Where Is the Business Case in Financing of Energy Efficiency in SMEs: Relationship between Lenders and their Clients

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ABSTRACT

The availability of well structured financial resources is the key factor for successful implementation of an energy efficient project or a renewable energy project (herein after referred as sustainable energy (SE) projects[2]). This paper is focused on description of prerequisites for successful cooperation between financial institutions (banks) and developers of sustainable energy projects, particularly on those characterized as SMEs[3]. The purpose of this paper is (i) to determine, whether there are any barriers against proper functioning of such cooperation and (ii) to propose methods or ways to overcome them. The paper also introduces strategies of IFC, the member of World Bank Group, which have been used for successful implementation of many projects around the globe, while overcoming above mentioned barriers.

The paper consists of three main parts. First chapter describes theory of SME financing from perspective of the client, whilst second chapter outlines position of the commercial financial institutions to the same issue. Experience of IFC with SE financing is shown in the third chapter, where paper describes market reality using example of successfully implemented financing program and surveys. Paper is concluded by summary of the World Bank activities in the SE financing area.

The One Side of the Coin– SMEs and Financing of their Activities

Definition of SMEs and their Relationship to Sustainable Energy Projects

As mentioned above, the key segment for research in this paper are SMEs (Small and Medium Enterprises) once characterized by saying that "*nobody knows who SMEs are, but everybody is eager to do business with them"*. Definitions of this segment differ widely depending on particular bank's policies and traditions. Nevertheless, for the purpose of this paper is used the general definition of EU as mentioned in the footnote[3)].

It is also necessary to define the relationship of SMEs and sustainable energy projects. SMEs are very important in implementation of traditional energy efficient projects such as heating system upgrades, fuel switching, building improvements, installations of efficient production technologies, efficient motors etc. Such entities form the core of potential clients for the financing of sustainable energy projects. As for renewable energy projects, the project sponsors can be also SMEs, but more often these projects are driven by so-called SPCs (Special Purpose Companies), i.e. companies established solely for the implementation and operation of

[1] International Finance Corporation, member of the World Bank Group

[2] Sustainable Energy Project means every activity resulting in decreased energy consumption of entities such as industrial plants, public buildings, district heating companies etc. Sustainable Energy Projects are also projects involved in installation of new energy sources, using renewable resources e.g. wind power, biomass etc.

[3] European Union defines SME as "a company with up to 250 employees and with yearly turnover of up to €40 million (US$ app. 52 million)".

particular renewable energy sources. SMEs are also companies, which are known in sustainable energy business as ESCos (Energy Service Companies), i.e. energy service providers and contractors.

SME Financing Worldwide

The availability of external finance for small and medium enterprises is a topic of significant research interest to academics and an issue of great importance to policy makers around the globe. Many policy makers in governmental and international aid organizations believe that small firms have inadequate access to external finance in developing countries as a result of market imperfections. In response, significant resources are being channeled into the promotion and financing of SMEs in developing countries. For example, the World Bank Group has approved more than $10 billion in SME support programs in the last five years. There is also significant renewed interest in development banks, whose mission is to provide loans that promote development by lending to constrained borrowers in developing countries, particularly small firms. Understanding how financing patterns of small firms differ in different institutional environments is an important first step in assessing these costly policies.

The key finding from literature research is that development in this area is very rapid. Twenty five years ago, the Bolton report suggested that there was no shortage of finance for small business; yet small business entrepreneurs continued to complain of competitive disadvantages due to their inability to raise finance. Fifteen years ago, Binks et al. (1990) confirmed a finance gap between the UK and the rest of the EU15. They argue that the development of banking practice in the UK has created finance gaps in the small and medium-sized enterprise (SME) market, particularly in terms of finance for growth and long-term investment projects.

