

OPERATION EVALUATION

Slovak sustainable energy finance facility I & II

Slovak Republic

September 2014

EBRD EVALUATION DEPARTMENT



European Bank
for Reconstruction and Development



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Contents

Defined terms	3
Project data	3
Executive summary	4
1. Introduction	6
1.1. The Bank's SEFF facilities	
1.2. Evaluation approach	
2. Project ratings	7
3. Relevance to the Bank's mandate	8
3.1. Rationale	
3.2. Additionality	
4. Achievement of objectives	9
4.1. Achievement of objectives	
4.2. Financial performance	
5. Project efficiency	13
5.1. Bank handling	
5.2. The Bank's investment performance	
6. Impact and sustainability	15
6.1. Expectations for transition at approval	
6.2. Transition impact as measured by the Transition Impact Monitoring System	
6.3. EvD's assessment of transition impact	
6.4. Environmental and social impacts	
7. Findings	21
7.1. The role of incentive payments	
7.2. Maximising demonstration effects	
7.3. Importance of a strong project consultant	
7.4. Importance of simple and streamlined procedures	
8. Sources	23
Annex 1: Results achieved and portfolio analysis	24
Annex 2: Management comments	31

Defined terms

additionality	The Bank complements rather than displaces private sector finance. It does not finance projects that can be funded on equivalent terms by the private sector.
the Bank	European Bank for Reconstruction and Development.
EvD	the EBRD Evaluation department
the evaluation team	Staff of the Evaluation Department and external consultant who jointly carried out the post-evaluation
the operation team	The staff in the Banking Department and other respective departments within the Bank responsible for the operation appraisal, negotiation and monitoring, including the OPA.
transition	As stated in the Basic Documents of the EBRD Article 1 "In contributing to economic progress and reconstruction, the purpose of the Bank shall be to foster the transition towards open market-oriented economies and to promote private and entrepreneurial initiative in the Central and Eastern European countries committed to and applying the principles of multiparty democracy, pluralism and market economics."
transition impact	The likely effects of a project on a client, sector or economy, which contribute to their transformation from central planning to well-functioning market-based structures
Transition Impact Monitoring System (TIMS)	Transition objectives are translated into benchmarks to be monitored during project implementation (TIMS). The score assigned to a project is based on a combination of the Transition Impact Potential and the Transition Impact Risk of the project.

Project data

Operation Name	SLOVSEFF I & II	Country	Slovak Republic
Portfolio Class	Private	Region	Central Europe & Baltic States
Type of Borrower	Participating Banks	Industry Classification	Financial Institutions
Company Ownership	Shareholders	Project Status	Active
Project Type	Framework facility	EBRD Commitment	€60,000,000 (SLOVSEFF I) €90,000,000 (SLOVSEFF II)
Operation Type	Debt	Investment Status	Active
Operation Team	Financial Institutions	Signing	2007 (SLOVSEFF I); 2009/10 (SLOVSEFF II)
OE Field Visit	Yes, 5 days	First Disbursement	2007

Executive summary

The Slovak Sustainable Energy Financing Facility (SlovSEFF or Slovak facility) was one of the first in a series of SEFF facilities implemented by the Bank over recent years to encourage energy efficiency and renewable energy projects with private industrial companies and housing associations. A major motivation underlying the project and the source of financing for the technical assistance and incentive payments was the closure of the Bohunice nuclear power plant as part of the negotiations for the accession of the Slovak Republic to the European Union.

The initial Slovak facility was approved in October 2007 and included sub-projects with four participating banks, each for an amount of €15 million, totalling €60 million. Its quick uptake resulted in a €90 million extension in December 2009, with the same four participating banks and identical amounts, leaving room for the incorporation of two more participating banks in November 2010. Integral to the project design was supplemental grant funding (€30 million) for technical assistance and a variety of subsidies.

The project experienced a strong early uptake, thanks in part to the marketing efforts of the project consultant. As of the date of this report the funds under the facility have been totally withdrawn and are almost fully utilised for the intended purposes. 688 projects have been financed in the different sectors, with the largest uptake in the housing sector (accounting for 87 per cent of projects or 61 per cent of the funds). These have resulted in estimated combined annual primary energy savings plus additional renewable energy generated amounts of 582 GWh.

EvD rates the project overall as '*successful*'. The project rationale was consistent with the Bank's country strategy and energy operations policy, and contributed to mitigate the impacts of the closure of the Bohunice nuclear plant. The additionality of the project, rated '*largely verified*', derived primarily from the provision of technical assistance and incentive payments rather than the mere provisioning of funds.

The '*good*' rating of achievement of operational objectives reflects the successful implementation of the project, despite the difficulties in measuring outputs against unclear benchmarks.

The financial performance of the five participating banks that ended up participating in the project is rated '*good*'. Positive transition impacts have been achieved, and the overall rating is '*good/satisfactory*'. EvD notes though the lack of definition of a clear framework establishing, and measuring ex-post, the casual relationship between inputs and outcomes of the project.

Demonstration effects, mainly in the housing sector, appear significant, providing evidence of the benefits of energy efficiency actions. Some skills have been transferred during implementation, although more focussed training activities might have further reinforced the impact on this front.

The sustainability of commercial energy efficiency financing without external economic incentives is however still unclear, as evidenced by the approval of a third phase of the project still including an incentive package. However the foreseen phase out of the incentive payments to participating banks and changes in the structure of incentive payments to sub-borrowers towards more environmentally related parameters signals a positive trend. The environmental impacts have been positive given the connection between energy efficiency achievement and environmental outcomes, mainly in terms of CO₂ emission reductions.

The project evaluation provides the following findings:

The role of incentive payments

Subsidies in the form of incentive payments are a key element of this facility and of many SEFF facilities. While they can play an important role in overcoming market inefficiencies or encouraging higher performance and standards, they also represent a risk of market distortions in conflict with the Bank's sound banking principle. Their design and use must therefore be carefully tailored and monitored. Their

role in SlovSEFF was emphatically not to make unprofitable projects viable, but rather to overcome barriers that prevent financially viable projects from being developed and to incentivize companies and households to prioritise such investments. It is important therefore that they are designed in a way that foresees their withdrawal over time, that the level is consistent with the barriers to be overcome and that mechanisms are included to measure the effectiveness and causal relationship between the measures put in place and the results obtained.

A recommendation is made regarding the need in projects with subsidies to define a logical framework establishing the causal relationship between the subsidies and the project's outputs and outcomes. Metrics are required to establish the desired level of incentives and to measure their impact and attribution and mechanisms to provide for their adjustment over time.

Maximising demonstration effects

SEFF facilities do not (and cannot, given their small size compared to the overall needs) aim to solve the extensive energy efficiency problems of the former planned economies. Rather, the goal is to provide evidence to the market of the viability of such investments. To maximize this demonstration effect, actions need to be taken to raise the profile and visibility of the projects rather than just relying on impacts deriving naturally from their implementation. SlovSEFF incorporated some such actions, the most significant being the establishment of annual awards with wide media coverage for the best performing projects. Other actions that might be contemplated include increasing the number and dissemination of case studies of industry projects and incentivising geographical spread of housing sector projects. Demonstration of actions intended to permanently overcome market and other barriers would be enhanced by the phasing out and ultimately final removal of such temporarily intended support.

Importance of a strong project consultant

All interviewed parties consistently praised the efforts of the project consultant. Its role in the early stages of marketing and promoting the facility, and later in the implementation (preparation of technical assessment packages – rational energy utilization plans and simplified energy audits) and monitoring have no doubt been instrumental to the success. The implementation of the project shows how critical it is to engage strong consultants with local presence and knowledge of the local market from the early stages.

Importance of simple and streamlined procedures

One of the key elements in the success in attracting sub-borrowers and participating banks to the facility was the simplicity of the application procedure. A number of other initiatives, some offering more attractive financing terms, were perceived as bureaucratic and cumbersome by housing sector borrowers. The grant element also required accurate reporting requirements but the systems implemented provided an effective way to minimise the administrative load, contributing greatly to the success of the facility and highlighting the profile of the Bank as a market oriented institution.

1. Introduction

1.1. The Bank's SEFF facilities

Through Sustainable Energy Financing Facilities (SEFFs), the EBRD extends credit lines to local financial institutions that seek to develop energy financing as a permanent field of business. Local financial institutions on-lend the funds to their clients (small and medium-sized enterprises, corporate and residential borrowers) to undertake projects that achieve energy efficiency savings or to invest in small-scale renewable energy generation. In addition to financing, SEFFs provide technical assistance to financial institutions and their clients: they train financial institutions staff in promoting the new financial product and recognising technically eligible projects and supporting the creation of standards for environmental due diligence; they provide borrowers with support in identifying energy saving opportunities through energy audits, developing financing applications enhancing project design and advising on high performance technologies. Finally, if needed, they can provide incentive payments to kick-start markets by encouraging financial institutions and end-borrowers to implement energy efficiency and renewable energy projects to a higher standard or, in the case of financial institutions, to occasionally compensate for the restricted use of proceeds, costs incurred in training staff and fulfilling monitoring requirements.

