

**Ex-Post Project Evaluation 2016: Package IV-4
(India, Viet Nam)**

February 2018

JAPAN INTERNATIONAL COOPERATION AGENCY

OPMAC Corporation

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India

FY2016 Ex-Post Evaluation of Japanese ODA Loan Project

“New and Renewable Energy Development Project”

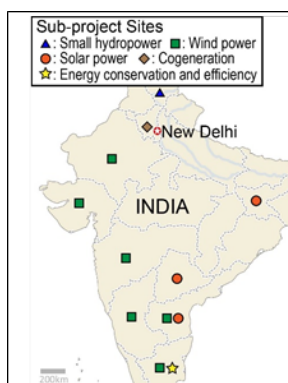
External Evaluator: Mitsue Mishima, OPMAC Corporation

0. Summary

The project aimed to provide medium- and long-term funding for new and renewable energy power generation and energy efficiency promotion projects in India, confronting a shortage of electric power generation capacity, by means of a two-step loan through the Indian Renewable Energy Development Agency Limited (IREDA), thereby contributing to the securing of electric power supply, diversifying its source, and alleviating the environmental burden. This project is supposed to respond to the growth of energy demand resulting from rapid economic growth and to improve the environment, is consistent with both the policy and development needs of India and the development assistance policy of Japan and thus is highly relevant. The project cost and period were within the plan and efficiency of the project is high. Wind power and solar power projects funded through IREDA are on the whole being operated as planned. This is recognized as substitution for thermal power generation which is the main source of electricity in India, reducing coal and other fuel consumption, resulting in reduction of CO₂ emission, and thus having impact on environment improvement. Further, employment creation impact at the sub-project sites is observed, and therefore effectiveness and impact of the project are high. With regard to sustainability of the project, although IREDA has to increase its staff, to strengthen their capabilities and to strengthen the monitoring system of loan projects responding to the rapid increase of loans, as of the time of this ex-post evaluation, no major problems have been observed in the institutional, technical, financial aspects and current status of the project operation and maintenance system. Thus, the project sustainability is high.

In light of the above, this project is evaluated to be highly satisfactory.

1. Project Description



Project Locations



Wind power generation financed by the project

1.1 Background

During the five years starting with the fiscal year 2005, energy consumption in India grew in tandem with rapid economic growth, with annual GDP growth averaging over 8%. Thus, to sustain stable supply of energy became an urgent issue of great importance for supporting such rapid economic growth. However, India had a skewed structure of energy supply, by relying on coal-fired power generation for 53% of the nation's power supply (as of 2009), which combined with the high and rising level of dependence on imported energy resource, created unease with regard to the stable supply of power. Seeking to diversify the structure of energy supply, the Indian government has worked at development of new and renewable energy (using wind power, solar power, cogeneration, etc.) but these types of energy source accounted for only 9.0% of national power generation (as of 2009), leaving much development potential to be exploited. Regarding conservation of energy, the *Energy Conservation Act of 2001* designated the 15 industrial sectors that accounted for the greatest shares of energy consumption, and mandated the obligation of energy audits, subsequent to which the sectors were required to work at achieving specific targets of energy efficiency.

In 1987 the Indian government established IREDA with the objective of financing and promoting the projects in the new and renewable energy field and the conservation of energy. Consonant with this the Ministry of New and Renewable Energy (MNRE) was established in 2006. MNRE has created a subsidy scheme so that independent power producers (IPPs) can enter the power sector market. Concerning energy conservation, the Bureau for Energy Efficiency (BEE) was set up under the Ministry of Power (MoP), and has been the single responsible organization for improving energy efficiency in all sectors of the economy, and has supported the implementation of energy conservation projects of various business entities. Within this context, market expectations for IREDA, the official government financial institution dedicated to activity in the fields of new and renewable energy, and of energy efficiency, have been high and therefore the project has supported for implementing various policies in the same area of the Indian government.

1.2 Project Outline

The objective of the project is to secure stable and diversified source of power supply against the recent increasing energy demand in India, by providing the two-step loans through IREDA for new and renewable energy development and energy efficiency and conservation projects in the country, thereby contributing to environmental improvement, sustainable economic development and mitigation of global climate change.

Loan Approved Amount/ Disbursed Amount	30,000 million yen / 30,000 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	June 2011 / June 2011
Terms and Conditions	Interest Rate: 0.55% Repayment Period: 30 years (Grace Period) (10 years) Conditions for Procurement: General Untied
Borrower / Executing Agency	Indian Renewable Energy Development Agency Ltd. (IREDA) / the same as at the left (Guarantor: The President of India)
Project Completion	December 2014
Main Contractor (Over 1 billion Yen)	None
Main Consultant (Over 100 million Yen)	None
Feasibility Studies, etc.	“Special Assistance for Project Implementation: New and Renewable Energy Development Project (Phase 2)” (December 2014)
Related Projects	“New and Renewable Energy Development Project (Phase 2)” (September 2014)

2. Outline of the Evaluation Study¹

2.1 External Evaluator

Mitsue Mishima, OPMAC Cooperation

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: December 2016 – February 2018

Duration of the Field Study: February 12 – March 15, 2017, May 13 – May 26, 2017

2.3 Constraints during the Evaluation Study

Out of eighteen target projects which were financed by IREDA under this ODA loan (hereinafter referred to as “sub-projects”), two projects are as yet unfinished and operational conditions cannot be evaluated and hence their effectiveness and impact are not covered by this report. Further, as of the time of the ex-post evaluation, repayment had been completed for eight sub-projects prior to the scheduled repayment date, of which operation data could not be obtained for one and hence that project is not included for the target of analyzing the effectiveness of the project.

¹ Regarding the data and information collection support for the evaluation study, it was contracted with and implemented by the National Institute of Labour Economics Research and Development (NILERD).

3. Results of the Evaluation (Overall Rating: A²)

3.1 Relevance (Rating: ③³)

3.1.1 Consistency with the Development Plan of India

The Eleventh Five Year Plan (April 2007 to March 2012) that was effective as of the time of the project appraisal, 93,577MW of new power development projects were planned in order to meet the rise in demand attendant upon rapid economic growth, of which, the target for new and renewable energy was 15,000MW. The plan also included the target of a 20% improvement of efficiency of energy use, compared to the energy use in fiscal year 2007 to 2008, by fiscal year 2016 to 2017.

Further, as part of countermeasures for environment improvement such as mitigating emission of CO₂ under the *National Action Plan on Climate Change*, announced in 2008, the *National Solar Mission and the National Mission for Enhanced Energy Efficiency* were launched and have been actively working to achieve progress in investing for solar energy and energy efficiency projects. As for solar energy, in 2010 the *Jawaharlal Nehru National Solar Mission* was formulated and a policy with special regard to photovoltaic and solar thermal power generation was promoted. In addition, the *Strategic Plan for New and Renewable Energy Sector (2011-2017)* of MNRE has the objectives of promoting renewable energy generation for on-grid distribution mainly by solar power and wind power generation, biomass power generation and cogeneration by bagasse⁴, and hydropower generation; and of promoting renewable energy power generation unconnected to the power system (off-grid) for the rural area, with quantified targets for each.

Examining the on-going plans and policies at the time of this ex-post evaluation, the subsequent *Twelfth Five Year Plan (April 2012 to March 2017)* includes the target of 30,000MW for new and renewable energy and also continued to assign importance to the policy of improving the efficiency of energy consumption in the industrial sector, including the thermal power plants, with the target of 20% reduction by fiscal 2016-2017. Then, in the *Three-year Action Plan (April 2017 to March 2020)*, the Indian government gave attention to increasing renewable power generation facilities and expanding the distribution network, as well as, with regard to conservation of energy, promoting investment in energy saving facilities in all sectors, based on cost-benefit analysis.

Regarding wind power generation, *Generation Based Incentives (GBI) policy for power generation*, introduced in 2009, is a scheme⁵ to provide subsidies based on the amount of power supplied to the grid. Policy that began under the *Eleventh Five Year Plan* continues

² A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

³ ③: High, ②: Fair, ①: Low

⁴ Bagasse is the fibrous material remaining after processing sugar cane and is used as boiler fuel.

⁵ According to the actual power generation, subsidies are paid since 2012 at 0.50 rupees/kWh, and up to 10,000,000 rupees/MW over the period of 10 years.

under the *Twelfth Five Year Plan*. IREDA is the implementing agency for GBI. In addition to these policy initiatives, the government has adopted various incentives such as tax exemption for imported equipment, and income tax relief for 10 years starting from the time of project operation.

From the above, the project is consistent with the various development policies of the Indian government from the time of appraisal to ex-post evaluation.

3.1.2 Consistency with the Development Needs of India

According to MoP statistics in fiscal year 2011-2012 available at the time of the ODA loan project appraisal, due to rapid economic growth, there was an 8.5% shortfall in power generation capacity relative to the power demand, making it necessary to adopt countermeasures for new power development including renewable energy and promotion of energy efficiency. In the background of this project, as stated above, was a skewed reliance on coal-fired generation, and in view of reducing the environmental burden by reducing use of fossil fuels, and considerations of diversification of energy sources, and securing stable power supply, it was necessary to increase renewable energy power generation capacity which accounted for only about 9% of the total.

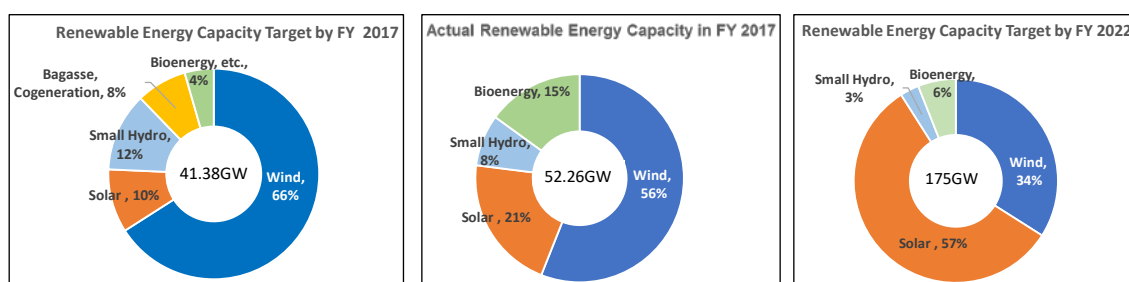
Turning to developments after that time, India's GDP growth rate for three-year period 2014 to 2016 was in the 7% range and electricity consumption per capita increased by about 6% on the annual average. Although MoP statistics show that the shortfall of power generation installed capacity to the power demand was reduced from 8.5% in fiscal year 2011-12 to 0.7%, in fiscal year 2016-17, there is a small insufficiency at the time of this ex-post evaluation study. In view of the continuation of demand and supply gap, a need still exists for increasing generation capacity and improving energy efficiency. *The Twelfth Five Year Plan* which is in force during the project implementation, calls for reduction of the share of coal in national power generation from 56% in 2012 to 42% in 2030, and for the share of renewable energy to be raised from 12% in 2012 to 33% in 2030. Nevertheless, according to MoP statistics as of February 2017 at the time of the ex-post evaluation, the source of power generation in India depends on coal-fired, accounting for 58.9% of generation on an installed capacity base. Total power generation installed capacity of renewable energy is 50GW, or 15.9% of the total. This means an increase of about 4% from the level of 2012, and it is still required to continue efforts for implementing renewable power generation projects in the future.

Regarding the planning of increases in renewable energy generation facilities over the long term, according to MNRE, it is estimated that India has the potential of renewable power generation of 900GW (750GW from solar, 102GW from wind, 25GW from bioenergy, and 20GW from small scale hydropower installations). MNRE aims at the development of 175GW on-grid power generation facilities using various renewable energy by 2022 (100GW from

solar, 60GW from wind, 10GW from bioenergy, and 5GW from small-scale hydropower facilities). In the *Twelfth Five Year Plan*, of the projected 30,000MW of new power from renewable sources connected to the grid by fiscal 2017-2018, 15,000MW are planned to come from wind power, 10,000MW from solar energy, and 5,000MW from other sources. Further, off-grid renewable energy from independent power supply, is planned to be 3,400MW, comprising 2,000MW from cogeneration using bagasse and 1,000MW from solar energy. Comparing the plan and actual total installation capacity of renewable energy as shown by Figure 1, whereas the target value at 2017 was 41.38GW, the actual value was 57.26GW that exceeds the target value. Therefore, it can be stated that progress has been made in increasing the renewable power generation facilities during the *Twelfth Five Year Plan*, and that the target value of 175GW by 2022 is set at a very high level, about three times higher from current figure, signifies that the need to develop renewable energy remains high.

As for energy conservation, at the time of the project appraisal, according to the *National Mission for Enhanced Energy Efficiency*, the energy conservation target is given as 23 million petroleum-equivalent tons per annual, equal to 19,598MW of power generation capacity. The government has stated in the *Eleventh Five Year Plan* that BEE and various MoP schemes achieved avoidance of the development of the power generation capacity equivalent to 11,000MW. In the *Twelfth Five Year Plan*, at the time of this ex-post evaluation, the projection for possible total energy reduction by the industrial sector is 13.18 million petroleum-equivalent tons. Of this amount, the projection for thermal power stations is 5.23 million tons, indicating that need to further conserve energy remains high.

As indicated above, need to develop renewable energy and conserve energy has remained high from the time of the project appraisal to ex-post evaluation, and the nature of this project is consistent with those needs.



Source: Ministry of New and Renewable Energy

Figure 1: Indian Government Plan to Increase Renewable Energy Power Generation Facilities (2017 and 2022) and Actual (2017)

3.1.3 Consistency with Japan’s ODA Policy

“Improvement of poverty and environment issues” is high-priority goals of the *Country Assistance Policy for India (2006)*, concerning assistance to India. Within this, assistance for renewable energy and for energy conservation are mentioned in the policy related to environment issues. Accordingly, JICA has assigned high importance to “support for sustained economic growth through improvement of the economic infrastructure” and “support for measures related to the environment and climate change”. As shown by these viewpoints, a policy to support for the development of new and renewable energy and energy conservation are being addressed and the project is consistent with these policies.

This project has been highly relevant to the development plan and development needs of India, as well as Japan’s ODA policy. Therefore, its relevance is high.