The situation of SMEs financing worldwide is very aptly described by Beck, Demirguc-Kunt and Maksimovic (2004), who used a firm-level survey database, covering 48 countries, to investigate how financial and institutional development affects financing of large and small firms. The database they used was WBES (World Business Environment Survey), a major cross-sectional firm level survey conducted in developed and developing countries in 1999 and led by the World Bank. The survey has information on financing choices for close to 3000 firms in 48 countries. One of the important strengths of the survey is its coverage of small and medium enterprises; eighty percent of the observations are from small and medium firms. Their results show that smaller firms finance a lower proportion of their investment externally, particularly because they make use of bank finance to a lesser extent.

Further investigating the linkages between firm size and the impact of institutional development on financing patterns, they see that small firms benefit more than large companies from higher levels of property rights protection and then can use significantly more external finance, particularly from banks and equity markets. These results underline the importance of improving the institutional environment for increasing the access of small firms to external finance.

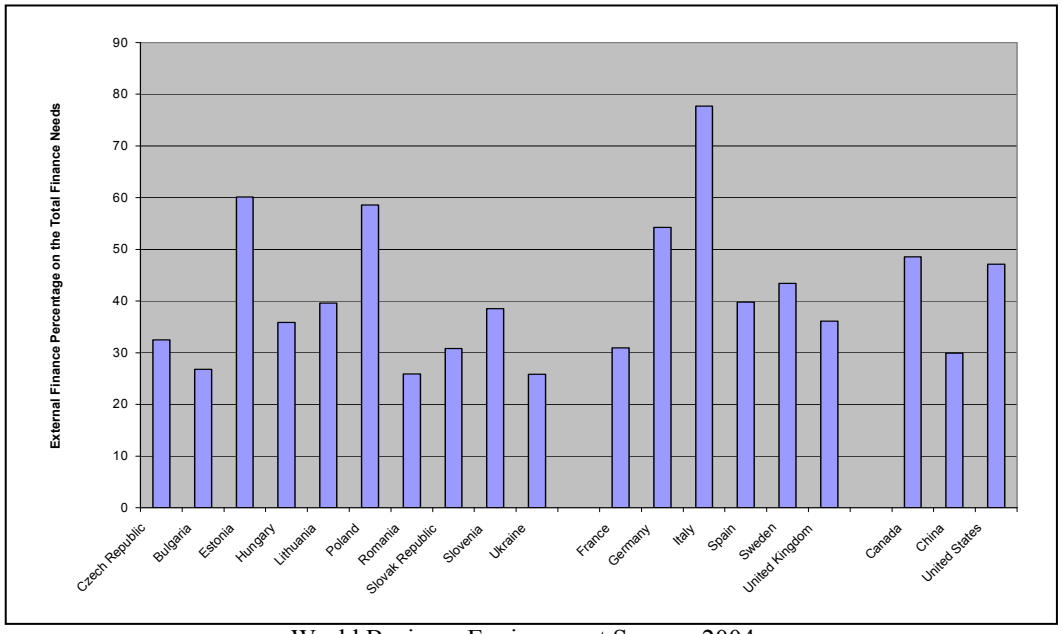
Another finding of the study shows that small firms use significantly more informal finance than larger firms. However, financing from such sources is very limited. On average the proportion of investment financed using informal finance is less than two percent. Thus, the use of informal financing does little to relax financial constraints faced by small firms in developing economies. Moreover, they find that small firms do not use disproportionately more leasing or

trade finance compared to larger firms. In particular, financing from these sources does not fill in the financing gap of small firms in countries with underdeveloped institutions since the use of these financing sources is positively associated with the development of financial institutions and equity markets. Surprisingly, small firms also finance their investment significantly less through government sources or development banks despite the fact that such programs are often politically justified as improving financing for small firms. These findings point out the limits to the ability of small firms to compensate for the underdevelopment of the financial and legal systems in their countries.

The following charts show the share of external finance of SMEs in respective countries and its break down into the various financial resources, based on the above mentioned survey.

The Chart 1 describes the total share of external finance on the entire financial needs of a company. The Chart shows that companies in emerging markets still have tremendous potential for growth of share of external finance on their total finance coverage. For instance 32.5% share in the Czech Republic is less than half of 77.7% share in Italy, and also much less than 54.3% share in Germany. In the USA the ratio between own funds and external finance is slightly below 1:1.

