Financing of Energy Efficiency: Influences on European Public Banks' Actions and Ways Forward

Christian Hudson, Anne Schopp, Karsten Neuhoff

A report from **a** pilot study by DIW, Climate Policy Department

In co-operation with IDDRI, EnergiaKlub and University of Vigo.

Berlin, May 2013

Executive Summary

Greater discussion between policy makers and public banks in Europe on the ways to stimulate markets in energy efficiency would help both policy makers and banks achieve their goals for financing of energy efficiency.

This discussion would be particularly helpful for formation and implementation of the building renovation roadmaps called for in the EU Energy Efficiency Directive, to inform discussions of savings targets in the context of EU 2030 Energy and Climate policy goal setting, and in the shaping and funding allocation of EU financial instruments for energy efficiency under the 2014-20 financial framework.

Further exchange would help banks and policy makers to take complementary actions. It would need to bridge differing perspectives - about the current state of markets, causes of barriers to financing and feasibility and benefits of goals for energy efficiency under different policy and financing conditions.

These conclusions are based on a round-table between public bankers, policy makers and other financial experts held in Berlin at the start of 2013 and a series of interviews with public bankers.

Public banks in Europe – like the European Investment Bank, Caisse de depot et consignations (CDC) in France, or KfW in Germany – are playing a key role in Europe in stimulating markets for energy efficiency. These markets need stimulation - the level of energy efficiency investment needed in the EU to achieve 2020 energy efficiency goals are estimated to require an additional €84 billion per year, inferring that achieving the EU's 2050 decarbonisation target may require several trillion euros.

This report reflects the practical experiences shared by bankers and experts from across Europe during the project. Three analytical findings of particular importance come out:

1) The private investment market for energy efficiency is undeveloped, and needs public actors' support to reach a self-sustaining size.

- Unfamiliarity, undeveloped technical expertise, uncertainty about future markets and other technical issues act as hurdles to growth of the private financial market in energy efficiency. Overcoming these would enable access to the size of funding needed to meet policy goals.

2) Public Banks' objectives and offers on energy efficiency are frequently determined by a mix of idiosyncratic institutional arrangements, varied information sets and personal factors, not only by public policy goals.

- Each public bank is different, with its own mandate, context and institutional arrangements. All of these influence the shape of the bank's activities and its various objectives that relate to energy efficiency, for example determining the selection criteria for energy efficiency project financing.

3) The level of public financing going into support of the finance market for energy efficiency is often held back by an under-estimation within governments and public banks of the economic and social benefits that it would bring.

- Unfamiliarity with investment in energy efficiency, the indirect nature of some of the benefits and a relative absence of benefits analysis combines to create a certain inertia against funding of energy efficiency, despite a very strong, but often unappreciated, macro-economic case for energy efficiency, and public support for private market growth.

Discussions suggested a few routes to make progress on these issues:

A) Wider dissemination and discussion of the public economic case for energy efficiency financing

- Further production and dissemination of analysis of EU, or national, macro-economic benefits from expanded investment in energy efficiency would be one key step in moving public and private resources into this area.

- The level of benefits increases as the indirect benefits – reducing unemployment, improving balance of trade, increasing net public budget revenues, reducing fuel poverty, reducing CO2 emissions – are taken into account.

- Public bank activities that facilitate future private investment by overcoming barriers have additional economic value, from 'jumping hurdles' to, or catalysing, greater investment, although this is hardly ever quantified. Wider understanding of the nature of these hurdles would increase perceptions of the value of over-coming them.

B) Analysis of the potential benefits of focussing support on particular market segments across the EU

- Bringing forward investments in energy efficiency at a scale that can allow transaction costs of investment to be lowered, and allow securitisation of the investments would be needed to facilitate large-scale private debt investment.

- Co-operation between public banks around particular market segments of the EU energy efficiency market could create sufficient scale in certain more-homogenous markets (eg. building types), so allow the progressive overcoming of hurdles. Success would be dependent on the extent to which investment in one segment has spill-over effects on market capacity which facilitate greater investment in another.

C) Analysis of goal setting for energy efficiency financing, under changing policy conditions

- Barriers to energy efficiency financing can only be progressively lowered, and a series of exchanges that leads to a conceptualisation of the possible rate of change or trajectory in

energy efficiency finance may help in setting priorities. This may provide a basis for discussion of co-ordinated action between policy makers and public banks, including more action on newer forms of financial instrument. For instance, a major block to financing is often weak demand. Public banks currently tailor their offers to stimulate demand, for instance setting energy performance criteria sufficiently low to induce uptake. Further exchange on how to co-ordinate a demand push from future public policy implementation with the conditions of financing offers could step-up achievement of energy savings.

- The creation of a credible and trusted trajectory for market growth is one of the key factors for inducing interest from private finance sources to enter into energy efficiency.

Feedback from project participants indicated that there would be a valuable role for a European forum that brings together bankers and policy makers to exchange experience and perspectives on the connections between public bank products and policy goals and instruments for energy efficiency. DIW and its partners are interested in building on the network created in this project to provide such a forum, and invite participation and co-operation in analytical work.

Contents

This report is structured in three parts: an introduction, a summary of factual findings about current practices and their influences, and key issues for the near future that were raised by project participants:

Introduction

1. This report

Financing of investment in energy efficiency is one of the ways by which public banks meet economic development goals simultaneously with wider policy goals. This report describes how some of the public banks in Europe have done that, and what can be learnt from their activity for the future achievement of Europe's energy efficiency and economic goals.

The information contained in the report comes mainly from a series of interviews with public bankers and a discussion between bankers and other financial experts in Berlin on January 11th 2013. This work constitutes a pilot project, involving partners across the EU[1], led by DIW.

By 'public banks' we mean financial institutions set up by governments with a mandate to deliver social goals: for example, the European Investment Bank, KfW in Germany, the Hungarian Development Bank (MFB).

2. Indicators of the Future Finance Market for Energy Efficiency

The EU has an indicative 20% energy efficiency goal for 2020. To achieve the 2020 energy efficiency target, the EU Commission estimates an *additional* €84 billion each year would need to be invested.

The 2020 goals are seen as a stepping stone to greater energy efficiency gains. Indicative 2050 targets to decarbonise the EU economy imply energy savings across the economy at levels of investment far greater than current seen. To achieve the 2050 EU's decarbonisation target, additional energy efficiency investment in the trillions of euros are expected.[2] As an example of the scale of the task to 2050, the target for the building sector aims at decreasing the CO_2-emission levels by 88%-91% (compared to 1990 levels).[3]

Current levels of finance going into energy efficiency are estimated at €15-20bn (in 2010)[4], with a significant proportion of this finance coming from public banks. This implies that to meet energy efficiency goals, there will need to be a very large expansion of financing into energy efficiency. It also implies that there are factors that have so far held back investment in energy efficiency that need to be overcome to realise the benefits of the energy efficiency goals.

---

[1] Project partners were: IDDRI (Paris); EnergiaKlub (Budapest); University of Vigo.
[2] As an example of estimation, see E3G (2012), The Macroeconomic Benefits of Energy Efficiency, April 2012, using data from European Commission (2011), 2050 Roadmap - Impact Assessment, SEC(2011) 288
[3] European Commission (2011), 2050 Roadmap - Impact Assessment, SEC(2011) 288 final.
[4] EIB (2012), Energy Efficiency Investments by Public Banks: EIB experience and strategic view, EIB estimation from several external studies, Presentation 11.01.2013.

Part1: Factual Findings

3. The Role of Public Banks

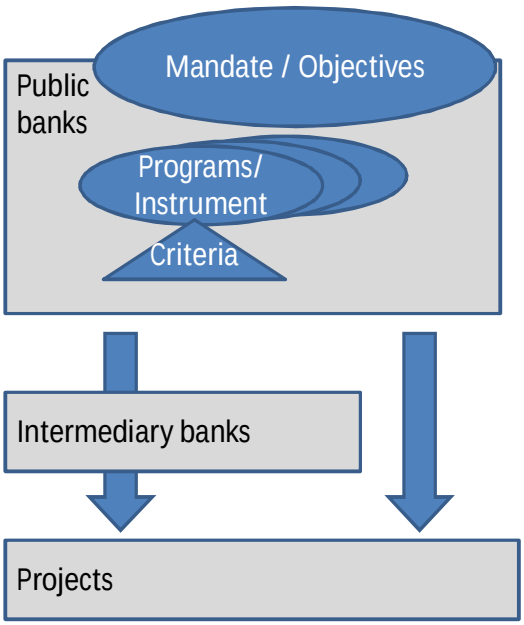
3.1 The Mandate and Objectives of Public Banks

The public banks in Europe have each been set up for slightly different reasons, with different mandates. For example:

- the EBRD was set up in 1990 with the purpose of 'fostering the transition towards open-market economies and to promote private and entrepreneurial initiative in Central and Eastern European countries committed to and applying the principles of multiparty democracy, pluralism and market economies'[5].
- the EIB's mandate is to support EU policy goals through sound investment, with the mandate for internal EU activities described in the EU Treaty.
- the mandate of KfW, a group of banks, set up in 1948 as part of the Marshall Plan, has the role of providing support to improve economic, social and environmental conditions, for which it is divided into domestic and international operational units, and then further divided into units supporting specific areas – for example: SMEs; housing and education; and local authorities.

Each bank's history and mandate shape its specific objectives and means of operation. Yet, in general, the banks operate as visualised in the simplified Figure 1: with some of their operations going through intermediary banks, and some direct offers of financial products to projects.

Figure 1: A simplified diagram of public bank activities



[5] EBRD Articles of Agreement, Article 1

3.2 Objectives of Public Banks around Energy Efficiency

Public banks in Europe currently offer a variety of programmes and products that support energy efficiency related objectives, usually aiming at several objectives within each programme, including:

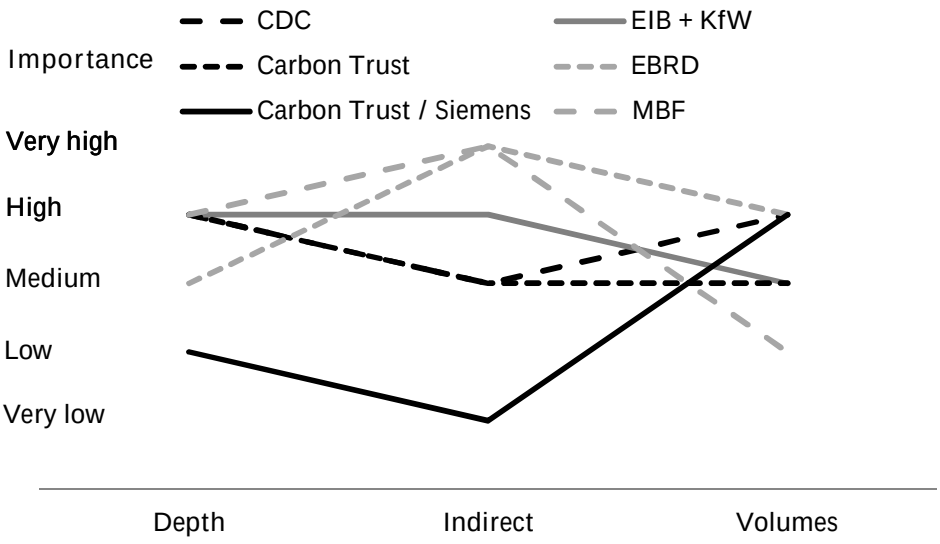
- promoting economically feasible projects that would not otherwise be financed,
- creating jobs,
- delivering direct energy savings,
- building market capacity in supply chain and installation of energy efficiency,
- maximising investment volumes,
- maintaining a sound risk-return profile for the bank,
- building a track record of energy efficiency lending,
- triggering, or leveraging, private investment, and
- building private and public financial capacity for energy efficiency investments.

Our project investigated several of these programmes, and the information gathered in relation to these forms the majority of the evidence base for this report. The banks involved were Caisse de depots et consignations (CDC) in France, EBRD, EIB, Instituto de Crédito Oficial (ICO) in Spain, KfW in Germany, the Hungarian Development Bank (MFB) and the Carbon Trust in the UK (which is not a public bank, but plays a role in financing). The programmes and products covered by these banks aim at industry, SMEs, residential buildings and public buildings. Some form part of a package with technical assistance (e.g. the EIB and KfW's use of European Local Energy Assistance (ELENA) programmes).

Each public bank participating in the project placed different weights on certain objectives. Different programmes within the same bank could often also aim at a differently weighted set of objectives. (See the Annexes for summaries of case studies on programmes for more detail).

Figure 2 illustrates this. It shows how interviewees from different banks described the relative priority given to different objectives for their programmes or product lines. Interviewees were asked to consider a simplified set of 3 grouped priorities: Delivering direct energy savings ("Depth"); Producing indirect effects (including financial and supply-side market capacity development); and Increasing investment volumes. Although achievement of these objectives is related, relative prioritisation in the different objectives is significant to outcomes.

Figure 2: Relative importance of objectives in public bank programmes



Each line in Figure 2 joins up the stated relative priority given to each of the 3 simplified objectives for a given programme. For example, the UK's Carbon Trust's government-funded interest-free loan programme (represented by the tight black dotted line) aimed primarily at maximising energy savings. A later Carbon Trust/Siemens Finance programme had a greater emphasis on producing financial returns (shown by the solid black line). EBRD activities primarily aim at promoting economic development, including market development, with energy efficiency one means of achieving this.

3.3 The Diversity of Public Bank Programmes and Products for Energy Efficiency

One result of the diversity of objectives for programmes that support energy efficiency is an equal diversity of programmes and products used. The project's case studies – a sub-set of the programmes in Europe - demonstrate some of this variety, although the project did not look at some types of instrument – for instance equity financing – which are already employed by some public banks[6]. Nevertheless, the case studies illustrate some key differences.

<u>Summary Facts on Programmes from Case Studies (see Annexes for Detail):</u>

- CDC's Eco-prêt logement social

France, since 2009, preferential loans for thermal retrofits, payback period of 15-25 years, required energy savings of 80 kwh/m² or more (depends on initial energy consumption), loan amount coupled to energy performance,
€1.2 billion loan volume during 2009-2011.