SEFFs have been set as a priority within the Bank's Sustainable Energy Initiative. Mobilising the grant funds necessary to support the technical cooperation and the incentive fees described above was identified as a means to achieve its goals. Grant funds mobilised under the Sustainable Energy Initiative are also used to undertake the preliminary market studies necessary to identify specific energy efficiency requirements in each target country.

Slovak Sustainable Energy Financing Facility (SLOVSEFF) SlovSEFF was one of the first SEFFs to be launched by the Bank, with Board approval granted in November 2007. An extension to the facility (SlovSEFF II) was approved in December 2009. For the first phase, credit lines of €15 million each were extended to four participating banks for a total amount of €60 million, while for SlovSEFF II credit lines totalling €90 million were provided, €15 million being allocated to each of the four initial banks, leaving room for the incorporation of two additional financial institutions which took place in November 2010 for €15 million each. Following the drop out of one of the participating banks, the funds destined to it were reallocated to the other three initial participating banks, raising the amount for these under SLOVSEFF II to €20 million.

Three categories of sub-projects were eligible under the facility: (i) energy efficiency improvements in the industrial sector; (ii) comprehensive refurbishments in the residential sector; and (iii) investments in new renewable energy capacity. A detailed analysis of the portfolio of supported sub-projects and a quantitative summary of the main SlovSEFF results is provided in Annex 1.

A total of €30 million in grant funds (€15 million for each phase) was provided to cover the cost of technical assistance and performance fees to participating banks and sub-borrowers. The fund, which is administered by the Bank, was created to support the decommissioning of both units at the Bohunice V1 nuclear plant as a condition to Slovak Republic's European Union accession in 2004. Technical assistance was provided by external consultants: the project consultant and the verification consultant.

Adjustments to the level of incentives based on the experience and learning from SlovSEFF I meant that the grant component of SLOVSEFF II could be kept at the same volume even though the total amount of loan funds was 50 per cent higher. Leverage was therefore increased from a 4:1 ratio for SLOVSEFF I to 6:1 for SLOVSEFF II.

1.2. Evaluation approach

Framework facilities represent basically a context of delegated authority from the Board for the approval of projects with certain common elements. The approach to evaluating framework facilities differs depending on the diversity and scope of such projects. In the case of SlovSEFF the underlying projects were limited in number, quite homogeneous in size and scope and most of the counterparties were already pre-identified at the time of Board approval (four out of six participating banks).

The approach to the evaluation, which is discussed in more detailed in the Approach Paper (Annex 4), has therefore taken an aggregated bottom-up form, covering all nine final projects with five participating banks (those initially envisaged except for the dropped participating bank) and a sample of sub-projects¹. While some performance parameters (financial performance) are analysed at the individual level, the wider impacts (transition and environmental impacts) are assessed in an aggregated manner, in line with the design and monitoring of the performance benchmarks (as set out by the transition impact monitoring system).

2. Project ratings

Table 1: Ratings summary

Slovak sustainable energy finance facility I & II	EvD ratings
<u>Overall performance</u>	Successful
(Highly successful, successful, partly successful, unsuccessful)	
Project relevance	
Additionality	Largely verified
(Fully verified, largely verified, partly verified, not verified)	
Project effectiveness	
Achievement of operation objectives	Good
(Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	
Company/Project financial performance	Good
(Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	
Project efficiency	
Bank handling	Good
(Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	
Bank investment performance	n/a
(Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	
Project impact and sustainability	
Transition impact	Good/Sat
(Excellent, good, satisfactory, marginal, unsatisfactory, negative)	
Environmental and social performance	Good
(Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	
Extent of environmental and social change	Substantial
(Outstanding, substantial, some, none/negative)	

¹ Note that the sub-projects visited during the country mission do not constitute a statistically representative sample of all around 688 sub-projects, but were selected to provide a cross-section of all three sectors and all five PBs.

3. Relevance to the Bank's mandate

3.1. Rationale

SLOVSEFF was explicitly referred to as one of the operational priorities for the country's energy and infrastructure sectors, as described in the Bank's 2006 Strategy for the Slovak Republic. Consistency with the Bank's approach to energy efficiency was supported by the 2006 Energy Operations Policy which explicitly encouraged:

"...invest[ment] in commercial banks or other financial intermediaries to establish dedicated financing mechanisms for energy efficiency projects [...] The Bank will seek technical cooperation funds or co-financing grants to support these activities where possible and appropriate".

Alignment with national priorities was also strong. The Energy Policy of the Slovak Republic from 2006 recognises the role of demand reduction as a key element in addressing the deficit in electricity production resulting from the closure of Bohunice V1. In line with this, Slovak Republic's First National Energy Efficiency Action Plan prioritises the undertaking of energy audits in the industrial sector and recognises the importance of mobilising commercial bank lending to finance energy efficiency improvements in buildings.

The rationale for providing incentive fees to sub-borrowers and participating banks received considerable attention during the approval process with a generally supportive outcome and directors welcomed the grants which facilitated this. As the EBRD's Financial and Operational Policy Committee has stated, incentive fees might be appropriate provided they "*address impediments to projects that are expected to become financially sustainable without such support over time*". In line with this, and supported by a market demand study, the Board report justified incentive payments to sub-borrowers to help overcome market barriers.

Two considerations are therefore noted with regards to the consistency of the project's subsidy scheme with the Bank's policies and operational principles:

- 1) Subsidies should not be aimed to make non-viable projects viable by adding an additional cash stream, but to make demonstrably profitable projects (as requested in the project by a minimum internal rate of return threshold) possible because of the removal of impediments to their realisation.
- 2) the need to move towards the sustainability of the energy efficiency financing sector over time without dependence on such subsidies.

With this in mind, the SLOVSEFF expansion in 2010 introduced a transition impact objective in relation to the "*sustainable removal of market barriers*". This aspect is further discussed in the transition impact section.

3.2. Additionality

Table 2: Additionality ratings

	OPA	EvD
Additionality (Fully verified, largely verified, partly verified, not verified)	Fully verified	Largely verified

Establishing Bank additionality at the time of project inception on purely financial terms would be challenging given the level of development of the private banking sector in Slovak Republic, mostly owned by large international banking groups. Total bank lending per head was increasing at the time of project inception, the corporate credit environment was becoming more competitive, most banks had moved also into retail banking, banking regulation was strong and improving and the financial reporting and auditing framework was compliant with international standards.

The additionality of the Bank relied rather on the provision of a combined package of financing, grant subsidies and technical assistance provided, what was referred to as a "one stop shop", that the private sector was not in a position to offer. No similar initiatives or funding sources existed in Slovak Republic at the time. The State Fund for Housing Development provided long maturity loans at low interest rates for the refurbishment of apartment blocks, but did not specifically target energy efficiency improvements. Even among those initiatives that have started up since SlovSEFF (programmes run by the European Investment Bank and the Council of Europe Development Bank), none provides the combination of loan funds dedicated to sustainable energy investments, technical assistance and performance-linked incentives that SlovSEFF comprises. Finally, as noted in the Sustainable Energy Initiative 2006 summary, the Bank's long lasting presence in the region and partnership with the financial sector enabled it to reach the final target users contributing to the additionality element.

4. Achievement of objectives

Table 3: Effectiveness ratings

	OPA	EvD
Achievement of objectives (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good	Good
Company financial performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good	Good
Project financial performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good	Good

4.1. Achievement of objectives

At the time of the project's approval the Slovak Republic derived 25 per cent of its energy needs from nuclear energy. Energy supply from nuclear sources was deemed to decrease by one third as a result of the closure of Bohunice V1. Taking into account economic growth and energy intensity approximately 1.6 times the average for the EU-25 (measured at PPP), Slovak Republic would face a significant challenge in meeting demand for electricity over the following years. The project sought to mitigate these challenges by aiming to support energy efficiency and renewable energy projects.

The operational objectives of the project were expressed in broad terms in the Board report as to:

"...increase financial intermediation and financing for rational energy utilization and provide benefits in terms of energy resource utilization and assist in mitigating increasing energy prices and high energy intensity in the region".

There was notably a lack of definition or establishment of specific performance parameters in terms of energy savings, CO₂ emission reduction or with regards to the sectorial allocation of the funds in the first phase of the project. Some expected performance parameters were scattered in the Board reports as a

reference rather than as clear targets. There were notable differences in the levels of energy savings expected to be achieved in the two phases of the project. Overall it transpires from the project documents that despite the previous experience in Bulgaria and the market study undertaken, the expected results in a new country were seen with a high degree of uncertainty and the only clear objective seemed to be the effective disbursement of the funds through the participating banks for eligible projects. Some of these deficiencies were addressed in the second phase as some better knowledge of the market had been achieved.

For the analysis of the operational performance the evaluation team has broken this wider objective into the two elements analysed below. The technical assistance component of the project is also included in this section given its instrumentality in the achievement of the operational objectives.