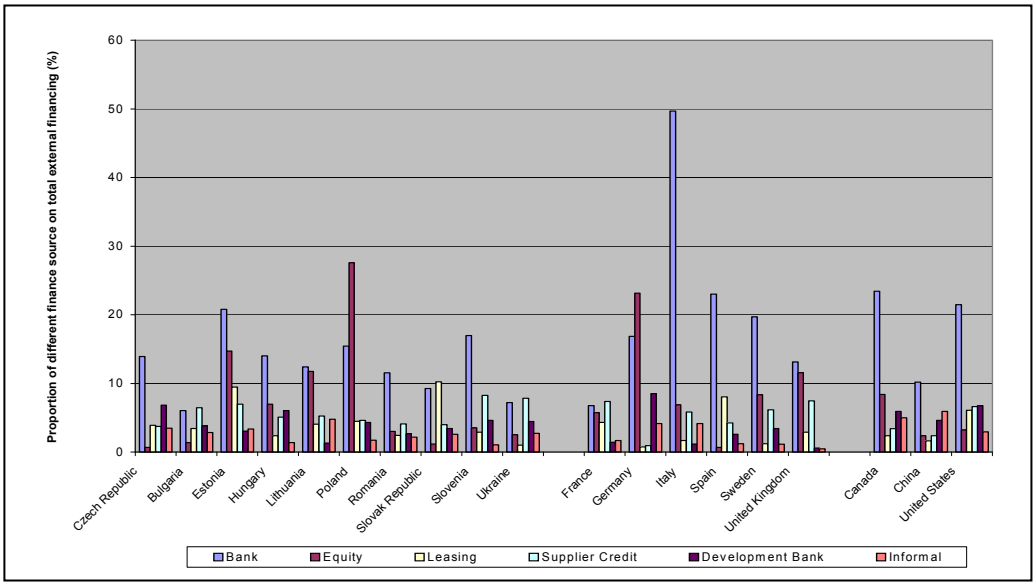
Chart 1: External Finance as the % of Total Financial Needs of SMEs



World Business Environment Survey, 2004

Chart 2 on the next page shows the breakdown of different sources of external finance and their share of an entire company's financial needs. This chart strongly supports one of initial propositions about the different structure of external finance for companies on emerging markets:

Chart 2: Breakdown of External Finance for SMEs



World Business Environment Survey, 2004

Nevertheless, all the above-mentioned facts are going to be probably very different in near future, as the situation for financing of SMEs and sustainable energy projects is going through dramatic changes now with unpredictable results.

The Other Side - Banking of SMEs: Is There Room for Energy Efficiency?

The financing of sustainable energy projects from perspective of a financial institution seems to be an ordinary business category, where no significant surprises or barriers are expected. This is largely true only superficially and, moreover, in established and stable economies. The situation is a little different in transition economies, where the learning curve of financial practice is still in its early development stages and where both parties of the equation – the financiers on one side and project sponsors on the other - still have particular imperfections. While consulting projects in CEE region I often hear complaints about lack of finance for sustainable energy projects and this is actually the reason why this paper has been written.

Credit Policies: A Comparison throughout the World

One of the leading Czech Banks presents in its own credit policy following statement: "The lending strategy of the Bank is determined by the budget strategy and by developments in the markets". This statement, in my understanding, quite clearly describes the world lying behind the front office of the bank, i.e. development of strategies for lending, loan documentation preparation, roles and procedures and, finally, approval processes for particular credit applications.

But what can we say about the market? The market is currently very complicated in every country's banking sector. As it was until 2008, terms for margins, rates, approval times were the only leading drivers and credit policies were lagging sometimes behind fast market development. In current market crisis and subsequent credit crunch other criteria lead the market.