3.2 Efficiency (Rating: ③)

3.2.1 Project Outputs

The financial scheme of this project, as shown in the figure below, is in the form of a two-step loan, comprised of a loan by JICA to IREDA and IREDA’s lending for eligible sub-projects (by sub-loans) according to JICA requirements. Eligible sub-project for financing by JICA were medium-to long-term finance by IREDA, either solely financed or co-financed by IREDA for photovoltaic and solar thermal power generation projects, wind power projects (5MW and more in case of nonrecourse project finance⁶), small-scale hydropower projects, cogeneration (using bagasse) projects (less than 150MW), biomass power projects (less than 150MW) and energy saving and energy efficiency projects.

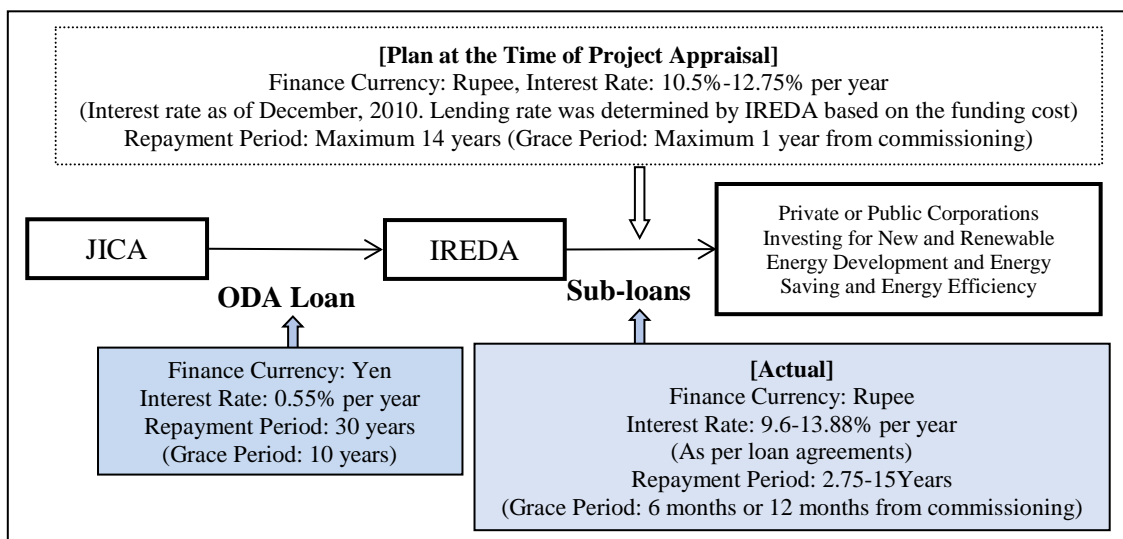


Figure 2: Financing Scheme of the Project

⁶ Non-retroactive type financing when repayment is to be solely from earnings (positive cash flow) from specified operations or assets possessed by an individual or corporation (non-exempt property).

Target sub-projects by IREDA which are eligible for this project were totaled 18, as shown in Table 1. Most (12 projects) were for wind power. In the background of this, an increase for wind power in all IREDA's lending is identified as one of the factors, due to implementation of a subsidy scheme to promote for wind power generation during the project periods, as referred in the section of this report on relevance. Other sub-projects comprised two each for photovoltaic power and small-scale hydropower projects, one for cogeneration (bagasse) power generation (power generation and steam utilization upon bagasse combustion for a sugar mill), and one for energy conservation and efficiency (modernization of sugar producing machines and auxiliary equipment of sugar mill cooperatives and public companies⁷)

Table 1: Number of Target Sub-projects and Actual Loan Conditions

Project Type	No.	Loan Conditions		Project Site States									
		Interest Rate	Repayment Period (Years)	HP	HR	RJ	GJ	JH	MH	TG	AP	KA	TN
(1) Wind power	12	9.6-13.75%	9-15			✓	✓		✓		✓	✓	✓
(2) Solar power	2	11.4%	10-12.8					✓		✓	✓		
(3) Hydropower	2	12.5%	10-11	✓									
(4) Cogeneration (bagasse)	1	13.88%	10		✓								
(5) Energy Conservation and Energy Efficiency Promotion	1	11.75%	10										✓
Total/Average	18	Average Approx. 12%	Average Approx. 11 Years	Project sites are in a total of 10 states									

Source: IREDA.

Note: State names: HP: Himachal Pradesh; HR: Haryana; GJ: Gujarat; JH: Jharkhand; MH: Maharashtra; TG: Telangana; AP: Andhra Pradesh; KA: Karnataka; TN: Tamil Nadu.

Regarding the terms and conditions of the financing, it was thought at the time of the project appraisal (December 2010) that interest rates would be set at 10.5 to 12.75% per annual, and the repayment period would be up to 14 years. As it turned out there were differences owing to the timing of the financing and variations in credit risk among borrowers, but on the average interest was about 12%, fixed, and the repayment period was about 11 years (including 6-12 months from the project completion as the grace period). According to IREDA, compared to commercial bank cases in the market, there was a merit for borrowers in terms of relatively lower interest rate and a tendency for a shorter appraisal period. Among the business operators who had received IREDA financing and were directly interviewed upon ex-post evaluation surveys, some commented on the loan conditions in positive terms on these points in general.

Up to the time of project completion in 2014 (completion of ODA loan disbursement) there

⁷ The project has two components (1) generating power by burning bagasse and (2) renewal of sugar producing machines and other equipment. (1) was financed by the Power Finance Corporation, public financial institution in India, and (2) by IREDA. Target component by the project was (2), which is to pursue energy-conserving effect by renewal of facilities.

was no occurrence of non-performing loans (or non-performing assets, hereinafter “NPA”, that were 180 days late after the scheduled repayment due date). At the time of this evaluation study (May 2017) there were eight instances of advance repayment (one small hydropower, seven wind power projects). According to IREDA, the early repayments were caused by borrowers refinancing loans from another institution or the borrowers’ selling of project assets to other companies. Thus, the projects themselves were being existing and continued. The trend of loan interest rate at public banks, according to Reserve Bank of India (hereinafter “RBI”) information was 10-10.75% in fiscal 2011-2012 but fell to 8.9-9.15% in July 2016⁸, signifying that IREDA rates at present are on the relatively high side. This fact appears to be one of the causes for refinancing.

Concerning technical assistance related to the project, at the time of the project appraisal, a plan was made for strengthening the technical appraisal capacity of IREDA with regard to photovoltaic power generation, improving the comprehensive understanding and analytic capability of IREDA’s technical appraisal capacity and performance, and holding a seminar for sharing the knowledge on new and renewable energy with participation by Japanese and Indian companies. However, the bidding for a technical support consulting contract was not successful. In that situation, assistance for technical appraisal capacity on solar power generation was obtained from the Agence Française de Développement (AFD). As a result, there was no Japanese technical assistance as in the plan. However, it is considered that absence of Japanese technical assistance did not affect the outcome of the project.

3.2.2 Project Inputs

3.2.2.1 Project Cost

The total amount of ODA loan was disbursed, as planned at the time of project appraisal, 30,000 million yen. While total planned project cost was 33,535 million yen, actual cost 33,349 million yen was lower than the planned.

Table 2 Project Cost (Plan/Actual)

Unit: million yen

Items	Plan (2011)		Actual (2014)	
	Total	Of which ODA loan	Total	Of which ODA loan
Loan for sub-projects	30,000	30,000	30,000	30,000
Interest during construction	470	0	328	0
Commitment charge	65	0	21	0
Administration cost	3,000	0	3,000	0
Total	33,535	30,000	33,349	30,000

Source: JICA and IREDA.

⁸ Source: RBI website, <https://www.rbi.org.in/scripts/PublicationsView.aspx?id=17207> (as of July 2017), Table 74, Structure of Interest Rates. There is no information provided for the five major public banks here, but ordinarily these rate quotations are for State Bank of India, Punjab National Bank, Bank of Baroda, Canara Bank, and Bank of India.

3.2.2.2 Project Period

The timing of the project completion was defined as the last disbursement by JICA to IREDA. At the time of the project appraisal, the project was expected to last from June 2011 to March 2016 (four years and 10 months, or 58 months) but the actual schedule was from June 2011 to December 2014 (three years and seven months, or 43 months), so the project was completed one year and three months earlier than the plan (74% of the planned period). The reason for early completion was that applications of sub-project loans that can be eligible for ODA loans were submitted earlier than had been expected, and the commitments had reached up to the ceiling of lending framework earlier accordingly. As stated in the output section of this report, the rapid increase in wind power projects that could be eligible for ODA loan was one of the factors particularly influencing this.

3.2.3 Results of Calculations for Internal Rates of Return (Reference only)

As the sub-projects eligible for the ODA loan were not identified at the time of project appraisal, no calculation of the internal rate of return (IRR) was made and for that reason no calculation was made at the ex-post evaluation. According to appraisal data of IREDA sub-projects, the financial internal rate of return (FIRR) was calculated based on the cost of sub-projects, operations and maintenance and the revenue from electricity sale. As a result, yielded FIRR values ranges from 11 to 22%. Information supplied by IREDA indicates that recalculation in 2015 gives FIRR values of ranging from 14 to 17%. These figures were discussed with IREDA at the time of ex-post evaluation, but it was not possible to confirm basis of calculation.

Both the project cost and project period were within the plan. Therefore, efficiency of the project is high.

3.3 Effectiveness⁹ (Rating: ③)

3.3.1 Quantitative Effects (Operation and Effect Indicators)

Fifteen of the 18 sub-projects had been completed by the time of the ex-post evaluation, and their facilities had started operation. Regarding the one cogeneration project, using bagasse at a sugar mill in Haryana State and the one energy conservation project at sugar mills in Tamil Nadu State (the borrower for this project is Tamil Nadu Power Co., financing for power generation plant and improvement of sugar mill facilities at 12 sugar mill cooperatives and public companies), the construction of both projects has taken much longer than had been planned and had not been completed by the time of ex-post evaluation. It was confirmed in the field survey in May 2017, however, that the turbine for the cogeneration sub-project,

⁹ Sub-rating for Effectiveness is to be put with consideration of Impact.

procurement of which had been significantly delayed, had arrived in April 2017. Trial operation is scheduled for September. Regarding the energy conservation sub-project, it was found that completion was planned to take place in December 2017 (see Box, “Result of Site Survey and Stakeholder Interviews at Four Sub-Projects”). At one wind power sub-project, approximately 30% of the planned capacity had not been completed, but the field survey revealed that completed facilities which had been completed were in good operation (see Box).

Effectiveness and impact of the project were judged from status of facilities completed by the time of ex-post evaluation only.

3.3.1.1 Operation Indicators (Installed Capacity and Capacity Factor)

As the sub-projects had not been identified at the time of the project appraisal, no initial target values were set at the time of ODA loan appraisal and target values were set at the time of screening of loan applications of sub-projects. The total target capacity of sub-project plants was 844MW; as of May 2017, actual installed plant capacity was 819.5MW. The difference between target and actual values is due to a reduction in capacity at two wind power sites. As for the capacity factor of the facilities, by type of generation, it was above 80% of the target on average; annual power generation of all sub-projects came to 1,121GWh. All of this represents output from new facilities, and as a contribution to diversification of power sources. The result also is significant in assuring stable power supply and in meeting the demand in view of the continued growth of demand in recent years in India.

Table 3: Operation Indicators (Installed Capacity and Capacity Factor)

Type of power generation	Installed Capacity (MW) ¹		Capacity Factor ² (%)	
	Target (Status upon completion)	Actual (status at time of ex-post evaluation)	Target (Status upon completion of each sub-project)	Actual ³ (2015-2016)
Wind	791.0	766.5	20.3	18.2
Solar	32	32	18.8	14.7
Small hydro	21	21	57.4	57.4
Total	844MW	819.5MW (May 2017)	—	—

Source: IREDA

Note 1: A notation made at the time of the project appraisal stated “maximum capacity” but this expression is synonymous with “installed capacity”, and consequently the present report uses “installed capacity”. Target value of total installed capacity is total target values of sub-projects at the time of the loan application reviews by IREDA.

Note 2: Capacity factor = actual annual power generation volume ÷ (installed capacity x annual hours) x 100. Target values are those used by IREDA at the time of sub-project loan application review. Here, capacity factor is average value for total sub-projects of the respective power generation category.

Note 3: Actual values here are based on values for accounting year 2015-2016. For cases when data for that year were not available, data for the nearest year before or after this year were used. One wind power sub-project was repaid in full in April 2015, thus IREDA has not been in touch with the operator and hence data are not available from that sub-project.

3.3.1.2 Effect Indicator (Energy Substitution Effect)

When IREDA undertook its review of the project applications, major power generation source of the grid to which the sub-projects of wind, hydro, and solar power facilities connected was thermal power plants (mostly coal-fired, some heavy oil-fired), and therefore reduction of fossil fuel use was expected as the project effect through implementation of the sub-projects. The trend of electricity demand was rising at about the time the sub-projects began operations, thus it was possible that without the project, thermal power generation by coal or oil consumption would have increased. Therefore, when calculating the projected effect of energy substitution, using the same conditions as used at the time of IREDA's loan reviews, it was found as shown in Table 4 that there was potential for reduction of about 370,000 coal-equivalent tons per year and about 20,000 oil equivalent tons per year as the energy substitution effect.

Table 4: Effect Indicators (Energy Substitution)

Energy substitution	Estimated value
Coal consumption	371,516 coal equivalent tons /year
Oil consumption	23,139 oil equivalent tons/year

Source: Calculated by evaluator based on the answers to questionnaires from IREDA and sub-project implementation companies.

3.3.2 Qualitative Effects (Other Effects)

At the time of the project appraisal it was anticipated that there would be qualitative effects of “energy efficiency; stabilization of electricity supply; improvement of the environment, sustainable economic development, and alleviation of climate change”. Regarding efficiency in energy use, as two sub-projects related to this effect have not been completed, no observation can be made at the time of this ex-post evaluation study. Stable supply of electricity was evaluated as quantitative effects. Improvement of the environment and alleviation of climate change are evaluated as the project's impact. Sustaining economic development was evaluated in terms of local socio-economic impact.