- EBRD's Sustainable Energy Financing Facilities (SEFF)

[6] E.g. CDC has significant equity investments in property, energy performance contracting companies and is involved in 3rd party financing arrangements.

Eastern Europe, West Asia and Russia, since 2006, preferential loans (through local banks) industrial and residential energy efficiency projects, varying payback periods, technical expertise given cost free, lists of eligible technologies that are maintained by local consultants, €1.9 billion loan volume by the end of 2011.

- EIB's energy lending policy

EU countries, direct financing (for large projects) or indirect through intermediary banks for industrial and residential energy efficiency projects, varying payback periods, technical expertise given or subsidised. Investment falls into the energy efficiency category when it brings at least 20% energy efficiency improvement or 50% of CAPEX can be recovered through energy savings or combined heat and power (CHP) projects.
€1.3 billion of energy efficiency loans in 2011 alone, with a total of around € 6.1 billion in the period of 2007-2011.

- MFB's Household Energy Saving Loan (HESL) and Panel Plus Loan Programmes (PPLP)

Hungary, loans for refurbishment of residential buildings, typically combined with government-funded grants. When projects meet the conditions for government supported grants, they automatically additionally qualify for these loans.
Approved HUF 1.35 billion (€4.5m) loans for HESL and HUF 30.3 billion (€100m) loans under PPLP to 31 December 2011.

- KfW's European Local Energy Assistance (ELENA) Programme

EU countries, beginning in 2011, loans (through local banks) can be combined with grants (leverage factor >20) for developing and planning energy efficiency projects. At least 20% energy efficiency improvement required.

- KfW's Municipal Finance Facility Energy Efficiency Window (MFF-EE) and SME Finance Facility Energy Efficiency Window (SMEFF-EE)

EU countries, since 2010, loans (through local banks) can be combined with grants (leverage factor >5) for energy efficiency projects. At least 20% energy efficiency improvement required, or at least 30% for rehabilitation of existing buildings including lighting etc.

- Carbon Trust's government-funded SME loan programme

UK, 2009-2012, interest-free loans to SMEs for energy efficiency equipment, including lighting, refrigeration, payback periods up to 4 years, energy savings assessments given cost free, Carbon Trust created project streams by demonstrating the business case both to suppliers and customers. Project must meet carbon reduction ratios of $1tCO_2$/ 600€ loan value.

- Carbon Trust/ Siemens Financial Services' Energy Efficiency Financing scheme

UK, since 2011, loans at market rates or leases to companies for energy efficiency equipment by Siemens Financial Services, technology-specific payback period of up to 10 years, energy saving assessments given freely by Carbon Trust, no performance criteria, but payback from energy savings should be <4 years.
€677 million loan volume

3.4 Diversity in the Selection Criteria and Processes Used

As the section above illustrates, there is a wide range of selection processes and criteria used for identifying investments that qualified for the energy efficiency programmes. These differ in type as well as value. We can categorise 6 main types of selection criteria. Investment projects qualify where:

- they use products or technologies with energy efficient characteristics from a pre-specified list (e.g. The EBRD has specified lists of eligible products/technologies for domestic renovation in Bulgaria.); or, alternatively
- they meet a specified resulting energy performance improvement (e.g. EIB and KfW, both apply a 20% energy efficiency improvement criteria[7]; CDC requires energy savings of more than 80 kwh/m², coupling the loan amount to energy performance; or
- satisfy an adjusted risk-return-payback requirement taking into account the nature of energy efficiency benefits (e.g. CDC combines low interest rates and long payback periods between 15 to 25 years); or
- the return profile meets investment criteria (no specific energy efficiency criteria, but an criteria that economic returns from efficiency have sufficiently high payback.) e.g. MFB and Carbon Trust/ Siemens Financial Services do not formulate any specific energy efficiency criteria; or
- certain process requirements are met - such as energy audits before project implementation or energy management systems/audits afterwards; or
- active, iterative discussion of energy efficiency benefits during the project selection process (e.g. as the EBRD carries out, through experts, for large investments that can improve their energy efficiency.)

Where the public bank is lending through an intermediary, the criteria may attach to the intermediary banks' projects, rather than the package of financing or credit line offered to the intermediary.

4. Factors shaping Public Banks Energy Efficiency Objectives

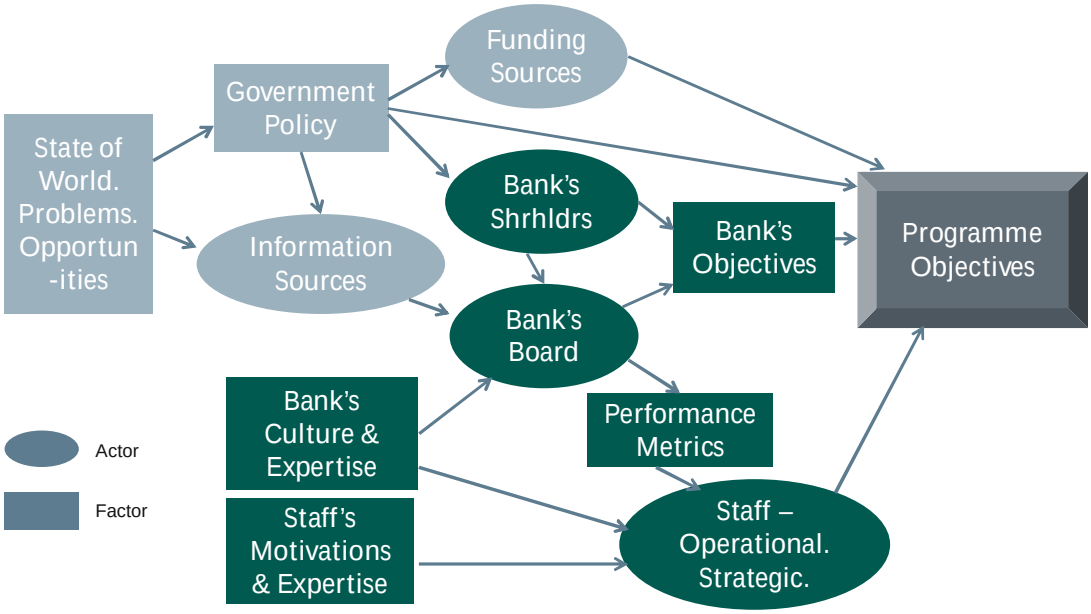
The choice of selection criteria is primarily the result of the interplay between objectives set and the constraints the bank faces, including the level of detail of information it has access to. Of the different forms of criteria mentioned in Section 3.4, each has qualities which make it more, or less, suitable for achieving a bank's chosen objectives for given market conditions.

The design of the programmes are also strongly determined by the objectives a bank sets, whilst outcomes are influenced by how well these design factors match the market conditions. The factors which influence the banks objectives are therefore an explanatory factor in the energy saving and economic outcomes that are achieved. There are several of these factors, in particular including institutional factors, in addition to the market conditions.

[7] The EIB lending policy is currently under review.

Figure 3 tries to summarise the influences on objective setting in public banks for a programme or product with an energy efficiency objective. Factors, and actors, external to the bank are shown in lighter grey; internal factors and actors in darker grey. The following text describes the influences.

Figure 3: Influences on Energy Efficiency Programmes



4.1 Mandate and Governance

The banks' mandate and governance structures were found to be a strong influence on programme objectives, with important factors being the strength of top-down governance and the degree to which the bank takes into account outside influences. Two examples illustrate the contrast:-

- For the CDC's Eco-logement programme for energy efficiency in France, the objectives were primarily determined by the 'Grenelle' process for environmental policy and specifically agreed in a document – a convention - between the French State and CDC.

- In contrast, the objectives for the energy efficiency team in the EBRD are mainly self-determined, and can be seen as result of a combination of the bank's culture, its explicit climate reduction target and personal interests and expertise of the staff working on energy efficiency.

Direction and choice of investment strategy usually comes through a bank's board, who are in turn influenced – particularly by the bank's shareholders (who may be all representatives of public bodies). Together these influence the objectives for the bank, and set up the internal performance metrics and working conditions which influence staff action.

The key decision maker in approval of financing programmes or products is usually a credit committee within the bank. This committee is usually conservative in its decision making, which provides a barrier to areas of finance outside the mainstream of a bank's financing activities.

The decision making processes for approval of programmes or products are often specific to each bank, and these institutional factors have an influence on whether, or how a bank will lend for energy efficiency.

For instance, the EBRD has one credit committee which decides on investments – and this assists investment decisions in energy efficiency. Other banks may have many different credit committees (for example, HSBC in the private sector has more than one hundred), which can create additional internal barriers.

4.2 Public Policy Objectives

Between the two extremes of the objective setting described above, many public banks have a mandate to achieve public policy goals. When doing this, they take into account the state of policy. The influence of public policy is particularly strong when some of the sources of funding for the bank's programme come directly from public funds, and have conditions attached to them.

As an example of another route of influence: the EIB has recently had its capital allocation increased, in part so that it can provide more investment to energy efficiency, in line with EU economic, climate and energy goals. The EIB has also tried to align its selection criteria with the 20% energy efficiency target for 2020.

It is also possible for public policy objectives to have a negative impact on the setting and achievement of objectives. Where policy instruments, or conditions attached to public funding constrain the way in which financing can be delivered, bankers may not be able to adjust the financing offers to match the market conditions. This can reduce uptake of the finance, for example, when demand is weak, high energy performance requirements are set and other policy measures are not used to boost demand.

4.3 Relevant Expertise

Several of the objectives set by public banks aim to overcome some of the barriers currently limiting other sources of financing of energy efficiency. This arises out of the recognition by public banks that facilitating private finance into energy efficiency is crucial, and that they have the expertise and tools to play the major role in that facilitation.

The relevant barriers to finance are well known (See, e.g.: IEA[8], ECOFIN Research Foundation[9]). These barriers include 'soft' barriers, as well as economic, financial and regulatory barriers.

[8] IEA (2007). Mind the Gap Quantifying Principal-Agent Problems in Energy Efficiency. Paris: International Energy Agency.
[9] ECOFIN Research Foundation, Climate Bonds, Marksman Consulting (2012). Local Energy Efficiency Project: LEEP+ Phase 1. August 2011

Taken together, these factors limit flows of private finance in two ways: usually they make energy efficiency finance unattractive compared to alternative, more familiar, investments that offer standard commercial risk/return ratios. In other cases, they raise the cost-of-capital for private finance investments, which in turn reduces the economic attractiveness of energy efficiency. They include:

- a perceived higher risk of energy efficiency – due to financiers' unfamiliarity with projects, low levels of professional technical capacity for energy efficiency and the lack of investment track record,
- the uniqueness of energy efficiency investment projects which tends to increase transaction costs and limit the possibilities to securitise investments,[10]
- low collateral value of the investments, as once these are made, they become part of larger infrastructure or have low/no second-hand value as separate items,
- the current financial crisis limiting the possibilities of trans-border investment in countries with significant sovereign risk, or via banks exposed to default risk,
- public authorities have limits on their ability to take debt or have other priorities for debt financing.

Public banks are in a good position to act on the financial barriers as they have expert knowledge of the financial markets, these constraints on private finance for energy efficiency and also the likely impacts of measures to remove them. They also have the ability to create financial flows into particular investments, or through particular channels.

For instance, many programmes lend through intermediary banks, who manage the financing of individual projects. This can be a means by which the private bank capacity for energy efficiency lending is increased. Equally, financing by public banks has the potential to create a project stream that demonstrates the investment market in energy efficiency – and this can reduce that obstacle to private bank finance.

4.4 Individuals and Individual Motivations

A further factor that consistently came out of discussions in this project was the influence of the individuals within banks. Increasing financing for energy efficiency usually requires a re-allocation of funding priorities. This needs someone within the bank who makes the case for that re-allocation, or who delivers the desired financing programmes. Where the existing role of energy efficiency investment in a bank is small – as it is in many public banks, for example the Hungarian MFB, the role of the individual can be even more important than in banks where energy efficiency financing is long established. The character and expertise of particular individuals therefore has an influence on the bank's work, not least as the reputation and trust given to the individual within the bank shapes the extent of their influence.

[10] Rezessy and Bertoldi (2010). Financing energy efficiency: forging the link between financing and project implementation. Commissioned by JRC; BPIE (2010). Financing energy efficiency in buildings. Background for European Roundtable 16.11.2010.

Individual incentives are also a factor, even in the setting of objectives of programmes. Self-generated, personal motivation is one important aspect. On top of this, the formal and informal incentive and reward structures within the bank influence objective setting and, later, delivery. Most commonly, we heard that, where the metric of success for an individual banker is based on the volume of lending that they deliver (as is usual), then the delivery of investment volumes is likely to be given greater weight in the formation and delivery of programmes.

4.5 Risk/Return profiles

Public banks need to match rates of return to the risk profiles of their investment. They must receive sufficient interest rates on their products compatible with their financial strength. This is often the essential criteria for their objectives and activities, and contrasts with most grant-based policy instruments for energy efficiency investments.

Often, support from European or national governments, allows public banks to gather finance[11] and lend at rates for projects that are more preferable than private banks, which can allow public banks to achieve policy goals that the private sector cannot finance. Yet, risk factors must be taken into account

Most public banks lend at least part of their programmes through intermediary banks, who take the project risk. The risk faced by the public bank is, in these cases, the risk of default of the intermediary bank, so the risk profile of the intermediary bank, rather than projects, is factored into the public bank's decision making. This includes risks relating to problems with the banking system, and sovereign risk.

4.6 Availability of Information

In shaping the objectives and the products that deliver them, banks have many factual factors to take into account, particularly around the areas of:

- The scope of opportunity for investment: including –
    - The physical potential for energy efficiency (for example the size and nature of building stock to be covered),
    - The potential of the energy efficiency market in a region to supply the products and services needed to carry out the investment, and how investment could impact on prices,
    - The strength of demand for finance, considering all the different barriers which hold back energy efficiency investments (not just the ones on the financial side), and how differing financial investment terms would affect that.
- Risks of investing through intermediary banks, and the terms of the offer that would be needed to make financing uptake attractive for the intermediary banks.
- How other characteristics of the energy efficiency product will impact on its uptake, for instance its procedural and administrative requirements.

[11] E.g. the CDC eco-loan offers low-rates of interest, that were supported by cross-subsidisation from CDCs other investments.