The basic policy as regards the approval of credit applications in traditional banking institutions is, of course, based on the evaluation of the company's financial results, including all traditional accounting and financial documents. For instance, Binks et al. (1990) present, that the decision to supply debt finance should rest on financial and managerial strengths, suitability of the project and prospects within the borrower's industry. Standardized risk assessment or traditional loan applicant criteria for commercial credit has reflected five common rules of approval. These have been summarized as the "5 Cs" according to Foster and Orser, (1994):

- **Capacity** is the extent to which an organization is able to meet its obligations as they fall due.
- **Capital** relates to the amount of equity investment held by the owner(s).
- **Collateral** relates to the value of assets available to secure the loanable-funds against liquidation or default. Firms in sectors such as manufacturing are believed to possess more pledgeable assets than firms in sectors such as retailing and services.
- **Character** includes the track record of the business and its owners. Age of business, years of managerial experience of the owners, and the level of financial management and expertise are among the variables which have been used to measure character.
- **Conditions** refer to the proprietary nature of the product or service, the size of the market and the industrial climate.

There is no doubt that the primary indicator for a bank will be at any rate the financial strengths of the whole company. But in the area of energy efficiency, projects may evince many possible scenarios, where cash-flow lending should be the ideal solution for investment needs, because the proposed project itself generates sufficient amounts of cash to cover repayments. Is this reality or only wish of SE community?

The other view of lending comes from Berger and Udell (2004), where the lending is divided into two types; transaction lending and relationship lending. Transaction lending technologies are primarily based on "hard" quantitative data that may be observed and verified at about the time of the credit origination. This hard information may include, for example, financial ratios calculated from certified audited financial statements; credit scores assembled from data on the payments histories of the SME and its owner provided by credit bureaus; or information about accounts receivable from transparent, low-risk obligors that may have pledged as collateral by the SME or sold to the financial institution. This information may be easily obtained, verified, and transmitted through the communication channels within a financial institution. Individual transaction technologies are distinguished from one another by the type and source of hard information that is the main basis for the underwriting decision.

In contrast, the relationship lending technology is based significantly on "soft" qualitative information gathered through contact over time with the SME and often with its owner and members of the local community. The soft information may include the character and reliability of the SME's owner based on direct contact over time by the institution's loan officer; the payment and receipt history of the SME gathered from past provision of loans, deposits, or other services to the SME by the institution; or the future prospects of the SME garnered from past communications with the SME's suppliers, customers, or neighboring businesses. This soft information may often be proprietary to the loan officer alone and may not be known to, verified by, or transmitted to others within the financial institution.

It is obvious, that Berger's and Udell's categorization is well-suited to the current behavior of banks on emerging markets, which combines these two approaches. In the contrary, lending policy in the US was transaction lending oriented in such extreme, that contact with the client was totally missing and everything was based on scoring systems and automated application approvals. Immediate result of financial crisis is such that the US banks will return to relationship lending in the near future as crisis changed banks` perception of risk and their operational procedures. As shown in the Table 1, the US SMEs lending market has traveled a lot on the way to simplifying the procedures to lend money:

Table 1: Difference between "Traditional" and the US Lending Procedures

Traditional Process	US Process (pre-crisis)
Application in Branch or with Loan Officer	Applications by Mail, Phone, or Branch
Tax Returns, Financial Statements Required	No Tax Return or Financials Needed
Application Reviewed in Detail By Lender	Automated Decision in 2/3rds of Applications
Annual Review Required	No Review – Line is "Evergreen"
Collateral often Required	Unsecured
Booked on Commercial Loan System	Booked on Consumer Loan System
Focus on Very Low Losses	Higher Losses Okay with Much Higher Pricing

Wells Fargo Presentation, WB, 2009

On the other markets, especially in emerging markets of Central Europe, we can see more traditional approach and relationship lending. Prevailing lending practices in a diverse group of countries – some with reformed collateral systems and others with unreformed collateral systems – confirm that during the credit evaluation process, the primary focus of FIs is on the capacity of SME to repay the loan (cash flow) and the character of SME.

This fact brings us back to the point, that SE finance may have certain "beauty", especially when linked with potential to strengthen repayment capacity of SME thorough cost savings and other benefits in marketing and product development. However, such difference will have rather limited impact to the credit approval process, as confirmed by lending practices analysis.