(Box) “Result of Site Survey and Stakeholder Interviews at Four Sub-Projects”

The evaluator conducted a site survey and interview to the project-related persons of four sub-projects. The result of the survey was as follows:

(1) Company A: Cogeneration using bagasse (power generation and heat utilization)

● Status of operations

Company A had 5MW of power generation plant and the project was for addition of 25MW from bagasse. Completion of the project was delayed in two years comparing to the scheduled date. While the major reason for this delay was a shortage of funds for acquisition of the turbine, it was installed in April 2017. According to the IREDA official in charge of this project, commercial operation is planned to be commenced in September 2017, after a trial commission period.



Company A: Outside View of the Power Generation Facilities

● Comment regarding IREDA financing

The loan application review process and paperwork went smoothly. Very much assistance was provided by the loan officer for the sub-project, including help on engineering matters. There was awareness that the origin of the funds was the Japanese government. The company was satisfied with the loan conditions and its implementation.

● Socio-economic impact

Hiring an additional 50 persons is expected as a result of the facility expansion. Hiring from among the local population is planned except for engineers and technicians. Basically, employment of local residents for project construction work has been assigned priority. Construction materials, 20% of construction cost, were utilized for purchase of construction materials in the local market. In this sense, the sub-project contributed to the local economic development.

(2) Company B: Wind power project

● Status of operations

The site of this sub-project is in Maharashtra State and 14MW facility of original plan, 19 MW, is in operation. The remaining 5MW generators has been procured but lack of funds has delayed installation. At present no problems have been observed in operation of the scale of 14MW.

● Comment regarding IREDA financing

At present the interest rate is about the same as that for loans from private-sector banks.

● Socio-economic impact

This sub-project contributed to the additional jobs for members of the local community during construction and operations, and it also contributed to the increase in local tax revenue resulting from a rise in land value. No complaints about noise have been made by residents near the facility. There is no concern over the environment.

(3) Company C: Solar power project

● Status of operations

The company is operating a total of 30MW solar power generation facilities, at four sites in Andhra Pradesh and Telangana states. While it is linked to the grid in its area, the company also sells electricity directly to private companies by the power purchase agreement (including a Japanese company, Toshiba). As for the status of facility operations shortly before the site survey there had been a problem related to the cable, but it had been resolved. There were no major breakdowns or malfunctions and operations to date have been smooth.



Company C: Solar Power Generation Site

● Socio-economic impact

There was new hiring of technical personnel for operation of the project facilities. The private companies which have contracted for purchase of electricity are charged lower rates than those of the state distribution company and hence are being benefited by the project.

(4) Sugar Mill Modernization Project for Sugar Mill Cooperatives / Public Companies (Energy conservation)

● Status of operations

At the time of the ex-post evaluation study, at the site of the 12 entities (February 2017) where modernization of sugar mill facilities was planned, four had completed installation and had begun trial operation only recently.

- Socio-economic impact

Impact could not be verified, as projects had not been completed at the time of the ex-post evaluation. However, through interviews at the Vellore sugar mill cooperative and Tamil Nadu Generation and Distribution Corporation Ltd. (TANGEDCO) it was expected that impact would be reduction of the energy cost of operating the sugar mill plant after replacement of its obsolete equipment, employment retention and increase effects at the sugar mill plant, and recovering of confidence of sugarcane farmers in the cooperative / public company through the end of frequent disorder of sugar mill operation. Providing that operation of the plant is going smoothly and there are no effects of external factors such as deterioration of the economic environment, these expected impacts appear to be realized. It is assumed that the project has social significance as the project benefit farmers including poor families, who provide their sugar cane to those cooperatives and public companies.



Sugar Mill Facility at
Vellore Cooperative Sugar Mills Ltd.

- Experimentation with a new financial scheme

The borrower of this sub-project was an electric power company as sugar mill cooperatives and public companies were not able to borrow money and invest in modernization of sugar mill plants and power generation plants because of regulatory restraints and incapable of individual borrowing. Reduction in energy consumption through the modernization of the plant is expected and surplus electricity can be supplied to the grid. According to the agreement between the power company and the sugar mill cooperative and public companies, the power company would plan, construct, own, operate and maintain the generation facilities, while the cooperatives and public companies would provide with the power company for the required land, and bagasse as power generation source for free. Contractor of Sugar mill plant construction would be supervised by the cooperative and public companies. Ownership of the project facilities will be transferred from the power company to the cooperatives and public companies, once loan repayment is completed by the power company. According to the IREDA official in charge of this sub-project, this undertaking is significant as it used a new financial scheme whereby the power company invested in the projects of the cooperatives and public companies. This person also mentioned interest in promoting this new model financial scheme for other cases, but at the time of the ex-post evaluation, there was no other state power company which showed an interest in this scheme.

3.4 Impacts

3.4.1 Intended Impacts

(1) Reduction of CO₂

Calculation of the reduction of CO₂ emission resulting from replacement of coal and oil consumption as fuel for power generation by the sub-projects yielded the annual value of approximately 909,000 CO₂-equivalent tons. Thus, it is judged that contribution is made by the project to alleviating the climate change.

(2) Impact on Local Socio-Economic Development

IREDA has indicated that each sub-project has had a socio-economic impact on its local community through creation of employment opportunities. In the case of each sub-project sites visited for this ex-post evaluation study (see Box), jobs were created during construction and subsequent operation, with the exception of the solar power sites. In addition, there was an instance where land values rose in the site area, so there would be an impact of tax increment.

3.4.2 Other Positive and Negative Impacts

3.4.2.1 Impacts on the Natural Environment

IREDA stated that it confirmed that all sub-projects met national requirements regarding the environment (such as clearance by the Forestry Department in the case of a project site in a forest land). Loan officers visited project sites during the loan review, construction, and completion stages, to confirm the conditions and status of the project sites. Reports of the conditions observed indicate that there were no instances of adverse impact on the natural environment and also it was confirmed there was no problem identified by IREDA after commencement of operation.

Further, as the project replace coal and oil as fuel, they work to abate emission of SO₂, NO_x, and fine particles and hence are conducive to improvement of the atmosphere.

3.4.2.2 Land Acquisition and Resettlement

According to IREDA there were no instances of local residents being forced to resettle due to the sub-projects. At the time of the ex-post evaluation study, the evaluator confirmed again through discussions with IREDA officials in charge of lending for the sub-projects that there was no sub-project corresponding to Category A of JICA Guidelines for Environmental and Social Considerations. Further, as a result of meetings with the project operators at project sites and confirming the contents of IREDA documents on sub-projects, no residents had to relocate and there were no problems in acquisition of land.

The objective of this project was “to assure the supply of electricity to meet demand and diversify power sources,” and it was achieved by the project. Due to the project implementation, the substitution of fossil-fuel based energy resources and reduction of emission of CO₂ have been recognized as positive impact. Therefore, it is judged that the project contributed to improvement of India’s environment and to alleviation of climate change. There was also employment generation impact by implementation of the project. As aforementioned, this project has largely achieved its objectives.

Therefore, effectiveness and impact of the project are high.

3.5 Sustainability (Rating: ③)

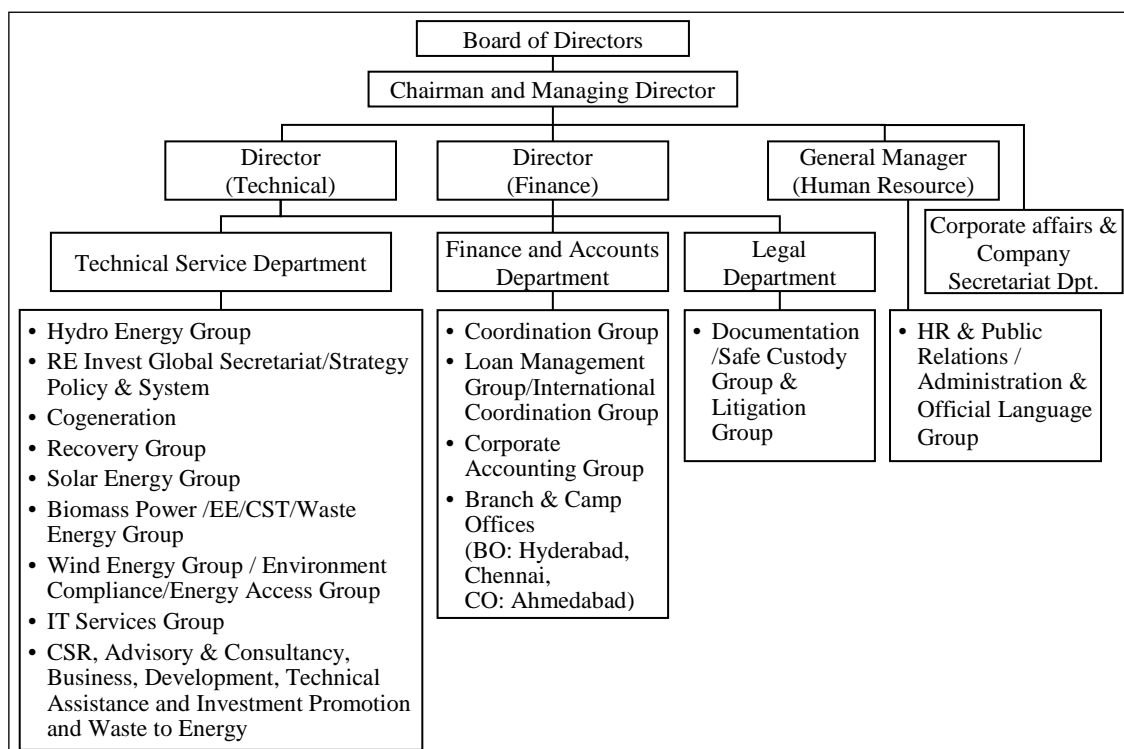
3.5.1 Institutional Aspects of Operation and Maintenance

IREDA, established as a public entity in 1987, is categorized by RBI as a nonbank financial institution. At the time of the ex-post evaluation, as an affiliated organization to MNRE, its’ administration was under the supervision of MNRE. The organization of IREDA is as shown in Figure 3. Under the Board of Directors and Chairman and Managing Director, there are the director in charge of engineering and, the director in charge of finance, and general manager

of human resources, and there are departments for Technical Service, Finance and Accounts, Human Resource, and the Systems Group. Technical Service department consists of groups specialized in hydropower, solar power, wind power, cogeneration, biomass generation, and energy conservation. This department was in charge of the sub-projects from loan appraisal to administration. The total number of employees of IREDA was 152 at the time of the ex-post evaluation. The number of employees had not that increased in recent years in accordance with the increase in number and amounts of the loans, thus at the time of the ex-post evaluation, there were some concerns for possible shortage of staff members. On this point, IREDA has already received approval from MNRE to increase total number of staff to more than 200 by 2020 and IREDA is in the process of employing the new staff every year. As of April 2017, 24 new persons had been employed and were being trained.

Most of the work of collecting repayment from the borrowers of IREDA is done at its head office. Some employees are stationed at Chennai and Hyderabad offices (but only one at Chennai) to assist the head office, such as by checking conditions at project sites, assisting in preparation of necessary documents for the loan, and coordinating with governmental agencies and banks.

At the time of the ex-post evaluation, measures were being implemented to increase staffing in response to the increase in financing and no serious problems were evident concerning the institutional aspects of IREDA and its allocation of responsibilities to each department.



Source: Compiled by evaluator quoting from the major parts in IREDA documents (as of April 2017).

Figure 3: IREDA Organization Chart

3.5.2 Technical Aspects of Operation and Maintenance

Among IREDA's loan officers are university graduates holding bachelor degrees or higher; many of them are MBA holders and specialists in electrical engineering. At the end of every January the Human Resource Department collects training need assessment reports from department managers about the staff, and subsequently each staff member takes training courses which are judged to be necessary for their work. Training programs according to specific job content are provided for senior management, middle management and young staff members on a regular basis so that employees can acquire the skills and knowledge they need.

As for loan appraisal, IREDA applies Credit Rating Model for Renewable Energy Financing that was adopted in September 2013; referring to credit ratings from multiple credit rating agencies, and an eight-level scale is used to assign credit ratings. In this way, detailed analyses on risks are made.

Thus, IREDA is making endeavor to improve its employees' capacity to perform loan appraisal and administration. As a financing institution, IREDA obviously monitors the status of loan repayment after project completion; however, they do not necessarily collect and monitor the project operation data regularly in the same way for all projects. Therefore, in order to confirm the operation data of each sub-project in the ex-post evaluation study, depending on the case, the evaluator had to request the sub-project borrowers to provide the operation data and this took time.

Through the technical assistance provided by JICA related to the New and Renewable Energy Development Project (Phase 2), which is subsequent of this project, IREDA has been developing an information system for project monitoring and evaluation that will enable it to confirm the operation data such as actual power generation of each project. This information system, which covers JICA-financed sub-projects, and then it is planned to cover all IREDA projects. At the time of the ex-post evaluation, construction of the system was still underway but once it is completed IREDA will be able to use its data for monitoring and analysis. Therefore, it is very crucial for IREDA to decide on its policies for operating and maintaining the system, and then to establish the organizational arrangements and capabilities for post monitoring of the projects.

3.5.3 Financial Aspects of Operation and Maintenance

Among the major financial indicators for its past five years, IREDA has reported an increase in earnings after tax, owing primarily to increases in interest revenue in every year. The capital adequacy ratio (CAR)¹⁰, that slipped after reaching 28% in fiscal 2011-2012, and remarkably decreased to 19.9% in fiscal 2015 -2016. Nevertheless, it was above the RBI's 15% standard for nonbank financial institutions. Since fiscal 2013-2014 NPA ratio has tended to rise every

¹⁰ CAR: capital divided by risk weighted assets according to items. The higher the percentage, the healthier the entity.

year. NPA ratio was 2.46% in fiscal 2013-14, 3.84% in fiscal 2014-15, and then 4.09% in fiscal 2015-2016. IREDA and MNRE agree each year on a target NPA and as shown in Table 6 NPA ratio surpassed slightly the target ratio in every year.