Increase financial intermediation and financing for rational energy utilisation

Prior to SlovSEFF, the extent to which local banks had been seen as a source of financing for energy efficiency and renewable energy was limited. SlovSEFF aimed to address this deficiency by targeting representative local banks (four in the first phase plus a further two in the extension), through which to provide a total of €150 million in loans to energy efficiency/renewable energy projects over the two phases of the facility. A detailed analysis of performance parameters is presented in Annex 1. To date, a total of 688 projects have been financed under the programme for a total amount of €149.86 million. The largest share of projects took place in the housing sector (87 per cent) followed by industrial (11 per cent) while renewable energy projects represented only two per cent. This share is somewhat more balanced when considered by funds allocated (61 per cent in housing, 27 per cent industrial, 12 per cent renewable) due to the larger size of industrial and especially of renewable projects.

The successful increase in financial intermediation requires in the first place the intended utilization of the funds for energy efficiency projects that met the eligibility criteria through the participating banks, something that can be considered as fully met despite the drop out of one of the participating banks, thanks to the reallocation of the funds. In terms of number of projects, the initial launch of the facility expected a significantly higher number than it resulted in. This was due to initial estimations based on the Bulgarian experience which anticipated a smaller size of housing projects (SlovSEFF being focused in comprehensive refurbishment of flat blocks resulted in a significantly larger project size than the Bulgarian individual house refurbishments). The size of energy efficiency and renewable energy projects also exceeded the initial estimations by more than a 100 per cent resulting in a lower number of projects. Regarding sectorial allocation, the rapid uptake of housing projects resulted in a larger concentration in the housing sector than had been initially anticipated. To avoid excessive focus in the housing sector in the second phase, thresholds were introduced, in particular a minimum of 20 per cent to be allocated to industrial energy efficiency projects. The combined result of the two phases shows the above mentioned results.

Provide benefits in terms of energy resource utilisation and assist in mitigating increasing energy prices and high energy intensity in the region

The second operational objective refers to the specific energy savings resulting from the implemented projects (that is lower energy consumption based on improved energy efficiency in housing and industrial projects and increased energy generated from renewable sources). Annex 1 also includes a detailed analysis of achievements on this front. According to the data reported by the project consultant, the

combined SloVSEFF I and II yielded estimated annual electricity primary savings of 582 GWh. This translated into annual delivered savings plus additional renewable capacity installed of 368 GWh².

The evaluation of this objective presents some difficulties given of the lack of clear benchmarks. The Board report for the first phase mentioned expected (primary³) energy savings of 400 GWh. The second phase instead foresaw savings in the amount of 200 GWh despite an increase of 50 per cent in the funds, allegedly due to a better market knowledge which led to lower expected savings per euro invested. Comparison of results against these parameters would show underachievement under SloVSEFF I (total primary equivalent savings of 283 GWh) while overachievement in SloVSEFF II (299 GWh). The reason for these discrepancies according to the operation team resides in the source of reference: For SloVSEFF I, the expected primary energy savings were based on extrapolating the results from the Bulgarian frameworks. The actual results fell short partly due to the greater than expected uptake of housing projects, where the energy savings were in the form of heat generated in natural gas boilers (rather than electricity savings, which have a much higher primary energy equivalent). However, it also appears that in extrapolating the savings achieved in Bulgaria into SloVSEFF I, insufficient account was taken of the differences in the characteristics of the respective energy sectors, leading to unrealistic expectations. Under SloVSEFF II, this experience led to the adjustment of the set targets to more realistic values. Overall, the total primary savings achieved of 582 GWh were marginally below the aggregate expected figure of 600 GWh for both phases.

Technical assistance provided to sub-borrowers, awareness-raising, marketing and outreach activities.

The technical assistance package, although not specifically an operational objective, has been assessed in this section given its important contribution to the achievement of the project's objectives. Of the total €15 million grant package for each phase a significant €2.5 million (under SloVSEFF I) and €2.7 million (SloVSEFF II) were allocated to technical assistance actions. Most of these were provided by the project consultant who assisted sub-borrowers in sub-project preparation, prepared rational energy utilisation plans for industrial and renewable energy projects and simplified energy audits for housing projects. The project consultant was also responsible in the early stages for marketing and outreach, and during the implementation phase for establishing an effective tracking mechanism to ensure the correct use of the funds and for the payment of the incentive fees based on the post-implementation verification. A separate verification consultant was contracted to verify the larger industry and renewable sub-projects, and a random sample of housing sub-projects.

The technical cooperation approval documents established as success indicators general parameters in relation to the project implementation, that is:

- i) number of sub-loans financed by project type;
- ii) total energy savings of the portfolio; and
- iii) participating banks to continue financing after project completion.

It would therefore be repetitive to describe here the achievements with regards to operational parameters described above. Rather, a qualitative assessment based on interviews with different stakeholders during the evaluation process can yield more insight. Based on these, the effectiveness of the project consultant

² Estimated annual electricity savings of over 20 GWh and annual heat savings of about 237 GWh. In addition, renewable energy projects contributed a further 42 GWh of generated electricity and 69 GWh of heat annually, with a total increased capacity (electricity and heat) of 25 MW. The total of annual energy savings plus additional renewable energy generated therefore amounts to 368 GWh.

³ Although not stated explicitly a number of mentions seem to indicate that the savings estimations were referred to primary savings

in fulfilling its role appears to have been one of the key factors in the successful implementation of the project. Particularly effective were the early-stage efforts in developing a comprehensive marketing and outreach strategy which, combined with the assistance provided to participating banks, which enabled a project pipeline to be created very rapidly. Following preliminary fact-finding activities, the project consultant also made numerous recommendations regarding the design of the facility which greatly contributed to its subsequent efficient functioning. Efficient operation was enhanced by the use of a streamlined web-based tracking and reporting system developed by the project consultant early in the project. Monitoring of the technical assistance provided by the consultants was adequate with intense communication with the operation team and as necessary with financial institutions for the release of the incentive payments to the participating banks and subsidies to sub-borrowers upon signing or implementation of the subprojects respectively.

The simplified energy audits and rational energy utilization plans (a sample of which has been reviewed during the course of the evaluation) provided, in a concise and easily understood form, details of the recommended energy efficiency/renewable energy investments, a simple cost-benefit analysis, a financing plan and implementation schedule. These provided the necessary evidence to the participating banks of the eligibility of the project and were the basis for the completion verification process. In total, the project consultant prepared 764 rational energy utilization plans and simplified energy audits leading to a total of 688 sub-projects to date. The overall cancellation rate (rational energy utilization plans and simplified energy audits that did not lead to implemented projects) was therefore just under ten per cent overall. Stakeholders interviewed by the evaluation team provided universally positive comments on the project consultant's performance. At least one of the participating banks is continuing its working relationship with the project consultant outside of SlovSEFF. EvD concurs with the Operation Performance Assessment's rating for overall achievement of objectives as 'good'.

	OPA	EvD
Achievement of objectives (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good	Good

4.2. Financial performance

The financial sector in the Slovak Republic is mostly owned and controlled by large international financial groups. The participating banks through which SlovSEFF was implemented are all owned by foreign banks. The performance of these institutions has been a combined result of local and international factors including the global financial crisis of 2008 to 2009, the loss of fee and commission income following Slovak Republic's adoption of the Euro in January 2009, the Euro sovereign debt crisis in 2011 and the introduction of a new bank levy in 2012, amongst others.

Despite these adverse external circumstances, and in a context of international economic crisis, the five participating banks that participated in SlovSEFF II have performed generally well. Profits of all five banks increased significantly between 2010 and 2011, although the effect of the bank levy led to generally lower profits in 2012. Although two of the participating banks showed increasing cost-income ratios in 2012 relative to 2011, all five banks have cost-income ratios comparable to or lower than those in the four largest Eurozone economies. The return on average assets for the five banks in 2012 ranged from 0.4 per cent up to 1.8 per cent, again comparable with or significantly higher than in the four largest Eurozone economies. The capital adequacy ratios of the five participating banks ranged from 13-18 per cent during the first half of 2012, well above the nine per cent level required under current national legislation. The financial performance of all the participating banks is also reported in the Credit Review Summaries as generally sound. These highlight profitability as most generally being either stable or increasing in recent

years. Where performance has been less strong, this has been a result of a focus on corporate clients (UCB) or, in the case of one of the participating banks, on a specific incident resulting in a large one-off loss.

It can be concluded that despite the context of the global economic situation, the participating banks have weathered the economic crisis well. One of the factors behind this success has been that Slovak banks are predominantly funded by local deposits and do not rely excessively on external sources or their parent groups. With regard specifically to the performance of the SlovSEFF loan portfolios, as of the date of this evaluation there are no reports of any arrears, defaults or non-compliance with any covenants, according to data provided by the operation team.

5. Project efficiency

Table 4: Efficiency ratings

	OPA	EvD
Bank handling (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good	Good
Bank investment performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	n/a	n/a

5.1. Bank handling

The Operation Performance Assessment rates bank handling as 'good' noting the positive communication between all parties (Bank, participating banks, project consultant) that resulted in a good client relationship and the strong commitment from all sides necessary to meet the challenges of successfully launching what was one of the earliest of the SEFFs. Based on findings from interviews with key participants and despite the deficiencies in the definition of project objectives, EvD concurs with the 'good' bank handling rating. The following sections examine some aspects of bank handling in more detail.