Another point of view to the focus of the banking sector to particular client groups, including SMEs has brought the research provided by EBRD team (2006). The research explored how bank characteristics and the institutional environment influence the composition of banks' loan portfolios. Using a new data set based on the recent EBRD Banking Environment and Performance Survey (BEPS), which was conducted in 2005 for 220 banks in 20 transition countries, it showed that bank characteristics such as ownership and size are important determinants of bank customer focus. In particular, they find that foreign banks are relatively strongly involved in mortgage lending and lending to subsidiaries of foreign companies, while lending relatively less to large domestic firms. They also find that small banks lend relatively more to SMEs than large banks do, while large banks appear to have a comparative advantage in lending to large customers. They do not find much evidence for the hypothesis that better legal credit protection changes bank portfolio composition. An exception is that banks that perceive pledge and mortgage laws to be of high quality focus more on mortgage lending.

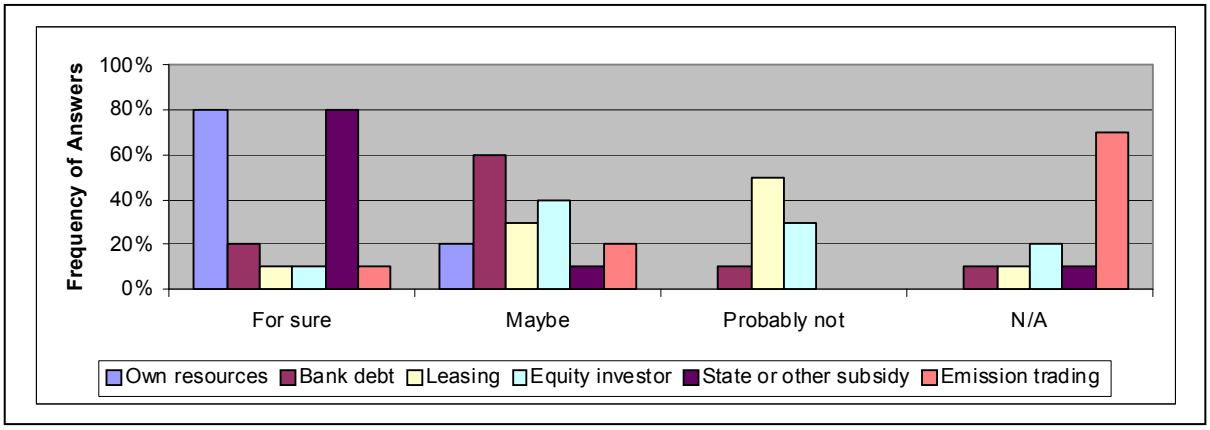
In summary of the findings above, it seems that there is some, but limited space for specialized banking approach to SME energy efficiency and small renewable investments. According to IFC's experience over last ten years in reality there are some needs on the market in support of bankers and many opportunities to convince them that SE finance is the area worth to put some effort in.

SME Finance and Sustainable Energy Projects: Data from Emerging Markets

Theory described in previous chapters tells us that it is not really possible to artificially divide financing of SME and financing of SE projects. They are interconnected more than energy experts are willing to accept and therefore SE lending is fully tied up with company/corporate lending. This is thus rebutting the assertions that SE finance for SMEs is some special kind of finance mechanism (with some exceptions like ESCo finance for instance). In this chapter is described few examples of IFC experience from emerging markets.

In 2006, Commercializing Energy Efficiency Finance Facility[4] managed by IFC was looking for information about yet existing barriers for financing of sustainable energy projects in several CE countries. It has run small survey among SME entities in the Czech market, asking questions regarding access to finance on local market. The question thus posed was: "If you were planning an investment of sustainable energy project, which source of finance would you consider? The scale was: 1 – for sure; 2 – maybe; 3 – probably not; and, last, not applicable. The types of financing proposed were (i) Own resources, (ii) Bank debt, (iii) Leasing, (iv) Equity investor, (v) State or other subsidy and finally (vi) Carbon trading. The results of the phone survey IFC conducted are shown on the Figure 3 below:

