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IMPLEMENTATION COMPLETION AND RESULTS REPORT
(TF-54515)

ON A

GRANT FROM THE
GLOBAL ENVIRONMENT FACILITY TRUST FUND

IN THE AMOUNT OF US\$10.0 MILLION

TO THE

REPUBLIC OF BULGARIA

FOR

AN ENERGY EFFICIENCY PROJECT

September 22, 2010

Sustainable Development Department
Central/South Europe and Baltics Country Unit
Europe and Central Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective June 2010)

Currency Unit: BGN (Bulgarian Leva)

BGN 1.00 = US\$ 0.65

US\$ 1.00 = BGN 1.58

ABBREVIATIONS AND ACRONYMS

BEEF	Bulgaria Energy Efficiency Fund
CO ₂	Carbon Dioxide
EBRD	European Bank for Reconstruction and Development
EE	Energy Efficiency
EPC	Energy Performance Contracts
ESCO	Energy Service Company
FI	Financial Institution
FM	Fund Manager
FMR	Financial Monitoring Report
FMS	Financial Management Specialist
GEF	Global Environment Facility
GEO	Global Environmental Objective
GoB	Government of Bulgaria
IBRD	International Bank for Reconstruction and Development
ICR	Implementation Completion (and Results) Report
KIDSF	Kozloduy International Decommissioning and Support Fund
MEET	Ministry of Economy, Energy and Tourism
M&E	Monitoring and Evaluation
PAD	Project Appraisal Document
PCG	Partial Credit Guarantee
PPP	Purchasing Power Parity
tCO ₂	Ton of CO ₂
toe	Tons of oil equivalent
UNFCCC	The United Nations Framework Convention on Climate Change

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BULGARIA
ENERGY EFFICIENCY PROJECT

CONTENTS

Data Sheet

- A. Basic Information
- B. Key Dates
- C. Ratings Summary
- D. Sector and Theme Codes
- E. Bank Staff
- F. Results Framework Analysis
- G. Ratings of Project Performance in ISRs
- H. Restructuring
- I. Disbursement Graph

1. Project Context, Global Environment Objectives and Design	1
2. Key Factors Affecting Implementation and Outcomes	4
3. Assessment of Outcomes	11
4. Assessment of Risk to Development Outcome	18
5. Assessment of Bank and Recipient Performance	18
6. Lessons Learned	21
7. Comments on Issues Raised by Recipient/Implementing Agencies/Partners	22
Annex 1. Project Costs and Financing	23
Annex 2. Outputs by Component	24
Annex 3. Economic and Financial Analysis	25
Annex 4. Bank Lending and Implementation Support/Supervision Processes	28
Annex 5. Beneficiary Survey Results	29
Annex 6. Stakeholder Workshop Report and Results	33
Annex 7. Summary of Recipient's ICR and/or Comments on Draft ICR	34
Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders	36
Annex 9. List of Supporting Documents	37

MAP

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1. Project Context, Global Environment Objectives and Design

1.1 Context at Appraisal

Country and Sector Background: At appraisal, the country's energy intensity of 0.38 tons of oil equivalent per thousand U.S. dollars of GDP (at the Purchasing Power Parity exchange rate), was more than twice the average value for the European Union and exceeded by a considerable margin the energy intensity of the transition economies in Europe. Bulgaria's potential to achieve significant energy savings in a cost-effective manner was estimated as high as 50% of total annual energy demand for existing building stock, 40% for district heating and 30% for industry. Although the most promising low-cost energy saving projects—i.e. payback time of less than three years, had been included in the Government of Bulgaria's (GoB) medium-term *National Energy Saving Action Plan (2001-2003)*, very few of them had been carried out. During 2001-2003, commercially financed energy efficiency (EE) investments amounted to US\$13 million, a mere 5% of the annual requirements for EE investments included in the *National Energy Saving Program to 2010*.

Barriers to energy efficiency: In 2004 potential investors faced serious barriers to the uptake of commercial EE finance in Bulgaria: (i) commercial bank intermediation relative to the size of the economy was low by international standards. Insufficient competition allowed banks to manage risks by limiting lending volume, demanding high collateralization (200% and higher), charging high interest rates to local businesses (between 10% and 18%, despite inflation being contained at 4%), focusing on short-term lending (with loan maturities of 1-2 years) and investing in low-risk government securities; (ii) the inefficiency of the judicial system made recovery of debt or seizure of collateral a long process. The perceived high credit risk hurt especially the SMEs, housing cooperatives, municipalities, hospitals and other similar energy consumers, which may not have had a significant credit history or lacked suitable collateral values associated with EE projects. Approval of credit applications took months; (iii) commercial banks were generally not familiar with commercial and technical issues involved in EE projects. The combination of financial and technical skills needed for the preparation of sound EE business plans to develop bankable EE projects was largely missing. The size of EE projects was generally small relative to energy supply projects with which they often had to compete for financing. Commercial banks perceived the risks and transaction costs of EE projects as too high; and (iv) innovative financing, such as energy performance contracting, was hardly used. Third-party bundling into a financially viable package of projects that are individually too small to justify an energy performance contracting arrangement can be effective in attracting capital for projects deemed too small for financial institutions. There was also no mature and competitive energy service industry, with most of the private energy service companies (ESCOs) having small operations and balance sheets.

Rationale for Bank assistance: The Bank's Country Assistance Strategy for Bulgaria in effect at appraisal was designed to support Bulgaria with reforms that assisted the country in meeting its European Union (EU) accession requirements concerning EE and environmental protection. The energy sector was considered to be lagging behind in meeting the EE and environmental requirements of the EU.

GEF financing was attractive due to the emission reduction potential offered by EE-initiatives in Bulgaria. The country's significant energy inefficiency and strong financing barriers to EE, along with the Government's credible commitment to address them, provided a compelling case for a GEF-supported contingent finance operation in Bulgaria that aimed to build a sustained market-based capacity to develop and finance EE projects on commercial terms under the proposed Bulgaria Energy Efficiency Fund (BEEF). The Energy Efficiency Act, adopted in 2004, aimed to foster broad-

based, sustainable commercial financing for EE projects. The BEEF, a commercially oriented revolving EE Fund, was established in accordance with Chapter 4 of the Act to demonstrate the financial profitability of investments in the EE sector. GEF support toward the initial capitalization was considered critical for the establishment of BEEF; without this support, the BEEF project would not have proceeded in a reasonable time frame. The Ministry of Economy, Energy and Tourism (MEET) was the primary implementing agency of BEEF and the recipient of the GEF grant.

1.2 Original Global Environment Objectives (GEO) and Key Indicators

The objective of the project was to increase the demand for and supply of EE projects and services in Bulgaria. The project would support a large increase in EE investments in Bulgaria through development of a self-sustaining, market-based financing mechanism, which can provide sustainable and increasing reductions in GHG emissions without relying on public subsidy.

This market-based financing mechanism, the BEEF, was designed to mitigate the perceived high risk and transaction costs of initial EE investments by directly supporting the implementation of a growing number of EE projects on fully commercial terms, demonstrating means to overcome current barriers and make profits on such projects. At least half of the benefits of BEEF-supported projects had to come from measurable energy savings. The BEEF was also designed to foster, through demonstration and explicit partnership, expanded investments by other market participants, such as commercial banks, ESCOs and leasing companies.

The **key indicators** were:

GEO (Outcome-level) indicators

1. Emergence of a competitive, self-sustainable national EE market demonstrated by:
 - Number of financial institutions engaged in EE project financing, with a target increase from 2 to 10;
 - Number of ESCOs engaged in EE project development and implementation, with a target increase from 18 to 40;
 - Number of EE projects and associated investment volume with commercial banks participating in financing with BEEF, with a target of \$48 million in cumulative BEEF leveraged EE investments composed of \$31 million from guarantees and \$17 million from loans;
 - Energy savings (over life of EE investments) of 1.03 mtoe; and
 - Cumulative BEEF-supported project life CO₂ emission reductions of 3.6m tons CO₂.
2. Financial sustainability of BEEF defined as self-financing percentage: 100% by 2010.

Intermediate (Output-level / results) indicators:

3. Proactive development of a critical mass of commercial EE projects and financing of US\$50m from 2005 to 2009.

1.3 Revised GEO (as approved by original approving authority) and Key Indicators, and reasons/justification

The GEO was not revised.

1.4 Main Beneficiaries

On the *user side*, the beneficiaries of EE investments are (i) SMEs, mostly in the industrial and service sectors, (ii) municipalities, and (iii) housing cooperatives/associations as potential subproject clients (project sponsors).

On the *supply side* beneficiaries are (i) equipment/materials manufacturers, building design and retrofit contractors, ESCOs and EE consultancies as business partners; and (ii) companies in the financial sector, particularly banks, mortgage and leasing companies as co-financiers.

1.5 Original Components

GEF financing of US\$10 million was to be used to (i) provide seed capital for BEEF; (ii) defray initial set-up and operating costs until BEEF reached financial self-sufficiency; and (iii) partially defray initial costs of EE capacity building (project development, financial packaging, etc.). The project had three components:

- *Partial Credit Guarantees (PCG)* to share in the credit risk of EE finance transactions and to improve loan terms for sub-project sponsors. A Guarantee Account (GA) was to be established in a competitively selected commercial bank. The GA was to earn income through interest from the reserve account balance along with guarantee fees to cover potential guarantee loss claims. The indicative GEF amount for the GA was US\$4.50 million, expected to trigger a total of US\$31.12 million. Individual guarantee commitments were not to exceed the equivalent of US\$500,000 (the guarantee liability limit).
- *Investment (Sub-Loan) Financing Facility* to co-finance bankable EE projects on a commercial lending basis. The indicative GEF amount for the Loan Account was US\$4.00 million that was expected to trigger investments of US\$16.34 million.
- *Technical Assistance (TA)*: to initially finance on a grant basis a portion of EE project development, capacity building, information barrier removal and administration costs of the Fund. US\$1.5 million in GEF funds was allocated for this purpose.

The initial allocation of GEF funds for loan financing and guarantees, respectively, was indicative since BEEF was designed as a flexible facility. Market demand for BEEF's two financing instruments was to determine their use during implementation.

The GoB co-financed BEEF's seed capital in the amount of BGN 3.0 million (US\$1.8 million equivalent) and the Austrian Government provided EUR 1.5 million (US\$2.0 million equivalent).

1.6 Revised Components

The components were not revised.