Projects that have become NPA are concentrated in the fields of small-scale hydropower, cogeneration, and biomass generation. These are vulnerable to external factors, such as rainfall affecting small hydro plants and unexpected situations concerning procurement of fuel materials in case of cogeneration and biomass power generation, so therefore appropriate and meticulous planning is indispensable for a project in these categories to succeed. IREDA has reported that there was some deficiency in technical review of feasibility studies for small-scale hydropower projects, and is dealing with this situation by assigning specialized technical personnel to such work, and improving the capacity of technical review. Among financial indicators for fiscal 2016-2017 NPA ratio again declined and reached almost to the target level. Net profit after-tax increased, by 20% above the previous year's value. Along with the increase in revenue, capital costs also increased, but at the present time, in general, there are no serious issues threatening financial soundness.

Table 5: Major Financial Indicators of IREDA

Unit: million rupees

Indicators	FY 2012-13	FY 2013-14	FY 2014-15	FY2015-16	FY 2016-17
Revenue	7,296	8,954	11,183	11,745	14,817
Interest revenue	7,191	8,908	11,179	11,740	14,793
Expenditure	4,757	5,546	7,397	7,562	9,438
Capital Cost	3,806	4,880	6,463	6,684	7,259
Personnel Cost	183	212	257	226	281
Profitbefore tax	2,506	3,403	3,786	4,176	5,379
Profit after tax	2,026	2,405	2,719	2,980	3,650
Provision	470	191	312	393	1,239
Asset	71,931	90,803	102,805	131,958	187,042
Capital Adequacy Ratio (%)	24.8	23.8	23.1	19.9	18.3

Source: IREDA Documents

Table 6: Transition of NPA Ratio of IREDA

Unit: %

Indicator	FY 2013-14	FY 2014-15	FY2015-16	FY 2016-17*
Target	-	3.00	3.25	3.68
Actual	2.46	3.84	4.09	3.70

Source: IREDA

Note: *This figure is before audit.

3.5.4 Current Status of Operation and Maintenance

During the ex-post evaluation study, by confirming the repayment status of sub-project loans that were still outstanding, it was found that three loans for wind power projects were overdue. As of the end of March 2017 one of these was classified as NPA. Nevertheless, operations were continuing and as of the time of the ex-post evaluation study, this project was in the process of being sold to a new owner.

According to interviews with beneficiaries, in Maharashtra State, more than one year delay in payment from state government for power purchases affected the wind power project, which became an NPA. According to IREDA, as of May 2017, the Maharashtra State government was going to settle unpaid obligations. There are similar arrears in other state governments such as Rajasthan. While it is only one sub-project that has been classified as NPA because of arrears in payment by the state government, this issue can affect the borrower's financial situation and can be a cause of delay in repayment to IREDA, thus it requires continued attention.

From the viewpoint of monitoring the second lending by IREDA that utilizes repayments from the sub-projects, JICA requested IREDA to submit a statement of loan outstanding of each approved sub-project; this document was submitted for the first time when the ex-post evaluation study was conducted. Examining the statement, it is evident that the total amount of loans outstanding of the projects financed by IREDA exceeded the total repayment by sub-projects. In general, it can be said that funds repaid by sub-projects are regarded as being used for financing the projects with the same objective of this project.

No major problems have been observed in the institutional, technical, financial aspects and current status of the operation and maintenance system. Therefore, sustainability of the project effects is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The project aimed to provide medium- and long-term funding for new and renewable energy power generation and energy efficiency promotion projects in India, confronting a shortage of electric power generation capacity, by means of a two-step loan through IREDA, thereby contributing to the securing of electric power supply, diversifying its source, and alleviating the environmental burden. This project is supposed to respond to the growth of energy demand resulting from rapid economic growth and to improve the environment, is consistent with both the policy and development needs of India and the development assistance policy of Japan and thus is highly relevant. The project cost and period were within the plan and efficiency of the project is high. Wind power and solar power projects funded through IREDA are on the whole being operated as planned. This is recognized as substitution for thermal power generation which is the main source of electricity in India, reducing coal and other fuel consumption, resulting in reduction of CO₂ emission, and thus having impact on environment improvement. Further, employment creation impact at the sub-project sites is observed, and therefore effectiveness and impact of the project are high. With regard to sustainability of the project, although IREDA has to increase its staff, to strengthen their capabilities and to strengthen the monitoring system of

loan projects responding to the rapid increase of loans, as of the time of this ex-post evaluation, no major problems have been observed in the institutional, technical, financial aspects and current status of the project operation and maintenance system. Thus, the project sustainability is high.

In light of the above, this project is evaluated to be highly satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

Concerning the data system for project monitoring and evaluation that is being developed through technical assistance for Phase 2 of this project, IREDA is supposed to renew and maintain the system, for use in the project monitoring after loan disbursement completion. It is recommended that procedural rules for project monitoring using this system be determined at the earliest and the personnel be assigned so as to make effective and maximum use of the system.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

Consideration at the early stage of project preparation for support to strengthen project monitoring capability of an executing agency

For IREDA, it was necessary from the commencement of this project to establish the information collection system related to sub-project completions and operation, in addition to the information collected at the time of project appraisal. At the time of the project appraisal, it was planned that the executing agency report quarterly to JICA the capacity factor of sub-projects, applying the lesson learned from similar past projects. At that time IREDA lacked a system for tracking capacity factor of all projects financed by them. Thus, attention had to be paid to this situation at the time of appraisal, and necessary support should have been considered through technical assistance. In the Phase 2 of this project, technical support was provided for building an information system for monitoring of sub-project operation status, but it would have been even better if technical assistance was started for implementation of this project.

Renewable energy and energy conservation projects represent relatively high investment risks, as they are vulnerable to changes in policies, economy, and natural conditions of the nation following project completion. Further, particularly in the case of large countries such as India these projects are likely to be influenced by change in the policies or economic conditions of the state government where the projects are located. When there is insufficient monitoring arrangement at the executing agency, apart from insufficiency in technical screening ability, it may be possible to take measures to raise effectiveness and ensure sustainability, by providing

support for building a monitoring system at an early stage. Such a system can also serve for strengthening loan management capacity. It is desirable that in future projects similar to this one, that JICA analyzes the monitoring arrangements and capability of the executing agency at the stage of project preparation survey, and prepare a plan for strengthening project monitoring by the executing agency, by providing technical assistance by JICA if necessary and possible, or through cooperation with another donor support.

End

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1. Project Outputs	Two step loans from the ODA loan borrower IREDA to end users	As planned
(1) Number of sub-loans	none	18
(2) Terms and Conditions		
Eligible end user	Private or public companies investing in new/ renewable energy development or energy conservation /energy efficiency improvement projects	As planned
Eligible sub-projects	<ul style="list-style-type: none"> • Photovoltaic and solar thermal power generation • Wind power generation (corporate finance or 5MW and more in case of nonrecourse project finance) • Small hydro power • Cogeneration (bagasse) power generation • Biomass power generation • Energy conservation, energy efficiency improvement promotion 	As planned
Interest Rate	In principle, no conditions regarding the interest rate. The interest rate that IREDA determines considering the credit risk and other aspects of end users (10.5-12.75% per annual as of December 2010)	9.6-13.88 % per annual
Repayment Period	Maximum 14 years	9 – 12.8 years (including half year to one year grace period after commencement of operation)
2. Project Period	June 2011 – March 2016 (58 months)	June 2011 – December 2014 (43 months)
3. Project Cost		
Amount Paid in Foreign Currency	30,535 million yen	30,349 million yen
Amount Paid in Local Currency	3,000 million yen	3,000 million yen
Total	33,535 million yen	33,349 million yen
Japanese ODA Loan Portion	30,000 million yen	30,000 million yen
Exchange Rate	1 rupee=1.78 yen (As of November 2010)	1 rupee=1.69 yen (average IFS annual rate between 2011 and 2014)
4. Final Disbursement	December 2014	

India

FY2016 Ex-Post Evaluation of Japanese ODA Loan Project
“Micro, Small and Medium Enterprises Energy Saving Project (Phase 2)”

External Evaluator: Mitsue Mishima, OPMAC Corporation

0. Summary

This project has the purpose of providing medium- and long-term financing to micro, small, and medium enterprises (MSMEs) in India, where rapid economic growth has engendered an increase in energy consumption making it vital to improve the efficiency of energy use. This financing has been for investment in acquisition of energy-conserving equipment and facilities. The provision of financial support for investment in energy conservation by MSMEs is highly relevant to both the development assistance policy of the Japanese government and the policy and development needs of the Indian government. The project was realized within the amount of funds appropriated but loan disbursement was delayed compared in the planned period, so the efficiency of the project is judged to be fair. The energy conservation equipment financed for end user (final borrowers) either directly by the Small Industries Development Bank of India (SIDBI) or through intermediary financial institutions has helped to reduce energy consumption, making the project highly effective. The project also had impact through reducing the emission of CO₂. There are cases wherein the project had impact through increased output of manufacturing, increased income, improved worker safety, and retention of employment. Thus, the effectiveness and impact are high. With regard to sustainability, at the time of the ex-post evaluation no serious problem is evident concerning SIDBI's institutions for operation and maintenance, technical matters, or financial matters.

In light of the above, this project is evaluated to be highly satisfactory.

1. Project Description



Project Locations



Energy-efficient printing machine financed by the project

1.1 Background

Energy consumption in India continued to rise, in accordance with rapid economic growth that averaged greater than 8% annually, and the energy demand was predicted to rise further. Thus, the necessity for efficient use of energy for the purpose of stabilizing energy supply and conserving the energy were an urgent issue. In particular, the low efficiency of energy consumption by MSMEs was pointed out. The Indian government promoted energy conservation, enacting the *Energy Conservation Act in 2001*, establishing the Bureau for Energy Efficiency (BEE) as a single institution to promote energy efficiency, and formulating the National Mission for Enhanced Energy Efficiency as one component of the *2010 National Action Plan on Climate Change* which was published in June 2008. Further, after the *Micro, Small and Medium Enterprises Development Act* which became effective in 2006, the supply of preferential financing to MSMEs were expanded. However, the MSMEs had limitations to their ability to obtain financing, and to their technology and knowhow for introducing energy efficient equipment and facilities, while at the same time awareness of the importance of energy conservation was low, resulting in a continued delay in promotion of energy conservation in the sector. Facing these conditions, with a view to supplying medium- and long-term financing which was necessary for energy conservation, coupled with strengthening the capacity of provision of the loans by SIDBI and other intermediary financial institutions, and raising awareness among the MSMEs, an ODA loan, “Micro, Small and Medium Enterprises Energy Saving Project”, (hereinafter the “Phase 1” project) was implemented and completed disbursement of the entire loan amount in the planned disbursement period, remaining three years. Due to necessity for further energy conservation and to respond to strong financial demand, this project was to be implemented as Phase 2.

1.2 Project Outline

The project aims at promotion of energy conservation by MSMEs, through supplying the necessary medium- and long-term loans for MSMEs to invest in energy conservation, while at the same time supporting strengthening of the lending capacity of both SIDBI as the executing agency and other intermediary financial institutions, and fostering enhancement of awareness of energy conservation among MSMEs, thereby contributing to improvement of the environment and sustainable economic development, as well as to mitigation of climate change effects.

Loan Approved Amount/ Disbursed Amount	30,000 million yen / 29,999 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	June, 2011 / June, 2011
Terms and Conditions	Interest Rate 0.4% Repayment Period 15 years (Grace Period) (5 years) Conditions for Procurement: General Untied
Borrower / Executing Agency	Small Industries Development Bank (SIDBI) / SIDBI (Guarantor: The President of India)
Project Completion	February 2015
Main Contractor (Over 1 billion yen)	None
Main Consultant (Over 100 million yen)	None
Feasibility Studies, etc.	<ul style="list-style-type: none"> • “Special Assistance for Project Implementation: Micro, Small and Medium Enterprises Energy Saving Project” (October 2008-March 2011) • “Special Assistance for Project Implementation: Micro, Small and Medium Enterprises Energy Saving Project Phase 2” (September 2011 -March 2014) • “Special Assistance for Project Implementation: Micro, Small and Medium Enterprises Energy Saving Project Phase 3” (2014 - February 2018)
Related Projects	<p>ODA Loan Projects:</p> <ul style="list-style-type: none"> • “Micro, Small and Medium Enterprises Energy Saving Project” (2008) • “Micro, Small and Medium Enterprises Energy Saving Project (Phase 3)” (2014)

2. Outline of the Evaluation Study

2.1 External Evaluator

Mitsue Mishima, OPMAC Cooperation

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule.

Duration of the Study: December 2016 – February 2018

Duration of the Field Study: February 12 – March 15, 2017, May 13 – May 26, 2017

2.3 Constraints during the Evaluation Study

The survey of beneficiaries¹ covered a sample of 125 firms, in the Delhi and Mumbai capital

¹ The beneficiary survey and project data and information collection support were performed by the National Institute of Labour Economics Research and Development (NILERD) of India.

areas as well as Pune, Chennai, and Kolkata, due to constraints in access to the survey area, the budget, and so on. Selection of these firms was conducted by purposive sampling with consideration given to a balance of the industries represented². Therefore, the survey result is not statistically significant and is used as a reference in connection with selected cases.

3. Results of the Evaluation (Overall Rating: A³)

3.1 Relevance (Rating: ③⁴)

3.1.1 Consistency with the Development Plan of India

The Indian government addressed the intention to promote restraint on energy demand through energy conservation in the energy policy which was announced in 2006. *The Eleventh Five Year National Plan (April 2007 to March 2012)* stated the target of achieving a “20% improvement in energy efficiency by 2017”. After these policies, according to the *Twelfth Five Year National Plan (April 2012 to March 2017)*, the energy conservation target of 13.8 million tons of petroleum-equivalent was adopted, and concerning the small and medium scale enterprise (SME) sector, the plan indicated that it is possible to conserve energy to the extent of 1.75 million tons of petroleum-equivalent and called for the continuation of efforts at conserving energy by improving its efficiency of use in the SME sector. Specifically, the plan addressed the necessity for upgrading production technology and raising productivity, for improving access to credit in the SME sector, and for continuation of financing for introduction of energy efficient equipment, as well as tax exemptions, preferential taxation, and so on. *The Three-Year Action Plan (April 2017 to March 2020)*, in effect at the time of the ex-post evaluation, indicates promotion of cost-benefit-based investment in energy efficient equipment in all sectors.