Figure 3: Distribution of the Answers about the Use of Different Financial Resources



IFC-CEEF Survey, Czech Republic, 2006

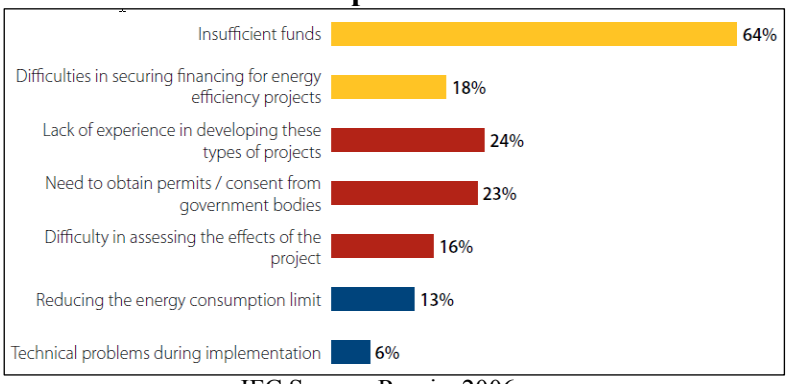
This simplified and brief research confirmed contention that Czech project sponsors more often rely on their own resources as well as on subsidies, while equity investors and bank debts are not usually part of their plans. Though the used sample is not representative enough to provide conclusive evidence, it provides at least some indication of supposition on difference of financing in CEE.

[4] Commercializing Energy Efficiency Finance ("CEEF") was Guarantee Facility established by IFC/GEF in order to promote SE financing in the Czech Republic, Estonia, Hungary, Latvia, Lithuania and Slovakia. The program was supporting financing activities of qualified private sector financial intermediaries principally by providing partial credit guarantees and technical assistance. It was operational between 2003 and 2008.

There is another source of data though, which has confirmed that one of the key barriers for obtaining finance for SE projects is reluctance to ask for it on the side of SME management and project developers.

In 2006, IFC conducted another study to research attitudes towards SE investments in Russia. In the study, the operations of 625 industrial companies located in five of Russia's federal districts and representing five different industrial sectors were analyzed. The survey was conducted in at least 6-8 cities in each federal district in order to ensure a sufficiently representative sample, allowing the assumption that the study's results apply to the general situation in all of the industries that were examined during the survey. In this way, the conclusions made during this study can be taken as rather complete overview of the energy efficiency practices in the industries that were included. In addition, the trends that were identified may be considered typical for many industrial companies in other sectors. For purpose of this paper, there are two significant findings of the study shown in the Chart 4 and confirming the paradox between availability of financing for SE projects and actual use of it:

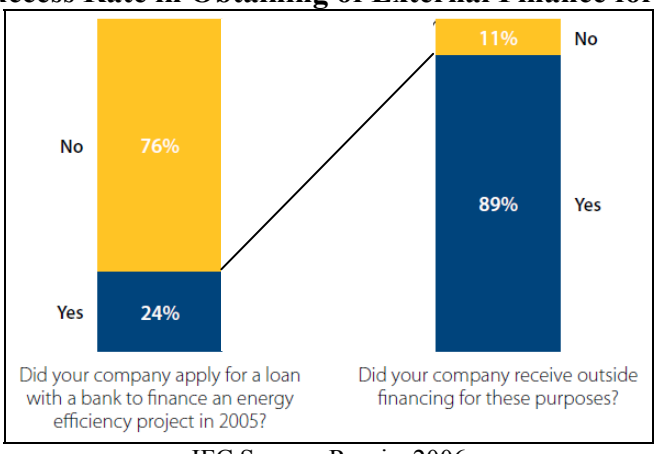
Chart 4: Barriers for Russian Companies Not to Proceed with SE Projects



IFC Survey, Russia, 2006

As you can see on the Chart 4, 64% of surveyed companies have difficulties with insufficient funds for SE and 18% have general difficulty to secure financing. On the other hand, the number of companies asking for external financing is in deep contrary with this finding, as is shown at Chart 5:

Chart 5: Success Rate in Obtaining of External Finance for SE Project



IFC Survey, Russia, 2006

As it can be seen on the Chart 5, companies generally avoid approaching banks and leasing companies for outside financing for energy efficiency, despite the fact that nearly 90% of applicants were successfully granted loans! Considering the low percentage of applications for bank loans, it would be logical to assume that many companies simply do not understand the advantages of using financial leverage, which can help increase the profitability of a company's own capital via external sources of financing.