1.7 Other significant changes

There were no changes in the project's design, scope and scale, and implementation arrangements. In November 2008, due to a lack of demand for guarantees, US\$2 million was transferred from the Guarantee Account to the Loan Account. Since the distribution of funds shown in the PAD between the two instruments was indicative, this did not represent a revision, but an adjustment to market demand in accordance with the philosophy and modality of the project. Also, from the TA-finance window US\$342,112 was transferred to the Loan Account prior to the project's closure (March 2010).

2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

Building on lessons learned. At the time of appraisal, the project design represented what was considered “best practice” for EE-programs in Central and Eastern Europe. In fact, the project’s quality at entry was rated highly satisfactory by the World Bank’s Quality Assurance Group which stated that the project’s preparation process can be considered a good example of what needs to be done early in the project design to ensure successful implementation. The design of the project was inspired by GEF’s Romania EE Project and by the IFC/GEF-supported Hungary EE Co-Financing Program (HEECP) and also incorporated lessons from the USAID-financed Municipal EE Program in Bulgaria. The latter project provided partial credit guarantees (PCG) in favor of the United Bulgarian Bank (UBB) for small-scale municipal EE projects. However, the USAID-financed project had suffered from two shortcomings: the non-revolving nature of the PCG facility and the monopolistic position of UBB, which kept the interest rate and collateral requirements at relatively high levels.

Collection of baseline data. A GEF project preparation grant (PDF-B) was used to develop a comprehensive set of high-quality baseline data, including reasonable candidate projects such as: improvement in street lighting, installation of heat exchangers, and automatic temperature control.

Advance identification of a pipeline of projects to invest in. The PDF-B identified a pipeline of viable EE projects for funding prior to the approval of the project. This allowed BEEF to finance projects immediately after Project effectiveness and to obtain early, quantifiable results.

The consultation process was comprehensive. In June 2002, the project concept was presented to the NGO community at a workshop. During the EE market assessment, top management and energy managers of companies in the industrial, service and municipal sectors as well ESCOs were engaged, supporting both information dissemination and initial project pipeline development.

Risks and Risk Mitigation Measures. The table below shows the risks and mitigation measures identified in the Project Appraisal Document (PAD) along with a brief description of how these risks evolved during implementation. Risk Ratings: H (High Risk), S (Substantial Risk), M (Moderate Risk), N (Negligible or Low Risk).

Original Perceived Risk	Risk Rating	Original Mitigation Measure	Results
Weak supportive macro-economic environment for EE projects.	N	<ul style="list-style-type: none"> Adjust energy prices to cost-reflective levels (substantially completed under the Bank’s ongoing PAL operation). Legal/taxation/institutional issues addressed by new EE Law. Favorable long-term macroeconomic outlook 	Energy prices were adjusted. But legislation to support development of condominium associations was not implemented and is too weak; this blocked BEEF entry into supporting EE in residential buildings.
BEEF’s size and leverage may not be large enough to create a sustained market impact.	S	<ul style="list-style-type: none"> Obtain GoB, bilateral and multilateral donor contributions during project preparation and implementation. Use early successes and associated rise in the Fund’s credibility to mobilize additional donor contributions, including GHG emissions trading. Build capacity for EE in the financial and energy service sectors. Catalyze substantial commercial co-financing through both demonstration effects of successful projects and business partnerships. 	BEEF contributed to building capacity in the financial and energy service sectors and commercial financing for EE investments in Bulgaria increased significantly. However, apart from initial GoB and Austrian Government co-finance, BEEF did not manage to secure substantial additional donor funds during the GEF/IBRD project lifetime.

Inadequate governance structure negatively impacts on BEEF's commercial orientation.	S	<ul style="list-style-type: none"> Establish BEEF as a public-private partnership to avoid politicization and potential GoB micromanagement. GoB-appointed members of the Management Board (MB) to be in minority. MB appointments are subject to prior consultation with the Bank. 	BEEF operated with minimal Government interference exactly as designed.
Projected energy and GHG savings are not achieved.	S	<ul style="list-style-type: none"> Ensure that at least half of the sub-project benefits come from measurable energy savings. Monitor and evaluate actual compliance to enable quick corrective actions. Ensure that the energy saving technology is well proven in the proposed application. During project development, engage own engineering and financial staff and/or external consultants equipped with best practices. Share risks among equipment/technology suppliers, ESCOs and sub-project sponsors. 	The projected energy savings and emission reductions were not achieved. The main reason was the higher than expected share in the portfolio of small-size municipal projects and the lower share of industrial projects with low pay-back times. Another contributing factor was the increase in unit construction costs. Finally, the lack of demand for guarantees reduced leverage.
Effective Fund Manager (FM) cannot be retained.	S	<ul style="list-style-type: none"> Based on initial market soundings, there is a small pool of potential FM candidates with satisfactory qualifications. Hire the best qualified candidate competitively following Bank procurement rules. Incentivize the FM to act proactively, identifying high volumes of new business and helping applicants improve their proposals. 	The assumption that the risk would be small proved to be correct. The first Executive Director turned out to be ineffective and was quickly replaced.
Insufficient deal flow due to lack of client interest prevents BEEF from achieving self-financing in year 5 and profitability thereafter.	H	<ul style="list-style-type: none"> Preliminary pipeline development points to the availability of a large pool of bankable projects with short payback times. Market intensively Fund products to targeted clients and offer help in packaging of projects (initially under the TA component). Build a strong pipeline of finance-ready projects early on. 	Helped by increasing national and international energy prices, BEEF had no problem finding projects to lend to and over-achieved the self-financing target.
Local financial institutions do not provide sufficient co-financing.	M	<ul style="list-style-type: none"> Market BEEF to local FIs early on. Conduct periodic workshops and disseminate early successes to encourage competitive co-financing. 	Local institutions were not interested in co-financing because they rapidly acquired the experience in dealing with EE financing. EBRD provided loans and investment grants to participating banks, which encouraged borrowers and FIs to work with them.
Possible initial implementation difficulties may impair BEEF's credibility.	H	<ul style="list-style-type: none"> Design BEEF with adequate built-in flexibility to adjust internal procedures, business strategy and implementation capacity to changing external conditions. Continually and intensively monitor and evaluate Fund performance. 	No implementation problems were encountered. The built-in flexibility of program design and the high quality of BEEF staff and consultants proved their worth.
Default rate of projects exceed anticipated level, potentially damaging BEEF's financial sustainability.	M	<ul style="list-style-type: none"> Incentivize the FM to develop high quality proposals having low repayment risk. Allow Fund resources to be used strictly on a non-grant basis to avoid "willful defaulters." Share risks among all project participants (e.g., requiring co-funding from sub-project sponsors to weed out clients with solvency problems; provide PCG up to 70% of the banks' outstanding loan principal). Avoid placing funds in a few large projects, spreading the risk through diverse portfolio. 	Default rate has been zero due to careful due diligence and appraisal of borrowers. This is an important achievement because in general municipalities had a poor track record with regard to complying with loan terms.
Overall Risk Rating	S		Overall, mitigation measures proved to be successful

The most important factor for risk mitigation, which was included in the design of the project was flexibility with regard to the use of BEEF financing instruments. BEEF could provide loans directly to project developers (commercial finance objective: to demonstrate to banks the commercial viability of investments in EE), or as co-financing to commercial bank loans (commercial finance objective: to draw banks into finance who without the assurance provided through the quality control of BEEF's technical expertise would have found it too risky to engage in EE-finance, particularly of ESCO-finance). BEEF could also provide guarantees as project PCGs or as portfolio guarantees. Finally, the BEEF provided flexibility in terms of using available funds for either guarantees or for loans.

2.2 Implementation

The project was not restructured (except a technical restructuring to reallocate guarantee funds to the loan facility) and was never at risk. The Mid-Term Review carried out in November 2007 favorably assessed project implementation, as well as the initiatives and instruments that had been launched.

The following factors affected project implementation:

Changes in operating context

The context for BEEF's operation changed dramatically as soon as the project started.

- An initiative of the Bulgarian Energy Efficiency Agency, to accredit energy auditing companies, resulted in an increase in the number of ESCO companies.
- The purchase by foreign banks of majority shares in the major Bulgarian commercial banks resulted in the latter getting access to "unlimited credit" from their foreign partner banks.
- Parallel donor initiatives in EE finance: The EBRD launched three EE-finance lines, two providing a combination of credit lines and investment subsidies to participating banks and their EE-loan takers, and a third providing credit to an ESCO-finance company.

All three developments promoted the achievement of the ultimate goal of establishing sustainable EE-operations in Bulgaria, and added more competition to the EE market-place.

The accreditation of energy auditors strengthened the credibility of EE-investment projects, and reduced the risk of non-performing projects. This reduced the attractiveness for banks to collaborate with BEEF in co-financing EE-investments in order to benefit from the technical expertise of BEEF in EE.

Shortly after project inception several Bulgarian banks were taken over by foreign banks, which had two impacts on BEEF's operation. First, liquidity shortages that may have existed at the time of project design and appraisal disappeared, reducing the need for BEEF loan finance. Second, fierce competition for market shares drove down interest rates and margins to such low levels that banks saw no room for adjusting a guarantee fee within the margins. In addition, as the EE market developed, banks became familiar with the commercial and technical issues in EE financing, thus lowering the perceived risks in connection with weak client/project credit profiles. As a result, BEEF had to reduce its guarantee fee to a very low 0.1% in order to secure clients for its guarantee products.

EBRD's *Bulgaria Energy Efficiency and Renewable Energy Credit Line (BEERECL)* for on-lending to private sector companies for *industrial energy efficiency and small scale renewable energy projects* was launched in 2004. United Bulgarian Bank (UBB), later UniCredit Bulbank, and Allianz Bank Bulgaria participated in the credit line. EBRD provided credit finance of €55 million. A €35 million

grant from the Kozloduy International Decommissioning and Support Fund (KIDSF) provided free consulting services to borrowers and gave them a completion subsidy up to 15% of the BEERECL loan amount for energy efficiency or 20% for renewable energy.

In 2005, EBRD launched the *Bulgaria Residential Energy Efficiency Credit Line (BREECL)* to finance small-scale residential energy efficiency projects: replacing windows; insulating outdoor walls and roofs; and installing heat pumps, solar thermal collectors and high-efficiency gas and biomass boilers. EBRD provided a €50 million loan, and KIDSF added a grant finance facility of €14.6 million. Both lenders increased their financial contributions in 2008. The Grant facility provides a completion fee to sub-borrowers, which is deducted from the loan principal, and completion fees paid to participating banks. Since BEEF does not offer investment grants, investors preferred to seek loans from banks that participated in this scheme. BEEF signed two general framework agreements in 2006 (UBB AD and Bulbank AD) and three in 2007 (Encouragement Bank, HVB Bank Biochim and International Asset Bank). In 2010, 2 new framework agreements were signed in 2010 with Bank DSK and with Tokuda Bank. Of all framework agreements signed, only three became clients / collaborating partners of BEEF.