Project design and structuring

Lessons from the Bulgarian facilities

Experience from two earlier successful Bulgarian frameworks (Bulgaria Energy Efficiency and Renewable Energy Credit Line and the Bulgaria Residential Energy Efficiency Credit Line) illustrated the usefulness of donor funds to provide incentive fees. The Bulgarian experience also informed the design of the housing sector component of SlovSEFF. Under the Bulgaria Residential Energy Efficiency Credit Line in Bulgaria, both single-dwelling and whole-building projects were permitted, which increased the administrative burden and required a much more complex system of incentive payments. Under SlovSEFF only whole-building projects involving housing associations were eligible from the outset. A further lesson from the Bulgarian experience was that a strong up-front effort in awareness-raising and marketing of the facility was essential to create a strong initial pipeline of potential projects. Compared with the Bulgarian facilities, the role of the project consultant in SlovSEFF was greatly enhanced.

Setting levels for incentive payments

The market demand study prior to project preparation incorporated a survey of industrial sector firms and an analysis to estimate the impact of different subsidy levels on the attractiveness of renewable energy and energy efficiency investments. The operation team exercised discretion in setting the initial level of incentives based on the market demand study, experience from the Bulgarian projects and insight gained

during the appraisal process. The initial levels set were more of an exercise in ‘testing the water’ which led to later adjustments in the second phase. Table 5 below depicts the incentive levels during the first and second phase of the project.

Table 5: Incentive payments under SlovSEFF I and SlovSEFF II

		SlovSEFF I	SlovSEFF II
Housing	Selection criterion	Energy saving > 15%	Energy saving > 15%
	Incentive payment	20% of loan amount	10% of loan amount 15% if energy saving > 25%
Renewable energy	Selection criterion	IRR > 12%	IRR > 10%
	Incentive payment	15% of loan amount	5-15% of loan amount depending on technology and capacity installed
Industry	Selection criterion	IRR > 12%	IRR > 10%
	Incentive payment	7.5% of loan amount	7.5% of loan amount
Participating banks	Up-front fee	2% of disbursed loans	1% of disbursed loans
	Admin fee	0.5% of total sub-loans outstanding	Zero

For **industrial projects**, initial incentive payments were set at 7.5 per cent. The operation team recognised that this level was not particularly attractive but it was believed that the combination of clearly profitable opportunities for energy savings (projects to be financed were required to demonstrate an internal rate of return of above 12 per cent) along with the offer of free technical assistance would be sufficient to attract industry sector sub-borrowers. In fact, the initially slow take-up of industrial energy efficiency projects was judged to be more a consequence of the economic crisis than a result of unattractive incentive payments, hence no increase was introduced in the second phase.

For **housing sub-projects**, a two-tiered incentive payment was introduced aimed to encourage more comprehensive interventions. The revised system for renewable energy projects took account of a wide range of factors including required rates of return for equity investors, the expected debt to equity ratio of projects, and the current and likely future levels of feed-in tariffs. Industrial project incentives, as mentioned above, were kept at the same level but the hurdle rate was softened.

Under SlovSEFF I, no rigid limits were set regarding the allocation of funds to the three sectors, but a requirement was introduced under SlovSEFF II for participating banks to direct at least 20 per cent of loan funds to industry sector projects. This aimed to address the relatively slow uptake for industry projects, which was partly a result of the economic crisis causing firms to focus on their core activities and reduce the priority given to 'peripheral' activities such as energy efficiency investments.

With hindsight, the fast uptake of housing projects and the need for certain threshold for industrial and renewable energy projects in the second phase highlights the need for a more methodological approach to setting the levels of incentives when approaching new markets as well as for providing mechanisms to provide adjustments (which to some extent these took place in the second phase of the project) based on the project implementation results and to establish a causal relationship between the levels of incentives and the results during project implementation.

Monitoring and reporting

EvD's review of monitoring documents confirms the robustness of the monitoring and reporting process. The release of incentive payment fees to participating banks (following participating banks' approvals of sub-projects) and to sub-borrowers (after verification of sub-project implementation by independent consultants) required a strong monitoring system and accurate coordination with the Bank. Monitoring

responsibilities of the participating banks were fulfilled by the submission of regular reports (initially quarterly and later changed to semi-annually) giving details of all sub-projects financed under the facility. Reporting on the completion of sub-projects was facilitated through the development by the project consultant of a comprehensive database which is being used as a reference for the development of a similar system within the Bank for use across its entire family of SEFFs.

As mentioned in the introductory section, during the evaluation process the evaluation team met with all relevant stakeholders in the project, who expressed a universally high level of satisfaction with the design and execution of SlovSEFF, the relationship with the operation team and with the role of the project consultant.

5.2. The Bank's investment performance

As explained in the introduction section, SlovSEFF is a framework facility, that is, a delegated Board approval authority under which a number of projects benefitting ultimately a large number of sub-borrowers is covered. On this basis, the calculation of a compounded weighted average internal rate of return of all projects would be an almost impossible mathematical exercise. This is particularly so given their different timeline and the changes to the cost allocation model in the Bank. In consequence the Operation Performance Assessment does not provide such a calculation. However it can be noted that to date all loans are repaid according to schedule, and because of the good financial position of all participating banks (except one of the participating banks, which exited), no revision of project risk rating has taken place. This indicates that the financial performance for the Bank should be in line with expectations at approval.

6. Impact and sustainability

Table 6: Ratings of transition, environmental and social impacts

	OPA	EvD
Realised transition impact (Excellent, good, satisfactory, marginal, unsatisfactory, negative)	Good	Good/Sat
Potential transition impact (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good	Good
Risk to potential transition impact (Excessive, high, medium, negligible, low)	Medium	Medium
Overall transition impact (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good	Good / Sat
Environmental and social impact (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good	Good
Extent of environmental and social change (Outstanding, substantial, some, none/negative)	Some	Substantial

6.1. Expectations for transition at approval

The sources of transition impact identified in the Board reports for both SlovSEFF I and II were, succinctly:

- **Demonstration effects of improved energy efficiency among sub-borrowers** - in particular promoting the expansion of energy efficiency lending by demonstrating the use of financial

intermediaries for investments resulting in rational energy utilisation and demonstrate the effects of rational energy utilisation for improving industrial competitiveness in light of the rising energy costs.

- **Transfer of skills** to build expertise among banks in assessing the risk and creditworthiness of clients for energy efficiency loans, and among companies in understanding banks' requirements for providing energy efficiency loans.
- **Sustainable removal of market barriers** - The Board report for SlovSEFF II listed a third transition impact objective. Although no accompanying narrative description was provided, it transpires in the project concept from early that the aim of the subsidies was to lead towards the permanent removal of market barriers and therefore to overcome the need for economic incentives over time. SlovSEFF II explicitly captured this transition impact objective that was not clearly stated in the first phase. The description of what the perceived market barriers actually were and how the project would remove them is discussed in later sections.
- **The transition risks** identified at approval were a sub-optimal uptake of the facility, that a reliance on subsidies might engender the perception that energy efficiency and renewable energy investments are not viable without subsidy support, and that the provision of subsidies alongside feed-in tariffs might lead to renewable energy projects being overcompensated.

EvD notes the absence of a clear framework linking activities to the expected outcomes. It seems as if the successful implementation of the project (measured basically by the utilization of the funds to finance eligible subprojects) was expected *per se* to lead to the intended transition impact results. In particular, a key element to the project relevance and consistency with the Bank's policies such as the sustainable removal of market barriers received little attention, was not included in the initial phase transition impact benchmarks and only one imprecise benchmark was introduced in the second phase.

6.2. Transition impact as measured by the Transition Impact Monitoring System

The transition impact monitoring system set up a number of benchmarks associated with each identified transition impact objective as shown in table 7 below.

Table 7: TIMs review (April 2013)

Objective	Benchmark	Status
1. Demonstration effects of successful sustainable energy investments	1.1. Sub-loan portfolio by end of 2012: EUR 90 million	Partially achieved
	1.2. Expected utilisation of the funds under the Facility 75% residential, 5% renewable energy sources and 20% industry	Achieved
	1.3. Number of energy efficiency rational energy utilization plans/ industrial sub-loans financed under the facility: 40-50	Achieved
	1.4. Number of simplified energy audits simplified energy audits/residential sub-loans financed under the facility: 350-500	Achieved
	1.5. Expected energy savings: 200,000 MWh per annum or 2 kWh per annum per EUR of investment, broken-down as follows: 5 kWh/EUR of investment in industrial energy efficiency; 3 kWh/EUR of investment in renewable energy sources; 1 kWh/EUR of investment in residential	Achieved
	1.6. Expected CO2 emission reduction: 50,000 tons/annum or 0.5 kg CO2 emissions avoided per EUR of investment, broken-down as follows:	On track

	1kgCO2/EUR of investment in industrial energy efficiency; 2 kgCO2/EUR of investment in renewable energy sources; 0.25 kgCO2/EUR of investment in residential	
	1.7. Targeted energy savings achieved by the portfolio: 15% energy savings for industrial projects; 30% energy savings for residential projects	Achieved
	1.8. renewable energy capacity added: 10 MWth (assuming renewable energy sources heat only; any electricity production will be considered a bonus)	Achieved
	1.9. Commercial success of the Project (repayments)	On track
2. Transfer of skills	2.1. Number of banks in the second extension of the Facility: 6 Participating Banks	Partially achieved
	2.2. Number of loan officers trained: at least 50 from the new participating banks	Partially achieved
	2.3. The new participating banks developed internal procedures and dedicated loan products	Achieved
	2.4. Number of firms reached through marketing campaign 100	Achieved
	2.5. Energy efficiency awareness among corporate customers: website operating and seminars/workshops with industry and investors	On track
3. Sustainable removal of market barriers	3.1. Number of Participating Banks continuing to engage in energy efficiency and/or renewable energy business using own funds after the Facility is terminated: at least 4 Participating Banks	On track

EvD notes some deficiencies in the Transition Impact Monitoring System.