Further, India’s Intended Nationally Determined Contribution (INDC), announced in October 2015 concerning the target for reducing generation of greenhouse gas (GHG), states that after National Mission for Enhanced Energy Efficiency (2010), BEE has supported detailed plan formulation for energy conservation projects and implemented energy conservation technology demonstration projects covering small and medium sized enterprises in more than 150 clusters all over the country. Another initiative by SIDBI introduced energy efficiency technology cases of 500 SMEs extending over 40 industrial clusters. INDC describes the importance of these existing efforts. In addition, it emphasizes that through its

² The states to be studied were selected on the basis of their having high per capita GDP, being industrially developed with an emphasis on manufacturing, having high demand for energy, and being the site of many sub-loans. They are the Delhi capital region (north), Maharashtra (west), Tamil Nadu (south) and West Bengal (east). Coverage areas of SIDBI Mumbai and respective branch offices were confirmed and in each state interviews were conducted with one or more industrial cluster, with consideration given to a balance in the sectors of industries selected. Further, to supplement this, opinions on SIDBI’s loans to energy conservation were obtained from the India Plastic Federation in Kolkata in the east and the Tamil Nadu Plastic Manufacturing Association.

³ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

⁴ ③: High, ②: Fair, ①: Low

ZED (Zero Effect, Zero Defect) policy initiative for SMEs which has been implemented since 2015, the government is striving to promote energy efficiency.

3.1.2 Consistency with the Development Needs of India

According to national statistics for final energy consumption, compiled by the International Energy Agency, from the time of the 2011 appraisal to the latest year for which data are available, 2014, India is the third greatest user of energy after China and the United States. During that period, final energy use rose from 501.03 million to 555.74 million oil equivalent tons. Also during project implementation period, India's economy grew by more than 7% a year, and as the consumption of energy rose. Thus, the project matched the needs of MSMEs for equipment and facility investment and its timing.

Issues confronting MSMEs have been the lack of knowledge on what energy conservation equipment should be purchased, and improved access to the finance. Therefore, these needs of MSMEs were consistent with the project components through SIDBI, that were increase in the supply of credit, produce of energy saving equipment list, and improvement of the appraisal capacity of SIDBI loan officers on financing for energy conservation.

According to SIDBI, while energy consumption is relatively high in the manufacturing sector, the consumption by MSMEs, accounted for 30% to 40% of total consumption of that sector and their superannuated equipment was creating inefficiency in energy use. It was confirmed that requirements of investment in energy conservation by MSMEs, in order to reduce the cost of energy, that was high during the project period, has continued thereafter to the time of post-evaluation. Thus, the needs for investment in energy efficient equipment targeting MSMEs have been recognized.

3.1.3 Consistency with Japan's ODA Policy

"Improvement of the poverty and environmental issues" were priority areas in Japan's Country Assistance Program for India (May 2006) and the policy for environmental issues support referred to renewable energy and conservation of energy. Responding to this, JICA emphasized "support for measures related to the environment and climate change" as priority area, and addressed the policy of support for introduction of energy conserving technology in the industrial sector. The project is consistent with this policy.

This project was highly relevant to the country's development plan and development needs, as well as Japan's ODA policy. Therefore, its relevance is high.

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

The project consisted of two-step loans (direct loans) whereby SIDBI provided the loans to MSMEs (end users), and three-step loans (indirect loans) whereby SIDBI provided the loans to end users through intermediary financial institutions. The project was implemented in this way, as planned. More than 90% of respondents to the survey of beneficiaries expressed content with SIDBI's required procedures, explanations of the financing, interest rates, and repayment schedules.

3.2.1.1 Result of Finance to Energy Saving Equipment to Micro, Small and Medium Enterprises

The number of sub-loans to be approved and disbursed, according to the plan, was expected to be about total 3,000, and the actual total came to 3,965. Direct loans from SIDBI to MSMEs account for more than 80% in terms of total amount, while they are 1,836 (46%) in terms of the number of the loans. Indirect loans were implemented through two intermediary financial institutions in the private sector. Of these institutions, Reliance Capital Ltd. made 2,092 loans and Intec Capital Ltd. made 37 loans, so in total 2,129 loans were made by the two. Regarding the indirect loans, almost all the loans were through Reliance. According to SIDBI, as a result, among all financial institutions that were target for refinance, only these two institutions requested SIDBI refinance⁵, having had the target loans that matched with loan conditions of this project.

Table 1: Project Output (Actual)

Type of Loan	Financial Institutions	No. of Loans	Amount (10 million Rs)	% of Amount
Direct	SIDBI	1,836	1,570	82.4%
Indirect	Reliance Capital Ltd.	2,092	325	17.1%
	Intec Capital Ltd.	37	10	0.5%
TOTAL		3,965	1,905	100.0%

Source: SIDBI

3.2.1.2 Conditions for the Loans

(1) Eligible Borrowers

The eligible borrowers or end users were micro, small, and medium scale enterprises as defined in the table below, according to *Micro, Small and Medium Enterprises Development Act*.

Emphases were given to awarding loans to micro and small enterprises, and to creation of

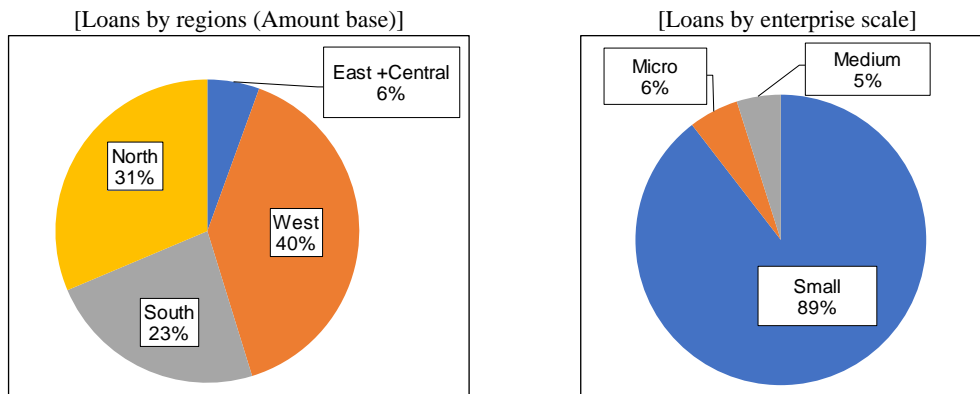
⁵ Each intermediary institution requests SIDBI the loan amount that they implemented and then they receive the finance from SIDBI retrospectively.

demand for energy conservation in central and eastern areas of the nation, that were under-represented in Phase 1 (2008). Results of direct finance by SIDBI are as shown in Figure 1, where it can be seen that small enterprises accounted for 89% of the loans, or most of the total, and micro enterprises accounted for 6%. The intended emphasis on aiding small and micro enterprises was thus achieved as planned. Further, regarding regional shares (monetary basis), in Phase 1 the central and eastern regions combined accounted for 2% but in this project the share was increased to 6%.

Table 2: Definition of Micro, Small, and Medium Enterprises

Enterprise Type	Manufacturing Industry	Service Industry
Micro	Investment in plant and machinery does not exceed twenty-five lakh (2.5 million) rupees	Investment in equipment does not exceed ten lakh (1 million) rupees
Small	Investment in plant and machinery is more than twenty-five lakh (2.5 million) rupees but does not exceed five crore (50 million) rupees	Investment in equipment is more than ten lakh (1 million) rupees but does not exceed two crore (20 million) rupees
Medium	Investment in plant and machinery is more than five crore rupees (50 million rupees) but does not exceed then ten crore rupees (100 million rupees)	Investment in equipment more than two crore (20 million) rupees but does not exceed five crore (50 million) rupees

Source: The Micro, Small, and Medium Enterprises Development Act, 2006



Source: SIDBI documents, upon project completion

Figure 1: Loans of the project by enterprise scale and regions

Credit supply projects (here and below, “sub-projects”) had the objective of funding investment in equipment chosen from the Energy Saving Equipment List for conservation of energy. The list was prepared by the technical assistance consultant. To be on the list the equipment had to provide a 10% and more reduction in energy use. Looking at the trend of sub-projects as shown in Table 3 it is evident that auto components accounted for the largest share, approximately 25%, followed by foundry and engineering, plastic & polymers, casting and forging, and textiles. The total of these six categories accounted for about 80% of the total.

Indirect financing through Reliance Capital Ltd. was made through 46 of its branches (in Gujarat, Maharashtra, Rajasthan, Karnataka, and Tamil Nadu) and most loans were made to companies in urban areas. Financing by Intec Capital Ltd. was made mainly to companies in the Delhi urban area. Both institutions mostly financed small enterprises.

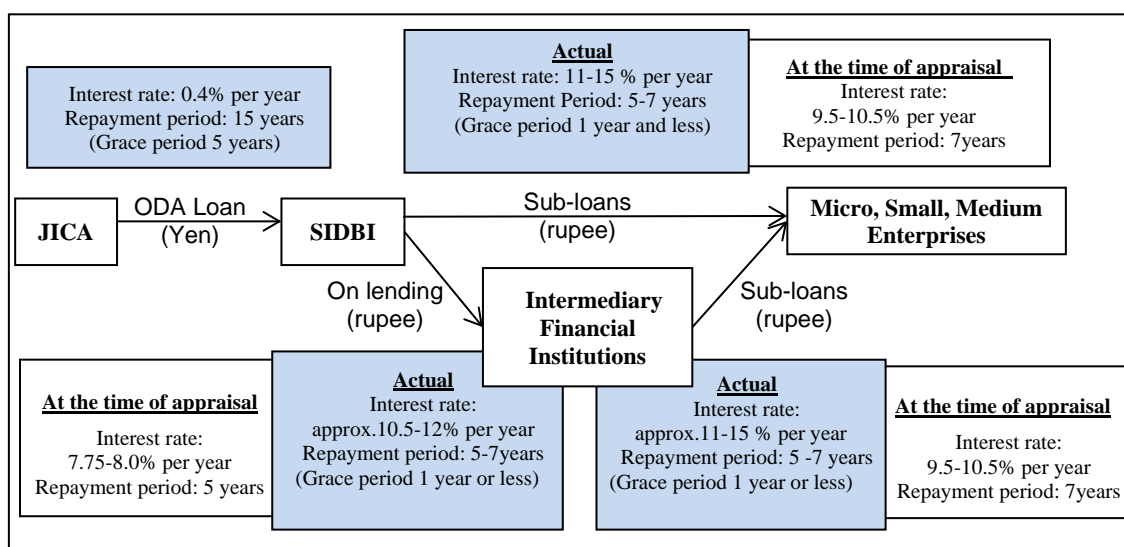
(2) Interest Rate and Repayment Period

From the comparison in Figure 2 of the expected loan interest rate and repayment schedule between at the time of the appraisal and as they actually became, it is evident that the interest rate from SIDBI to end users, and from SIDBI to intermediary institutions, and from the intermediary institutions to end users, were higher than had been expected. The reason for the difference is that the prime lending rate at SIDBI at the time of appraisal was about 11% but from 2011 onward the rate was increased at the 12% level during lending period, as interest rates generally rose in reflection of the credit risk of the end users.

Table 3: Loans by subproject sector

Sector	No. of subprojects	Share
Auto Components	460	25%
Foundry	290	16%
Engineering	243	13%
Plastic & Polymers	176	10%
Casting & Forging	152	8%
Textile	126	7%
Printing	73	4%
Food Processing	59	3%
Leather	28	2%
Packaging	27	1%
Manufacturing of Electrical Equipment	22	1%
Ceramics & Glass	19	1%
Rubber	14	1%
Pharmaceutical & Bulk Drug	13	1%
Other (commercial building, renewable energy, etc.)	134	7%
TOTAL	1836	100%

Source SIDBI documents



Source: Prepared by evaluator based on JICA and SIDBI documents

Note: Actual interest rate and repayment period indicate that majority falls in this range.

Figure 2: Plan and actual loan conditions of the Project

3.2.1.3 Technical Assistance (Out of Scope of the ODA loan)

In association with this project, JICA conducted Special Assistance for Project Implementation for the project while it was being implemented, and provided technical assistance as detailed in Table 4, from September 2011 to March 2014 (31 months). At time of the appraisal, technical assistance completion was planned to be when the loans had all been made, but because the ODA loan disbursement was delayed beyond what had been planned, the technical assistance was completed before disbursement completion.

It appeared that in connection with the technical assistance, coordination would be necessary with other technical assistance donors active at the time, Kreditanstalt für Wiederaufbau (KfW) of Germany and Agence Française de Development (AFD) of France. According to what was heard from SIDBI and the technical assistance consultant, however, as there were no special conditions requiring this, not much coordination was made.

Concerning support for generating demand for energy conservation in the central and eastern regions, a campaign and focus group meetings were carried out targeting MSMEs in industrial categories having high potential for energy conservation; in addition, awareness-building seminars were held during Phase 1 in Kolkata and other places in the eastern region and were thought that the seminars could have contributed to the increased applications for loans in Phase 2.

Hearing opinions of SIDBI officers who participated in training for strengthening the capacity for appraisal of energy conservation loans could not be implemented, since there were no participants in this seminar from the head office (Mumbai), the Delhi office, Thane branch and Chennai branch that were visited for the evaluation this time. Also, as SIDBI personnel were being transferred from the position when they attended seminars to new locations nationwide, time was needed to find seminar participants at that time. Thus, the effect of capacity strengthening could not be confirmed by this study.

At the time of this study, according to SIDBI personnel in the department in charge of the project implementation in Mumbai office, in all instances the technical assistance was satisfactory and was useful in facilitating the implementation and efficiency of the project, and contributed to the collection and organization of information. Although contribution of the employee training by the technical assistance to project implementation could not be revealed and, with regard to preparation of the equipment list, SIDBI personnel at the head and other offices, and also personnel of Reliance Capital Ltd., an intermediary financial institution, said that it was of high value in conducting loan appraisals as confirmed by the ex-post evaluation of the Phase 1 project. KfW and AFD commented that they referred to the list by JICA in making their own similar lists of energy saving equipment list for target of their finance. It must be noted that SIDBI and technical assistance consultants pointed out that while they renewed the list a number of times since it was made in Phase 1, they only

added more items, so at this time it was necessary to study to remove some items from the list, and to review the list in entirety so as to be easier to use.