It was a great disappointment for BEEF management that it lacked Government support to get grant financing from KIDSF to put it on equal footing with the EBRD supported mechanisms.

In 2008, EBRD provided a senior loan of €7 million to the *Energy and Energy Savings Fund SPV (EESF)*, a special purpose investment company, set up in 2006 to finance the ESCO services business of the construction and engineering group Enemona, its major shareholder. EESF uses the proceeds of the loan to purchase receivables from energy performance contracts carried out by Enemona in the industrial and public sectors including kindergartens, schools, hospitals and other municipal buildings. This development cost BEEF business since Enemona was one of its private minority shareholders and a major client. However, Enemona continued to be a client of BEEF, but at reduced scale; through ESCO-projects portfolio guarantees issued to EESF.

Thus, BEEF faced donor-supported competition in four business areas: residential buildings, industrial EE, public buildings, and ESCOs.

Negative factors for EE-investment climate in Bulgaria

The EE-investment climate was affected negatively by the following factors:

- *Rapid acceleration of EE investment costs* (labor & insulation materials) lengthened significantly paybacks of energy retrofit projects, requiring more client co-financing and decreasing client willingness to undertake projects, or reduced project size. By 2008 the construction cost index in Bulgaria had almost doubled compared to 2004, when the project was appraised.
- *Lack of a legal framework to create a market for EE investments in multi-apartment buildings.* There was a significant delay in the adoption by Parliament of an Act stipulating the creation of Condominium Associations in multi-apartment buildings. This Act provides the legal provisions allowing for the creation of legal entities that can contract with energy supply companies and other service providers. When it was finally adopted in 2010, the Act left it to the condominium owners to decide whether or not they wanted to establish an Association. As a result, only a few Associations have been created so far. In addition, the poor financial situation of many families living in multi-apartment buildings is preventing

these families from taking any kind of loans; a situation that could have been mitigated by an EE subsidy scheme for low-income households but such a scheme has never been introduced.

Positive factors during project implementation:

That BEEF could survive as a viable financial mechanism in these adverse circumstances is a tribute to the built-in flexibility of the initial project design and to the quality of BEEF's contracted Fund Manager (FM) who managed to adjust BEEF's interventions to the market conditions, whilst testing the market's acceptance of various new finance products along the way. Close Bank supervision also played an important role in helping identify and tackle key strategic issues and ensured ownership and coordination with Government counterparts, especially during the early implementation of the project. In addition, the increase in energy prices from 2004 to 2008 reduced the payback periods on EE investments and ensured that public interest in EE savings was strengthened. Positive factors supporting project implementation include:

Efficient Governance:

- The inclusion of a *person on BEEF's Board with a strong background in finance* helped to introduce and apply professional risk evaluation methods (to be used in determining interest rates according to project risks) and risk management measures.
- The *fund raising campaigns*, launched in 2005 and 2007, managed to secure BGN 400,000 (US\$270,000) from private donors such as a private Bank, an energy company (Lukoil), and Enemona JSC, which is one of the largest ESCOs in Bulgaria and joined the donors assembly of BEEF.

Correct and early identification of changing market conditions and risks:

- Already in late 2006 the FM drew the *correct conclusion that insufficient demand existed for the US\$4.5 million fund allocation for PCGs* and that leaving about US\$1-1.5 million in the Guarantee account would be enough to maintain its PCG business. BEEF managed in the following years to sell a limited number of project PCGs and a greater number of portfolio guarantees. Yet, it had to lower its PCG-fees to the non-commercial rate of 0.1% to find takers, and even then, it would only succeed after some hard selling efforts. In some cases project developers backed off from guarantee deals after the requests had been processed and instead received loans from banks that would accept their project without a guarantee. Overall, the market indicated that banks rarely require PCGs for small projects; the BGN 800,000 limit thus made PCGs unattractive for commercial banks.
- *Already in 2007 the FM also correctly identified the obstacles in concluding deals with commercial banks for co-financing.* Banks are not interested in BEEF co-financing of small projects as the transaction costs become too high relative to the loan amount. The co-financing of large projects, on the other hand, is beyond the scope of BEEF.

Flexible adjustment of means and instruments to reality:

- FM offered *credit products with attractive financing conditions for the initial BEEF projects* in order to develop a sustainable project pipeline in the early years of the Fund. As an initial approach, this was the most efficient way to provide an attractive set of services.
- BEEF found a niche market: *financing EE projects for public buildings* owned either by local authorities (administration buildings, schools, etc.) hospitals or universities, and street lightning. To reduce the administrative burden on municipalities when financing EE projects, the FM asked the Ministry of Economy to initiate changes in the Energy Efficiency Act. Adopted in June 2007, the revised Energy Efficiency Act stipulates that local authorities are not obliged to carry out procurement procedures when seeking financing for EE projects; they can directly negotiate with BEEF.

- Despite EBRD's ESCO loan, BEEF *maintained Enemona as a customer* by providing loans for the implementation of ESCO projects and portfolio guarantees to a pool of 29 ESCO contracts that were loan-financed by a commercial bank with which BEEF had a collaboration agreement.

Development and introduction of innovative finance products:

- Through its information campaign and media initiatives, BEEF promoted ESCO contracting as a means of effectively implementing and managing EE investments. *Three ESCOs entered the market with BEEF's technical assistance and financing.* BEEF's ESCO portfolio guarantee scheme provides an ESCO with a guarantee against defaults and a liquidity guarantee to cover disruptions in the flow of receivables: BEEF guarantees that it will cover up to 5% of defaults and delayed payments under the portfolio. In theory, this provides a 20:1 leveraging ratio.
- In 2006 BEEF introduced two other innovative guarantee schemes, which have not yet generated any interest among investors: (i) a *Residential Portfolio Guarantee* scheme covers the first 5% of defaults on individual end-user loans used to finance a joint EE project for a *building block (or portfolio of blocks)* and (ii) a standardized financing product with the International Asset Bank for EE, "*Energy Asset*" under which a PCG from BEEF covers up to 80% of the principal of a credit (maximum BGN 800,000).

Close and effective supervision from the Bank:

- The Bank has been proactive in identifying key issues that needed to be tackled during implementation. The early identification of these obstacles helped to orient BEEF's strategic choices and allowed for their successful resolution in a timely manner. For instance, the Bank's intervention helped to quickly resolve the poor communication between the first Executive Director (ED) of BEEF and the Management Board (MB), thus enhancing prospects for project success. Overall, the Bank's oversight and intervention during project implementation was appropriate, well-coordinated, and satisfactory to all stakeholders.
- The Bank also played a catalytic role in ensuring that the Government's strong ownership translated into tangible actions. The establishment of BEEF as an integral part of the national /policy framework for Energy Efficiency and the Government's early financial contribution through the budget to cover the initial set up costs for BEEF were a clear measure of the effective working relationships and strong GoB ownership.

2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

M&E design. Step-by-step monitoring, verification and evaluation were critical in this project, and were to be conducted by BEEF. The format, contents and frequency of implementation progress reports were agreed upon and were included in the Project Implementation Plan (PIP). They formed an integral part of the project financial and management reports (FMR). Detailed, quantified output and outcome indicators were defined in the PAD against which project progress could be monitored. Since market transformation was the end goal of the project, with the individual BEEF-financed projects being instruments towards this, the outcome indicators included outcomes: number of FIs involved in EE-finance; number of ESCOs operating on the market; that only to a limited extent could be attributed to the specific efforts of BEEF. The others—EE investments leveraged by BEEF, energy savings, CO₂-emission reductions, self-financing ratio of BEEF—were concrete and could be used to measure BEEF performance.

M&E implementation. BEEF regularly collected data according to both the technical and financial indicators of supported projects, reported in a detailed manner on individual project costs, EE-measures, energy savings by fuel and estimated CO₂-emission reductions. These data were closely

monitored and the actual figures were compared with the target values. The Bank also conducted bi-annual project monitoring missions.

M&E utilization. The data collected were evaluated and used to inform decision-making. For example, the verification of the financial savings achieved from a typical package of EE investments enabled the loan taker to cover the amortization payments of the loan. This data was then used to determine the loan tenor to be offered on a standard basis by BEEF. While individual measures within an investment package could have pay-back periods longer than the tenor of the loan, the pay-back period for the package as a whole could not be longer than the loan tenor. Evaluation also led to the reallocation of funds from the guarantee account to the loan account.

The formula for calculating the self-financing ratio of BEEF – current revenue divided by current operating costs - is somewhat misleading because it does not take into account the impact of inflation on the real value of the equity capital base of BEEF. A more correct formula to apply if the purpose is to measure the sustainability of BEEF as an operating entity, is to make an annual inflation adjustment to the capital base to keep it constant in real value, and to add the cost of that inflation adjustment to the operating costs.

2.4 Safeguard and Fiduciary Compliance

Financial management. The financial arrangements for the project were:

- BEEF financed only up to 75% of the cost of an investment project; the remaining cost had to be provided by the project sponsor. By June 2010, BEEF had awarded 81 loans, with another four to five loans in the process of final approval. Monthly repayments under the sub-loan agreements began in 2006. A number of payment delays, but no defaults, have been recorded so far.
- BEEF has entered into 31 guarantee deals, amounting to BGN 3.04 million. BEEF has a maximum limit of BGN 800,000 for its first loss portfolio guarantee product, which covers the first 5% of losses on a loan portfolio. Very few payment requests were triggered from guaranteed projects, and most of these led to later payments by borrowers to BEEF. Thus they concerned a delay in payments, not loan defaults.

The GEF grant financial management covenants have been consistently complied with by BEEF. All annual audit reports have been submitted on time, with clean audit opinions and have been acceptable to the Bank. The final audit report covering the first half of 2010 (the project closed on March 31, 2010 and the disbursement grace period expired at the end of June 2010) was submitted on time, with a clean opinion and has been accepted by the Bank. All semi-annual un-audited Interim Financial Reports (IFRs), including those for the first half of 2010, have been submitted on time by BEEF, reviewed and accepted by the Bank.

Procurement. There were no serious procurement issues during implementation. The ISRs throughout the project implementation gave a rating of *satisfactory*.