Firstly, the benchmarks in place correspond only to the second phase of the project. Although the Board report for SlovSEFF I identified a number of transition impact benchmarks, it has not been possible to find the associated reports in the system. According to the operation leader these were not monitored at the framework level. This poses a weakness for the use of the Transition Impact Monitoring System as the main reliable source to assess transition impact. For example benchmark 1.5 related to energy savings is rated achieved in comparison with the second phase set goal of 200GWh, but if compared with the initial 400GWh goal it might have deserved a lower rating. A similar thing can be said of CO₂ emissions reduction (benchmark 1.6). Sectorial allocation (benchmark 1.2) was only introduced in phase II so there is no assessment of the impacts during the first phase.

Secondly, many of the set benchmarks refer rather to actions in relation with the general project implementation (amounts of funds, number of participating banks, rational energy utilization plans and simplified energy audits prepared, repayments, number of firms reached through marketing efforts) than to the measurement of the outcomes of such actions. Other benchmarks more related with operational outputs (energy savings, CO₂ reduction) don't lead to a direct conclusion of how these achievements impacted the wider transition impact goal, in this case the demonstration effect. This highlights the need mentioned in previous sections of a clearer framework establishing the link between the project's inputs, outputs and outcomes. Finally, the quality of the information reported on some of the benchmarks, mainly in relation with the transfer of skills and sustainable removal of market barriers is inadequate to make an informed opinion.

6.3. EvD's assessment of transition impact

The evaluation team has complemented the information contained in the Transition Impact Monitoring System reports with other sources gathered during the course of the evaluation including interviews with all the relevant stakeholders in the project (participating banks, sub-borrowers, government, housing associations, European Union and several Bank departments). On this basis EvD rates overall transition impact *'good/satisfactory'*. The project achieved several impacts on the demonstration effect front and some on the transfer of skills while achievements regarding the permanent removal of market barriers, highly connected to the foreseen fade-out of incentive payments and the potentially market distortive effects of subsidies, deserves a wider discussion as presented below.

Demonstration effects of successful sustainable energy investments

The achievement of short-term demonstration effects depends largely on there being a significant critical mass of successfully implemented projects. As noted in previous sections, a total of 597 apartment blocks, 76 industrial sector firms and 15 renewable energy projects have successfully used loans from the participating banks to finance sustainable energy investments. In the housing sector, demonstration effects are enhanced by the visibility of the refurbishments, practically all involving renewed cladding immediately apparent to outside observers. Where several apartment blocks in close proximity have undergone energy efficiency improvements, the entire character of the neighbourhood is transformed. A 'virtuous circle' can be envisaged, where the more blocks in a neighbourhood are improved, the greater the imperative becomes among residents of unimproved blocks to invest in improvement projects. However, clustering of housing projects could also be seen as a risk to the ability of SlovSEFF to realise a long-term demonstration effect. While a certain amount of clustering is inevitable, because particularly well-motivated and dynamic housing management companies (HMC) with a limited geographical scope are likely to make repeat applications to the facility, the Bank might consider ways in future projects to trigger a wider geographical spread of projects.

Industrial energy efficiency and renewable energy projects are less obviously visible, so long-term demonstration effects depend on factors such as the internal communications within large companies, where a larger scale programme of energy efficiency and renewable energy investments may be triggered by the success of a single project; communications within business networks; or positive experiences gained by the participating banks in SlovSEFF leading to them promoting sound energy management practices more widely among their other clients. Long-term demonstration effects in the industrial sector could be enhanced through the preparation and dissemination of greater numbers of case studies of successful SlovSEFF projects. The setting up of annual awards for the best projects under the facility was a positive initiative with wide repercussions in the media that helped raise the profile and visibility of SlovSEFF.

Transfer of skills

As presented in the Board reports, the project was expected to help transfer skills to participating banks by building expertise in assessing the risks and credit worthiness of energy efficiency investments, and to sub-borrowers by making them familiar with the banks' requirements for providing energy efficiency loans. Transfer of skills was expected to take place through the on-going implementation of the project and interaction with the project consultant. The terms of reference for the project consultant included some elements (introductory workshops, development of operation manuals for participating banks' staff) and of course the interaction with participating banks and sub-borrowers for the preparation of rational energy utilization plans and simplified energy audits and later monitoring and verification that provided an opportunity for the transfer of skills on specific needs that arose on an *ad-hoc* basis.

As noted before, the design of the benchmarks and the quality of information reported does not provide an optimal basis for the assessment of achievements on this front. Interviews with participating banks and sub-borrowers provided more insight. In general terms, participating banks treated the energy efficiency loans as any other product for which creditworthiness relied basically on the borrower's capacity to repay debt from its cash flow generation capacity, but supported with grant subsidies that made the projects more attractive. Some specific training actions were put in place in the early stages of the project with the assistance of the project consultant for the marketing of the facility amongst the participating banks' customers. The size of the facility for each of the participating banks, and probably the uncertainty about its possible success, was too small to trigger the establishment of dedicated departments. The new products were commercialised through the existing networks and through the same banks' officers that would work on more conventional financial products. With regards to sub-borrowers, the largest benefits were derived from the interaction with the project consultant for the preparation of the rational energy utilization plans, or simplified energy audits in the case of housing associations. As these included a financial analysis to estimate the project's internal rate of return, coordination with different departments of the borrowers to identify energy savings investments and estimate costs and savings led to a better awareness of energy efficiency opportunities and better understanding of the lending process for energy efficiency projects.

As noted in the Board report, through the transfer of skills:

'the project was expected to contribute to lowering transaction costs for energy efficiency financing and the facility's success would lead to sustainable lending through participating banks without the requirement for any grant financing'.

Unfortunately at this stage there is no evidence that this has been achieved and the fact that an envisioned third phase of SloVSEFF still includes an incentive package means that market barriers to sustainable lending still remain. EvD rates this objective as '*partially achieved*'.

Sustainable removal of market barriers

The provision of incentive payments was justified based on the need to remove what the Board report referred to as market barriers but indeed included also policy related barriers that allegedly impeded financially profitable projects from realising. Despite an identified large market potential, the low volume of investments seemed to indicate that imperfections were preventing profitable energy efficiency and renewable energy investments from taking place. The main barriers identified, as reported in the Board report for SloVSEFF I, were:

- In the industrial sector, low awareness in many medium and small industrial companies and poor knowledge of available technologies to reduce energy consumption;
- In the residential sector, difficulties in gaining consensus due to the large number of owners in apartment buildings. On the positive side the legal framework allowing housing associations to take loans was a positive advantage compared to previous projects (for example the Bulgaria Residential Energy Efficiency Credit Line); and
- In renewable energy source projects, lack of an adequate incentive system, fragmented regulation, non-guaranteed purchase tariffs, limited tax breaks and so forth.

While incentive payments are assessed to be compatible with the Bank's policies (see Rationale section), they represent a risk of market distortion that must be carefully managed in SEFF operations. The Financial and Operational Policy Committee made clear the temporary aim of such incentives. The Use and Management of Donor Grants guide further clarifies that the provision of this type of stimulus should be headed, amongst others, by principles of sustainability. Although such temporary element was clear in

the project design from the first phase, a specific transition impact objective was only included in the formulation of the second phase. Interestingly the Board report for SlovSEFF II did not detail what these barriers were perceived to be, so one has to rely on the identification made in the first phase and assume they had not changed. In EvD's view, the analysis of the different impediments to the development of an energy efficiency financing sector could have benefited from deeper analysis. The identified barriers in the renewable energy source sector did not lead to related actions. The lack of follow up on the initially identified barriers in the course of the SlovSEFF II extension represents also a weakness that if properly approached could have offered the opportunity for more targeted actions. The benchmark for this objective was formulated as at least four participating banks continuing to engage in energy efficiency and renewable energy business using their own funds after termination of the facility. According to the Operation Performance Assessment, achievement of this transition impact benchmark is 'on track' with two participating banks already continuing with the financing of renewable energy projects.

The long-term prospects for transition impact on this front are difficult to assess. Long-term removal of major barriers relating to a lack of awareness depends on the realisation of the demonstration effects already described in the previous section, for which the prospects are good. However, there are risks to the long-term development of the market associated with the use of incentive payments. The planned approval of a third phase of the project (although not within the scope of the present evaluation) gives credit to the successful implementation of the project but also constitutes a 'de facto' recognition that energy efficiency and renewable energy financing in the Slovak Republic has not achieved the point of seeing a well-functioning market needless of support via incentives. Since the rationale of the incentives is presented as overcoming market barriers rather than adding to the financial viability of projects, it should be expected to see a clear trend of phasing out of such incentives in new projects.