Further, the awareness-building campaign and publicity for this project financing appeared to have contributed to promoting investment by MSMEs in energy conservation equipment. Monitoring of the operation and effect indicators (energy conservation effect) of sub-projects selected as the sample was essential for ascertaining the project's effect, and in particular was thought to have been useful for stimulating awareness of those who received technical assistance.

Table 4: Result of Technical Assistance

Item (plan at the appraisal)	Result
(1) Energy conservation awareness campaign	<ul style="list-style-type: none"> • Actual implementation: awareness campaigns were conducted 18 times from November 2011 to October 2013, targeting at industrial cluster areas: Guwahati, Mangalore, Balasore, Mirzapur, Rudrapur, Jamshedpur, Gandhidham, Nashik, Jamnagar, Mysore, Panaji, Rourkela, Lucknow, Raipur, Indore, Hyderabad, Nagpur, and Hubli • Focus group meetings, two times, mostly for representatives of industrial associations and small and medium enterprises with potential for saving energy, in December 2011 and September 2012. Locations: Coimbatore and Shillong. • Publicity on availability of loans of the project: via the web page and pamphlets, and 11 issues of a newsletter featuring case studies of energy conservation.
(2) Revision and updating of the Energy Saving Equipment List	<ul style="list-style-type: none"> • Updating the list was done six times during the project period (on average, twice a year), and new technology was added to the list. The last revision during the project period was in April 2014 (release 7.6)
(3) Support for social and environment impact monitoring	<ul style="list-style-type: none"> • Concerning social and environmental monitoring, sub-projects in sectors where the potential impact was high were selected and 41 from all over the nation were studied. No adverse impacts were discovered.
(4) Monitoring of operation and effect indicators (energy conservation effect)	<ul style="list-style-type: none"> • Regarding energy conservation effect, from the nation's industrial clusters, 125 sub-projects were selected for study and monitored regarding the extent of energy consumption.
(5) Strengthening capacity for appraising energy conservation loans by employees of SIDBI and intermediary financial institutions (including introduction of an energy rating system)	<ul style="list-style-type: none"> • Training was provided only for SIDBI employees, on three occasions.
(6) Support for procedures in relation to application of a Clean Development Mechanism (CDM) / Program CDM	<ul style="list-style-type: none"> • From CDM candidates identified in Phase 1, in Phase 2 support was provided for registration of a CDM project for the steel (rolling) cluster in Bhavnagar. (Confirmation at the internet site of the UNFCCC at the time of the ex-post evaluation: this was registered on December 22, 2014.)

Source: JICA and SIDBI documents, and results of hearing from the technical assistance consultant.

3.2.1.4 Overall Analysis on the Background for Financial Needs

According to SIDBI, the need for the loans at end users of loans made by this project continued to be robust. Policy for promoting energy conservation by enterprises in Japan encompassed many incentives, such as subsidies for energy saving diagnosis for factories, etc., and acquisition of energy conservation equipment, tax exemption, and interest subsidies

to the loans for acquiring energy conservation equipment or creating arrangements for energy conservation. Provision of these incentives promoted energy conservation by enterprises. Similarly, in India, all the following factors worked simultaneously and concurrently as incentives for investing in energy saving equipment by MSMEs, and generated a robust demand for financing.

i) Implementation of an energy conservation promotion system

As a system for promotion of acquisition of energy conservation by MSMEs, reduced or preferential taxation on energy conservation equipment and subsidies, etc. were implemented. Companies benefiting from these systems were included among the end users of loans made by the project.

ii) Stimulation of demand for investment in energy conservation equipment by end users

In order to encourage energy conservation investment by potential borrowers of project loans, seminars for awareness enhancement on that subject were held in industrial clusters as part of the technical assistance, and publicity about the project was disseminated via the Web and pamphlets.

iii) Speeding up of the loan appraisal process

As technical assistance, a list of energy saving equipment that could reduce energy consumption by 10% or more was made and updated. It was helpful in simplifying and speeding up appraisal of the loan applications.

iv) Economic trends

Economic conditions in India were favorable relatively during the project period, creating an environment that made equipment investment by MSMEs easily, that normally are vulnerable to changes in the economic environment.

3.2.2 Project Inputs

3.2.2.1 Project Cost

As shown in Table 5, the entire amount of ODA loan of 30,000 million yen was disbursed, the overall project cost was planned to be 33,330 million yen, and the actual cost conformed to the plan, at 33,328 million yen.

Table 5: Project Cost (Plan/Actual)

Unit: million yen

Items	Plan (2011)		Actual (2015)	
	Total	Of which ODA loan	Total	Of which ODA loan
Loan	30,000	30,000	29,999	29,999
Interest during construction	280	0	299.5	0
Commitment charge	50	0	20.8	0
Administration fee	3,000	0	3,009	0
Total	33,330	30,000	33,328	29,999

Source: JICA, SIDBI documents

Note: Exchange rate at the time of appraisal: 1 rupee=1.78 yen (November 2010); actual: 1 rupee=1.7 yen (IFS annual average exchange rate data, average from 2011 to 2015). Due to fluctuation of the exchange rate, actual total project cost was slightly lower than in the plan.

3.2.2.2 Project Period

The proposed schedule at the time of appraisal was from June 2011 (signing of the ODA loan agreement) to March 2014 (34 months)⁶ but the actual duration was from June 2011 to February 2015 (45 months), approximately 11 months longer than the plan (132% of the plan). The reason for this was that while there was strong financial need of the loans to MSMEs, SIDBI was cautious about the effects of the yen-dollar exchange rate risk, and delayed the timing of the request to JICA for loan disbursement, considering the trend of the exchange rate.

Although the project cost was within the plan, the project period exceeded the plan. Therefore, efficiency of the project is fair.

3.3 Effectiveness⁷ (Rating: ③)

3.3.1 Quantitative Effects (Operation and Effect Indicators)

3.3.1.1 Non-Performing Asset Ratio

The ratio of loan repayment in arrears was suggested as an operation indicator of the project. In this report, the ratio of non-performing assets (NPA) was examined. It was intended to set a target at the time of project commencement; however, as this was not done in fact, Table 6 shows only actual figures. At the end of fiscal 2015-2016, the NPA ratio in monetary terms, was high relative to the NPA ratio of 0.73% for all of SIDBI in the same fiscal year, but was at about the same level, at NPA ratio 4% to 5% on the average⁸ as that announced by the Reserve Bank of India (RBI) for public financial institutions in the same year. According to SIDBI, the situation was due to two loans of large sums that fell in arrears

⁶ Definition of project completion here is defined as the date of final disbursement as planned at the time of appraisal.

⁷ Sub-rating for Effectiveness is to be made with consideration of Impact.

⁸ Source: <https://dbie.rbi.org.in/DBIE/dbie.rbi?site=publications#!4> (Aug. 2017) "Bank Wise and Bank Group-wise Gross Non-Performing Assets, Gross advances and Gross NPA Ratio of Scheduled Commercial Banks."

in fiscal 2015-2016 that made the number high. In general, the NPA ratio was kept within reasonable range.

Table 6: NPA Ratio of the Loans under the project

Indicators	FY 2013-14 ¹ During project implementation	FY 2014-15 Project Completion Year	FY 2015-16 One year after project completion
NPA ratio in amount base (%)	0.4	0.98	5.18
NPA ratio in number (%)	2.17	1.41	2.47

Source: SIDBI documents

Note 1: Fiscal year in India is April to March

Note 2: ① NPA are loans not repaid for 180 days or more after the due date for repayment. Ratio of unpaid amount to outstanding loan amount at the end of the year. ② Ratio of number of the loans classified as NPA to total number of loans.

3.3.1.2 Energy Consumption Reduction

At the outset of the technical assistance, a target value for energy conservation was set based on results of Phase 1. In comparison to it, the result of reduction in energy consumption volume calculated as of March 2014 from the result of operation and effect indicator monitoring during implementation of technical assistance is as shown in Table 7.⁹

Although target saving values were set for respective annual electrical and thermal energy consumption based on the share by type of energy conservation equipment financed under the Phase 1, it should have been difficult to predict what kind of energy conservation equipment would be needed by MSMEs in Phase 2, and the possibility is fully considered that the actual share of energy conservation equipment financed by Phase 2 is not the same as in Phase 1. Thus, it is considered to be reasonable that electrical energy saving was converted to thermal energy saving (in Mcal) and then the plan and actual figures were compared. Consequently, as of March 2014 the value was 459,850 Mcal in comparison to the target of 469,290 Mcal, achieving 98% of the target figure.

Table 7: Total Energy Saving Amount¹ by Sub-loans Financed by the Project

Indicator	Target (As of Disbursement Completion)	Actual (As of March 2014)
① Annual Electrical Energy Saving	535.09MkWh	280.43MkWh
② Annual Thermal Energy Saving	8,416MkCal	218,680MkCal
①+② (Total thermal energy conversion saving)	469,290MCal	459,850MCal

Source: SIDBI and JICA documents

Note 1: To set target values, results of Phase 1 were used to calculate per project (sub-loan) energy conservation, and assuming the total number of loans for Phase 2, the result was made the target for Phase 2. From the results of actual disbursement of loans, the number of equipment financed were multiplied by the operation and effect indicator for each type of equipment (energy conservation effect) as had been monitored; this yielded the magnitude of energy saved.

Note 2: Converted at 1 kWh = 860kCal.

⁹ At this time there were 1,757 outstanding loans, and the calculation was made on that basis. Loans were made until February 2015 and totaled 1,836; the calculation thus was based on about 96% of loans completed.

The energy saved was examined by comparative analysis from another aspect. Calculation by use of the monitoring result of operation and effect indicator by the technical assistance, the effect of energy conservation achieved by use of respective equipment by the project was estimated to be approximately 28% to 39%, depending on the equipment type. Results obtained by monitoring averaged about 39%, so the assumed energy conservation effect was generally on target.

Further, according to the results of beneficiary surveys, 94% of the responses were that energy was saved by the project. Depending on the response, energy conservation ranged from 5% to 60%, and averaged 18.4%. Also, 99% of the respondents stated that they were satisfied with the performance of the acquired equipment. Among the responses were three instances of companies that had been a target for monitoring of operation and effects indicators by the technical assistance. All stated that there was energy saving effect.

From the above, it is judged that in overall terms the project generally had an energy conservation effect.

3.3.2 Qualitative Effects (Other Effect)

3.3.2.1 Enhanced Awareness on Energy Saving by Micro, Small, Medium Enterprises

In the opinion of SIDBI, many of the companies that participated in the awareness promotion campaign indicated in their answers to a questionnaire that their understanding of the importance of energy conservation in production processes had improved; it is evaluated from this that the project stimulated many initiatives to be taken by MSMEs to conserve energy.

Further, as the beneficiaries' questionnaire result, of the 125 companies that were interviewed, 124 replied that their awareness of energy conservation had improved as a result of the project. This is the result of limited samples selected by purposive sampling; however, almost all respondents gave positive replies. In addition, in the opinion expressed by leaders of industrial organizations in Kolkata and Chennai, it appears that since 2010 awareness of energy conservation has risen in the MSME sector.

Thus, the implementation of this project has had the aspect of raising awareness of energy conservation.

3.3.2.2 Improved Appraisal Capacity of SIDBI and Intermediary Financial Institutions on Energy Saving Projects

The effects of training could not be verified. The technical assistance component provided training only of SIDBI loan officers and the number of training sessions was limited. However, in the opinion of SIDBI and the consultant in charge of the technical assistance, in

the beginning of the project, SIDBI officers often consulted with the technical assistance consultant regarding the effects of equipment proposed to be financed, but the number of such consultations gradually decreased as the loan officers increased making decisions on their own, and this is considered to be a sign of improved capability.

Employees of SIDBI and intermediary financial institutions can be thought to have acquired insight regarding energy conservation equipment through reference to the Energy Saving Equipment List. This is believed to have been part of the contribution of this project to improvement of loan officer capability.

3.4 Impacts

3.4.1 Intended Impacts

3.4.1.1 Quantitative Impacts

(1) Green House Gas Emission Reduction

CO₂ reduction target was calculated as 438,430 tons a year by technical assistance, on the basis of the energy saving plan, after the start of the project. After the project implementation, the reduction calculated from monitoring results of operation and effect indicators (energy conservation effect) was 241,010 tons a year, about 50% of the target. As described in the section on effectiveness, however, given the difficulty of forecasting from the variety and quantities of equipment in the plan, in fact rather than the effect of electrical energy saving equipment, more thermal energy saving equipment was financed, resulting in a difference relative to the plan. In any event, a certain degree of reduction of CO₂ was observed, and it contributed to improvement of the environment and alleviation of climate change.

(2) Contribution to Sustainable Economic Development

Results of the survey of beneficiaries show that 88% of respondents stated that there was a favorable impact on production volume from the equipment financed by the project. Further, 93.6% replied that income too had risen, to the extent that it rose in 2015-2016 by 12.5% on the average relative to 2010-2011, around the timing of introducing energy conservation equipment. In response to the question on change of profits, 97.6% of total replied that there had been an increase. Many of the respondents to the survey thus indicated that there had been an economic impact. Besides these results, industrial organization representatives in Kolkata and Chennai, in interviews, expressed the opinion that SIDBI financing for energy conservation equipment investment by MSMEs had contributed to production growth.

3.4.1.2 Qualitative Impacts

According to the result of the survey of beneficiaries, almost all responders stated that there had been impact in term of improved workplace safety and product quality. Further, 90% of responders said that there had been an increase in the number of employees.



Photo 1: Energy conservation equipment purchased by Company A. In addition to reducing electricity use by about 30%-40%, product quality was improved, business was expanded by launching of new products, employment increased, and evaluation on product quality by customers and their satisfaction rose.



Photo 2: Energy conservation equipment purchased by Company B. In addition to reducing electricity use by about 10%-20% there was a 1-2% decrease in diesel oil use, sales and product quality improved, business expanded, and also contribution to retention and increase in employment.

3.4.2 Positive and Negative Impacts

Impacts on the Natural and Social Environment

The technical assistance consultant selected 41 companies in the textile, metal casting, and other industries in 12 industrial clusters in various states, and performed monitoring of the environment (of the atmosphere, water quality, noise, etc.) at subproject areas. It was confirmed that those companies followed government standards and also there were no adverse impacts on the social environment during the project.