Environmental safeguards. The EA category for this project was FI (Financial Intermediary). Compliance with the Bank's EA requirements was greatly facilitated by the capacity already built in-country to comply with the EU Directives. Nonetheless, the Bank required an Operations Manual (OM) for BEEF to meet the Bank's standard requirements for FI projects, including a detailed Environmental Chapter defining the process of compliance with the Bank's standards. The OM also ensured adherence to all local ordinances in the design and construction of client projects. The strong technical know-how of BEEF staff and the excellent reporting systems of BEEF ensured compliance; the staff team included an environmental specialist. There were no significant deviations or waivers

from the Bank's safeguards. Compliance with the Environmental Assessment policy was considered *satisfactory* throughout implementation.

2.5 Post-completion Operation/Next Phase

The World Bank consistently advocated for a significant increase in the funds for BEEF in order to allow it to continue and scale up its level of operations—and BEEF's business plan for 2010-onwards identifies a range of options for this. The FM's fund identification efforts have so far led to the negotiation of €40 million in financial support from the Government and EBRD, with negotiations expected to be finalized by the end of 2010. The support program would include a €15 million contribution by the Government from KIDSF to provide start-up and capacity building support to participating local authorities; and a €20 million loan from EBRD to BEEF to finance among others, municipal entities providing energy saving services to their cities; or finance to ESCOs by providing long term funds based on the receivables due under Energy Performance Contracts (EPC). The proposed financing program has two important implications for BEEF's sustainability:

- It will expand its scale of operations, which has obvious consequences for its medium- term institutional and financial sustainability.
- The “purchasing of receivables” function will correspond well to BEEF's position as a single fund without retail outlets. To be efficient, retail lending requires retail outlets.

In addition to supporting this new market segment, BEEF will also continue its traditional lending activities. These activities would be funded by current loan repayments, thus demonstrating BEEF's relevance in the EE market and the achievement of its self-financing target.

The MoEE envisages changes in the governance structure for BEEF that will further enhance its long-term sustainability. It intends to move away from the contracted FM-concept and instead employ staff under BEEF, where the Director as well as staff are paid a base salary plus a performance-based bonus.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

The project objectives were clear, relevant, and important to Bulgaria's economic development. They were appropriate to the needs of the country's energy sector. GHG emission reduction through energy efficiency remains a very relevant objective for Bulgaria, which still in 2010 has a large untapped energy savings potential. The project was, and remains, consistent with the Bank's assistance strategy for Bulgaria.

BEEF's role and functions in promoting increased commercial bank finance for investments in EE varied during implementation from those originally foreseen when the project was designed:

- The *co-financing function* became irrelevant in a large and relatively mature EE market, which developed faster than initially foreseen. The size of EE loans is too small to allow banks to pursue consortium financing as a means to spread risk. Good EE audit expertise is available on the open market for services, and some EBRD projects even provide it free of charge to clients; this reduces the attractiveness of having a finance partner like BEEF who has the technical EE expertise that commercial banks lack.
- There does not seem to be a substantial market demand for the *PCG-provider function* either. The public sector clients making up the bulk of ESCO customers proved actually to be of low risk. Individual homeowners investing in EE provide strong collateral through ownership of

their home. The financial sector dedicated to EE projects in Bulgaria is relatively unaffected by the present world financial crisis; thus there is no need for PCGs to un-clog frozen finance arteries.

What remains are *three useful functions*:

- *Finance provider of last resort to credit-worthy developers*, offering a commercially viable project which banks are unwilling or too slow to finance. Some borrowers of EE loans from BEEF had been frustrated in their attempts to get a loan from commercial banks for an investment. As the repayment record on BEEF's loan portfolio shows, these were creditworthy borrowers. Thus, BEEF has a direct finance role to play in some market niches such as public buildings. In addition, the fact that BEEF can get borrowers to accept loans for EE that are not accompanied by investment subsidies demonstrates to the Government that grants may be used more effectively for other purposes.
- *Financing ESCOs by purchasing receivables from performance contracts*. BEEF has the perfect combination of technical and finance expertise for this task.
- *EE-finance advocacy function*. ESCOs successfully market their services to public and private clients. It is reasonable to assume that the active involvement of an honest broker like BEEF in energy finance seminars reinforces the trustworthiness of ESCO marketing campaigns. Government policy makers can draw on BEEF's unique and unbiased expertise in knowing the issues involved in EE finance inside out.

3.2 Achievement of Global Environmental Objectives

At the end of the project in June 2010:

- BEEF had awarded 81 loans. The total loan volume by BEEF was US\$16 million and the total leveraged investment by BEEF's loans was US\$24 million. BEEF has calculated the lifetime energy savings at 0.09 Mtoe, and the GHG-savings at 0.9 MtCO_{2e}.
- BEEF had entered 31 guarantee deals covering US\$ 2 million. The total leveraged investment reached US\$16 million. BEEF has calculated the resulting lifetime energy savings at 0.04 Mtoe, and the GHG-savings at 0.2 MtCO_{2e}.

The financial self-sufficiency ratio of BEEF defined as “annual income *from project operations* in the form of fees and payments of interest from borrowers / BEEF annual operating costs” was 133% in 2009. The table below shows the project's achievement with regard to the key performance indicators mentioned in the main text of the PAD.

Key performance Indicators	Target Value 06/30/2010	Actual	Achievement in %	Comment
Outcome Indicator 1: Emergence of a competitive and sustainable national EE market				
(a) No. of ESCOs:	40	39	98%	Target achieved
(b) No. of FIs in EE:	10	13	100%	Target achieved
(c) BEEF leveraging EE investments (US\$m)	48	39	81%	Modest shortfall due to lower than foreseen share of PCG in the portfolio which have higher leverage than loans.
(d) energy savings over life of EE investments (mtoe)	1.03	0.13	13%	The lower value is due to (i) the lower leverage, (ii) cost increase of EE equipment and services at a rate significantly above inflation, (iii) deterioration of the US\$/BGN exchange rate; (iv) the appraisal assumed an indicative portfolio composed mainly of industrial projects with an average simple payback time of 3 years—BEEF's cumulative project portfolio in June 2010 was composed mainly of small buildings and street lighting projects, which had an average pay-back period of 5 years; and (v) labor and materials costs increased by almost 60% between 2004 and 2009, which increased the investment costs.
(e) GHG reduction over life of EE investments (mtCO ₂ equiv.)	3.6	1.1	30%	The shortfall in CO ₂ reduction is due to the lower total energy savings and a higher share of electricity savings out of the total savings. Whereas energy savings in the forecasted "industrial project portfolio" were mainly from natural gas, diesel and coal; the share of actual savings from electricity is about 25% of total energy savings. Energy savings are calculated at end user level, emission savings are calculated with correction coefficient for transmission, losses and distribution.
Outcome Indicator 2: Financial sustainability of BEEF (level of self-financing)				
Self financing from interest and fees	100%	133%	100%	Target achieved
Results Indicators for Each Component				
Component 1: PCG: cumulative project portfolio (US\$m)	31	16	52%	Target not achieved, but was only indicative in PAD
Component 2: Loans: cumulative project portfolio (US\$m)	17	24	100%	Target achieved
Component 3: TA: Proactive development of EE proposals US\$m	45	50	100%	Target achieved. Project also provided TA supporting the creation of 3 ESCOs

3.3 Efficiency

Rating: Satisfactory

The costs involved in EE investments have been reasonable given the market's development, but were higher than originally estimated during the design phase. Compared to the expected "industrial" project pipeline, BEEF-supported projects were predominantly in the public buildings sector, including thermal refurbishment of schools, kindergartens, hospitals, and universities. Another factor affecting the financial profitability of EE investments was the significant increase in construction costs during the implementation phase. Between 2004 and 2009, the construction cost index in Bulgaria rose from 92 to 141, or by 53%, thus meaning that energy savings for the invested US dollars would be lower. As a result, the average payback time of BEEF's portfolio was between four to five years, in comparison to the three years forecasted in the PAD. Also, the economic rate of return was 10% lower, but remained at very profitable levels. In addition, the projects yielded additional benefits that lower the *economic pay-back rate* even further: many projects were retrofitting projects yielding important additional benefits in terms of user comfort/amenities and visual improvements (see beneficiary survey below).

Type of projects and financial characteristics	Assumption in the PAD	Achieved
Share of EE projects in industrial systems and process in the portfolio (% of total investments)	53%	31%
Share of EE projects in public buildings in the portfolio (% of total investments)	28%	69%
Average simple payback time (1)	2.9	4.7
Average Economic Rate of Return	33%	23%
Energy savings (Mtoe over the average project's life of 20 years)	1.03	0.13
GHG emission reduction (Mt CO2 equivalent)	3.6	1.1

- (1) Equal to economic internal rate of return not including value of positive externalities such as consumer benefits from amenities and local and global environmental benefits

The analysis of BEEF financial performance includes the five years of implementation during which the GEF funds (US\$ 9.65 million) were disbursed. During this period, GEF resources mobilized total co-financing of US\$28 million, bringing the total available financing to US\$ 39 million (excluding the TA component), which yields a leverage ratio of 4.0 compared to 4.8 forecasted in the PAD. The associated abatement cost per ton of CO2 works out to as low as US\$8.4, assuming the full amount of the GEF grant as a proxy for the incremental cost.

The Net Asset Value (NAV) model which was used in the PAD as a proxy measure of BEEF profitability was calculated for the ICR based on the financial characteristics of the Fund's portfolio during implementation. BEEF increased the value of its assets since income fees and the interest earned were higher than the cost of the Fund's administration and project defaults (close to zero). The cost of fund administration of US\$1.1 million amounts to a very reasonable 11% of the total cost of GEF's contribution of US\$10 million. The NAV of BEEF increased from US\$10.5 million to US\$12 million in 2010. However, the leveraging impact of BEEF funds can be better evaluated over a 15-year period (the project design life) which includes the reflows from its lending and guarantee operations. With the repeated revolution of the funds, and assuming BEEF is able to maintain its current default rate, the project's NAV is expected to reach about US\$ 19 million (see details in Annex 3).