It will be necessary to see the outcomes of the new system and the continuation of energy efficiency and renewable energy lending by local banks after the complete phase out of incentives payments to be fully satisfied with the achievement of this objective. At this stage EvD concurs with the Operation Performance Assessment rating as 'on track'.

6.4. Environmental and social impacts

Environmental and social performance

The Board reports identify the environmental objectives of the projects as being: (i) participating banks to ensure that sub-borrowers are in compliance with national requirements on environment, health and safety; (ii) EBRD eligibility criteria for small hydro projects (and also wind power projects in SlovSEFF II) are adhered to where relevant; and (iii) environmental benefits resulting from reduced primary energy demand.

According to the Environment and Sustainability department's environmental reported data, all of the sub-borrowers are in full compliance with the requirements under (i) above. The small hydro projects supported all met the EBRD eligibility criteria, while no applications were received for wind power projects. No clear benchmarks were set under SlovSEFF I for environmental benefits resulting from reduced energy demand. Under SlovSEFF II, a benchmark was set of a 50,000 tCO₂ annual reduction in emissions, achieved at an average cost of 0.5 annual kgCO₂ per euro of investment. This benchmark was further broken down by sector as 1 annual kgCO₂ per euro for the industrial sector, 2 annual kgCO₂ per euro for the renewables sector and 0.25 annual kgCO₂ per euro for the housing sector.

SlovSEFF II marginally passed the overall emission reduction benchmark, achieving annual CO₂ savings of 50,932 tonnes. However, it fell somewhat short on the benchmarks relating to emission reduction per unit of investment, as shown in Table 8 below. Taking both phases of SlovSEFF together, the figures are

somewhat better, with savings per euro of investment exceeding the benchmark target for industry and for the facility as a whole.

Table 8: Benchmark targets and actual achieved figures for annual CO₂ reductions per € of investment

	Industry	Renewables	Housing	Overall
SlovSEFF II target	1	2	0.25	0.5
SlovSEFF II actual	0.73	0.82	0.23	0.45
SlovSEFF I & II combined actual	1.07	1.15	0.23	0.61

Extent of environmental and social change

The main source of environmental change in the project is the reduction in greenhouse gases and other emissions associated with the reduction in primary energy demand resulting from the successful sub-projects. Based on data provided by the project consultant, the two phases of SlovSEFF combined have resulted in a reduction in annual CO₂ emissions of 114,496 tonnes. These figures were derived by the project consultant using the standard Primary Energy Factors and Emission Factors specified by the government of Slovak Republic. Overall, about half of the total annual CO₂ savings resulted from industry sector sub-projects, and about 22 per cent from housing projects (see Annex 1). The data required to estimate reductions in other emissions (SO₂, NO_x, particulates) was not available.

A significant aspect of the social change due to the project resulted from improvements in the living standard of residents of the refurbished apartment blocks. The project consultant estimates that this amounted to 86,374 residents in 31,184 households. The total residential floor area improved was estimated to total over 2.5 million m². Although no benchmarks were set up at the project inception, it seems that the social impacts achieved have been significant. As well as improvements to the interior living space, housing sector projects also provided significant improvements to the general neighbourhood, especially where several projects were implemented in close proximity.

Based on the above, EvD rates the environmental and social performance of the project as 'good', with 'substantial' change.

7. Findings

7.1. The role of incentive payments

The combined package of targeted loans, technical assistance and incentive payments was instrumental in the success of the project. It made the facility very attractive to sub-borrowers, with the incentive payments being most frequently identified as the key attraction. While incentives can play an important role in overcoming market inefficiencies they can also represent a risk of distortions. Their design must therefore be carefully tailored and monitored. Setting the initial level and the rate of scale back is crucial in ensuring that the facility achieves its aim of stimulating a sustainable market for energy efficiency without introducing excessive market distortions and avoids creating dependency or giving a wrong message to the market that energy efficiency financing is only viable if subsidies are sustained. In SlovSEFF the project ensured that the financed subprojects were profitable per se and before the incentives by requesting a certain threshold of the internal rate of return which was assessed by the project consultants.

Recommendation: Projects including the provision of subsidies in the form of incentive payments, administration fees or others should define a clear logic framework establishing the causal relationship between the subsidies and the project's outputs and outcomes, metrics to establish the desired level of

incentives and to measure their impact and attribution and mechanisms to provide for their adjustment over time.

7.2. Maximising demonstration effects

The main goal of sustainable energy finance facilities is to provide a demonstration effect to the market of the viability of energy efficiency project financing. This requires specific actions to maximize the visibility of projects undertaken. In the housing sector, although the short-term demonstration effect is enhanced where several adjacent blocks are refurbished, clustering can also result in a lessening of the wider demonstration effect. In the industrial sector the visual demonstration is not so immediate which requires specific actions, such as that under SloVSEFF to establish annual awards for the best performing projects, with wide media coverage.

Lesson: Specific actions should be envisioned to enhance the demonstration effects of projects rather than just relying on impacts deriving naturally from their successful implementation. The establishment of annual awards for best performing projects with wide media coverage was one such action in SloVSEFF. Other actions might be contemplated to incentivise geographical spread in the housing sector. The creation of a greater volume of case studies and other promotional material disseminated through the participating banks could improve the prospects for such an effect.

7.3. Importance of a strong project consultant

The strong performance of the project consultant proved to be critical to the success of the project. Their early efforts in marketing, intelligence gathering and providing assistance to the participating banks enabled the very rapid establishment of the facility and the generation of a project pipeline. The web-based monitoring and tracking system developed by the project consultant facilitated the streamlined operation and management of the project. Several stakeholders also emphasised the importance of their local knowledge and experience, allowing them to provide assistance to participating banks and sub-borrowers that was both relevant and credible. The provision of high-quality and targeted assistance by the project consultant was cited by every participating bank and sub-borrower interviewed as being a major attraction of the facility and a crucial component in its success.

Lesson: It is critical for the success of energy efficiency projects to work with strong project consultants with local presence and knowledge of the local market to implement the early stages of the project launch (including marketing, pipeline generation and coordination with participating bank), implementation (such as definition of technical criteria, preparation of rational energy utilization plans and simplified energy audits) and monitoring/verification, including their contribution to the final evaluation process.

7.4. Importance of simple and streamlined procedures

Along with incentive payments and the technical assistance provided by the project consultant, the other factor that attracted both sub-borrowers and participating banks to participate in the facility was the simplicity and speed of the application procedure. A number of other initiatives to promote similar investments either already existed or appeared during the period when SloVSEFF was operating, some offering more attractive financing but were perceived as bureaucratic and cumbersome by housing sector borrowers. From the point of view of the participating banks, the grant element of SloVSEFF means the reporting requirements are necessarily greater than for other similar initiatives (such as that of the European Investment Bank programme). But the steps that have been taken to minimise this administrative load (such as the creation of an efficient web-based monitoring and tracking tool, and the shift from quarterly to six-monthly reporting), mean that the reporting for SloVSEFF was not perceived by any of the participating banks as being unduly burdensome.

Lesson: Subsidy-incentivised actions include the risk of an increased administrative burden for intermediaries and final beneficiaries. Keeping the process simple and streamlined is a guarantee for success.

8. Sources

Internal bank documents including: Operation Performance Assessment (self-assessment), Board minutes, Board reports, Directors' Advisors' Questions, Operations Committee minutes, Credit department notes, Environment and Sustainability department report, Office of the Chief Economist comments, credit review summaries, monitoring reports and transition impact monitoring system reports.

Annex 1: Results achieved and portfolio analysis

Overview of portfolio

Since its start in 2007, a total of 688 sub-projects have been supported under the combined SlovSEFF I and II facilities. The distribution by number of sub-projects and loan amounts between the two phases of the facility and the three sectors covered are shown in Tables 1 and 2 below. In terms of the number of projects the housing sector dominated, accounting for about 87 per cent of projects while measured by the volume of loans provided they accounted for about 61 per cent of the total over both phases. Industrial projects represented the second largest group with 11 per cent by number of projects and 27 per cent by loan amounts and finally renewable energy projects accounted for only two per cent of projects by number but a more significant 12 per cent by loan amounts due to their larger size.