- How related policy instruments, or grants, will inter-relate with demand and impact of investments.
- To what extent the investments will impact on the dynamic evolution of the financial market, supply side capacities or demand for energy efficiency projects in future.

The availability of information on these issues, and the form in which it is presented and can be taken into account in decision making, is one of the factors influencing the formation of objectives.

Banks gather information about the issues that they find most relevant, often employing expert consultants in regional markets. For example, the EBRD uses consultants to advise on the energy use norms in regional markets – and therefore what will be considered feasible energy efficiency measures.

One of the key forms of information that banks take into account in designing additional or revised instruments is the experience from past financing programmes and instruments. Public banks in Europe frequently meet in small groups to exchange these experiences. The comparison of programmes and results is a useful guide for future decisions. New programmes – for example, the ELENA programme implemented by EIB, KfW (and CEB) – started as pilot projects, before scaling up to achieve significant results[12].

Learning from programmes is not always easy, and the extent of data availability is a key factor. Some outcomes are not easy to assess. For example, where public banks choose to tackle barriers to private financial capacity, by creating a track-record of investments through their financing, and by increasing private banks familiarity with the type of transaction involved, the estimation of the potential effects in advance or the measurement of effects in evaluation can be difficult.

Consideration of indirect effects, even though frequently an important objective, is often constrained by the complexities of the interaction of different factors leading to observable outcomes, and by the time lag between the financing programme and an observable outcome.

Nevertheless, data gathering and exchange plays a key role. One example of learning: CDC's second Eco-logement loan was offered at a less attractive rate of interest than the first, as the first had been very highly demanded. This had an impact: the target for the second Eco-loan for 2012 was 150 000 loans, but around 20 000 were realized. The example also illustrates the difficulty in judging the impact of changes to financial offers.

In the programmes that the project examined, there were different degrees and forms of monitoring and collecting data on the outcomes, with particular differences in whether direct

[12] An analysis of the performance of the EIB ELENA facility shows that the leverage effect for current projects is 54, i.e. more than double the required level of 20, potentially leading to investments of over € 1.5 billion. It is estimated that energy savings from signed and approved projects could reach 919 GWh per year, with total avoided CO2 emissions reaching 588,357 tonnes per year (COM(2013) 225 final, p. 6)

energy savings were estimated, or verified after project investments. Some sampling of actual savings realised would provide valuable information on achievement of goals.

Part 2: Making Progress on Financing

5. Key Questions for the Future

In the course of the project, our discussions gathered experiences from public banks and policy makers that highlighted some key issues for future decisions on financing of energy efficiency, and the policy framework to support it.

The prime issues were: 1) Weak demand for finance 2) Reaching sufficient scale; and 3) the energy efficiency performance or 'depth' of investment to support. The sections below explain these issues.

5.1 Weak Demand for Finance

Levels of demand for energy efficiency financing are not constant within, or between, countries. So, the uptake of finance offered by public banks cannot be taken for granted. Achieving high levels of uptake depends on various factors including the underlying demand for energy efficiency investment, and the attractiveness of the public bank's offer compared to alternatives.

In certain regions and market segments, lack of demand, rather than lack of availability of finance, is the primary issue holding back investment. Some public banks have facilities for energy efficiency lying idle. Two particular issues which could hinder uptake were mentioned in addition to the barriers to financing mentioned in Section 4.3:

- Weakness of underlying demand for energy efficiency investment

  Demand for financing is related to the demand for investment in energy efficiency, and the potential of the market on the supply side to deliver energy efficiency products and services. Even for public banks, potential demand typically must be of a sufficiently large scale for a programme or product to be attractive, and the programme only successful where the demand is realised. Often, this level of demand is not present – growth of demand is often linked to adequate policy.

- Attractiveness of offer to intermediaries, compared with alternatives

  Even though a loan may appear at first sight to be an attractive offer for all parties, it may not be attractive when compared to alternatives. Lessons can also be learnt from the MFB 'Panel Plus Loan' programme designed to stimulate investment in panel-built multiple-residences. To promote uptake by owners and occupiers of residences, the loan was offered at a favourable interest rate, with a cap placed on the maximum interest rate at which the loan could be offered (of 3 month EURIBOR +3.5%) The loan was offered through intermediaries, and the cap meant that the margin for the intermediary banks was lower than the margins that they could receive for undertaking other financing. As a result they showed relatively little interest in distributing finance in the programme.

Where these situations arise, building up a suitable project stream may become one of the key activities of bankers. There are questions on the extent to which public banks can use attractive financial products to stimulate demand that would otherwise not manifest. These questions

revolve around the extent to which the products and programmes are marketed (and the form by which they are marketed) and on how financially attractive the products would optimally be.

It also means that bankers have to pay attention to other factors that can reduce the attractiveness of their products. Although the situation differs between countries, we heard that, in general, the greater the conditions that attach to finance, the lower the demand for it, all other things being equal. This is for three reasons:

- conditions which limit the ability of bankers to match their financial product to specific markets situations can hinder the volume of lending; particularly where these conditions are not developed in consultation with bankers who have good knowledge of the market conditions;

- the use of highly demanding process requirements may decrease the attractiveness of the financing to the point where demand drops away, where a market has low demand. Burdensome administrative requirements can dissuade potential intermediary banks and customers from using a public bank's finance offer. These add costs – including the opportunity costs of time which could be spent on other activities. As energy efficiency investments are often relatively small, administrative requirements for intermediary banks can be multiplied compared to investment in other (larger project volume) areas;

- the stringency of energy-efficiency performance requirements has been found to weaken demand. This may come because project planners first deciding on levels of energy efficiency improvement and then looking for sources of finance that fit that level of performance, or equally would happen where performance requirements were too stringent compared to supply-side capacity, or investment desires, (e.g. insufficient expertise in condensing boiler installation), or from limits in the ability to invest by home-owners. For example, in Hungary, building owners will often carry out energy efficiency at a low level, because this is what they believe they can afford. Later, if possible, they would invest again to reach higher performance levels.

These factors can create trade-offs between demand and achievement of support for policy goals. If public banks have to lower the conditions on their loans or highly subsidise them to make them attractive, it seems likely that public policy instruments would be more cost-effective at stimulating demand. A lack of demand suggests that the policy maker and banker may need to consult together on how to shape the attractiveness of the financial offer to future market conditions, and how other policy instruments can support the uptake of the financial offer.

5.2 Reaching sufficient Scale

Sufficient scale of investment in energy efficiency is a pre-requisite for stimulating the private debt finance market's entry into some sectors of energy efficiency (for example, public buildings and residences, SMEs) and creating large supply-side capacity to support further expansion.

Scale reduces transaction costs for investment, and allows bankers who are used to investing in large volumes to become interested in the market. It could open the way for sufficient

homogeneity in project investments to allow securitisation of debt finance. Where this can be done, it would make investment in energy efficiency significantly more attractive to volume investors, because their investment could be traded on financial markets. This provides a source of finance, and gives the investments liquidity for the initial financier, allowing them to be sold on, and new investments taken.

Liquidity is essential for private bank finance: it has been said that the purpose of banks is to provide liquidity to the market, as opposed to tying up their finance in fixed investments.

Aggregation of investments, and standardisation of investment documents (which can already be achieved) are needed to get to scale. Energy efficiency investments are usually small, in financing terms, which brings this need for them to be dealt with in aggregate. It may be possible to aggregate energy efficiency investments with other forms of longer-term investment in particular situations: for example in urban investment bonds.

Expectations of future scale matter for present decisions. Private banks will tend only to invest in energy efficiency where they can see that there will be sufficient future demand that they can form a rolling investment fund, with the returns on current investments being re-invested in the future. For this, banks need a fair degree of certainty that there will be demand for energy efficiency finance in the future. Sufficiently small pay-back periods are also needed for a rolling fund: these would probably need to be between 7-10 years, for such a fund to be attractive. There also need to be expectations of future market scale because there are real transition costs from resources in a bank moving from another area of investment into energy efficiency investment, as bankers use working time to become familiar with the area and build networks.

An issue relating to scale is the definition of the scope of 'energy efficient investment'. As new investments – in upgrading building stock, or installing replacement industrial processes - tend to be more energy efficient than what they replace, investors need a definition to decide already which investments go beyond the normal level of performance improvement, and so bring returns specifically from their energy savings characteristics. The answer is specific to different market segments.

5.3 The Energy Efficiency Performance Level, or 'Depth' of Investment, to Support

The 'depth' of energy efficiency achieved refers to the extent of energy saving from an investment, compared to the physical structures or practices which it replaces. For instance, in a building, it is the % change in the use of energy after the investment took place. It is important, because it defines what degree of the total saving potential can be achieved.

Theoretically, there is a cost-optimal level of energy efficiency performance, which is determined by the cost-of-capital, the investment costs and the profile of the future savings from efficiency. Investment should take place until the marginal cost of additional investment reaches the marginal benefit of the discounted stream of future energy savings. This would capture the whole of the economic energy efficiency potential (under current market prices).

In practice, other factors influence the level of investment taking place, which can often bring investment at energy efficiency performance levels below the theoretical cost optimal level. This would not be an issue, if it was easy for future investment to later realise the remaining savings. However, practicalities often prevent that additional investment, as mentioned below. This has consequences for the achievement of policy goals, and so raises the question on the appropriate 'depth' of new investments to support.

Two factors influencing the decision on 'depth' for any programme or product are particularly significant:

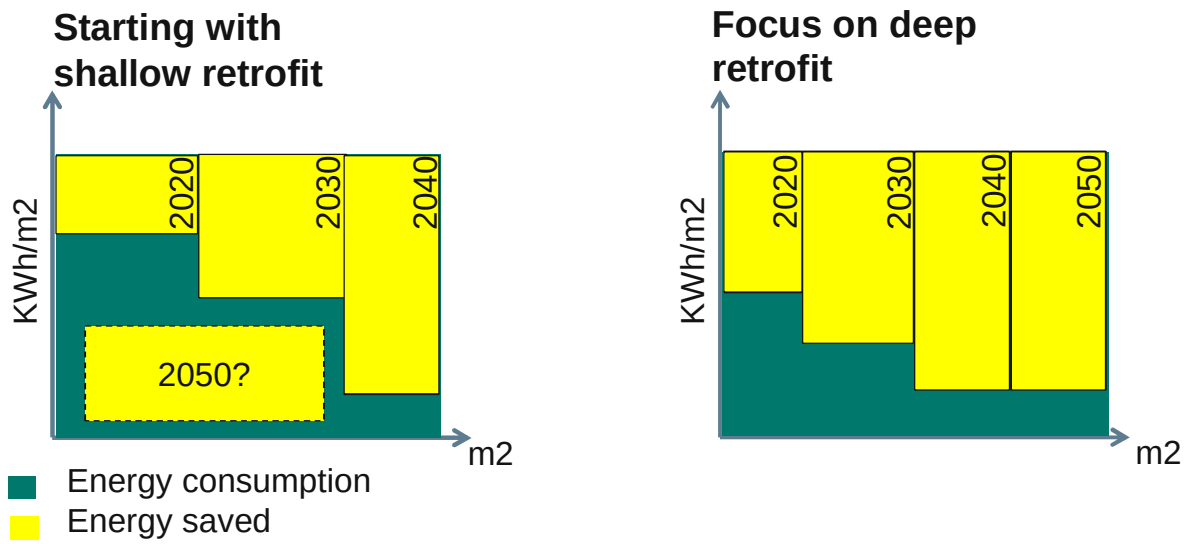
5.3.1 Lock-in

The 'depth' of energy efficiency chosen in an investment can be 'locked-in' for future decades, meaning that choices now affect future performance. This arises for two reasons:

- energy efficiency investments often take place at the time of other investments (for example, building renovation, or industrial process updating) because costs are reduced when such activities take place together. The gap between such periodic investments may last decades.
- initial investments in energy efficiency can exclude further investments – by making them less financially attractive: e.g. once a space-heating boiler is replaced with a slightly more efficient boiler, it may not pay off to then later replace the second boiler with a more efficient third, due to the one-off costs of replacement.

This potential lock-in matters, because financing shallow energy efficiency results in limits to the practical potential for energy savings in the future. This misses economic opportunities and can endanger social, energy and climate goals set for energy efficiency. In the schematic Figure 4 below, imagine that the diagram starts in 2010 with the underlying (dark) rectangle, which represents the total building stock and its current energy use. As each decade passes, investment brings the energy savings represented by the each light rectangle – and in both diagrams the total energy savings become progressively greater. (Each decade's rectangle represents the same volume of energy saving in both diagrams).

Figure 4: Comparison of 'shallow' and 'deep' building retrofit



The diagram on the left represents shallow retrofit, in which, to achieve 2050 energy saving goals, the decade of investments leading up to 2050 has to be undertaken in building stock that has already been renovated.

For instance, looking at buildings, calculations suggest that for a sensible economic trajectory to achieve the EU building energy savings goal, the *average* final energy demand for space heating for all buildings would need to fall from 115 to 90 kWh/m²a by 2020 and to 20 kWh/m²a by 2050. This requires that 2.3% of the building stock receives comprehensive thermal retrofit each year. If initial retrofit is shallow, then buildings need to be retrofitted multiple times and a greater % of total building stock needs to be retrofitted in each decade.[13] This has cost implications, particularly where the shallow retrofit does not factor in later retrofitting (e.g. a stepped retrofit).

Whether there is lock-in from early investment depends on the nature of the first, and successive investments. It is possible to order progressive investments in ways that do not reduce the attractiveness of further energy efficiency steps, but this requires knowledge and planning, together with the right incentives.

5.3.2 Increasing Cost-of-Capital, with increasing Depth

An increasing 'depth' of energy efficiency frequently increases the pay-back period of investment. This increases the perceived finance risk as investment is tied up for longer – is less liquid – and so it is perceived as riskier. At best, it increases the cost of finance, which reduces the attractiveness of the investment. Beyond that, particularly for private banks, the longer pay-back period can make the investment sufficiently unattractive not to be financed at all. (As debt financing of energy efficiency investments is an unfamiliar market, perceived risk is already high, and as a result energy efficiency investments are seen as be barely commercial.)