3.4 Justification of Overall Outcome Rating

GEO rating: Satisfactory

The GEO rating of Satisfactory is based on the following:

- The project has been successful in supporting an ***increase in EE investments*** in Bulgaria by supporting the development and implementation of financially viable EE projects, which provide sustainable reductions of GHG emissions without relying on public subsidy. BEEF has achieved a market transformation through the demonstration of commercial viability of EE investments on a large scale.
- The project contributed to financing a total of ***112 projects***, with a total investment of US\$ 39 million, or 80% of the initial target. The success in leveraging these investments results from BEEF's capability of making appropriate financial products available to the market, such as credit lines, that effectively addressed credit risk barriers in the most difficult market segments for EE investments in Bulgaria. As noted above, BEEF became a finance provider of last resort for credit-worthy developers—such as local municipal governments and other public institutions—for which commercial banks were unwilling or too slow to finance. Without the intervention of the project, it is likely that little progress would have been made in EE financing for public sector developers. In fact, in a consumer satisfaction survey, 43% of respondents indicated that BEEF helped them in taking the final investment decision to implement the EE project. Most notably, all BEEF investments were financed in commercial terms, whereas most of the other 'commercial' EE investments in Bulgaria relied on some kind of public subsidy. BEEF's investments resulted in sustainable reductions of energy consumption. That BEEF-supported EE investments led to lower energy savings than expected in the PAD (by 87%) ***is not an indication of serious project under-performance***. Rather, it is evidence of the well-known difficulty of predicting dramatic changes in market conditions. The fact that the costs of EE materials and services beyond the rate of inflation was one causal factor for under-performance, that BEEF focused on less profitable market segments, another. Boosted by EU accession the labor and material costs in construction increased by 56% between 2004 and 2009, meaning that energy savings for the US dollar invested would be lower compared to the PAD forecast. In addition, lower hanging fruits of EE investments in industry went to commercial bank finance as industries asked their regular bank partners for finance; others went to banks collaborating with EBRD who could offer investment grants. This led BEEF to provide EE financing for the public sector, where projects usually are less profitable with higher payback times. Yet, increasing the EE of public buildings is a necessary task if global climate targets are to be achieved. That one donor takes care of the lower hanging fruits and another donor of the higher, does not make the contribution of the latter less important for global environmental objectives. One can argue that donor-supported projects should focus on developing the more difficult markets, since the easier ones are likely to be developed by the market in any case. Finally, the weak demand for PCG also translated into a lower leverage of BEEF's resources.
- The realized ***GHG emissions savings reached 30% of the target***. Despite lower energy savings, GHG emission reductions are proportionally higher than initially forecasted in the PAD. The realized share of electricity in saved energy consumption was higher than estimated in the year 2004 model calculations. For the calculation of energy savings, the final energy content is used; whereas the calculated CO₂-emission reduction is based on the gross energy content. Therefore, the target achievement for CO₂-reduction is better than for energy savings.
- The ***successful increase in the number of ESCOs*** from 14 to 39 (95% of the target) and of banks extending loans to EE projects from two to 13 (130% of the target) can only to a limited extent be ascribed to BEEF. Other factors played an important role, including (i) the take-over of Bulgarian banks by foreign banks eager to expand operations in Bulgaria, (ii) the

increase in international fuel prices and domestic energy prices; and (iii) the availability of grant-supported EBRD loan finance.

- Unlike similar EE funds elsewhere in the region BEEF has been successful as a financing mechanism and has ***achieved its self-financing target*** despite a dramatic change in market conditions. BEEF would be able to continue its operations—although at lower activity levels, thus demonstrating the project’s sustainability. In addition, EBRD’s interest in making use of BEEF as a vehicle to provide finance to ESCOs is proof of the project’s initial good performance and relevance to further expand investments in the EE market in Bulgaria.
- Some finance instruments developed by BEEF have remained unexploited due to lack of Government regulations and social support schemes (e.g., the residential housing guarantee scheme). Once the Government introduces reforms, the instruments can yield GEO-benefits whether offered by BEEF or by another institution.

The last Implementation Status and Results Report (ISR) from March 2010 rated the project as *Moderately Satisfactory* on its GEO indicators. Since then the following changed circumstances have informed the decision on an upgrading to *Satisfactory*: (i) MEET has adopted the proposed Plan for Sustainable Future Operation of BEEF, (ii) the FM has been given a legal basis to continue operating the fund for as long as it takes for the BEEF Board to implement a new FM structure, (iii) the EBRD has started preparing for an active involvement in BEEF, including the provision of equity and/or debt thus addressing the recapitalization issue, (iv) there is very advanced negotiations with KIDSF on a grant support to complement the aforementioned EBRD financial contribution—a total of EUR30 million is being discussed, and (v) detailed analysis of the project’s outcome indicators has shown that lifetime CO₂ emission reductions will be at a level of 1.1 mtCO₂ equivalent, which is roughly three times higher than what was assumed in March. As a result, the concerns about the sustainability of the project raised in the latest ISR have been largely dispelled.

The project has therefore ***largely achieved its GEO*** as expressed through the two main outcome indicators included in the Results Framework, i.e. (1) emergence of a competitive and sustainable national EE market in Bulgaria and (2) financial sustainability of BEEF’s operation. In this context the lower than expected GHG reduction from the project supported investments is less significant since it does not threaten the sustainability of future EE investments given that the effectiveness of BEEF’s investments is satisfactory with an incremental abatement cost of less than US\$9 per ton CO₂.

3.5 Overarching Themes, Other Outcomes and Impacts

(a) Poverty Impacts, Gender Aspects, and Social Development

The energy cost reductions have a direct impact on the affordability of energy services for end-users. According to the survey, BEEF clients reported significant decreases in their energy bills and were able to direct scarce financial resources to other pressing needs. The support to the retrofitting of schools, kindergartens, and hospitals also provided social benefits on top of the energy-cost reduction benefits. These social benefits include improved working conditions such as comfortable indoor temperatures during the winter season. In addition, the demonstration effect of EE projects has resulted in increased awareness about EE measures by final beneficiaries, including an increased social acceptance of what was referred to as a ‘green behavior’ in the beneficiary survey carried out for the purpose of this Completion Report. For instance, about 74% of people interviewed indicated that their behavior had changed and that they are actively pursuing EE measures in their personal lives.

(b) Institutional Change/Strengthening

EE market participants have benefited from the project's demonstration effect. One of the main institutional strengthening results came from the creation of ESCOs that have been supported by the TA funds from BEEF, thus contributing to the development of an efficient ESCO-industry, which due to strong competition between the firms is an efficient service provider. BEEF has also contributed to build and disseminate know-how on EE investments in Bulgaria. Through its web-site and active participation in seminars, and other events, BEEF has increased awareness of EE.

(c) Other Unintended Outcomes and Impacts

None; except that energy efficiency measures such as insulation of the exterior walls and replacement of windows are typically done as part of an overall refurbishment, produced a dramatic aesthetic improvement and rehabilitation of working space and improvement of the overall building functionality according to the project's beneficiaries.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

A final beneficiary satisfaction survey was commissioned by the Bank after the project closure to help assess the impact of EE projects financed by BEEF in terms of (i) end-user satisfaction measured through improvement in indoor air quality, indoor temperature and lighting, and improvement in indoor comfort; (ii) increased awareness of EE; and (iii) increased affordability of energy services.

The findings of the survey indicate a high level of consumer satisfaction both with BEEF's performance during project preparation and implementation, as well as with the outcomes of the project. As a result, the beneficiaries stated that it is very likely that they would recommend BEEF as a partner to their colleagues (95.2%) and that if they were to finance another EE project, they would work with BEEF again (95.2%). Moreover, for most of the Fund's partners, close contact with competent and knowledgeable staff was a crucial factor in the process of making the investment decision.

Satisfaction with BEEF as financing partner

(Answers are rated using a scale from 1 to 5, where 1 means "I am dissatisfied" and 5 means "I am completely satisfied")

	Average
1. Available information on BEEF in the public space	4.33
2. Easy contact with a representative/expert in BEEF	4.76
3. Effective first contact with a BEEF representative/expert	4.81
4. Level of knowledge on the subject of the BEEF employees	4.75
5. Explanation of the procedure for application for funding	4.76
6. Explanation of the terms for funding	4.71
7. Professionalism of the BEEF team	4.86
8. Speed of application process	4.76
9. Speed of approving application	4.57
10. Cost of finance (interest rate)	4.24
11. Communication during and after implementation	4.86

Satisfaction with the energy efficiency project:

	Average
1. Project execution	4.71
2. Comfort resulting from the project (better lighting, better temperature etc.)	4.95
3. Realized savings (less overheads)	4.71
4. Appearance of the building	4.89
5. Final impact of the project execution	4.86

4. Assessment of Risk to Development Outcome

Rating: Low or Negligible

The energy savings from the rather straightforward refurbishment measures and boiler improvements are certain to continue during their economic and technical lifetime. The continuation of BEEF's involvement in EE-finance is also certain, partly due to the revenue generated from repayments on loans. The Fund's sustainability would be enhanced if its upcoming engagement with EBRD materializes. Thus, further energy efficiency improvements and GHG emission reductions will be achieved, making the achievement of the project's development objective all the more certain. More broadly, BEEF's sustainability is ensured by the Government's support to its continuation as witnessed by the latest revision of the Energy Savings Act (2008), which recognizes BEEF as an important tool to meet its GHG commitments. More recently the Government has demonstrated its commitment to the continuation of the Fund's activities by ensuring that the staff at BEEF will continue to work under a new FM-contract.

The risks to sustaining the operation of BEEF are related with its upcoming engagement with EBRD. Without this engagement, BEEF would need to scale down significantly its annual lending, from about US\$4 million to about US\$2.3 million.

5. Assessment of Bank and Recipient Performance**5.1 Bank****(a) Bank Performance in Ensuring Quality at Entry**

Rating: Highly Satisfactory

The ICR team rates the Bank's performance in the identification, preparation, and appraisal of the project as highly satisfactory. The Bank took into account the adequacy of project design and all major relevant aspects, such as technical, environmental, financial, economic, and institutional, including procurement and financial management. A number of alternatives were considered for the project design and the Bank made maximum use of transfer of experience from similar projects in other Eastern European countries.

The project belongs to the category of highly innovative projects. As in all innovative projects, there are risks that some innovations fail; that was also the case for BEEF. That the vision of the future was flawed can be ascribed to the uncertainty of forecasting the future and not to flaws in the logical thinking leading to the development of the concepts. The PAD adequately underlined the need for flexibility during implementation with regard to product pricing and with regard to choice of instruments.

(b) Quality of Supervision

Rating: Satisfactory

The Bank's performance during the implementation of the project was *satisfactory*.