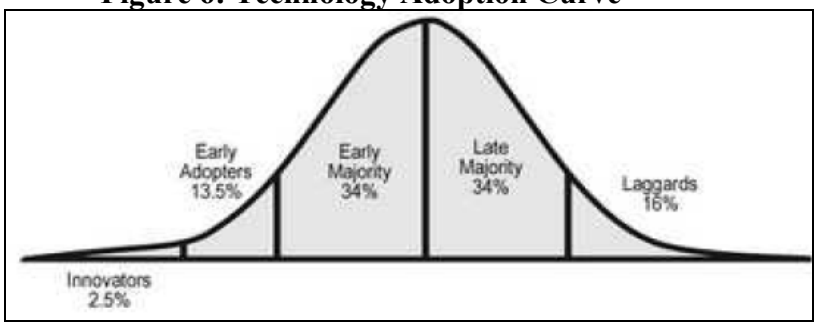
An Example of the IFC Approach: Russian Energy Efficiency Finance Program

As previous chapters described theory of SME/SE finance and attitudes of clients, an example of successfully stimulated approach of banks can frame discussion described in this paper.

In 2009 IFC launched the Russian Energy Efficiency Finance Program offering finance together with advisory services. Since then IFC has worked with eight financial institutions in Russia, and that experience has yielded some important insights into gaining acceptance of an innovative product like energy efficiency finance.

The technology adoption curve (see Figure 6) helps to put the challenge into context. Innovators (like IFC) pioneer the product, which is then taken up by few early adopters who quickly grasp its value. However, for broader adoption by the more conservative early and late majority, the product then needs to be specifically tailored and adapted to meet their specific needs

Figure 6: Technology Adoption Curve



E.M. Rogers, Diffusion of Innovators, New York, 1995

Since most financial institutions are very conservative, how could the Program gain wide acceptance of an innovative product like sustainable energy finance?

A three-step process of adaptation was required to secure participation from the chief executive officer (CEO) down to local branch credit officers:

Step one: inspire confidence in the product. Bankers are usually very conservative creatures and to adopt new approach or develop new products for the market needs to be backed-up by several important facts, including market size and its attractiveness (read "margins"). Therefore they also need strong belief and only commitment from the top can secure success at the end of the route. There are usually several questions that emerged in banker's heads as barriers to developing business with a new product like: 1) What is the product? 2) Why should we be doing this? 3) Why do we need it if money is already flying out of the door? 4) Why a special SE product? 5) We do so much training; why spend more time on this? 6) How should IFC support us in this effort? The key for success in this first step is to identify what is needed to inspire

confidence in the new product, package it accordingly, and then close the deal. Getting the bank on board means (i) to identify the size of the opportunity and market readiness through market survey data to show how profitable the product is and (ii) to identify how the product fits into the strategy of the bank, if there are other motivations like need for differentiation on competitive market, general strategy for being "green" bank etc.

Step two: institutionalize the product. It has been confirmed in many cases, that the institutional commitment of resources and an official product description open the door to widespread adoption. Therefore once the idea has been adopted by the management of the bank, there has to be sustaining effort to work on other bank's levels and departments through training, product development support and marketing.

Step three: iterate the product. Over the times, the market reaction to a newly developed financial product can show the development in needs to provide financing as well as other support to projects. Also internally the bank is constantly changing and therefore there is constant need to enhance the product to make it more accessible and user friendly for the conservative majority in order so they will use it over and over.