[13]Ecofys (2012). Renovation tracks for Europe up to 2050: Building renovation in Europe – what are the choices? Commissioned by Eurima.

As a result, deep retrofit that has payback periods of longer than 15 years is not attractive to private finance. Investments with payback periods of less than 10 years (in building retrofit) are said to be on the edge of being commercial.

Where 'deep' energy efficiency relies on innovative technologies that are relatively new to the market, and so seem unproven, these will increase the perception of risk by the credit committees within banks, and probably lead to the refusal of these energy efficiency investments.

6. Bridging Policy and Banking Perspectives

The next few years will see several changes for energy efficiency financing: for example, each Member State will produce a Roadmap describing key features of a long-term strategy for improving the energy efficiency performance of its existing building stock as the EU Energy Efficiency Directive complements the Energy Performance in Buildings Directive; discussions in the context of the next EU Multilateral Financial Framework have opened the potential for the creation of new forms of financial instruments for energy efficiency.

These changes raise practical issues, where decision makers will be deciding afresh the questions:

- Which projects should public banks finance?
- How, and to what extent, should public money support financing of energy efficiency?

The answers to these questions are only found by answering several underlying questions. For example, Article 140 of the EU Financial Regulation[14] sets out the conditions under which a new EU financial instrument would be justified, covering questions on the extent to which the financial instrument is additional and addresses market failures holding back investment.

In the course of the project, we found that outcomes are influences by the way in which energy efficiency goals are conceptualised by the actors involved. These perspectives influence the objectives of public banks, and decisions on programme and product design. Differences in perspective between (for instance) policy makers and bankers can weaken the achievement of the goals of either group. We also found indications of differences in perspective within those two groups (for example between financial policy makers and climate policy officials).

These differences in perspective are relevant to how much public money to allocate to energy efficiency investment, and how it is spent, towards which goal.

Exchange of experience between public banks and policy makers is one route to communicating the evidence that will provide the underlying answers on which decisions on policy and programme design could be based. This section discusses the issues – and emerging questions – in four areas raised by the project:

[14] Regulation (EU, Euratom) No 966/2012

- the relative economic benefits of energy efficiency investment;
- the net economic value from 'jumping hurdles' to greater investment;
- the conceptualisation of feasibility of financing goals; and
- the benefits of focussing on market segments.

6.1 The Relative Economic Benefits from Energy Efficiency

Energy efficiency tends to bring particularly strong economic benefits from investment, when compared to other investments, as:

- the direct return on investment can be high (for instance, often significant energy savings can be achieved by changes with very low cost);
- energy saved usually implies reducing the transfer of wealth outside the EU as payments for fuel imports and instead sees the re-investment of that money in the EU;
- energy efficiency investment creates jobs – which also reduces welfare payments.

Yet, the full extent of the economic benefits of energy efficiency investments have not always been appreciated by decision makers allocating resources within finance ministries and some public banks. This impacts on the allocation of resources, whether public funds or a bank's financial or human resources, to energy efficiency, with a certain amount of inertia already mitigating against a transfer of resources to the most productive areas.

Existing examples of estimates of economic benefits demonstrate that it is possible to make clear and convincing cases on the relative economic strength:

- KfW (2010) calculated that for each euro invested by its energy efficiency programmes in 2010, the German Federal Chancellery would receive between €1.8 and €2.8 in taxation on the induced investments. When the effect of increased employment is taken into account, additional net benefits to the Chancellery of over €4 per euro in the programmes could be realised, for example through a reduction of unemployment welfare payments by €1.8bn in 2010.[15]
- E3G (2012) describe the set of macro-economic benefits of energy efficiency.[16]
- Cambridge Econometrics and Verco (2012) show that for the UK, an energy efficiency programme is a more effective way to stimulate the economy – compared to likely alternatives of: cutting VAT; reducing fuel duty; or investing in infrastructure projects like roads. A €4bn/year programme in building thermo-retrofit is estimated to boost gross domestic product (GDP) by 0.20 per cent.[17]

[15] Kuckshinrichs, Kronenburg, Hansen (2011). Wirkungen der Förderprogramme im Bereich, Energieeffizientes Bauen und Sanieren' der KfW auf öffentliche Haushalte, Forschungszentrum Jülich, STE Research Report, im Auftrag von KfW Bankengruppe.
[16] E3G (2012). The Macroeconomic Benefits of Energy Efficiency, April 2012.
[17] Cambridge Econometrics and Verco (2012). Jobs, growth and warmer homes: Evaluating the Economic Stimulus of Investing in Energy Efficiency Measures in Fuel Poor Homes. Commissioned by Consumer Focus.

- An IDDRI/DIW estimation of the benefits of green investments in a European stimulus package pointed to a net gain from energy fuel cost reductions of €55bn to 2050 from a package of investment including energy efficiency.[18]

The economic benefits of energy efficiency investment vary between countries. In countries currently suffering high unemployment, as currently in Spain, investments in energy efficiency can have a greater economic gain, by reducing unemployment in sectors of the labour market that are particularly slack.

Potential for Future Exchange 1:
Discussion and Forms of Dissemination of Economic Benefits of Energy Efficiency

The provision of more information on the full economic benefits of energy efficiency could help in the allocation of scarce public investment resources towards energy efficiency in future years, including discussions on the use of EU Structural and Investment Funds.

This information could provide additional rigour on the extent to which there is under-investment in energy efficiency once all costs have been taken into account; and assess benefits widely – including the impacts on employment, stimulus from reduction in energy import payments, and so impacts on net government payments. It could particularly identify which markets (including which countries) would stand to realise the greatest benefit, given current employment market, fiscal and investment conditions. Some research is being done to provide decision makers with estimates in some of these markets, e.g. Spain

6.2 The net Economic Value from 'jumping hurdles' to Greater Investment

Energy efficiency investments usually require some upfront costs, to deliver future returns. The same appears to be true looking at public investment in overcoming hurdles to energy efficiency financing: investment in the short term can free future returns, by removing barriers to private financing.

So, public investment now has two valuable forms of return: the energy savings (and indirect effects from the investments) itself and the reduction of barriers that free up future private finance. The reduction of barriers has a significant economic value, because it facilitates future investments with good returns that otherwise would not take place.

Due to the nature of these barriers, the investment market for energy efficiency needs to be seen as a new, 'fledgling' financial market, with distinct problems and the need for public support to overcome current constraints.

This is not always the way that the market is perceived by policy makers, or finance ministries. Such decision makers can see the finance market as efficient, and so the low level of finance

[18] Spencer, Bernoth, Guerin, Chancel, Neuhoff (2011). Green Investments in a European Growth Package (IDDRI/DIW Working Paper, June 2011)

going into energy efficiency investment as an indicator of a lack of cost-effective investment opportunities in that area – for example, because transaction costs or other unobserved costs are too high, and cancel out future savings. Some studies re-enforce aspects of this view, suggesting that the gap between investment levels and truly profitable investment levels are over-estimated.[19]

It may be helpful to see some of these barriers listed in Section 4.3, - including the perceived long pay-back periods, resulting illiquidity, and the need for scale - as 'thresholds', or 'hurdles' that, once overcome, free up future investment returns. These are economic blocks which prevent the financial market from allocating capital efficiently. This perception allows a clearer role for policy in helping leap that hurdle in ways that are not so expensive that they make the whole package of intervention/investment and energy savings economically unattractive.

The need for sufficient scale is a good example: it is unlikely to be overcome without policy intervention, but once hurdled, it opens up investments. There are at least 3 other barriers that can be seen as 'hurdles', and which come out of the nature of the investment decision making process within banks, and particularly the way in which they deal with uncertainty:

- The unfamiliarity of energy efficiency investments and the frequently low collateral value of investments create an excessively high perception of risk, in comparison to the available evidence of the levels of risk (or to other investments).[20]

- The attractiveness of energy efficiency being further reduced by its apparently different nature – it produces savings, instead of products. Additionally, these savings are in energy, so subject to risks of price fluctuation (rather like the price of products in a market).

- The need for expertise, as well as familiarity to be built up within private banks, around energy efficiency investment. Currently, many bankers are unaware of the actual, low risk profile of energy efficiency.

This kind of assessment of the barriers could also help in the design and approval of new financial products for energy efficiency financing, of the type being envisaged by the EIB, and by the European Commission in the Financial Regulation for 2013[21] supporting the forthcoming EU Budget, and so the allocation of EU Structural and Investment Funds. It also implies that public funding that removes barriers can be reduced, once the barriers are hurdled.

There are various ways in which programmes and products can be designed in ways which more effectively overcome these barriers, whilst also delivering the savings from energy efficiency.

---

[19] E.g. Allcott and Greenstone (2012). Is There an Energy Efficiency Gap National Bureau of Economic Research, Working Paper 17766

[20] Collateral value is low, as it is impractical to take-back only the energy efficiency aspects of investments (e.g. windows in a house, in event of default), and so financing is usually unsecured, and treated as an unsecured loan – with correspondingly high interest rates E.g. in the Netherlands, a typical offer for an unsecured loan to consumers carries a rate of interest between 8-14% pa.

[21] Regulation (EU, Euratom) No 966/2012

For instance, one approach to hurdling this perceived risk, and perhaps longer pay-back periods would be a financial product in which public money is invested in the first tranche of risk – perhaps as equity – in a vehicle that debt investors could then enter, with lower risk exposure.

There are examples of ways in which financial activities reduce other market hurdles. The setting of certain requirements by public banks in their programmes can influence the market as to what is seen as an appropriate level of energy efficiency performance. This could influence the ambition level of projects coming forward for finance, and the expectations of market actors on what they should demand from, or supply to, the market. EBRD's listing of products as available for their credit in certain countries has this kind of seal of approval. KfW's domestic energy efficiency building standards have become reference points for property market activity.

We found that currently, there is less evaluation available about the effectiveness of public bank activity in overcoming hurdles to market activity, than there is on the energy saving (and indirect economic impacts of the saving) from investments. This scarcity may weaken the persuasiveness of the case for use of public money to support tackling these barriers, even where doing so is one of the main goals of public bank energy efficiency programmes.

Potential for Future Exchange 2:
Estimation of the Economic Benefits of Public Support for overcoming initial hurdles in the Energy Efficiency Finance Market

A key part of the discussion on the economics of public support of products or financial instruments for energy efficiency financing is the economic gain from those instruments overcoming market barriers, and so freeing up future investment streams, in addition to their own returns.

This is relevant to discussions of the additionality of public fund allocation, in particular the extent to which is does not substitute for other sources of finance for opportunities that are already profitable. It is information that is needed to decide how much public funding support to allocate to make public bank products more attractive – for example, how much of a grant element would be effective to support demand for loans.

There are two potential metrics for the value of the public funding allocated: the value of the future investment streams that would be freed-up by overcoming the hurdle; and the cost of the cheapest alternative way to overcome that hurdle (if any alternatives exist).

Neither of these may be easy to estimate with certainty. Exchange and review of past experience in overcoming or reducing hurdles in certain markets may provide some guidance, when analysed within a framework that identifies which hurdles are being reduced.

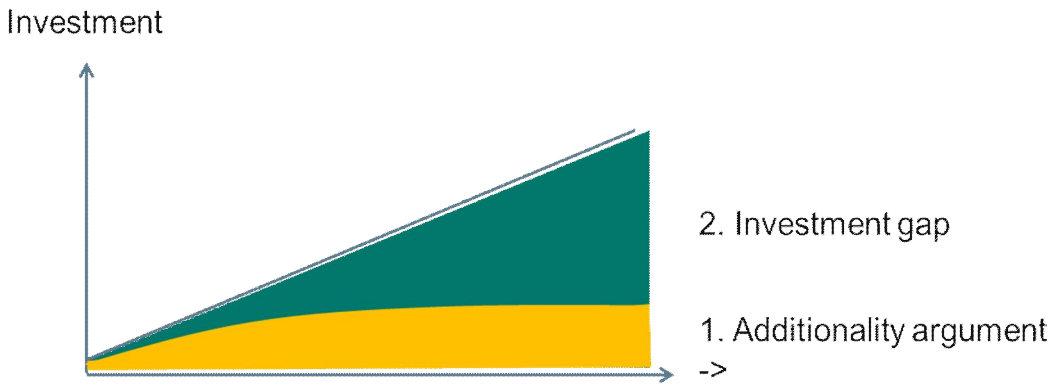
This information, in turn, can provide guidance on the level of inducement needed for private finance to enter into a particular (unfamiliar) market for energy efficiency, given the availability of alternatives.

For example, an investment vehicle in which public equity investment would take the first tranche of risk, to reduce the perception and reality of risk for private investors in the vehicle - the level of public equity investment would need to be in the area of 30-40% of the total investment volumes to make the investment attractive. Discussion of the evidence base of these kinds of estimates could facilitate agreed levels of public contribution.

When comparison of the least-cost alternative to overcoming hurdles is considered, there are necessary and interesting questions around the true source of the 'hurdle' and of the different cost-effective ways of removing this type of barrier. For example, one of the key questions is the issue of what would be necessary to bring about changes in attitudes and perceptions within banks on energy efficiency lending. Answers could be based on exchanges of experience about the decision making processes within banks, and how different factors impact on those.

Such analysis may also provide some pointers to how long public support for energy efficiency investment in a market would need to last, before the barriers are overcome. So whether – as seems unlikely – the public investment represented by the lighter coloured lower segment in Figure 5 would continue indefinitely, or when it could decrease, after private investment was catalysed and was then able to fill the investment gap.

Figure 5: What profile will public support for energy efficiency investment take?