Positive aspects:

- The Bank allocated sufficient budget and staff resources, and the project was adequately supervised. The task team paid semi-annual visits to the project and prepared Aide-Memoires and letters to alert the Ministry about issues found during project execution, in particular the need to identify additional sources of funding to strengthen the capital base of BEEF.
- In October 2006 the Seventh Quality of Supervision Assessment (QSA7) rated the supervision of the project as highly satisfactory. The panel considered that the team's proactive supervision during the early implementation phase was key not only to implementation but to achieving the project objectives. Bank intervention allowed a quick resolution of the poor communication between the first Executive Director (ED) of BEEF and the Management Board (MB). The quick intervention of the Bank was appropriate, well-coordinated, and satisfactory to all stakeholders. It resulted in the replacement of the first ED with a more proactive ED who enjoyed the respect and trust of the MB. The project's Highly Satisfactory rating was repeated during the October 2008 Quality Assessment of the Lending Portfolio (QALP) review, in which the panel noted that "the Task Team has been extremely proactive, comprises staff knowledgeable about the requirements of the project and conversant with the mistakes made in similar projects, and has had strong support from the Management".
- The Bank provided guidance and oversight in the preparation of the operational manual for BEEF, the final version of which was completed in 2007, and in the development of the annual as well as the post-project business plan by the FM of BEEF. The Bank's procurement and financial management staff worked closely with the FM's staff to explain the rules and procedures to be applied during project implementation, with regard to procurement of goods and works, and selection of consultants, as well as audit requirements, based on the grant agreement. The financial management aspects of BEEF were carefully reviewed, and specific recommendations to strengthen the financial management system were made. Shortcomings in accounting software were quickly identified and resolved successfully.
- An environmental specialist conducted a mission to monitor the quality of the procedures for environmental compliance in the manual.
- The Bank continued to assist the FM with the development and introduction of new finance products, such as the ESCO portfolio guarantee scheme and the guarantee scheme for multi-apartment buildings
- The Implementation Status Reports (ISRs) realistically rated the performance of the project both in terms of achievement of development objectives and project implementation.

Negative aspects:

- The Bank was somewhat slow in adjusting the project philosophy to the realities of the market. Already in 2006 the FM drew attention to the limited demand for guarantees and recommended to reduce the amount in the guarantee account to US\$1.5-2 million. The Bank Aide-Memoire of September 2007 noted that "The Partial Credit Guarantee (PCG) has not yet been utilized". Yet, only in November 2008 was agreement reached to transfer US\$2 million from the GA to the LA.

- The project would have benefited from updating the Results Framework at the mid-term review to better reflect the reduction in estimated savings.

(c) Justification of Rating for Overall Bank Performance

Rating: Satisfactory

Based on the highly satisfactory rating during the preparation phases and the satisfactory rating during implementation the overall rating is Satisfactory.

5.2 Recipient

(a) Government Performance

Rating: Moderately Satisfactory

Positive aspects:

- The Government demonstrated its strong commitment at the project's outset by (i) including the promotion of EE activities as an integral part of the national legal/policy framework; (ii) contributing very early, significant budget funds for setting up the BEEF; and (iii) appointing to the MB of BEEF, highly qualified and dedicated officials, who were proactive in supporting the objectives of the project and providing guidance on technical aspects of finance, but left the management of the fund to an executive director.
- Hiring of a well qualified FM team, comprising Bulgarian locals, with strong financial/banking and project development skills, and insistence on having a strong executive director (ED), which required changing the first appointment.
- Two provisions in the new Energy Efficiency Act, adopted by the Parliament in October 2008: (i) According to the Act, energy intensive industries and companies are obliged to implement energy efficiency investments. In case these companies are unable to meet the set energy efficiency targets, they are required to pay a penalty which will flow to BEEF to support energy efficiency projects. This may facilitate additional capitalization of BEEF, and (ii) Municipalities can enter into direct loan negotiations with BEEF without having to conduct a formal financing tender first.
- MEET shows interest in the continued operation of BEEF and supports involvement from EBRD/KIDSF, which will be critical for a scaling up of operations.

Negative aspects:

- Whereas in the beginning, the GoB was proactive and directly involved in providing finance to BEEF's start-up capital, its involvement was reduced gradually so that by the end of the project there was a lack of ownership. The Ministry did not assist BEEF in its efforts to increase its capital base, despite all Bank supervision Aide-Memoires recommending that it pay attention to the need for additional finance. It did not support BEEF either in the effort to get access to grant finance from KIDSF, or to equity finance contributions from energy distribution companies with EE-promotion obligations.
- The Ministry could have done more to actively assist BEEF in getting involved in the co-financing of EE-projects with EU cohesion and structural funds

(b) Implementing Agency or Agencies Performance

Rating: Satisfactory

The performance of the BEEF-FM was *satisfactory*. The above sections have drawn attention to the strong performance of the FM in financial management, in introducing new finance products and in finding market niches in a market context that turned out to be different from what was expected at

the time of project approval. Also in marketing, BEEF tested more than the conventional “regional awareness seminar approaches”: Since BEEF faced difficulties in penetrating the corporate market, it hired in October 2006 a professional marketing firm, specialized in industrial entities, to enhance its market research and outreach efforts. The firm was to approach businesses operating in various regions of Bulgaria to gauge the level of interest in EE projects and facilitate deals of interested businesses with BEEF; and be rewarded for each deal with a bonus. As result of the efforts, the number of corporate projects increased.

(c) Justification of Rating for Overall Recipient Performance

Rating: Satisfactory

Whereas the Ministry’s ownership was evident at the project’s outset, its active support decreased over time and it was late in taking action to secure re-capitalization for BEEF. However, the ongoing EBRD/KIDSF negotiations will likely lead to a significant increase in BEEF’s financial resources and facilitate a scale-up of BEEF activities. This fact and the satisfactory performance of the FM throughout the implementation period lead to an overall Recipient performance rating of Satisfactory.

6. Lessons Learned

Lesson 1: Before introducing a new instrument on the market, carefully determine the basic assumptions for why and under which circumstances the instrument is intended to work and then make a careful reality check in the form of a market survey. Often, a new approach tested successfully in one country has less successful outcomes when introduced in another country. During implementation check whether a new instrument performs as expected and covers a perceived need.

Lesson 2: Innovative projects are particularly vulnerable to developments in the external environment that are different from what was expected at appraisal. A mid-term review should carefully analyze whether the original project philosophy still holds. BEEF was foreseen to co-finance with commercial banks. As such it did not succeed. Yet, it found a niche for itself on the market providing loans to EE-projects and actively supporting the preparation of EE-projects. Nevertheless, the question was never asked what kind of instrument BEEF is in 2010 and what its most useful strategic role is in the present and future Bulgarian context.

Lesson 3: BEEF’s loan activities were expected to be provided primarily in the form of co-finance with commercial banks. Co-finance for commercial banks is attractive as a risk diversification instrument only in the case of very large projects, where a bank does not want to become over-exposed to a client. EE finance projects are relatively small sized projects – BEEF’s loans are typically in the range of US\$250,000 to US\$500,000. A commercial bank is not interested in dividing such small loans between two co-financing banks as it would increase its transaction costs per loan amount.

Lesson 4: Lured by supposedly high leveraging ratios, publicly backed guarantees have become a popular choice for finance-sector engagement programs. The design of the project was based on the expectation that commercial banks in many cases would ask for a partial credit guarantee as a condition to enter into EE finance. However, how PCGs perform is extremely contextually dependent. It is well-known that PCGs can be important for loans to SMEs, to high-cost specialized buildings, to critical infrastructure projects and to capital intensive new, rather untested technologies. In deep, sophisticated financial markets, PCGs are used as fine-tuning instruments to reduce total costs of capital. Although success stories can be found, experiences with PCGs for “smaller scale” EE & RE projects have been disappointing in several emerging economies. PCGs are not well-

known nor understood, and therefore, not in much demand. This was the situation also in the Bulgarian finance community, which did not see much need for a PCG when financing EE-projects. Public sector borrowers have good repayment records; for the corporate sector seeking EE loans, loans would be provided based on their balance sheets and the banks' previous experience with loans to these parties. Leveraging ratios that are not adjusted for "free rider-effects" exaggerate the impact of PCGs on the engagement of commercial finance. The simple arithmetic that a 5% first loss guarantee triggers a 20-fold of commercial lending does not take into account that a large share of the "triggered finance" would have come forward in any case. In Bulgaria, very hard selling and non-commercial fee rates of 0.1% were needed in order to induce banks to purchase PCGs. Nor did consumers benefit from lower costs of loans covered by a guarantee.

Lesson 5: The development of the market for EE in the multi-apartment building sector depends on the creation of well-functioning condominium associations and on the introduction of "energy poverty" schemes to solve the issue of poor households living in those apartment buildings that are unable to access loans to pay for their share of the total cost of the EE investment. General portfolio PCGs for ESCO-projects cannot solve that issue.

Lesson 6: In countries, like Bulgaria, with high energy saving potential, sufficient scope exists for the financing and implementation of EE projects without investment grant support.

7. Comments on Issues Raised by Recipient/Implementing Agencies/Partners

(a) Recipient/implementing agencies

The Bank team concurs with the comments made by the Chairman of the Board of the Fund (re. Annex 6).

(b) Cofinanciers

The Bank concurs with the comments made by the EBRD (re. Annex 8). EBRD characterizes BEEF as a "highly efficient funding channel in the promotion of EE"

(c) Other partners and stakeholders

The Bank team concurs with the comments made by the Chairman of the Board of the Fund (re. Annex 8).

Annex 1. Project Costs and Financing

(a) Project Cost by Component (in US\$ Million equivalent)

Components	Appraisal Estimate (US\$ millions)	Actual/Latest Estimate (US\$ millions)	Percentage of Appraisal
Partial risk guarantee	31.12	15.46	50%
Loan financing	16.34	23.55	144 %
TA	2.05	1.11	54%
Total Baseline Cost	49.51	40.12	81%
Physical Contingencies	0.00	0.00	0.00
Price Contingencies	0.00	0.00	0.00
Total Project Costs	49.51	40.12	
Project Preparation Facility (PPF)	0.00	0.00	0.00
Front-end fee IBRD	0.00	0.00	0.00
Total Financing Required	49.51	40.12	81%

(b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (US\$ millions)	Actual/Latest Estimate (US\$ millions)	Percentage of Appraisal
Recipient		1.80	2.01	112%
Global Environment Facility (GEF)		10.00	9.65	97%
Austrian Government		5.75	1.97	39%
Private donors (Brunata Bulgaria, Lukoil, DZI Bank, Enomona)			0.27	
Leveraged co-financing (own equity by sub-projects sponsors and commercial financiers) and reflows from lending and guarantee operations		31.96	26.22	91%

Note: 1 USD = 1.49 BGN (Reference exchange rate as of 01/19/2005)

Annex 2. Outputs by Component

Component:	Investment (US\$m)	Energy savings over project's lifetime (toe)	CO2-emission reduction (tCO2)
Component 1: Partial Credit Guarantees – cumulative portfolio of BEEF projects	15.46	90,035	919,098
Component 2: Investment Financing – cumulative portfolio of BEEF projects	23.55	42,748	223,820
Component 3: Technical Assistance - Proactive development of EE-Proposals	49.8	N.A.	N.A.