According to the responsible person at SIDBI, there were no sub-projects falling in Category A of JICA Guidelines for Environmental and Social Considerations. Further, in the responses to questions to SIDBI, with specific reference to the sub-projects in textile and ceramics plants which could have an influence on the natural environment, the persons in charge at relevant branches visited the sites to determine whether serious impacts were identified, and after the loans were made they also confirmed that there were no instances of problem occurrence. They also reported that there were no cases of relocation of residents or new acquisition of land etc. From these findings it is judged that as a result of the project there was no significant impact on the natural environment.

As is evident from the above, the NPA ratio for project loans was relatively at a low level while the energy saving was roughly as had been planned. Also, CO₂ emissions had been reduced to the extent corresponding to the energy saving volume, and among the financed companies impact

was evident in the form of increased production output, increased income, and improvement of worker safety, and so on. This project has largely achieved its objectives. Therefore, effectiveness and impact of the project are high.

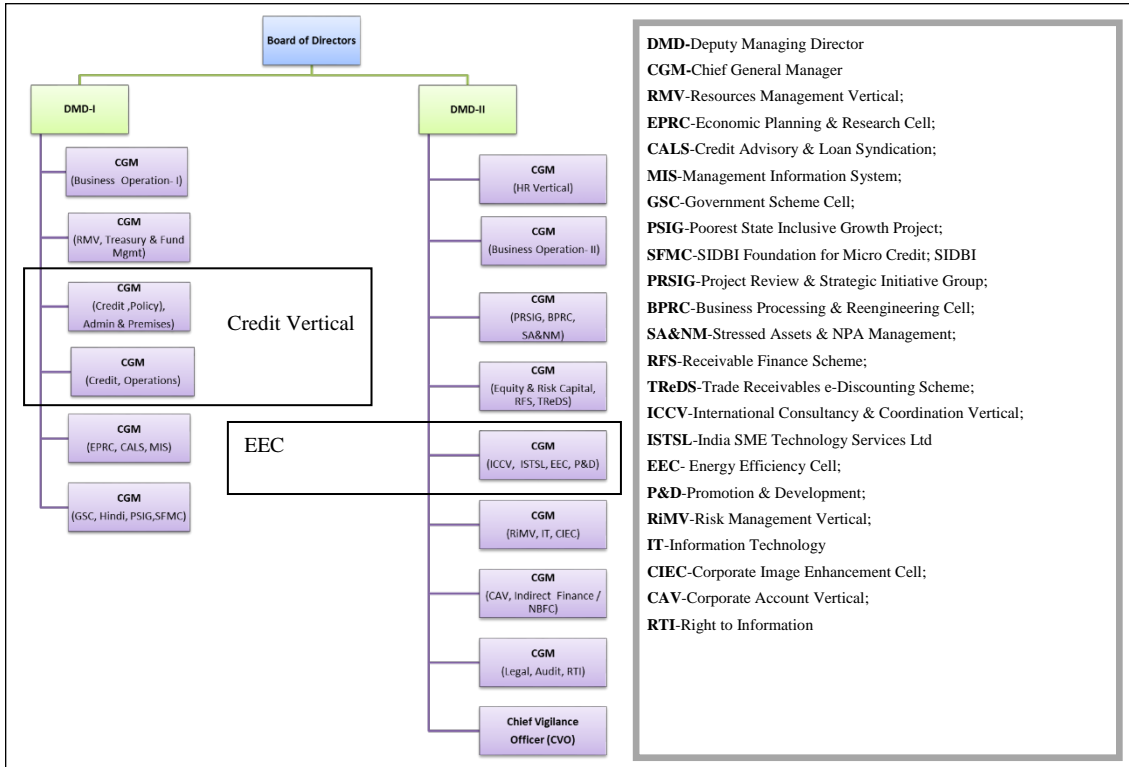
3.5 Sustainability (Rating: ③)

3.5.1 Institutional Aspects of Operation and Maintenance

SIDBI was established in 1990 as a financial institution specializing in MSME finance. Today, it has 1,060 employees, a head office in Lucknow, Uttar Pradesh, and substantial operation management functions concentrated in the Mumbai office. There are regional offices in 15 cities including Lucknow, Mumbai and Delhi, and branches in 80 locations (as of the end of March 2016).

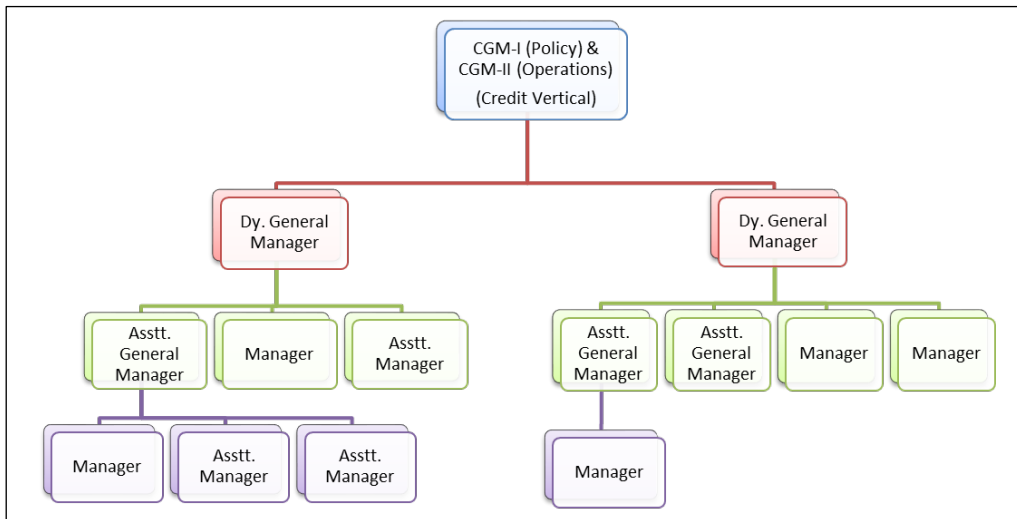
Organizational arrangements are as shown in Figure 3. Reporting to the Board of Directors are two Deputy Managing Directors who are in charge of 16 units. Among them is the Energy Efficiency Cell (EEC), and, in comparison to the situation at the time of ODA loan appraisal when there were EECs at Mumbai and Delhi offices, these have been consolidated to one cell, in Delhi. It provides technical support for energy conservation, and undertakes studies as are needed. At the time of the ex-post evaluation, Credit Policy and Credit Operation units at the SIDBI Mumbai office were in charge of monitoring implementation of loans and loan repayment. These are called the Credit Vertical part of the organization and are as shown in Figure 4. Energy conservation loan cases are allocated among the 12 members of the Credit Operation department. The loan officers at each branch lending sub-loans are responsible for most works on loan appraisal and repayment for loans made, and reports to Credit Vertical. The relevant branch offices of SIDBI handles issuance of loans to intermediary financial institutions and repayment from them, and the person in charge of refinance in the Mumbai office does monitoring with reports from the other offices.

The turnover rate of employees of SIDBI is low. Many employees are college graduates or have other higher-level education and there are many MBA holders, accountants, and engineers. There was no indication of a shortage of human resources, and this situation has not changed since the time of the ex-post evaluation of Phase 1.



Source: SIDBI Document

Figure 3: SIDBI Organization Chart (Overall)



Source: SIDBI

Figure 4: SIDBI Organization Chart for Credit Policy and Operation Vertical

While there has been some change in the organization since the project appraisal, the allocation of responsibility for energy conservation finance is clear at the head and branch offices, and concerning the officers there is no evident shortage or problem in doing the work. The monitoring arrangements for the project's financing appears to be suitable.

3.5.2 Technical Aspects of Operation and Maintenance

SIDBI runs two training centers where programs are regularly held, covering all aspects of finance and for all employees, so that they are equipped with the capability of smoothly implementing their basic work. Appraisal requirements for financing small and medium enterprises are fixed separately for each product. Regarding energy conservation financing guidelines were drafted on the basis of JICA guidelines for the project and loan officers at branches perform their work according to them. In addition, loan officers have conducted the project appraisal, routinely using the Energy Saving List which was repeatedly revised during the ongoing Phase 3, at least up to the time of the ex-post evaluation. The process for appraisal of energy conservation loan applications conformed to the uniform rules and procedures for it and appears to be suitable. Even in the case of making use of the list for future appraisal work it is thought that because of the experience gained through this project, SIDBI will be capable of providing similar finance based on its own revision of the list or through contracting out to consultants.

3.5.3 Financial Aspects of Operation and Maintenance

From examination of SIDBI's major financial indicators for fiscal 2011-2012 to fiscal 2015-2016, shown in Table 8, it is evident that revenue was increased in every year until fiscal 2013-2014, and was generally at the same level after that. Although in every year, net profits rose 20% to 30%, compared to previous year, from fiscal 2014-2015 to 2015-2016 they declined about 20%. The reason for that was, as one factor, an increase in interest costs and financial costs that exceeded the growth of revenue.

The NPA ratio over the five-year period was consistently low, at 0.34% to 0.78%. SIDBI's financial conditions in recent years can be judged to be good, and there are no points threatening the sustainability of the project. Soundness of financial conditions is being maintained.

Table 8: SIDBI's Major Financial Indicators

Indicators	Unit: million rupees				
	FY2011-12	FY2012-13	FY2013-14	FY2014-15	FY2015-16
Income	46,152	54,012	58,083	57,415	57,846
Interest and Discount, etc	44,233	51,341	56,190	54,971	55,418
Expenditure	35,355	42,049	42,688	36,262	41,481
Interest & Financial Charges	25,233	30,393	33,371	33,737	35,021
Operating Expenses	2,760	3,221	3,093	4,495	4,209
Provisions and others	7,363	8,436	6,224	(1,970)	2,251
Profit Before Tax	10,797	11,963	15,395	21,152	16,365
Net Profit	5,914	8,645	11,514	14,531	12,172
Total Assets	593,849	618,926	678,104	608,550	764,785
Capital Risk Asset Ratio (%)	30.6	28.1	30.8	36.7	29.9
Non Performing Asset Ratio (%)	0.34	0.53	0.45	0.78	0.73

Source: SIDBI Annual Reports

3.5.4 Current Status of Operation and Maintenance

The NPA ratio of end users of direct loans by SIDBI, as stated in “3.3.1.1, Non-Performing Asset Ratio”, has been kept relatively low. Among the companies surveyed as beneficiaries, none had problems in operation or maintenance of purchased equipment.

As for indirect loans, according to a report from SIDBI, intermediary institutions have made payments to SIDBI on schedule, and no loan was in arrears. The person in charge of finance at the Mumbai office evaluated that the financial status of the two borrower institutions was good. Examination of the financial statements of those two institutions did not reveal any problems.

Regarding the reports of the second and following series of lending utilizing repayment from the borrowers, requirement of a revolving fund account was waived due to the reasons of SIDBI’s administration and accounting, and all cases of granting credit for energy conservation equipment were required to be reported to JICA. Review of documents submitted to JICA in 2015 and 2016 indicated that there was more of an increase in total loan outstanding amount with lending with the same purpose than the increase in total repayment from the loans of the project, implying the situation wherein repayment funds for the project can be relented for the same purpose.

No major problems have been observed in the institutional, technical and financial aspects of the operation and maintenance system. Therefore, sustainability of the project effects is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

This project has the purpose of providing medium- and long-term financing to MSMEs in India, where rapid economic growth has engendered an increase in energy consumption making it vital to improve the efficiency of energy use. This financing has been for investment in acquisition of energy-conserving equipment and facilities. The provision of financial support for investment in energy conservation by MSMEs is highly relevant to both the development assistance policy of the Japanese government and the policy and development needs of the Indian government. The project was realized within the amount of funds appropriated but loan disbursement was delayed compared in the planned period, so the efficiency of the project is judged to be fair. The energy conservation equipment financed for end user (final borrowers) either directly by SIDBI or through intermediary financial institutions has helped to reduce energy consumption, making the project highly effective. The project also had impact through reducing the emission of CO₂. There are cases wherein the project had impact through increased output of manufacturing, increased income, improved worker safety, and retention of employment. Thus, the effectiveness and impact are high. With regard to sustainability, at the time of the ex-post evaluation no serious problem is

evident concerning SIDBI's institutions for operation and maintenance, technical matters, or financial matters. In light of the above, this project is evaluated to be highly satisfactory.

In light of the above, this project is evaluated to be highly satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

Review of the Entire Energy Saving Equipment List

SIDBI and the technical assistance consultant indicated in connection with the Energy Saving List made during Phase 1 that the revision made by now was limited to the addition of equipment items, and that it is necessary to conduct a total review of the list including elimination of items which are no more needed. It is desirable that the list be reviewed at the earliest opportunity, either within the scope of the ongoing Phase 3 technical assistance, or under the SIDBI's EEC to make the list more user friendly.

4.2.2 Recommendations to JICA

None.

4.3 Lessons Learned

Detailed analysis of the environment within which a project is to be realized and examination of technical assistance, in the preparatory stage of energy conservation finance projects

In this project, The following factors were important for promotion of MSMEs' investment in energy conservation equipment and achievement of the project purpose: (1) the implementation status of policy and institutional arrangements for promotion of energy conservation investment, (2) the activities for stimulating the demand to invest in energy conservation, (3) smooth execution of loan appraisals for energy conservation investment loans, and (4) economic conditions that facilitated investment in plants and equipment. Further, with regard to evoking, among borrowers, of perception of the need for use of credit and to improvement of loan appraisal capacity of the executing agency, the role of technical assistance was valuable for the smooth implementation of the project and the accomplishment of the project purpose. The assistance included the awareness-raising seminars devoted to energy conservation investment that were held continuously starting in Phase 1, and the technical assistance to the formulation of Energy Saving Equipment List and to the loan appraisal by the executing agency.