6.3 Bounded Trajectories

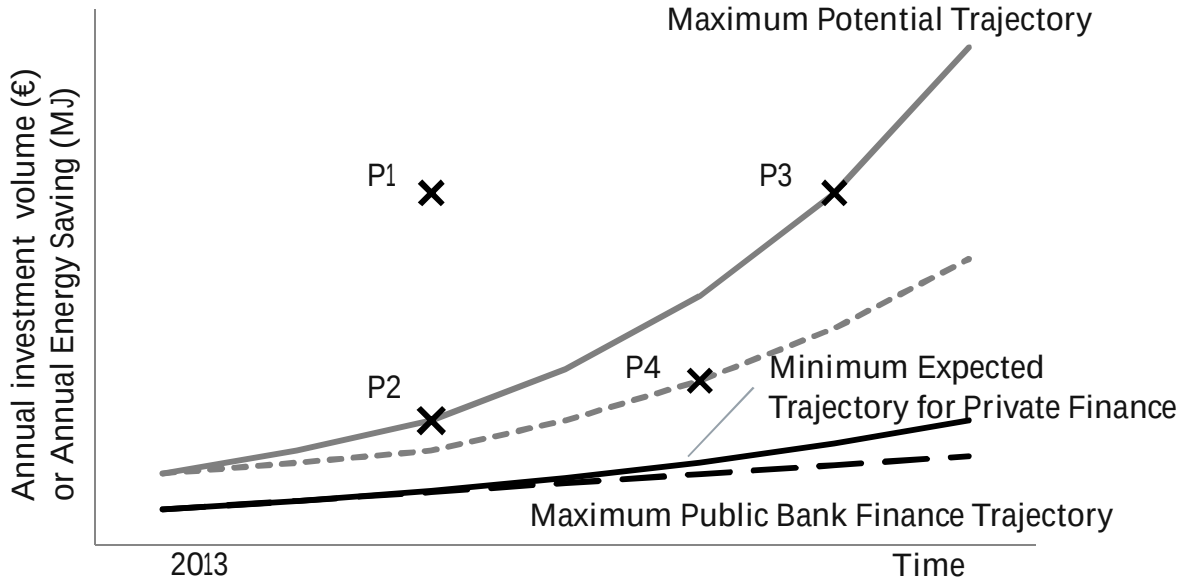
Investment in energy efficiency cannot immediately be raised to a given target level, due to the time taken to overcome hurdles and build market capacity and demand. These can be progressively reduced over time. For example, banks unfamiliar with energy efficiency would build up their expertise, over time, as they became more familiar, rather than make a sudden shift in their strategies into a relatively untested area.

Another reason for the progressive nature of change is that expectations of market growth play an important role in decisions to build capacity in finance and suppliers of energy-efficient goods and services (or in the creation of ESCOs who might play a role in aggregating demand.) Expectations are not instantly changed by policy - setting a policy target is not in itself sufficient

to create strong expectations due to past poor performance in the achievement of policy targets (in various policy areas). So market expectations will move progressively.

Understanding the potential rates of change, or the boundaries to them, is a key piece of information for setting policy goals and creating constructive discussion on the feasibility of policy goals between policy makers and public bankers around energy efficiency. Looking at the potential growth of energy efficiency markets as a trajectory may give an additional common perspective, even where there is uncertainty about the potential future trajectories. Figure 6 below is an illustration of such a trajectory. It shows the potential achievement of investment goals in terms of progressive investment market expansion, given constraints. The investment potential in energy efficiency is a set of possible trajectories, starting from current 2013 investment levels.

Figure 6: Bounded Investment Trajectories



In Figure 6:

- The numbered points P represent potential policy goals. The maximum rate of progress currently economically feasible under the existing conditions is shown by the solid grey line running through P2 and P3. P1 shows that a very bold policy target which ignores the constraints is not feasible. (Although achievement of any goal is theoretically feasible given limitless public support, at some point this becomes uneconomic).

- The dotted line in Figure 6 running through P4 indicates a trajectory with less progress in the near-future. As a result, from the time of P2 onwards, the constraints still need to be rolled back, and cannot be done at a faster rate than the dotted line: if P2 is not reached, achieving P3 would also not be feasible. So, if P3 represented an ambitious 2050 energy efficiency target, it would only be reachable if the 2020 (P2) target were reached.

- There is also a minimum expected trajectory shown, which acts as a boundary constraint to investment. The trajectory implies that much future financing comes from private

sources, rather than from public banks. For private finance to enter the market, there has to be an expectation of future expansion, so that early movers in the market can see that their entrepreneurship will lead to bigger gains later, on a scale which pays back. For example, on a short time scale, we heard that for a bond market for energy efficiency investment to take off in the EU, the market might need to grow to €300-500m within 2 years.

- The dashed line indicates that the expected level of public banks future financing would not realise policy goals by itself. Public banks have a key facilitative, or pump-priming role, for private finance rather than being the main delivery mechanism.

Figure 6 illustrates trajectories that are defined by whichever constraint – whether from finance for energy efficiency investment, demand or supply-side capacity – remains most significant. In practice, each of these areas needs to be tackled simultaneously – and this re-enforces the benefits of co-operation between finance and policy.

Potential for Future Exchange 3:
Estimation of Feasible and Attractive future Investment trajectories and the co-ordination of policy and financial offers to achieve them.

Information on the potential impact of public support, and of different designs of financial product or programmes can be presented in different ways. Their influence on trajectories is one way.

Considering the shape of potential trajectories matters for setting policy goals, and could help EU Member States refine their long-term roadmaps for renovating building stock. Some analysis is already available that can help inform thinking about potential trajectories.[22]

Such conceptualisations would need to build on discussion of the potentials to roll-back hurdles to investment and the effectiveness of different policies, programmes and financial products. They could, at best, provide pictures of how policies and programmes could work together in particular markets, compared to alternatives, and so provide a stimulus for discussion between policy makers and public bankers, whose actions have profound implications for the success of each others' agenda. For example, the role of minimum performance levels for existing buildings has a large effect on financing offers, with the difference between France and Germany in this respect being illustrative.

Discussion of the shape of trajectories brings up questions around how transferable evidence of roll-back of constraints in one market would be to other markets. It would also raise issues on the form of financial instruments that were best suited to remove certain financial market barriers.

[22] E.g. BPIE (2013). A Guide to Developing Strategies for Building Energy Renovation. February 2013.

6.4 Uncertain Benefits from focussing on Market Segments

Markets for energy efficiency differ between regions, legislative regimes, building types, industry types and other market conditions. Indeed, it is probably unhelpful to think of a market for energy efficiency financing in the EU, because these market conditions vary so significantly. Appropriate financial offers, and policy instruments, necessarily differ between these markets.

There are some significant sources of information available on the differences between market segments: for example on buildings, the Buildings Performance Institute Europe have compiled a database of the building stock in the EU, gathering the known information on the most important characteristics, for example ownership type[23].

There is one advantage from these differences. The diversity of different potential investments in energy efficiency in the EU can allow banks to target their activities on the market segments which most easily deliver their objectives at the appropriate scale.

For instance, using a hypothetical example, investments in the French social housing sector, where a relatively small number of social landlords regularly renovate portfolios of similarly constructed housing, significantly reducing transaction costs, could offer sufficient scale to build up a track-record of investment that interest private financiers. This could more readily assist in over-coming capacity constraints in the financial market, than investments into other sectors.

Where – but only where – there would be transfer of learning, and capacity building, from one market segment to another, this approach might progressively roll back barriers. This could be the case, for instance, where private bankers, or supply-side engineers, who developed skills in energy efficiency in the social housing sector, could then later expand their expertise into other building types.

Different segments of the market offer better or worse opportunities for overcoming particular constraints. For example, in some regions of the EU – e.g. Germany, or Denmark – technical capacity on the supply-side is high, allowing banks and policy makers to focus on the other constraints. Whilst, in Hungary, the majority of residential housing is privately owned, with a relatively small market segment owned by public authorities, and this raises the costs of putting together residential thermo-retrofits on a large scale.

Often, the finance and supply side segments of 'deep' or 'shallow' energy efficiency could be seen as quite different market segments, involving different financial profiles and technologies. So, there can be choices to be made over where to invest, when resources are scarce. Currently, some programmes aim to lend to both 'deep' and 'shallow' segments of the market (and everything in between) – for example by KfW.[24] who provide varying levels of support, to increase the attractiveness of 'deeper' investment in building retrofit.

---

[23] BPIE (2012). Europe's Buildings under the Microscope: A country-by-country review of the energy performance of buildings. ISBN: 9789491143014.

[24] Neuhoff, K., Amecke, H., Novikova, A., Stelmakh, K.(2011). Thermal Efficiency Retrofit of Residential Buildings: The German Experience. Climate Policy Initiative.

There are also political reasons for focussing on particular segments: areas where the benefits are perceived to be higher, and so many gain more policy support. Tackling energy poverty, through the renovation of social housing is one of those areas, where social benefits are high and reduction of energy wastage for lower-income groups would allow future reductions in energy subsidy/increased energy taxation that would improve net public revenues.

The issue of focussing investment only becomes more relevant where potential lending volumes are lower than the market demand for finance.

Potential for Future Exchange 4:
The Merits of Cross-border Aggregation of Investments in specific Market Segments

Aggregation of investments with sufficient homogeneity is seen as a key route to stimulating private finance. Where there are potentials for similar investments in the same market segment across the EU (for example, in a particular building type, where similar policy conditions exist), there may be a benefit in public banks across the EU considering investment in comparable market segments, so that either the investments, or the learning from such programmes, could be aggregated across EU boundaries.

As some public banks frequently come together to exchange information with each other around their experiences with energy efficiency investments, the issue of feasibility of aggregation of similar investments across their activities might be of interest, looking at the key factors affecting homogeneity of investments.

This issue also requires discussion of national experience of the means by which hurdles within the supply of finance and supply of energy efficiency services and equipment are rolled back, and the extent to which geographical markets in Europe for financing energy efficiency are connected, so that experience could transfer.

7. Ways Forward

There are several ways in which policy-makers and bankers can exchange information to reach a better joint understanding, in particular around the issues identified in the boxes above.

The response by participants to the January workshop held as part of this project indicated that there would be a valuable role for a European forum that brings together bankers and policy makers to exchange experience and perspectives on the connections between public bank products and policy goals and instruments for energy efficiency. This forum could serve to resolve any differences between perspectives and exchange on the key issues that have been identified in the boxes above.

Future exchange could take place in the form workshops that brought together bankers, financiers, experts and policy makers. Each future workshop could investigate one or more of the most relevant topics for participants, stimulated by some prepared analysis on the topic.

This project report is being sent to all the parties who co-operated on the current project, and other interested organisations. In the course of the project, we established a network of interested individuals and expert organisations, who could form the basis for further exchange on the issues raised.

DIW and its project partners are interested on building on this project. We invite you to join us in taking the exchange of experience in this area forward, and ask you to let us know where your particular interest lies, either within the topics in this report, or on some of the many additional issues involved in this area.

Annex: Case Studies of Selected Programmes

Caisse des dépôts et consignations (CDC)

Prepared by IDDRI

1. Programmes

The Caisse des Dépôts et Consignations (CDC) is a public institution serving the general interest and the economic development of France. Through its many subsidiaries and shares as an institutional investor, the CDC is involved in many economic sectors (infrastructure, real estate, transport, innovation, climate etc.).

The CDC has not been directly involved into energy efficiency financing until recently, though its activities in financing building construction and general refurbishments with regional and local authorities are well established.

After the French environmental summit 2007 (*Grenelle de l'Environnement*), the CDC was granted a new mandate to finance thermal retrofits in the social housing sector through preferential loans. The new mechanism "Eco-prêt logement social" was officially launched through a convention between the French State and the CDC in 2009, covering the period 2009-2011 with a total volume of 1.2 bn euros. It was recently extended until 2020.

The originality of this mechanism relies on the fact that the financing resource originates from the savings accumulated on regulated (and tax-free) private saving accounts, with a total amount of over 220 billion euros, of which 50% are managed by the CDC and transformed into preferential long-term loans for projects of public interest.

Through their low interest rates, these saving accounts provide a resource at a relatively low cost (currently 2.85%).[25] Since the preferential loans for thermal retrofits are distributed at an interest rate below the cost of the resource (1.9% to 2.35% until 2011, 2.25% to 2.50% currently), the difference has been covered by CDC's own resources and profit margins obtained from other investing activities.[26]

The interest rate was raised for the second period of the "Eco-pret logement social" (to 2.25%-2.50%) in response to very strong demand for the period 2009-2011.

2. Energy efficiency related policy objectives

The program supports the French policies derived from the EU 2020 climate and energy targets and as such, is explicitly mentioned in the French National Action Plan for Energy Efficiency

[25] The remuneration of the saving account is currently fixed at 2.25%, whereas the CDC pays the resource including a 0,60% commissioning fee for the collecting local banks.

[26] The indirect subsidy covered by the CDC and the Saving funds department amount to 170 million euros for the period 2009 to 2011.

(2011). Furthermore, its objective is to help achieving the ambitious targets defined for energy efficiency in the building sector during the environmental summit of 2007, in particular:

- *reducing the overall energy consumption in the existing building stock by 38% until 2020*
- *achieving a total of 400 000 deep thermal retrofits per year by 2013*
- *realize deep thermal retrofits in the 800 000 less efficient social housings until 2020 in order to reduce GHG emissions and combat energy poverty*

The CDC is directly managing the loan program and involvement from local banks remains limited, though they might of course be involved through complementary lending.

Table 1: Relative importance of CDC's objectives around Energy Efficiency

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/project				EU 20-20-20 energy and climate targets	
Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)			Positive impact on supply side market and local expertise		
Promoting take-up of the financing/Leveraging funds				CDC lends at very low rates (between 1.9 to 2.5 %, depending on duration)	

3. Selection process

The CDC sets both financing requirements for the final beneficiaries (social housing organisations and local authorities) and energy efficiency requirements, based on the terms specified in the convention between the French state and the CDC.

a. Financial criteria/ model

Eligibility

CDC assesses the risk-adjusted return on capital of providing financing to the final beneficiaries. The financial criteria are equivalent to those used for other loan programs for construction and retrofitting in general.