Annex 3. Economic and Financial Analysis

The economic and financial performance of the project depended primarily on two factors: (i) quality of the design as a financial facility; and (ii) quality of the portfolio. Against these criteria, the financial facility has functioned relatively well during the implementation period supporting profitable investments, although realized energy savings were lower than expected.

1. EE market Assessment and initial hypothesis

The economic and financial analysis in the PAD was based on a preliminary market assessment which included an indicative portfolio of EE projects, mostly in the industrial sector. This pipeline indicated favorable financial and environmental characteristics based on high operating cost savings from EE investments.

Type of projects and financial characteristics	Assumption in the PAD	Realized
Share of EE projects in industrial systems and process in the portfolio (% of total investments)	53%	31%
Share of EE projects in public buildings in the portfolio (% of total investments)	28%	69%
Average simple payback time	2.9	4.7
Average Financial Rate of Return (1)	33%	23%
Energy savings (Mtoe over the average project's life of 20 years)	1.03	0.13
GHG emission reduction (Mt CO ₂ equivalent)	3.6	1.1

- (2) Equal to economic internal rate of return not including value of positive externalities such as consumer benefits from amenities and local and global environmental benefits

Compared to this “industrial” project pipeline, BEEF-supported projects were predominantly in the public buildings sector, including thermal refurbishment of schools, kindergartens, hospitals, and universities. While this sector represents the second largest potential for energy savings in Bulgaria¹, it is also characterized by less favorable financial conditions than the industrial sector due to the predominance of high-cost measures (with long payback times) such as replacement of windows.

Another factor affecting the financial profitability of EE investments was the significant increase in construction costs during the implementation phase. According to Eurostat², between 2004 and 2009 the construction cost index in Bulgaria rose from 92 to 141, or by 53%, thus meaning that energy savings for the invested US\$ would be lower. At the closing date of the project, energy savings reached only 0.11 million tons of oil equivalent, or 13% of the target value.

As a result, the average payback time of BEEF's portfolio was between 4-5 years, compared to 3 years as forecast in the PAD. Also, the financial rate of return was lower by 10% than initially foreseen but remained at acceptable levels.

¹ The public buildings sector accounts for the second largest share of potential energy savings (40%) after the industrial sector (46%), and residential buildings (15%).

² Eurostat Construction Cost Index for new residential buildings in Bulgaria, 2005 = 100.

Despite the low energy savings, the environmental benefits in terms of GHG reductions were proportionally higher than expected at appraisal. By 2010, the CO2 savings were of 1.1 million tons of CO2 equivalent, or 30% of the target value. This is due to the higher share of savings in electricity in total energy consumption. Whereas energy savings in the 2004 “industrial project portfolio” were mainly from natural gas, diesel, and coal, the share of savings from electricity is about 30% of total energy savings end of 2009. Energy savings are calculated by BEEF at end user level, emission savings are calculated with correction coefficient for transmission, losses and distribution; as opposed to the last ISR (ISR-9) which misrepresents the achievement of project lifetime CO2-reductions (estimated at 0.33 million tons). This results from a conservative conversion factor (which was indicative in the PAD) used to calculate CO2 savings for the projects supported by BEEF loans or PCGs.

2. BEEF’s economic and financial performance

The analysis of BEEF financial performance includes the five years of implementation during which the GEF funds (US\$ 9.65 million) were disbursed. During this period, GEF resources mobilized total co-financing of US\$28 million, bringing the total available financing to US\$ 39 million (excluding the TA component), which yields a leverage ratio of 4.0 compared to 4.8 forecasted in the PAD. The associated abatement cost per ton of CO2 works out to as low as US\$8.4, assuming the full amount of the GEF grant as a proxy for the incremental cost.

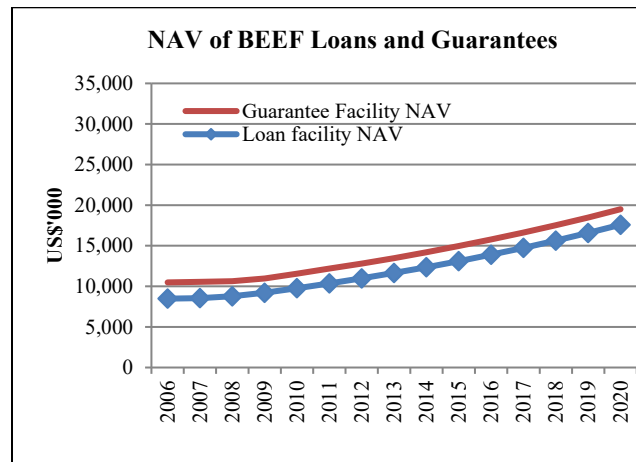
However, the economic performance of BEEF can be better measured if the analysis is made over the project’s design life of 15 years, which includes the cash reflows from its lending and guarantee operations. Between 2005 and 2015, the total financing mobilized is forecast to reach US\$19 million. An alternative approach to estimate the incremental cost based on an increased share of ESCO projects in the Fund’s portfolio in line with a €35 million capital increase by the KIDS Fund and EBRD, would yield a lower abatement cost.

Net Asset Value

The Net Asset Value (NAV) model which was used in the PAD as a proxy measure of BEEF’s profitability was calculated for the ICR based on the financial characteristics of the Fund’s portfolio during implementation:

	Loan Facility	Guarantee Facility
Interest/Guarantee Rate/Fee charged	6%	1%
Average Loan maturity	4 years	4 years
Default Rate	1%	1%

The initial asset value of BEEF in 2005 was of US\$ 10.5 million, compared to the US\$ 17.55 million estimated at the appraisal due to lower than expected contributions from other donors and market participants to the Fund's capitalization. Despite the lower initial capitalization, BEEF increased the value of its assets since income fees and the interests earned were higher than the cost of the Fund's administration and project defaults (close to zero). The NAV of BEEF over the lifetime of the project increases to about US\$ 19 million. While the NAV from the guarantee facility slightly declines due to a low deal flow and guarantee fees, the NAV of the loan facility is projected to increase (see graph below).



Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Istvan Dobozi	Lead Energy Economist	ECSIE	TaskTeam Leader
Victor Loksha	Consultant	ECSIE	Consultant
Leonid Vanian	Sr. Procurement Spec.	ECSIE	Procurement
Rossen Papazov	Sr. Financial Management Spec.	ECS03	Financial Management
Supervision/ICR			
Istvan Dobozi	Lead Energy Economist	ECSSD	TTL
Peter Johansen	Sr. Energy Specialist	ECSSD	TTL since March 2009
Doncho Petrov Barbalov	Operations Officer	ECSIE	Operations Officer
Bogdan Constantin Constantinescu	Sr Financial Management Spec.	ECSO3	Financial Management
Josephine A. Kida	Program Assistant	ECSSD	Program Asst.
Vladislav Krasikov	Senior Procurement Specialist	EAPPR	Procurement
Victor B. Loksha	Consultant	AFTEG	Consultant
Eolina Petrova Milova	Operations Officer	ECSS6	Operations Officer
Yukari Tsuchiya	Program Assistant	ECSSD	Program Asst.
Leonid Vanian	Sr Procurement Spec.	ECSOQ	Procurement
Albena Ivanova Vatrlova	Operations Officer	ECSSD	Operations Officer
Claudia Ines Vasquez Suarez	Extended Term Consultant	ECSSD	Economist

(b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks*	US\$ Thousands (including travel and consultant costs)
Lending		
FY04		98.94
FY05		87.62
Total:		186.56
Supervision/ICR		
FY05		15.64
FY06		71.02
FY07		79.66
FY08		70.68
FY09		67.02
FY10		83.85
FY11		5.90
Total:		393.77

*Note: Staff weeks are no longer supported by Bank information.

Annex 5. Beneficiary Survey

Background and Context

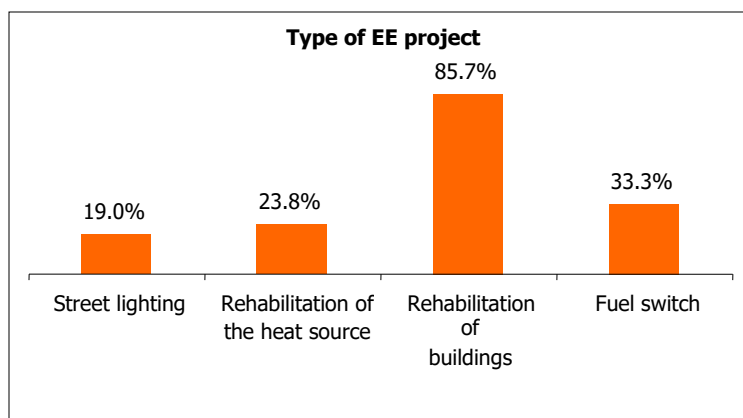
On behalf of the World Bank and BEEF, GfK Bulgaria conducted a survey among beneficiary representatives in August, 2010. The main aim of the survey was to define the satisfaction of BEEF clients with the services received as well as to understand more about the way the project had impacted their EE behaviour. By the end of year 2009 BEEF had participated in the financing of 77 energy efficiency projects.

Total Number of Projects	77
- Municipalities	33
- Corporate clients	33
- Hospitals	5
- Universities	6

The target projects were selected among the 67 out of the total of 77 projects that had at least one winter season of operational experience after the rehabilitation. The respondents that participated in the survey represent BEEF's main customer groups, i.e. municipalities and corporate clients.