Table 1: Number of sub-projects in each sector and facility phase

	Housing	Industry	Renewables	Total
SlovSEFF I	250	34	8	292
SlovSEFF II	347	42	7	396
Total	597	76	15	688

Source: Project Consultant

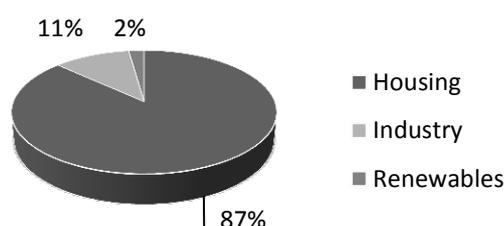
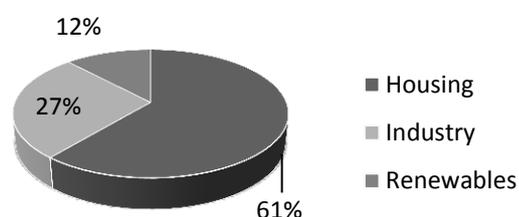


Table 2: Total loan amounts (million €) of sub-projects in each sector and facility phase

	Housing	Industry	Renewables	Total
SlovSEFF I	32.60	19.32	8.08	60.00
SlovSEFF II	58.81	21.20	9.84	89.86
Total	91.41	40.52	17.92	149.86

Source: Project Consultant



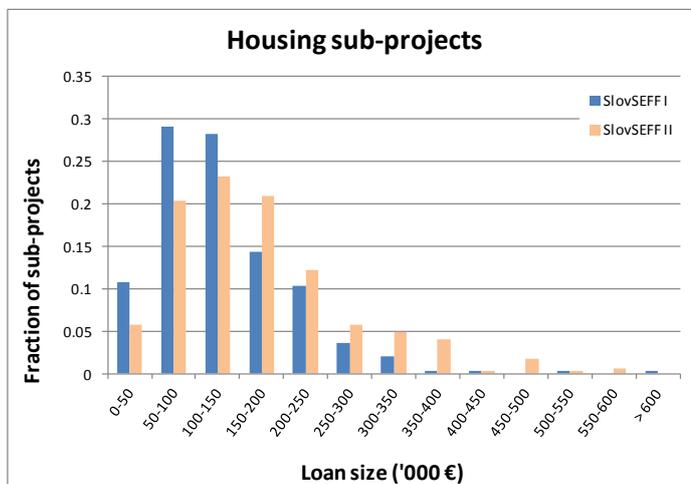
Loan size

The different weight in distribution by number of projects and loan amounts reflects the different average size of projects by sectors. In the aggregated SLOVSEFF I and II figures, renewable energy projects presented the largest size with average €1.2 million per project followed by industrial projects with average size of €540,000 and finally housing sector projects with an average size of €154,000.

Housing sector

The average loan size for housing projects under SloVSEFF I was about €130,000, while for SloVSEFF II this had increased to about €170,000. Figure 1 shows the frequency distribution of loan amounts for housing sector projects under the two phases of SloVSEFF. The increase in project size in SloVSEFF II seems to reflect the restructuring of incentive payments, which provided a stronger incentive to implement projects that achieved higher energy savings.

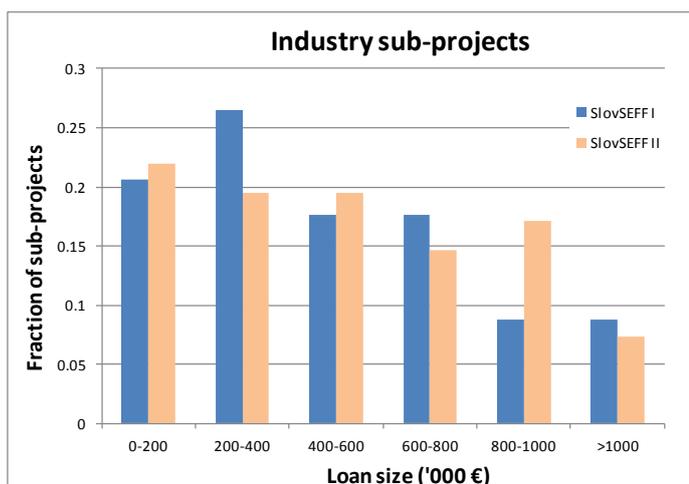
Figure 1: Frequency distribution of loan size for housing sub-projects



Industrial energy projects

Figure 2 shows the frequency distribution of loan amounts for industrial energy efficiency projects. As can be appreciated in the graph, the distribution is broadly similar for the two phases, with the average loan amount under SloVSEFF I of €568k only slightly higher than the €515k seen under SloVSEFF II.

Figure 2: Frequency distribution of loan size for industry sub-projects



Energy and CO₂ savings

Across the combined SlovSEFF I and II portfolio, the supported energy efficiency sub-projects have yielded estimated annual heat savings of over 850,000 GJ and annual electricity savings of over 20,000 MWh. In addition to this, the renewable energy projects supported produce a further 248,000 GJ of heat and 42,000 MWh of electricity annually. The total amount of renewable energy capacity added was about 25 MW. Table 1 below summarises how these quantitative results were distributed across the three sectors and between the two phases of SlovSEFF.

Table 4: Summary of main quantitative results

		Housing	Industrial	Renewables	Total
SlovSEFF I	Annual heat saved / produced (GJ)	135,691	314,929	186,739	637,359
	Annual electricity saved / produced (MWh)	107	18,366	2,800	21,273
	Renewable capacity added (MW)	0.05	-	18.61	18.66
	Annual CO ₂ savings (tonnes)	9,570	38,779	15,216	63,565
SlovSEFF II	Annual heat saved / produced (GJ)	185,520	216,373	61,150	463,043
	Annual electricity saved / produced (MWh)	9	1,693	39,431	41,133
	Renewable capacity added (MW)	-	0.21	6.42	6.63
	Annual CO ₂ savings (tonnes)	15,280	18,668	16,680	50,628
Combined portfolio	Annual heat saved / produced (GJ)	321,211	531,302	247,889	1,100,402
	Annual electricity saved / produced (MWh)	116	20,059	42,231	62,406
	Renewable capacity added (MW)	0.05	0.21	25.03	25.29
	Annual CO ₂ savings (tonnes)	25,063	57,447	31,896	114,406

Source: Project Consultant

Together, the projects in the combined portfolio achieved annual primary energy savings of over 580,000 MWh (compared with a target figure of 504,000 MWh) and result in total annual CO₂ savings of over 114 kt. Overall, about half of total annual CO₂ emission reduction resulted from industry sector projects, although this fraction fell strongly from 61 per cent in SlovSEFF I down to only 37 per cent in

SlovSEFF II. At the same time, the fraction of total CO savings resulting from housing projects rose from 15 per cent up to 30 per cent. These shifts are a reflection of the more comprehensive housing projects undertaken under SlovSEFF II, as a result of the change in incentive payments.

Table 5: CO₂ savings by types of projects

CO ₂ (t/y)	Housing	Renewable	Industry	Total
SLOVSEFF I	9,570	15,216	38,779	63,564
<u>SLOVSEFF II</u>	<u>15,494</u>	<u>16,680</u>	<u>18,668</u>	<u>50,842</u>
Total	25,063	31,896	57,447	114,406

Source: Project Consultant

The housing projects benefited a total of almost 85,800 residents in 30,900 households and resulted in almost 2.5 million square metres of residential space being upgraded.

Table 6: Housing projects beneficiaries'

Residential sector	Floor area (m2)	Inhabitants #	Apartments
SLOVSEFF I	1,108,644	46,355	14,351
<u>SLOVSEFF II</u>	<u>1,394,637</u>	<u>39,873</u>	<u>16,773</u>
Total	2,503,281	86,228	31,124

Source: Project Consultant

Percentage energy savings in housing projects

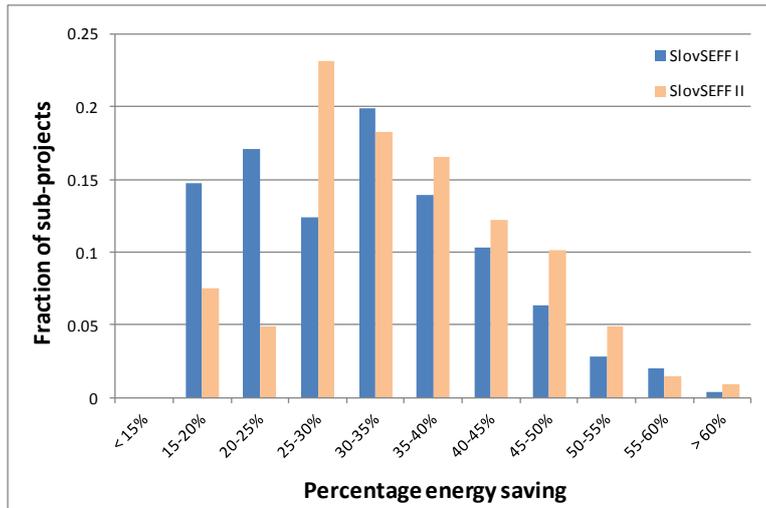
Table 7: Housing projects beneficiaries'

Energy savings (%)	Housing	Industry	Total
SLOVSEFF I	30.2%	6.2%	7.9%
SLOVSEFF II	33.4%	11.8%	16.7%
Total	32.0%	7.5%	10.2%

Source: Project Consultant

The effect of the revised structure of incentive payments to housing projects under SlovSEFF II can also be seen in the frequency distribution of percentage energy savings, shown in Figure 3 below. Particularly apparent is the very small number of projects under SlovSEFF II having a percentage energy saving in the range of 20 to 25 per cent. The project consultant reported that significant additional effort was put into extending the scope of any projects with savings in this range, in order to push the energy savings above the 25 per cent energy saving threshold and qualify for the higher incentive payment. The median energy saving for SlovSEFF I housing projects was 31.6 per cent, while for SlovSEFF II this had increased to 34.2 per cent.