Lessons learned from the Russian program show that when introducing an innovative product it is crucial to remember that most people will not immediately understand its intrinsic value. In order to be successful the product must be presented in a way that those who should be reached clearly understand its benefits. If trying to get a product up the adoption curve inside a financial institution, the experience shows that it is important to tailor it to inspire top management, define it to achieve institutionalization, and finally popularize it to ensure iteration.

Conclusions

The paper finds out that despite long term general complaints about lack of financial resources for sustainable energy projects the market is well developed and banks under regular market conditions are willing to finance these projects. Banks still have some weaknesses, especially in training and education of their officers and in prudent credit criteria. On the other hand, projects looking for financing are rarely well prepared and there is still a long way to go to achieve perfect project proposals, feasibility studies and business plans. It is also clear that from the point of view of the banks the SE project is not necessary any special case. Banks are generally focused on financing of entity as such and therefore the SE specialists need to be focused also on the quality of a client, not only on project itself. However SE lending products can have some "beauty" for banks, e.g. new marketing messages, well defined market segment etc., though company/corporate lending approach will prevail because of lending practices and risk management requirements. Last, but probably most important finding shows, that key barrier for many SMEs to obtain financing from banks, especially for those on emerging markets, is just simple apprehension to ask for it.

World Bank Group Role in Financing of Sustainable Energy Projects

The World Bank Group announced on October 2, 2008 an 87 per cent increase in funding for Sustainable Energy projects and programs in developing countries in the past fiscal year. Total SE commitments for the year ended June 30, 2008 reached nearly US$2.7 billion.

The commitments by the World Bank Group, including Carbon Finance operations and co-financing support from the Global Environment Facility (GEF), were made up of the following:

- US$1.192 billion for Energy Efficiency;
- US$476 million for New-Renewable Energy including wind, solar, biomass, geothermal, and hydropower projects that will produce up to 10 MW per facility; and
- US$1.007 billion for hydropower projects of more than 10MW per facility.

The renewable energy and energy efficient investments made up 35 percent of total Bank Group energy commitments for the year (up from 13 percent per year on average in the early 1990's) with 95 projects in 51 countries, as well as two cross-border projects.

In 2004, at the International Renewable Energies Conference in Bonn, Germany, the Bank Group committed to increase its financial support for new renewable energy and energy efficiency projects by 20 percent per year. From then until the end of FY 2008, the WBG more than exceeded that goal each year, committing close to US$3.7 billion to such projects, compared with the agreed commitment goal of US$1.3 billion.

IFC also raised its private sector investments in alternative energy sources significantly. The private sector plays a critical role in addressing the challenges of global warming since more than 80 per cent of all current investments related to climate change come from non-government owned companies and investors.

Table 2: WB Group Commitments for SE in FY 2008

Source of funds	Commitments in FY08 (millions of US dollars)			
	New Renewable Energy	**Hydro > 10MW**	**Energy Efficiency**	**Total**
World Bank	**272**	**625**	**719**	**1,616**
IBRD/IDA	*117*	*601*	*624*	*1,343*
GEF	*90*	*0*	*55*	*145*
Carbon Finance	*65*	*24*	*40*	*128*
IFC	**115**	**361**	**473**	**949**
Own Funds	*72*	*361*	*473*	*906*
Carbon Finance	*39*	*0*	*0*	*39*
GEF	*4*	*0*	*0*	*4*
MIGA	**88**	**21**	**0**	**110**
Total	**476**	**1,007**	**1,192**	**2,675**
Note: Some columns may not add up exactly due to rounding				

WBG Internal Communication, WBG, 2008

The growth in IFC's clean energy portfolio in FY08 was indicative of a shift from small, donor-supported, niche-market investments to an increasingly diversified global market for clean energy across all sectors. In FY08, IFC's Financial Markets Group had nine clean energy financing investments in five countries, including some of the largest and most rapidly growing

emitters of greenhouse gases — Brazil, China, Russia, Turkey and Ukraine. These projects will provide commercial lenders with more than $280 million for dedicated credit lines for clean energy activities and would help to address the diverse, profitable, but smaller scale investment opportunities otherwise difficult to capture.

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