Table 1. List of BEEF clients, who participated in survey

	Location	Project	BEEF Financing
1	Balchik	EE Rehabilitation of Elementary School	359,792 BGN
2	Vetovo	EE Rehabilitation of Secondary School	196,410 BGN
3	Dimovo	EE Rehabilitation of Street Lighting	150,000 BGN
4	Kjustendil	EE Rehabilitation of Hospital	562,000 BGN
5	Varna	EE Rehabilitation of Medical University	537,445 BGN
6	Strajitza	Modernization of Street Lighting	203,000 BGN
7	Buhovo	EE Rehabilitation of Bulgarian University for Distance Learning	130,000 BGN
8	Banite	EE Rehabilitation of Secondary School and Dormitory	296,276 BGN
9	Kudelin	EE Rehabilitation of Home for Dementia Sufferers	183,000 BGN
10	Pernik	EE Rehabilitation of Administrative Building	226,720 BGN
11	Harmanli	Modernization of Street Lighting	269,000 BGN
12	Dimitrovgrad	EE Rehabilitation of Elementary School	456,282 BGN
13	Kocherinovo	EE Rehabilitation of Secondary School	196,266 BGN
14	Plovdiv	EE Rehabilitation of a University Faculty Building	406,722 BGN
15	Dupnitsa	EE Rehabilitation of Kindergarden	441,947 BGN
16	Levski	EE Rehabilitation of Administrative Building and Industrial Hall	433,800 BGN
17	Slivnitsa	EE Rehabilitation of School	297,000 BGN
18	Karnobat	EE Rehabilitation of Administrative Building and Industrial Hall	438,174 BGN
19	Troian	EE Rehabilitation of Hospital	768,000 BGN
20	Dobrich	EE Rehabilitation of Dormitory	221,460 BGN
21	Ihtiman	EE Rehabilitation of Kindergarden	71,103 BGN

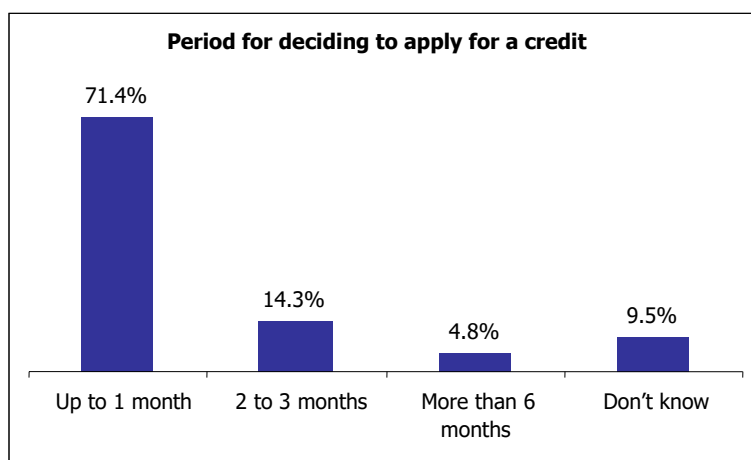


BEEF relations

BEEF has developed a corporate web site, where detailed information can be accessed by current and potential clients. Moreover, BEEF representatives continuously participate in seminars and conferences about sustainable energy and energy efficiency. The survey shows that most of BEEF's clients learned about the possibility of financing EE through the BEEF website <http://www.bgeef.com/display.aspx> (47.6%), while other learned about BEEF through professional networks (33.3%).

BEEF seems to be a good strategic partner for Bulgarian municipalities and companies. 42.9% of respondents say that BEEF helped them in taking the final decision to implement their EE project. BEEF is also providing technical information on how to design the project and helping to demonstrate that a project is financially profitable.

Most respondents state that BEEF provided sufficient information regarding the credit terms and that they were well informed about the procedure and documentation of financing. This meant a fairly short time required to decide whether to apply for a BEEF credit.



Though the approval of an application is supposed to take no more than one month, according to BEEF's own standards, half of the beneficiaries state that their approval took between 2 and 3 months.

The survey shows that the level of satisfaction with the cooperation with BEEF among beneficiaries is high and that BEEF's representatives are perceived to have provided adequate information, displayed competence and provided useful assistance in project implementation.

Satisfaction with BEEF as financing partner

(Answers are rated using a scale from 1 to 5, where 1 means "I am dissatisfied" and 5 means "I am completely satisfied")

	Average
12. Available information on BEEF in the public space	4.33
13. Easy contact with a representative/expert in BEEF	4.76
14. Effective first contact with a BEEF representative/expert	4.81
15. Level of knowledge on the subject of the BEEF employees	4.75
16. Explanation of the procedure for application for funding	4.76
17. Explanation of the terms for funding	4.71
18. Professionalism of the BEEFteam	4.86
19. Speed of application process	4.76
20. Speed of approving application	4.57
21. Cost of finance (interest rate)	4.24
22. Communication during and after implementation	4.86

Satisfaction with the energy efficiency project:

	Average
1. Project execution	4.71
2. Comfort resulting from the project (better lighting, better temperature etc.)	4.95
3. Realized savings (less overheads)	4.71
4. Appearance of the building	4.89
5. Final impact of the project execution	4.86

The implementation of the projects was mostly considered as satisfactory, meaning that the projects were brought to an end on time and did not affect the working process of beneficiaries.

Based on the positive experience and satisfaction with the implementation of their own EE project many beneficiaries became advocates of BEEF and have promoted it as a financial possibility to colleagues and partners (100%). The interviewed representatives declared that they are very likely to recommend BEEF as a financing partner (95.2%) and if they were to finance another EE project, they would use the fund again (95.2%). Moreover, for the predominant share of BEEF's beneficiaries, the contact with BEEF was crucial in the process of making the final decision to invest in the project. BEEF achieved this through frequent consultations and providing documentation and assistance with procedural issues of project implementation.

Savings, Comfort, Functionality

The survey shows that BEEF's clients all perceive that they have more affordable energy bills after the implementation of the project. Furthermore, most have stated that social comfort improved in terms of building aesthetics, better working environment and higher indoor temperatures during the winter season. The majority of respondents have stated that the building's functionality has improved.

Based on the survey data BEEF is perceived as an important partner that supports municipalities and companies aiming to improve their functionality and working processes by rehabilitation of the working place and to undertake steps to improve their energy consumption behaviour.

Conclusion and Recommendation

The survey data shows that BEEF is seen as a reliable partner and a good alternative to traditional banks for financing EE projects. However, the survey shows three areas where there is room for improvements:

1. Providing more sources of information about BEEF's existence and activities and giving more possibilities to potential clients to access detailed information;
2. Shortening of the period required for approval of funding; and
3. Increasing emphasis on improved street lighting projects.

Annex 6. Stakeholder Workshop Report and Results
N/A

Annex 7. Summary of Recipient's ICR

Comments by Mr. Lulin Radulov, Chairman of the Board of BEEF:

(i) Assessment of the operation's **objective, design, implementation, and operational experience**;

Bulgaria has the highest energy intensity in the EU and the improvement of energy efficiency is the first priority for the country. The Energy Efficiency Fund's objective is to support Bulgaria in mobilizing funds for financing efficiency programmes and measures in the field of consumption. It was designed and implemented as a public private partnership. Its operation during the last five years has been concentrated mainly on small projects related to energy efficiency of buildings. The limited assets and disinterestedness of the industry (because of the low energy prices) impeded the activities of the Fund in industry.

(ii) Assessment of the **outcome/result** of the operation against the agreed objectives;

The Fund implemented a number of projects and, to some extent, attracted the interest of other institutions (EBRD, EIB, private banks) in energy efficiency.

It should be noted, however, that the economic crisis was not the reason for the limited interest of the private Bulgarian funding institutions and companies, as during the first three years of the Fund's operation the economic development conditions were very active. Most likely, this was a result of the lack of national responsiveness of the private capital and passiveness of the Ministry of Economy and Energy.

(iii) Evaluation of the **recipient's own performance** during the preparation and implementation of the operation, with special emphasis on lessons learned that may be helpful in the future;

The Ministry of Economy and Energy was actively involved in the preparation phase. There was a room to desire larger scale support from the Ministry for ensuring more sources of funding.

The Ministry should become the active party; it must keep constant dialogue with the private sector in order to involve it into national initiatives.

(iv) Evaluation of the **performance of the World Bank** during the preparation and implementation of the operation, including the effectiveness of their relationships, with special emphasis on lessons learned

Except for the initial funding from GEF the World Bank succeeded to convince the Austrian government to contribute 1.5 MEuro to the Fund. The World Bank was providing constant help to the Management Board and the Consultants, particularly in the first phase, in order to ensure correct financial control and smooth start of the operation. The Bank also made efforts to urge the Ministry of Economy and Energy to investigate more actively the potential sources of funding for the Fund.

(v) Evaluation of the proposed arrangements for future operation of the project.

I can mention the following characteristics of the operation, which would help outlining some measures for future, more effective operation:

- o The operation of the Fund should be better balanced with regard to the types of projects: buildings, industry, transport. In the portfolio of executed and ongoing projects there are few industrial and no transport projects. This is the Consultant's responsibility. More efforts should be put to activities promoting efficiency of industrial and transport sectors.

- o The limited funding made the operation costs component (Consultants) too high and imposed greater price of the loans – similar to the loans conditions of commercial banks and, in some cases, not competitive against the EBRD money, which is using grants from the EU.
- o The portfolio can be extended by RES projects, which are characterized with high efficiency. For instance, projects for production of distributed heat, regardless of the source (solar irradiation, biomass, biogas etc), which replace electricity, are the most efficient among all possible implementations. Their energy performance indicators are very high, locations are next to the consumers, which means that there are no losses.
- o The activities of the Fund may include promotion of the deployment of RES utilization, particularly of biomass, through providing support to the private companies in establishing distribution network for pellets and energy chips.
- o The Ministry should redirect part of the received EU money to capitalization of the Fund. This will reduce the relative costs of the management and will make the Fund more competitive.
- o The Ministry should keep active dialogue with the economic subjects (it is the Ministry of Economy.)
- o Tariffs are of utmost importance, however, this problem is out of consideration, particularly in Bulgaria – the country with lowest level of energy prices in the whole EU.

Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

Comments by Asari Efiang, Principal Product Development Manager, Energy Efficiency and Climate Change, EBRD

BEEF has made a robust contribution to the Energy Efficiency market in Bulgaria since its inception in 2005. Changes in the Energy Efficiency Act adopted in June 2007, which enabled local authorities to negotiate directly with BEEF proved particularly efficient and have allowed BEEF to become a highly effective funding channel in the promotion of energy efficiency particularly in its established niche, public buildings, where there is an absence of commercial financing.

The BEEF has also acted as a major catalyst for the development of the ESCO market in Bulgaria not just through its various marketing initiatives but also its technical assistance programmes and targeted suite of products e.g. the ESCO portfolio guarantees.

The EBRD is considering a possible future involvement in the BEEF fund primarily to continue and build upon the development of the private ESCO market in Bulgaria which BEEF has been instrumental in. The idea would be to put in place additional financing instruments to incentivise private companies in the engineering and construction sectors to enter the ESCO market supported by a range of possibilities for the financing of Energy Performance (EnPC) contracts as well as the EE financing instruments (loans/ partial credit guarantees/ portfolio guarantees) currently offered by BEEF.

Annex 9. List of Supporting Documents

1. Project Appraisal document dated February 14, 2005 and the Legal Agreements
2. Plan for Future operation submitted by BEEF

MAP