Selection/ Financing

The financial assessment model takes into account two dimensions: financial viability of the project (balance between incomes through rents, current expenses and investments) and of the operator responsible for the project.

b. Energy efficiency criteria / model

Eligibility

Retrofit operations have to realize a minimum energy performance:

- for dwellings with an initial consumption exceeding 230 kWh_{pe}/m^2.year (corresponding to energy performance class E, F and G), the retrofit must imperatively achieve a final performance level inferior to 150 kWh_{pe}/m^2.year (value weighted by climate zone and altitude).
- for dwellings with an initial consumption between 151 and 230 kWh_{pe}/m^2.year (energy performance level "D"), eligibility is conditioned by achieving a minimum level of energy savings (at least 85 kWh_{pe}/m^2.year), or by achieving an energy performance better than 80 kWh_{pe}/m^2.year (weighted by climate zone and altitude).[27]

The maximum amount of the preferential loan per dwelling is calculated according to a principle of progressivity, conditioned by the projected level of energy savings (kwh/m²):

Energy savings	<80	80-89	90-99	100-109	110-129	130-149	150-169	170-189	190-209	210-229	230-249	250-270	> 270
Loan per dwelling	0	9k	10k	11k	12k	13k	13k	13k	14k	14k	15k	15k	16k

Selection / Financing

Projects complying with both the financial and energy efficiency criteria do not undergo additional selection processes. However, the total amount of projects has been limited during the first phase due to the availability of resources (which expired as early as May 2011 before being perpetuated without a resource ceiling until 2020).

4. Assessment of outcomes

Depth of direct EE outcomes from projects

The energy efficiency criteria are checked in advance of investment through quantitative analysis by external experts, who have to certify that the planned works will achieve the projected energy savings. However, technical assessments are only undertaken *ex-post* (after realization of the project) if the building wants to obtain an energy performance label, in which case an additional 2 000 euros of maximum loan amount per dwelling are granted. Otherwise, there is no *ex post* analysis of the achieved energy performance.

Building market capacity

Since the Caisse des Dépôts directly manages the loan program with the final beneficiaries, the programs impact on building market capacity in the financial sector can be assessed as rather low. However, because of its size, the program might have an impact on the structuration of the supply chain in the building sector itself.

[27] 80 kWh/m² is the required level to obtain the energy performance label "low energy consumption building" in France.

Financial attractiveness

The loan program is very attractive for social housing operators since loan distribution functions according to a streamlined and rather fast process. It also combines low interest rates and long payback periods (between 15 and 25 years). For the first period, the initial envelope of 1.2 bn euros was consumed in early 2011 whereas this amount was planned to last for the whole period 2009-2011. In response, the interest rate was raised for the second period. This may be a factor in a markedly lower demand for the loan from 2011.

Table 2: CDC's ranking of outcomes

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/ project			Min. energy savings of 20-30%; Pro-gressivity of loan amount according to projected energy savings		
Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)			No impact on financial sector; Impact on structure of supply side in the building market		
Promoting take-up of the financing/Levera ging funds		No external financing requirement in theory (but always in practice)			

5. Expert comments on the impact of the selection process on achievement on outcomes

By its financial model, the French eco-loan program for social housings is quite unique in the European landscape. The centralization of the saving account resources can be perceived as a rather innovative approach, providing considerable resources at a manageable cost.

'Depth of efficiency' in relation to goals

The energy efficiency requirements are an important part of the selection process. However, interviews indicate that the required energy performance level is not high enough regarding the political objectives (38% reduction of energy consumption in the building stock) in particular and are only slightly higher than the criteria enforced through thermal regulation. In order to tap the full potential for energy savings, these criteria should be increased, which might in turn raise new issues regarding the economic and technical feasibility of projects, since (technical) competence building remains insufficient. On the other hand, the preferential loans integrate a larger panel of available incentives for thermal retrofits in the social housing sector, including

funding through the energy savings obligation scheme, regional grants and additional loans for general housing improvements.

Issues on meeting targets

Since the program has been perpetuated without a maximum limit for the total volume of credits, the availability of funding for thermal retrofits in social housings should not be an issue for the next years. However, it still appears uncertain that the program will be sufficient to achieve the objective of retrofitting the 800 000 most energy intensive social housings until 2020. This is particularly a problem, given the lower uptake in the second period of loan.

Verification

Regarding the evaluation of the impact on energy savings, interviewees were well aware of the lack of *ex post* verification and assessments. A process has been initiated with the Union for Social Housing to implement a monitoring program which would aim at assessing real energy consumption in targeted buildings. Since the program has only been initiated in 2009 and first projects have just been achieved, a comprehensive assessment on first projects will not be available before 2013/14.

Sources/ References

Interview with Thomas Sanchez, strategy and sustainability department, Caisse des Dépôts

Interview with Frank Hovorka, Head of Real Estate sustainable policy, Caisse des Dépôts

Interview with Laurent Sindres, Saving Funds department, Caisse des Dépôts
workshop discussion, 11th January

The Carbon Trust

1. Programmes

The Carbon Trust is not a bank, but a not-for-profit company which amongst many activities supports the financing of energy efficiency measures in the UK. This activity has some useful contrasts to public bank lending for energy efficiency. The information below relates to two programmes funding SME investments in energy efficient equipment.

A. A government-funded programme providing interest-free loans to SMEs for energy saving equipment. This programme has run since 2009. With constraints on public budgets the programme was ended in England and Scotland, but continues in Northern Ireland and Wales. The loans range from 3,400 Euro to 450,000 Euro (Carbon Trust 2012a).

B. An Energy efficiency financing scheme in co-operation with Siemens Financial Services. This programme started in 2011 and is planned to lend around 677 million Euro (550 million GBP) for the next three years. It provides direct financing for SMEs and bigger UK-based companies, often sold through equipment suppliers. Siemens Financial Services offers loans for energy efficient equipment at market interest rates or leases energy efficiency equipment to customers. The Carbon Trust offers independent energy saving assessments, estimating that 170,000 tCO_2 could be saved over the lifetime of the equipment (Carbon Trust 2012b). The commercial scheme has no upper loan limit (Carbon Trust and Siemens Financial Services 2011).

2. Energy efficiency related policy objectives of Interest-free loan programme

The Carbon Trust recognises the various barriers to energy efficiency investments in SMEs (e.g. limited access to finance, lack of awareness, and low confidence in the business case of EE projects), which prevent cost effective energy saving opportunities with short payback period to be realized.

Carbon Trust aims to tackle these by demonstrating the business case of energy efficiency measures to companies as part of the assessment for financing. This allows firms' financial officers to take financing decisions that they otherwise would not take. The objectives of each of the programmes differ, due to their nature. The simple business model of the programmes is that energy savings payoff the upfront cost of deploying energy efficiency equipment (Macroberts 2011). The specific characteristics of the two programmes are described separately below.

The government programme aims at maximizing carbon savings by providing public funding to unlock private investment in carbon reduction.

Table 1a: Relative importance of CT's objectives around Energy Efficiency

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/project				Maximise annual CO_2 savings	
Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)			Train energy efficiency suppliers		
Promoting take-up of the financing/ Leveraging funds			Unlock private investment		

3. Selection process of Interest-free loan programme

a. Financial criteria/ model

Eligibility

All energy efficiency projects from SMEs are eligible that promise energy savings to payback the interest-free loan in 4 years.

Selection/ Financing

The Carbon Trust creates a stream of projects by providing potential customers with a list of credited suppliers of EE equipment. Carbon trust calculates the business case for firms, showing rates of return from energy cost savings. Certain sectors are targeted. For example, hotels were shown that they could significantly increase profit margins at times of weak market demand, through a 20% saving on energy costs that were usually around their 5-6% of turnover, so generating a 1%+ profit margin.

b. Energy efficiency criteria / model

Selection/ Financing

Projects must reduce at least 2 tCO_2 annually for each 1200 Euro invested. The application of this selection criteria aims at maximising energy returns for a given amount of money. The selection criteria are adjusted depending on demand in the market, the carbon/loan ration becoming lower as the ongoing recession reduced interest in loans.

4. Assessment of outcomes of Interest-free loan programme

Depth of direct energy efficiency outcomes from projects

The carbon reduction requirement of 2 tCO_2/ 1200 Euro targets projects such as lighting, heating, refrigeration, and some industrial processes. Projects such as photovoltaic are excluded, because of the relatively low annual carbon reduction per Euro invested.

Building market capacity

According to the interviewee the capacity of energy efficiency product suppliers to market themselves and to explain energy efficiency solutions to their customers was significantly boosted by the business case analysis done for the Carbon Trust financing. The capacity of client firms also increased: once one energy efficiency project was successfully financed, it often generated more interest in the firm's management for further energy efficiency projects, and also established the connection with the Carbon Trust and energy efficiency equipment suppliers.

Financial attractiveness

In 2009/2010 the interest-free programme provided 2,100 loans worth 82 million Euro to SMEs, before it was scaled down to Northern Ireland and Wales. These allowed SMEs to reduce their annual energy cost by around 27 million Euro over the lifetime of the energy efficiency measures (DECC 2011).

Table 2a: Carbon Trust's ranking of outcomes

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/project				Most attractive EE projects selected	
Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)			Expertise of EE supplier increased		
Promoting take-up of the financing/Leveraging funds			[Not commented on]		

5. Energy Efficiency related objectives of Carbon Trust and Siemens Finance Services Programme

The programme with Siemens Financial Services has been set up with the maximization of financial returns as its primary goal. Energy savings from energy efficiency equipment are an additional benefit, which is of interest to the Carbon Trust.

Table 1b: Relative importance of CT's objectives around Energy Efficiency

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/project		Energy Efficiency is an additional benefit			
Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)		(Not mentioned)			
Promoting take-up of the financing/Leveraging funds				Maximise financial returns	

6. Selection Process of Carbon Trust and Siemens Finance Services Programme

a. Financial criteria/ model

Eligibility

Siemens Financial Services carries the financial risk and therefore assesses the risk associated with providing finance to the applicant, when considering a project.

Selection/ Financing

The interest charge depends on the applicant's track record and the project cost. The payback period can be 1 to 7 years and in the case of photovoltaic installations up to10 years.

b. Energy efficiency criteria / model

Eligibility

The programme applies no energy efficiency criteria, except that anticipated energy savings match or exceed payments (Carbon Trust and Siemens Financial Services 2012).

7. Assessment of outcomes of Carbon Trust and Siemens Finance Services Programme

Depth of direct energy efficiency outcomes from projects

According to one interviewee the depth of the resulting energy efficiency savings are lower than in the government-funded programme, with the absence of specified energy efficiency criteria allowing a broader pool of EE projects.

Building market capacity

Energy efficiency equipment suppliers or their customers create the project stream, and approach the Carbon Trust for access to the Siemens Financial Service funding. The existing of funding provides suppliers with greater incentives to market their products, and expand the market. On receiving applications, the Carbon Trust does not recommend alternative suppliers

or measures in an attempt to drive the market (as this would deter suppliers from bringing projects to the programme). Baselines are assessed by Carbon Trust technical experts, for each project by looking at existing on-site consumption and estimating future consumption, with and without new technology.

Financial attractiveness

The programme has so far achieved lower rates of uptake than the subsidised 0% interest rate programme.

The Carbon Trust demonstrates the business case to potential customers by calculating energy cost. It was reported that energy efficiency financing has become easier over years as higher energy costs in the UK improve the business case.

Financing for leasing of the energy efficiency equipment is also provided for by the programme, and this can be more attractive for customers and suppliers. One interviewee explained that these benefits include: lower taxes and easier consideration of the lifetime savings of the equipment, as Siemens owns the equipment, carries the upfront cost and receives regular lease payments.

Table 2b: Carbon Trust's ranking of outcomes

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/project			Lower energy savings per average Euro spent		
Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)			Build-up of supplier capacity to present business case		
Promoting take-up of the financing/Leveraging funds				Broad pool of energy efficiency projects	

8. Expert comments on the impact of the selection process on achievement on outcomes

Adjustment of selection criteria

The use of selection criteria in the government programme increased carbon savings for a given amount of financing, under conditions where demand was sufficiently strong. These selection criteria were adjusted depending on demand in the market, as other economic factors changed, but seemed to remain effective at promoting higher levels of energy efficiency.

Achievement of the highest level of potential energy savings was traded off against the choice to incentivise individual suppliers to create demand – the suppliers were able to sell their energy efficiency equipment, even if it was not the ideal equipment.
In the Siemens finance programme, the absence of energy efficiency criteria traded off the achievement of higher energy savings against faster rates of investment.

Using interested parties to generate demand

The schemes were successful because they motivated private equipment suppliers to bring potential customers to the source of finance. Their incentive to do so was not only the source of finance, but the help that they would get from the respected Carbon Trust in building and presenting the business case to the potential customer. Surprisingly, equipment suppliers often needed significant help in presenting a solid business case. The Carbon Trust's work therefore was also building up the capacity of the supplier market to seek wider clients.

Ways to interest decision makers in firms

One key factor on success of the program was Carbon Trust creating the flow of energy efficiency projects and to demonstrate the business case to customers. In addition, the appeal of the 0% interest rate in the government programme seemed to bring in greater demand than a rate that was still bringing economic returns for the SMEs. Although projects financed with a market rate of interest still gave significant positive returns, it seemed that the idea of 'getting something for free' – i.e. the subsidised loan increased the appeal of energy efficiency investment for firms under the government scheme.

Partnering to facilitate financing

Siemens' experience in using leasing to finance other type of products such as information technology since 2000 in the UK (Siemens 2000) enabled them to be comfortable with lending for financing energy efficiency equipment, particularly in co-operation with the Carbon Trusts' specialist knowledge of energy efficiency, which they delivered through assessment services.

Sources/ References

1 interview with an expert from Carbon Trust

Carbon Trust (2012a). 0% business loans eligibility, http://www.carbontrust.com/client-services/northern-ireland/loans-eligibility

Carbon Trust (2012b). The Carbon Trust Annual Report 2011/2012: Accelerating the move to a global low carbon economy. London: Carbon Trust.

Carbon Trust and Siemens Financial Services (2012). Energy Efficiency Financing, Customer benefits.

Carbon Trust and Siemens Financial Services (2011).The Carbon Trust and Siemens launch new green finance deal worth £550 million to green businesses in the UK, Press release.

DECC (2011). UK Report on Articles 4 and 14 of the EU End-use Efficiency and Energy Services Directive (ESD): Update on progress against the 2007 UK National Energy Efficiency Action Plan, Department of Energy and Climate Change.

Macroberts (2011). Finance Scheme for Green Business, http://www.macroberts.com/images/CableTalkJune11FinanceSchemeGreenBusinessNJ.pdf

Siemens (2000). Annual report 2000. Munich: Siemens AG.