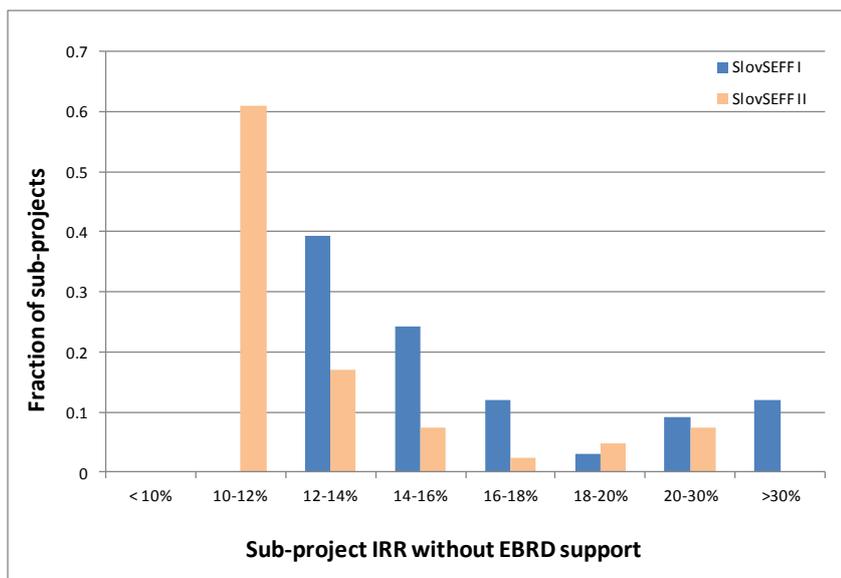
Figure 3: Frequency distribution of percentage energy saving for housing sub-projects



IRR in industrial energy efficiency projects

Figure A4 below shows the frequency distribution of IRRs for industrial energy efficiency projects under the two phases of SlovSEFF. The hurdle IRR was decreased from 12 per cent to ten per cent between SlovSEFF I and II, but the distribution of project internal rate of returns under SlovSEFF II appears to have become much more strongly skewed towards projects that only just clear the hurdle internal rate of returns. Over 60 per cent of projects under SlovSEFF II have an IRR between 10-to 12 per cent, and the more detailed cumulative frequency graph in Figure 4 below shows that the internal rate of return of more than one-third of projects was within 0.5 percentage points of the threshold value.

Figure 4: Frequency distribution of without-subsidy IRR for industry sub-projects



Energy saving per unit of investment

Finally, as a measure of efficiency the evaluation team has analysed the evolution of the energy savings per unit of investment ratios that were established as part of the TIMs benchmarks. Figures 5 and 6 below show the frequency distribution of such parameters for housing and industrial sector projects respectively.

In the case of housing projects, the distribution again illustrates the impact of the changes to incentive payments that were made in SloVSEFF II. Because of the linking of incentive payments to energy savings under SloVSEFF II, projects tended to be more comprehensive, but this was generally achieved by including measures that have longer payback periods. This manifests itself in the lower annual energy savings per unit of investment seen in SloVSEFF II projects. The mean annual final energy saving per unit of investment was 3.38 GJ/€ under SloVSEFF I, but had fallen to 2.78 GJ/€ under SloVSEFF II. In terms of annual primary energy savings, the mean values were 3.77 GJ/€ and 3.75 GJ/€ respectively.

The annual final energy saving per unit of investment also fell between phases I and II in the case of industrial energy efficiency projects. This is a reflection of the lower hurdle internal rate of return under SloVSEFF II, as well as the increased proportion of marginal projects. The mean annual final energy saving per unit of investment was 13.8 GJ/€ under SloVSEFF I, but had fallen to 8.78 GJ/€ under SloVSEFF II. In terms of primary energy saved, the mean values were 20.4 GJ/€ and 16.7 GJ/€ respectively.

Figure 5: Frequency distribution of annual final energy saving per unit of investment for housing sub-projects

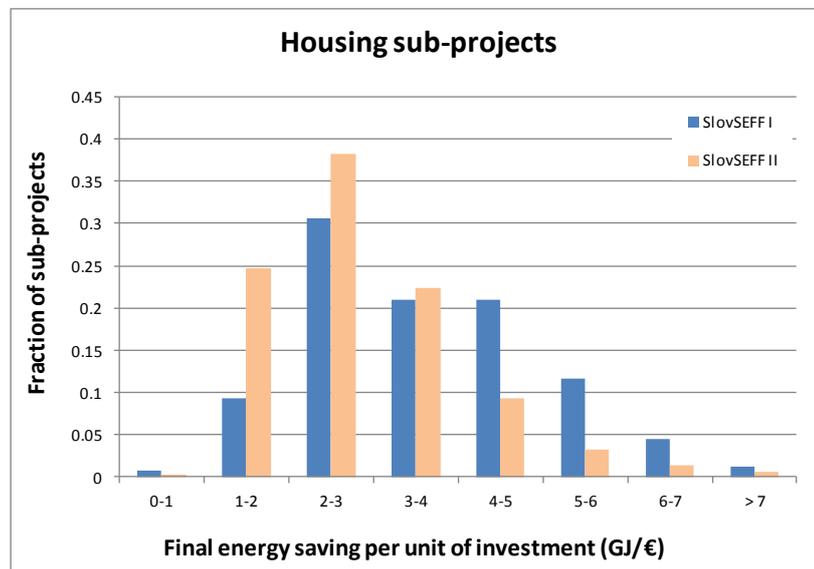
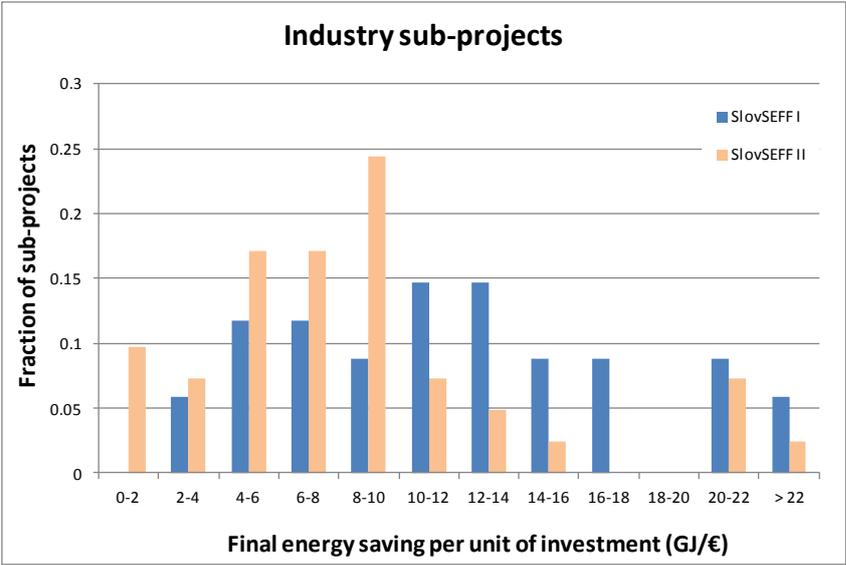


Figure 6: Frequency distribution of annual final energy saving per unit of investment for industry sub-project



Annex 2: Management comments

Management reviewed the Evaluation Department's Operation Evaluation Report on SlovSEFF I and II with interest and agrees with the overall assessment of the project as being "Successful". Management has the following comment in response to the recommendation in the report:

"EvD Recommendation: Future project proposals which include the provision of subsidies should identify clearly their extent and incidence as well as funding sources and intended beneficiaries. The expected causal link between project inputs, including subsidy elements, and results should be clearly articulated. Project performance metrics should include means to assess how they are achieving their intended outcomes."

Management believes that the lessons learned from SlovSEFF and other sustainable energy financing facility projects have been put to good use in subsequent sustainable energy financing facilities and now apply a clear rationale for the provision of subsidies and incentives. For example, the purpose of incentive payments of PFI is to encourage the investment in developing a new product and training staff before there is a proven market for the product. Consistent with that rationale, these incentives are typically phased out in repeat projects with the same PFI. Similarly, the structure of incentive payments to end-users is now calibrated, in most sustainable energy financing facilities, to the type of project based on the anticipated energy savings or carbon mitigation associated with that type of project, including support for higher performance solutions with low market penetration rates. Furthermore, all the sustainable energy financing facilities have benchmarks measuring energy savings and carbon mitigation. These 'smart subsidy' approaches for end users and tapering of PFI incentives are progressively introduced in each market. In some of the more advanced countries (for example in SlovSEFF III) this has been taken all the way to calibration against a carbon price, which clearly links the incentive payment to the desired outcome of the sub-project.

Management considers that the incorporation of these elements into the product design, combined with the current approach to monitoring through benchmarks accomplishes the desired goals of establishing a relationship between subsidies and the project's outputs and outcomes. The level of incentives are calibrated to the desired outcomes in terms of energy savings or carbon mitigation, in a manner consistent with the level of market development, awareness, and adoption of energy efficiency practices and technologies. Management believes that these evolving mechanisms, added to the developments in the Bank's results framework currently underway, already deliver better targeted and more relevant approaches to the use of subsidies in energy efficiency projects.