European Investment Bank (EIB)

1. Programmes

The EIB has almost 90% of its financing activities in the EU supporting EU policy objectives (EIB 2012a). The EIB's energy efficiency lending amounted to nearly 1.3 billion Euro in 2011, with its energy lending being 12.8 billion Euro (20% of its overall financing) (EIB 2012c). Typically the EIB establishes credit lines providing loans through local banks to energy efficiency projects. These include buildings, industry and SMEs, energy service companies (ESCOs), as well as high efficiency cogeneration plants (CHPs) and district heating and cooling systems. The EIB provides direct financing for large scale energy efficiency projects and technical assistance (EIB 2012a).

Furthermore, the EIB has joint initiatives with the European Commission to provide energy efficiency financing: the technical assistance program for developing energy efficiency projects (ELENA), the use of EU structural funds to establish revolving funds for sustainable urban development projects (JESSICA), and the European Energy Efficiency Fund (EEE-F) for energy efficiency and renewable projects which is managed by Deutsche Bank (for an overview see Withana et al 2011).

The EIB is reviewing its energy lending policy, including its lending objectives and project screening criteria and reporting (EIB 2012a). The new energy lending policy will be announced summer 2013 after approval by the EIB's Board of Directors.

2. Energy efficiency related policy objectives

The EIB, owned by the 27 member states, aims to contribute to EU policy objectives. These include increase in Growth and Employment Potential, Economic and Social Cohesion, Environmental Sustainability and Climate Action (EIB 2012b). EIB's energy lending policy supports the EU's 20-20-20 energy and climate targets. This shapes the relative importance placed on various possible goals for energy efficiency lending, as shown in Table 1.

Table 1: Relative importance of EIB's objectives around Energy Efficiency

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/project				Contribution to EU 20-20-20 targets	
Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)				To build energy efficiency financing expertise of local banks	

Promoting take-up of the financing leveraging funds			Provide long-term financing for large scale projects		

3. Selection process

a. Financial criteria/ model

Eligibility

Projects should be economically, financially and technically sound as well as socially and environmentally sustainable (EIB 2012a). Intermediary banks carry project risks.

Selection/ Financing

The financial appraisal process for energy efficiency projects does not differ from other sectors. However, if projects qualify for climate mitigation, EIB can increase its funding share from 50% to 75% of total investment cost.

b. Energy efficiency criteria / model

Eligibility

Projects qualify as energy efficiency projects when they meet one of the following criteria: the project achieves an increase in energy efficiency of at least 20% against baseline, or 50% of the investment cost can be recovered through energy savings. Combined heat and power (CHP) projects, including coal and lignite fired stations[28], count also as energy efficiency projects if they comply with the European CHP directive (EIB 2012a).

Selection/ Financing

The EIB actively supports the creation of a pipeline of energy efficiency projects through the ELENA initiative. In the standard business cycle , intermediary banks or directly project promoters approach the EIB with investment proposals. At arrival of the application, the EIB decides whether projects meet energy efficiency criteria or whether they fit to other eligible sectors such as SME, R&D, or transport. Intermediary banks translate EIB's project selection criteria, and have to ensure that every individual project meets the EIB lending project criteria.

4. Assessment of outcomes

Depth of direct energy efficiency outcomes from projects

The EIB directly translated the EU's 20% aggregate EU-wide energy efficiency improvement target into a minimum 20% energy improvement target for its projects. The EIB has moved from its traditional financing of CHP to energy efficiency projects in building, because of changes in the market leading to reduced demand for CHP investment. According to EIB staff there is no trade-off between depth of projects' energy efficiency performance and lending volume targets. Member States as shareholders represented by the board of governors formulate lending volume targets for Public Policy Objectives (e. g. climate action, energy and transport) in the

[28] Specific additional criteria apply

corporate operational plan whilst the energy efficiency criteria are set by the energy lending policy (currently under review), proposed internally and agreed by the board of governors, independent of lending volumes.

Building market capacity

With EIB lending often being distributed through intermediary banks, the EIB could be considered to be building market capacity, but this was not specifically reported, and has not been analysed.

Financial attractiveness to clients

The EIB offers long-term financing years for large scale projects with terms of 20-25.

Table 2: EIB's ranking of outcomes

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/project				20% energy efficiency criteria	
Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)			Not ranked		
Promoting take-up of the financing/ Leveraging funds			Not ranked		

5. Expert comments on the impact of the selection process on achievement on outcomes

The EIB's energy lending policy review is likely to consider ways to aggregate energy efficiency projects to increase project scale and financial attractiveness. Energy efficiency projects constitute a challenge due to their relatively small project size. EIB has experience in financing large scale projects, while energy efficiency potential is frequently in smaller projects. The review also aims to standardise energy efficiency technical documentation and risk distribution.

Sources/ References

1 interview with an EIB expert

EIB (2012a), Consultation Paper: The European Investment Bank reviews its Energy Sector Lending Policy,
http://www.eib.org/attachments/consultations/consultation_paper_eibs_energy_lending_policy_en.pdf

EIB (2012b), The EIB Group Operational Plan 2012-2014,
http://www.eib.org/attachments/strategies/cop_2012_en.pdf

EIB (2012c), The European Investment Bank Promoting Energy Efficiency,
http://www.eib.org/attachments/thematic/energy_efficiency_en.pdf

Withana, S., Nunez Ferrer, J., Medarova-Bergstrom, K., Volkery, A., and Gantioler, S. (2011), Mobilising private investment for climate change action in the EU: The role of new financial instruments, IEEP, London/Brussels.

European Bank for Reconstruction and Development (EBRD)

1. Programmes

Since 2006 the EBRD has provided: (i) direct loans for large scale industrial or municipal energy efficiency projects and (ii) loans through local banks to commercial and residential borrowers within its Sustainable Energy Financing Facilities (SEFF). These credit lines can be combined with grants and involve free energy efficiency technical assistance sponsored by donor countries for the local banks as well as the final beneficiaries. EBRD operates mainly in Eastern Europe and Russia; SEFFs exist in 15 countries. By the end of 2011 EBRD committed 1.9 billion Euro for these SEFFs (EBRD 2012c).

The financing conditions vary across countries and projects. The loans for industrial energy projects range from a few hundred thousand to a few million Euro and the loans for residential energy efficiency projects range from a few thousand Euro to a few hundred thousand Euro (EBRD 2012c).

2. Energy efficiency related policy objectives

EBRD was established to support countries from central Europe to central Asia in their transition towards well-functioning market economies. At the same time EBRD has always had a parallel environmental mandate (EBRD 2012a, UNEP 2009).

According to one interviewee, its objectives around energy efficiency are determined by the interplay between various groups of actors within the institutional arrangements of the bank who prioritise policy objectives differently: the shareholders, the bankers and the energy efficiency team. The shareholders, almost all countries, primarily want the EBRD to build financial expertise and create market capacity, so as to enable market transition in the former Soviet economies. The bankers focus is on increasing the total volume of investment, as this is the main metric measuring performance, including individual performance. The energy efficiency team aims to increase the energy efficiency outcomes from projects in the bank's portfolio.

In summary, for the EBRD as a whole, we would describe the relative importance as in Table 1:

Table 1: Relative importance of EBRD's objectives around Energy Efficiency

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/project			Energy efficiency team aims at energy efficiency projects		

Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)					Shareholders aim at building market capacity
Promoting take-up of the financing/Leveraging funds				Bankers aim at investment volumes	

3. Selection process

a. Financial criteria/ model

Eligibility

Local banks have to comply with EBRD's financial criteria. According to one interviewee EBRD's financing models are conservative, i.e. the bank applies relative high risk requirement for its lending to local banks. At the same time local banks provide loans to the final beneficiary at their own risk.

Selection/ Financing

The project appraisal includes many factors, including benefit cost ratio, payback period, net present value and risk indicators. For example, EBRD requires internal rates of return (IRR) greater than 10%. Since on average EE projects under SEFF obtain IRRs of 20-25%, this requirement does not seem to prevent selection of EE projects (EBRD 2011).

The profile of energy efficiency technologies in reducing investment risk in the project as a whole could be incorporated in future into the financial assessment of projects. The standard criteria have to be met also by projects with energy efficiency aspects. For example, if a project is overleveraged and so risks not making payment on the debt, the project is not selected.

b. Energy efficiency criteria/ model

Eligibility

Criteria vary between project types. Energy efficiency projects must comply with a list of technologies/products or have to achieve a minimum performance requirement of for example 20% in specific energy use. Each facility has its own list of technologies/products which is created and expanded by an independent consultant.

- Industrial energy efficiency – large scale: For big projects EBRD does not use minimum standards, but rather recommends energy efficiency measures.
- Industrial energy efficiency – small scale: For SME industrial energy efficiency a list of technologies is used. It includes on-site co-generation of heat and electricity, modernisation of steam production and distribution systems, upgrade of compressed air production and distribution systems, improved heat recovery from processes, heat insulation, load-matching variable speed motor controls, higher efficiency lighting, the introduction or improvement of energy management and control systems.

- Residential energy efficiency: For residential energy efficiency lists of eligible projects set minimum standards, for example double-glazing, insulation of walls, insulation of roofs, high-efficiency biomass stoves/boilers, solar water heaters, high-efficiency gas boilers, heat pumps (EBRD 2012c).

Selection/ Financing

EBRD has three approaches to acquire energy efficiency projects: (i) companies apply with energy efficiency projects for financing and EBRD appraises whether these projects meet the financing and energy efficiency requirements, (ii) EBRD develops the energy efficiency capability of an already planned project with a commercial client component, or (iii) EBRD proactively builds energy efficiency projects from scratch. The proactive business development, accounts for ¼ of EBRD's 400 projects per year.

4. Assessment of outcomes

Depth of direct outcomes from energy efficiency projects

Energy savings are assessed ex-ante. So far there is no systematic ex-post assessment of actual energy savings (EBRD 2011b). The baseline for assessing energy savings is set on a case-to-case basis. According to the interviews, the depth of an energy efficiency project is less important than the practicability of selection criteria in meeting the bank's wider goals. ESCOs, for example, were promoted because this business model can easily be replicated and involves the private sector. The physical impact on energy savings is however relatively low. It was reported that the approach of specifying eligible technologies/products is sufficiently easy to implement, even though it risks missing the full technical potential of energy efficiency savings that would come from an integrated approach. This integral approach – identifying the potential energy savings at project level - was reported to be challenging due to different energy efficiency performances across industry sectors.

Building market capacity

The creation of market capacity and build up of financial expertise is the core goal of the EBRD in general. So projects are assessed for their potential impacts on the transition impact they could have – for example, in relation to the existing institutions, the development of the private sector, and a matrix of other factors. According to one interviewee the eligible list of technologies/products, for example, stimulates new entrants in the market who want to supply their energy efficiency technology under the SEFF.

Financial attractiveness for borrowers

The interviewees reported a lack of demand from clients for energy efficiency lending. This lack of demand does not relate to the criteria used, but is rather due to a lack of capacity within firms (e. g. project management skills), lack of capacity of energy efficiency suppliers, splits between financial decision makers and engineers within firms, low (e. g. subsidized) energy prices, or views that limited borrowing capacity is best spent on alternative projects with perceived higher returns than energy efficiency.

EBRD interviewees were asked to rank their outcomes from using their criteria (Table 2, below).

Table 2: EBRD's ranking of outcomes

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/project			Energy efficiency technology list might limit depths of savings		
Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)					Track record in energy efficiency lending since 2006
Promoting take-up of the financing/Leveraging funds				Energy efficiency technology list easy for implementa-tion	

5. Expert comments on the impact of the selection process on achievement on outcomes

Overall, the interviews suggest that EBRD's approach puts stronger focus on building market capacity and increasing investment volumes than on the physical impacts of energy efficiency projects. This is also related to the way different interests of actors within the bank inter-relate.

Generally, decisions on energy efficiency aspects are project specific and involve discussions with clients and experts with technological knowledge. These factors cut the incentives for private banks to invest, because it increases the time needed for a transition. Even where risk/return ratios are better than others, this added time excludes energy efficiency aspects of projects because individual bankers are judged on number and total volume of projects, not their risk/return ratios.

The EBRD clearly has recognized energy efficiency as an interesting business opportunity and established an energy efficiency team that screens EBRD's project portfolio to identify energy efficiency opportunities. In the future, EBRD envisages engaging more in broader policy discussions/objectives.

Sources/ References

Interviews with 4 experts involved in the SEFF.

EBRD (2010), Energy Efficiency in the EBRD's operations and opportunities for technical cooperation,
http://www.finance.gov.sk/en/Documents/1_Adresar_redaktorov/Zimanyiova/ODA/Energy_efficiency_sector.ppt

EBRD (2011a), Climate change mitigation policy and action in Eastern Europe,
http://www.princeton.edu/step/seminars/previous/spring-2011/Tanaka-Princeton-Presentation-Climate-Change-Mitigation-Policy-18-Apr-2011.ppt

EBRD (2011b), Special Study by the Evaluation Department, Sustainable Energy Initiative Phase I Strategic Review, http://www.ebrd.com/downloads/about/evaluation/1106.pdf

EBRD (2012a), About the EBRD,
http://www.ebrd.com/downloads/research/factsheets/about.pdf

EBRD (2012b), Improving industrial energy efficiency,
http://www.ebrd.com/downloads/research/factsheets/industriale.pdf

EBRD (2012c), Sustainable Energy Financing Facilities,
http://www.ebrd.com/downloads/research/factsheets/seff.pdf

UNEP (2009), Energy efficiency and the Finance sector: A survey on lending activities and policy issues, Report commissioned by UNEP Finance Initiative's Climate Change Working Group, January 2009.

Kreditanstalt für Wiederaufbau (KfW) - outside Germany

1. Programmes

The bulk of KfW's activities are in Germany, but KfW also finances energy efficiency projects outside Germany. These energy efficiency programs include the SME Finance Facility Energy Efficiency Window (SMEFF-EE), the Municipal Finance Facility Energy Efficiency Window (MFF-EE) and the European Local Energy Assistance (ELENA). Under these programs KfW provides loans in combination with EU grants through intermediary banks to SMEs, municipalities, but also housing associations and ESCOs.

SMEFF and MFF target EU accession and new EU member states; ELENA is available for all EU countries. SMEFF and MFF were established in 2000, with an increased emphasis on energy efficiency existing since 2010. ELENA was initiated in 2011. This facility is part of the European Commission's Intelligent Energy Europe programme and is also implemented by EIB, EBRD and CEB (Núñez Ferrer, Volkery et al. 2012). Energy efficiency lending forms part of KfW's high proportion of lending relating to climate and renewable energy goals: In 2011 KfW, committed 22.8 in billion Euro, or 32% of its total commitments, in environment and climate protection (KfW 2012a).

The loans are offered at or close to market interest rates. The level of the grant is linked to the loan. For example, under the SMEFF and the MFF the grant can be up to 20% of the loan to the bank and up to 15% of the loan to the final beneficiary. Grants under ELENA are up to 5% of the loan to the final beneficiary, corresponding to a leverage factor of at least 20. These programmes target smaller scale energy efficiency projects. Thus, the loans for the final beneficiary are up to 1 million EUR for the SMEFF and up to 5 million Euro for the MFF. Under ELENA the goal is to support projects with a value to 50 million Euro (KfW 2012b-d).

2. Energy efficiency related policy objectives

These programmes support the EU 20-20-20 energy and climate targets. By initiating new energy efficiency projects and using intermediary banks and local technical expertise, KfW aims to increase the local capacity in financing and implementing energy efficiency projects.

Table 1: Relative importance of KfW's objectives around Energy Efficiency

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/project				EU 20-20-20 energy and climate targets	
Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)				EE financing expertise of local banks	

Promoting take-up of the financing/Leveraging funds			KfW aims to lend close to market interest rates		

3. Selection process

KfW sets both financing requirements for the intermediary bank and energy efficiency requirements for the final beneficiary that need to be achieved.

a. Financial criteria/ model

Eligibility

KfW assesses the risk-adjusted return on capital of providing financing to the intermediary bank. The bank has to comply with KfW's risk/return requirements, otherwise KfW will not lend to them. The final project risk is carried by the intermediary bank.

Selection/ Financing

The financial assessment model of KfW does not include adjustments made to weight the different nature of energy efficiency returns. Whether returns come from energy efficiency savings or from other value created (e.g. higher rents) is immaterial.

b. Energy efficiency criteria / model

Eligibility

Energy efficiency projects have to achieve a specific energy performance. Investments in the energy performance of buildings, industry, infrastructure, equipment, etc. must provide energy savings of at least 20%. Investments in rehabilitation of existing buildings including lighting, heating, ventilation and air conditioning must comply with an energy saving ratio of 30% (KfW 2012d). The same energy efficiency requirements apply to all countries. However the baseline to calculate the energy savings ratio depends on the existing local energy performance.

Selection/ Financing

KfW does not compare projects with intermediary banks to each other, but rather decides on case-to-case whether the project application fulfills KfW's requirements. To ensure intermediary banks can comply with energy efficiency requirements, KfW discusses the nature of energy efficiency project pipeline which the intermediary bank will finance beforehand.

4. Assessment of outcomes

Depth of direct energy efficiency outcomes from projects

The 20% energy efficiency criteria is rigorously applied and checked in advance of investment, because later non-performance will result in the need to pay back the grant to the EU Commission and to recover the loan.

Building market capacity

KfW's lending activities to intermediary banks for SME and municipalities aim to support local banks in creating and extending financing products for investment in certain areas. KfW uses this business model outside Germany since 2000; the link to EU energy efficiency objectives was initiated in 2010, in the middle of the EU multiannual financial framework 2007-2013.

Financial attractiveness

For ELENA the demand has been modest so far. The constraints on lending outside Germany are not energy efficiency -specific, but relate to the current market situation and larger challenges with lending to intermediary banks for public authorities.

Table 2: KfW's ranking of outcomes

Importance	Very low	Low	Medium	High	Very high
Outcomes for energy performance of projects/ Depth of savings/project				20% energy efficiency criteria	
Achieving energy efficiency objectives indirectly (E.g. building financial expertise, supply market capacity)				Local expertise for energy efficiency financing	
Promoting take-up of the financing/Leveraging funds			High leverage requirement		

5. Expert comments on the impact of the selection process on achievement on outcomes

The interviews indicate that KfW's choice of the selection process/criteria puts particular emphasis on achieving the 20% energy efficiency criteria. The limited demand for energy efficiency projects is not linked to the selection process/ criteria, but rather to the current situation of financial market and public budgets. According to the interview reasons for low number of applications are:

- Public authorities have more urgent priorities for public funding than energy efficiency.
- Sovereign risk is too high in some countries, so that the banks do not pass KfW's risk/return requirements.
- Some public authorities are not allowed to take on new debt. This applies for example to Germany, UK, Italy.
- Some countries are already endowed with functioning municipal funding and are thus only interested in the grant component of ELENA.
- Some municipalities can get better financing conditions from local banks. These banks leant at interest rates below the rates at which KfW borrows.

- The administrative requirements – which often include the need for translation - for EU grant funding are considered unappealingly heavy compared to the size of the financing.

As different countries have different financial risks, KfW is not willing to provide the same financing across, e.g. in the Netherlands and Greece. Therefore KfW is in favour of public guarantee mechanisms for lending to countries with higher risk profiles.

Sources/ References

2 interviews with experts involved in the EE programs SMEFF-EE, MFF-EE and ELENA

KfW (2012a), Greening Poland's and Germany's Economies, Session 3: Financing EU Climate and Energy Policies: EU Funds and Innovative Financial Instruments for Decarbonisation, http://www.ecologic-events.eu/green-economy-europe/sites/default/files/Cornelia_Dinter.pdf

KfW (2012b), Municipal Finance Facility Energy Efficiency Window - promotional credit programmes, http://www.kfw.de/kfw/de/KfW-Konzern/Unternehmen/Auftrag/Sonderaufgaben/Foerderkredite_EU/MFF_EE_Leaflet_final.pdf

KfW (2012c), Programme Leaflet ELENA (European Local Energy Assistance), https://www.kfw.de/KfW-Konzern/%C3%9Cber-die-KfW/Auftrag/Sonderaufgaben/F%C3%B6rderkredite-EU/ELENA-%E2%80%93-European-Local-ENergy-Assistance/index.html

KfW (2012d), SME Finance Facility Energy Efficiency Window - promotional credit Programmes, http://www.kfw.de/kfw/de/KfW-Konzern/Unternehmen/Auftrag/Sonderaufgaben/Foerderkredite_EU/SMEFF_EE_Leaflet_final.pdf

Núñez Ferrer, J., A. Volkery, et al. (2012). "The use of innovative financial instruments for financing EU policies and objectives: Implications for EU and national budgets. CEPS Special Report, October 2012."

ENERGY EFFICIENCY PROGRAMMES OF THE HUNGARIAN DEVELOPMENT BANK

18.12.2012

ABOUT THE HUNGARIAN DEVELOPMENT BANK

The Hungarian Development Bank Private Limited Company (hereinafter: the Bank) promotes development policy objectives through financing investments in Hungary as a classical development bank. The objective of the Bank is to enhance investments and development, to bridge gaps in infrastructure, to encourage the expansion of Hungarian businesses, primarily that of the SME sector both in Hungary and abroad, to stimulate technological and environmental development, energy efficiency and employment.

DESCRIPTION OF THE PROGRAMMES

1 Overview of the Bank's loans

EXISTING LOAN PROGRAMMES ON 31 DECEMBER 2011

PROGRAMMES/TYPES	APPLICATIONS RECEIVED		APPLICATIONS APPROVED		LOAN PER CLIENT
	ITEM	HUF MILLION	ITEM	HUF MILLION	HUF MILLION
NEW HUNGARY ENTERPRISE DEVELOPMENT LOAN PROGRAMME	6 035	450 674	5 214	326 939	62,7
INCL. LOAN PROGRAMME FOR SMALL AND MEDIUM SIZED ENTERPRISES	242	4 795	220	4 379	19,9
MICRO-CREDIT PLUS PROGRAMME	573	5 626	436	4 246	9,7
SMALL BUSINESS LOAN PROGRAMME	357	7 955	241	5 385	22,3
MFB PUBLIC TRANSPORT DEVELOPMENT LOAN PROGRAMME	24	35 950	17	13 148	773,4
MUNICIPAL INFRASTRUCTURE DEVELOPMENT LOAN PROGRAMME "FOR A SUCCESSFUL HUNGARY"	3 101	302 037	2 967	273 508	92,2
INCL. PANEL PLUS LOAN PROGRAMME "FOR A SUCCESSFUL HUNGARY"	624	31 149	605	30 268	50,0
HOUSEHOLD ENERGY SAVING LOAN PROGRAMME "FOR A SUCCESSFUL HUNGARY"	936	1 396	903	1 347	1,5
SOCIAL HOUSING LOAN PROGRAMME "FOR A SUCCESSFUL HUNGARY"	23	2 222	22	1 962	89,2
NEW HUNGARY AGRICULTURAL DEVELOPMENT LOAN PROGRAMME	389	19 611	340	15 209	44,7
WORKING CAPITAL LOAN PROGRAMME FOR PRODUCER ORGANISATIONS	43	6 534	32	5 196	162,4
NEW HUNGARY AGRICULTURAL WORKING CAPITAL LOAN PROGRAMME	80	4 194	78	3 944	50,6
MFB AGRICULTURAL VIS MAIOR WORKING CAPITAL LOAN PROGRAMME	749	9 922	738	9 836	13,3
MFB AGRICULTURAL WORKING CAPITAL LOAN PROGRAMME	33	1 086	31	1 011	32,6

2 Residential programmes

For residential communities, different subsidy schemes have been running in the recent years, in the framework of the 'For a Successful Hungary' Programme, operated by the National Development Ministry and its institutions. This non-refundable support can be complemented by the energy efficiency loan programmes of the Bank, through commercial banks (refinancing).

The 'Panel Plus Loan Programme' finances energy savings by refurbishing blocks of flats made of panel (characteristic for the period 1960-1980), while the 'Household Energy Saving Loan Programme' finances the refurbishment of residential buildings constructed by other, traditional technologies.

The Bank approved the disbursement of HUF 30.3 billion in loans under the Panel Plus Loan Programme by 31 December 2011, generating energy saving investments of ca. HUF 71 billion. Under the Household Energy Saving Loan Programme, the Bank accepted 903 applications and approved HUF 1347 million in loans until December 2011.

Selection criteria

Energy efficiency criteria

As both loan programmes provide complementary financing for refurbishments supported by the national support scheme, the criteria regarding energy saving are not set by the Bank, but the operating agencies of the scheme. This means, that in case the application meets the criteria and is approved by the agency, the applicant is automatically entitled to the loan for which he/she can apply in the participating commercial banks (26 financial institutions in the Household programme, and 22 in the Panel Plus Programme, nationwide).

Financial criteria

As the Bank's loan programmes are available only in commercial banks, the financial criteria for the final beneficiaries are not set by the Bank: they are defined according to the participating banks' own internal regulations. However, the applicable interest rate is limited to 3 month EURIBOR + max. 3,5%. It is to mention here, that this leaves a relatively low margin for commercial banks, which, among other reasons, resulted in rather low interest to offer this product to their clients.

Intermediary banks have a credit limit which is defined by the Bank, according to its internal rules and formulas (we did not receive any further information on this in the interview). This limit, however, can be raised if necessary. According to the interviewed person, the limit does not hold back the credit placements.

Sponsor	Instrument	Project requirement	Intermediary	Instrument	Sub-project requirement	Final beneficiary
Hungarian Development Bank	Refinancing	The credit limit allocated to each intermediary is set by the Bank, according to its internal rules and formulas.	Commercial banks and saving cooperatives	Loan	Approved application in the national support scheme Financing requirements according to the banks' own rules	households

3 Programmes for municipalities and firms

The Bank offers two types of loan programmes to finance investments of municipalities and firms: loans complementing the national support schemes and other, 'regular' loans.

Loans related to the national support scheme
The loan programme is very similar to those described above, in the residential chapter: credit is provided to those who successfully applied for non-refundable funding in the national support scheme. Loans of the 'New Hungary Enterprise Development Loan Programme' and 'Municipal Infrastructure Development Loan Programme' can be acquired through financial institutions (refinancing), or directly through the Bank.

Sponsor	Instrument	Project requirement	Intermediary	Instrument	Sub-project requirement	Final beneficiary
Hungarian Development Bank	Refinancing	Approved application in the national support scheme	Commercial banks	Loan	Financing requirements according to the banks' own rules)	Municipalities, firms
Hungarian Development Bank	Loan	Approved application in the national support scheme Financing requirements according to the banks' own rules)				Municipalities, firms

Selection criteria
Energy efficiency criteria
As in these programmes the Bank provides additional financial sources to the non-refundable state support, the energy efficiency criteria are set by the operating agency of the support scheme. In case the project meets the criteria and the application is approved by the agency, the applicant is entitled to the loan.

Financial criteria
In case of refinancing, the financial criteria are set according to the participating banks' own internal regulations. The maximum interest rate is 4,7% for municipalities, and 6,7% for companies at the moment.

In case of direct loans, financial criteria are defined by the Bank, but, unfortunately, we were not provided with any details in the interview.

Regular loans
Besides the above described loans, the Bank also offers other investment loans for municipalities and firms, either in a refinancing scheme or directly through the Bank. Under this activity, the Bank finances various kinds of investment projects; among others energy efficiency investments as well, but not exclusively. Hence, these, according to our view, can not be considered as energy efficiency programmes. It is to mention, that the Bank does not apply any criteria regarding energy savings in the case of energy efficient investment projects, due to lack of expertise within the Bank.

EXPERTISE

	Very low	Low	Average	High	Very high
Technical expertise of the Bank for energy efficiency projects	X				

POLICY OBJECTIVES

Importance	Very low	Low	Medium	High	Very high
Promoting take-up of the financing / Leveraging funds				X	
Outcomes for energy performance of projects*					X
Achieving energy efficiency objectives indirectly (e.g. building financial expertise, supply market capacity		X			

* EU 20-20-20 energy and climate targets

DESIRABLE / POSSIBLE CHANGES

	Scale	Depth
Financial attractiveness for intermediary banks	X	not applicable for the Bank
Technical assistance per client		n.a.
Selection process		n.a.
Monitoring requirements		n.a.

REFERENCE

- Interview with the Deputy Head of the Product Management Department
- www.mfb.hu