Accordingly, when formulating a similar project investing in energy conservation equipment targeting MSMEs, at early stage of project formulation, JICA should evaluate the project from multiple aspects to foresee the possibility of smooth project implementation, such as aspects including (1) implementation status of energy conservation policy and system (2) awareness-

raising among MSMEs and necessity for stimulating their demand for investing in the energy conservation, (3) evaluation of appraisal capacity of the executing agencies regarding the target of the loans and necessity for producing reference document such as energy equipment list, and (4) the possibility of economic deterioration which influences the business of MSMEs in the near future. In the evaluation, in case the necessity for technical assistance is judged, it is desirable that technical assistance should be planned beforehand by JICA or in collaboration with other donors.

Agreement with the Project Executing Agency on Setting and Definition of Operation and Effect Indicators for Monitoring Purposes

In this project, as for necessity for indirect loans monitoring and the definition on operation and effect indicators, a common understanding was not formed with the project executing agency (for example, actual indirect loan amount by each financial institution was not reported and definition of NPA ratio was unclear about whether it is for the project financing portion or for total SIDBI). When implementing a development finance project in the future, it is necessary to agree with the executing agency on necessary items of operation and effect indicators and their definition in detail for monitoring purpose, clearly reflecting it in the report format.

End

Comparison of the Original and Actual Scope of the Project

Items	Plan	Actual
1. Project Outputs		
(1) Number of Loans	3,000	3,965
(2) Terms and Conditions		
Eligible subprojects	Eligible target project under ODA loan is investing in the facilities and others that are listed in energy saving equipment list	As planned
Eligible end users	MSMEs classified based the definition by Ministry of Micro, Small and Medium Enterprises, and eligible borrowers acknowledged by SIDBI	As planned
Target sector	No limitations in particular, however, excluding weapons, drug trading, other illegal industries	As planned
Target area	Nationwide in India	As planned
Interest rate and repayment period	Loans from SIDBI to end users 9.5-10.5%/year	Approx. 11-15%/year, 5-7 years
	Loans from SIDBI to Intermediary Financial Institutions: 7.75-8.0%/year, 5 years	Approx.10.5-12%/year, 5-7 years
	Loans from Intermediary Financial Institutions to end users: 9.5-10.5%/year, 7 years	Approx. 11-15%/year, 5-7 years
2. Project Period	June 2011-March 2014 (34 months)	June 2011- February 2015 (45 months)
3. Project Cost		
Foreign Currency	30,330 million yen	30,319 million yen
Local Currency	3,000 million yen	3,009 million yen
Total	33,330 million yen	33,328 million yen
Japanese ODA loan portion	30,000 million yen	30,000 million yen
Exchange rate	1 Rs=1.78 yen (As of November, 2010)	1Rs=1.7 yen (average IFS annual rate between 2011 and 2015)
4. Final Disbursement Date	February 2015	

Socialist Republic of Viet Nam

FY2016 Ex-Post Evaluation of Japanese ODA Loan Project

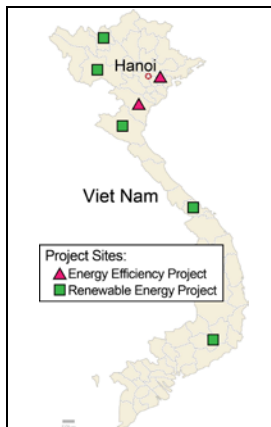
“Energy Efficiency and Renewable Energy Promoting Project”

External Evaluator: Tomoo MOCHIDA, OPMAC Corporation

0. Summary

The Project aimed to provide Vietnamese enterprises, sub-project owners, with medium- and long-term funds, through the Vietnam Development Bank (hereinafter referred to as “VDB”), for the promotion of energy efficiency activities and the utilization of renewable energy, and at the same time to promote awareness campaigns to encourage investment in these fields, thereby accelerating the efficient utilization of energy by enterprises, the pursuit of environmental conservation and sustainable economic development in the country. Furthermore, the Project was intended to assist VDB in strengthening its financing capacity for areas such as the energy efficiency of enterprises, by utilizing the experience of environmental financing in Japan. The Project is highly relevant to the development policy and needs of the Vietnamese government as well as to Japan’s ODA policy from the perspective that it supported efficiency of energy utilization and diversification of energy supplies through the management of the environmental burden. While the actual cost of the Project fell within the planned one, the Project period exceeded that planned. Therefore, the efficiency of the Project is fair. Under the Project, medium- and long-term loans required for the utilization and promotion of energy efficiency and renewable energy by enterprises were extended and awareness on the part of the sub-project owners who received sub-loans was raised. However, it has not been sufficiently confirmed either qualitatively or quantitatively as to whether or not awareness of Vietnamese enterprises was raised towards the utilization and promotion of energy efficiency and renewable energy to the extent that it was intended it should be achieved by the Project. At the level of sub-project owners who had received sub-loans, efficiency of energy utilization was promoted and contributions were observed towards environmental conservation and sustainable economic growth through the substitution of energy to control the environmental burden, and to the mitigation of global climate change through reduction of greenhouse gas, to a limited extent. Therefore, the effectiveness and impacts of the Project are fair. As for sustainability, some minor problems were observed in terms of the technical and current status of the Project although sustainability was foreseen on the institutional and financial aspects. Therefore, the sustainability of the Project effects is fair. In light of the above, this Project is evaluated to be partially satisfactory.

1. Project Description



Project Locations



Hydropower Plant in Nghe An Province

1.1 Background

At the time of the appraisal in 2009, Viet Nam had experienced an increase in energy demand due to rapid economic development, with an annual growth rate of about seven percent per year over the past several years. The structure of energy demand showed a large expansion of energy demand in the industrial sector, and future energy demand was also expected to increase, centering on the industrial sector. Therefore, it was an urgent issue to make efficient use of energy (on the side of demand) as well as to develop and diversify new supply sources of energy by controlling the environmental burden (on the supply side). On the demand side, energy utilization in Viet Nam had been inefficient and the introduction of renewable energy had not yet progressed. In order to cope with rapidly increasing energy consumption, the government strove to take measures for the efficient utilization of energy through the establishment of legal frameworks concerning energy efficiency. The government also took measures for the efficient utilization of energy through the introduction of equipment with high energy efficiency, and the diversification of the energy supply sources by accelerating investment in renewable energy.

On the other hand, in the industrial sector where the energy demand was relatively high, the level of understanding on the necessity for energy efficiency and renewable energy was generally low. It was deemed difficult to promote energy efficiency activities by leaving it simply to the initiatives of the private sector.

1.2 Project Outline

The Project aimed to provide medium- and long-term loans required for the utilization, promotion of energy efficiency and renewable energy by Vietnamese enterprises through the implementation of two-step loans and so on by VDB. At the same time, the aim was to raise

awareness on the part of these enterprises, thereby contributing to an increase in the efficiency of energy utilization at enterprise level, and an acceleration in environmental conservation and the sustainable economic growth of Viet Nam, further mitigating global climate change.

Loan Approved Amount/ Disbursed Amount	4,682 million yen / 3,418 million yen
Exchange of Notes Date/ Loan Agreement Signing Date	October 2009 / November 2009
Terms and Conditions	<p>Interest Rate 0.25 % (0.01 % for consultant portion)</p> <p>Repayment Period 40 years (Grace) (10 years)</p> <p>Conditions for Procurement General Untied</p>
Borrower / Executing Agency	The Government of Socialist Republic of Viet Nam / The Vietnam Development Bank (VDB)
Project Completion	January 2015
Main Contractor (Over 1 billion yen)	NA
Main Consultant (Over 100 million yen)	NA
Feasibility Studies, etc.	The Special Assistance for Project Implementation for Energy Efficiency and Renewable Energy Promoting Project in Vietnam (2010)
Related Projects	<p>(Related Technical Cooperation)</p> <ul style="list-style-type: none"> • The Study on National Energy Master Plan in Vietnam (2006 - 2008) • The Study on Master Plan for Energy Conservation and Effective Use in the Socialist Republic of Viet Nam (2008 - 2009) • Project for Institutional Capacity Development for Infrastructure Finance in Vietnam (2008 - 2012) <p>(Multilateral Agencies)</p> <ul style="list-style-type: none"> • The World Bank (WB): Demand-Side Management and Energy Efficiency Project (2004 - 2007) • Asian Development Bank (ADB): Supporting Implementation of the National Energy Efficiency Program Project (2008 - 2010) • United Nations Development Programme: Promoting Energy Conservation in Small and Medium Scale Enterprises (2005 - 2010), etc.

2. Outline of the Evaluation Study

2.1 External Evaluator

Tomoo Mochida, OPMAC Corporation

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule:

Duration of the Study: December, 2016 - February, 2018

Duration of the Field Study: February 18, 2017 - March 22, 2017,

May 13, 2017 - May 26, 2017

3. Results of the Evaluation (Overall Rating: C¹)

3.1 Relevance (Rating: ③²)

3.1.1 Consistency with the Development Plan of Viet Nam

At the time of the appraisal in 2009, the Vietnamese government was striving to take measures for the efficient use and the diversification of energy supply sources in order to cope with rapidly increasing energy consumption. On the demand side, various measures were swiftly adopted in order to address issues concerning improvement of energy efficiency and the implementation of energy efficiency activities. Those measures included issuance of a government decree on thrifty and efficient use of energy in 2003 (102/2003/ND-CP), the establishment of energy conservation centers in the provinces, and enactment of a law on economical and efficient use of energy (50/2010/QH12). On the other hand, with regard to the diversification of supply sources, Viet Nam's national energy development strategy up to 2020, with a 2050 vision (1855/2007/QD-TTg), was approved in 2007. This set the target volume of electricity to be generated by renewable energy in 2010 and 2020 at three percent and five percent of the total amount of electricity to be generated, respectively. Furthermore, in order to take measures against climate change, including the utilization and acceleration of energy efficiency and renewable energy, the Ministry of Natural Resources and Environment, being the focal ministry among others, laid out "*the national target program to respond to climate change*" (Prime Minister Decision 158/2008/QD-TTg).

At the time of the ex-post evaluation, the national master plan for power development for the 2011 - 2020 period with a vision to 2030, (Prime Minister Decision 1208/2011/QD-TTg) had been issued in 2011 and revised in 2016 (Prime Minister Decision 428/2016/QD-TTg). More emphasis was placed on the development of renewable energy and the liberalization of electricity markets. According to the revised plan, although dependence on electricity to be generated by hydropower plants in the field of renewable energy would be decreased in terms of the ratio, it was planned that the generation capacity would be enhanced.

Furthermore, the decree on state investment credit and export credit implemented by VDB shows a list of investment projects eligible for investment credit where preferential interest rates will be applied. In Government Decree (32/2017/ND-CP) issued on March 31, 2017,

¹ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

² ③: High, ②: Fair, ①: Low

investment projects relating to energy efficiency, a new category, were listed as eligible projects for financing based on experience gained under the Project.

Furthermore, at the time of the ex-post evaluation, it was understood that measures had been taken against issues caused by global warming. For example, these include policies such as the National Climate Change Strategy (approved by Prime Minister Decision 2139/2011/QD-TTg), which set goals including the reduction of greenhouse gas emissions.

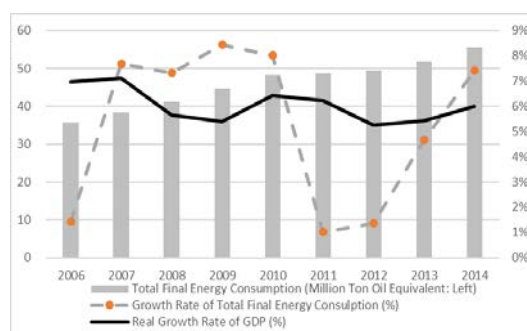
The Project is deemed to have been relevant to the direction of the development policies in Viet Nam because it has provided medium- and long-term funds required for the utilization and promotion, etc. of energy efficiency and renewable energy in order to improve the efficient use of energy and raise awareness on the part of enterprises.

3.1.2 Consistency with the Development Needs of Viet Nam

At the time of appraisal, the demand for energy continued to increase due to the rapid growth of the Vietnamese economy (final consumption of energy increased about 2.8 times over a period of 19 years from 16.06 million Tons of Oil Equivalent in 1990 to 44.67 million Tons of Oil Equivalent in 2009.³)

On the demand side, energy utilization in Viet Nam was not efficient and it was deemed that there was a high potential for energy savings, especially when compared with the conditions in Japan.

For example, the total primary energy supply⁴ in 2005 in Viet Nam was 0.48 Tons of Oil Equivalent per thousand US dollars in 2010 prices. In terms of the amount, Viet Nam was ranked as the second largest country among major Asian countries after the People’s Republic of China (0.50 in the same measurement unit). A large difference was observed compared with that of Japan (0.09 in the same measurement unit). The growth of final energy consumption slowed down over the period from 2011 to 2012, but energy demand exhibited an increasing trend after 2012 (as seen from Figure 1, the total final consumption of energy in 2014 was 55.53 million Tons of Oil Equivalent, increasing 1.24 times over a period of five years from 2009). The total primary energy supply in 2014 in Viet Nam was 0.46 Tons of Oil Equivalent per thousand US dollars in 2010 prices. In terms of the amount,



Source: Energy balance flows of IEA for total final consumption and IMF for the real growth rate of GDP

Figure 1: Historical Trend of Total Final Consumption and the Real Growth Rate of GDP

³ Information from the website of the International Energy Agency (hereinafter referred to as “IEA”).

⁴ An overall measure to evaluate the energy efficiency of a nation’s economy. Statistical data is quoted from the IEA website.

Viet Nam had the largest among major Asian countries, exceeding the amount of the People's Republic of China (0.35 in the same measurement unit) and followed by Indonesia (0.24 in the same measurement unit). A large difference was observed if compared with that of Japan (0.07 in the same measurement unit).

As seen above, room for potential improvement of energy efficiency is found both at the time of appraisal and ex-post evaluation. Therefore, the Project is consistent to development needs.

3.1.3 Consistency with Japan's ODA Policy

In the "Country Assistance Program for the Social Republic of Viet Nam" prepared in July 2009, the "promotion of economic growth and strengthening of international competitiveness" was regarded as one of the priority areas for assistance, under which cooperation in terms of the stable supply of resources and energy was proposed in order to continue assistance for the promotion of energy efficiency in response to an increasing trend in electricity demand. Furthermore, in the Country Assistance Implementation Report prepared by the Japan International Cooperation Agency (hereinafter referred to as "JICA") in April 2009, "promotion of economic growth and strengthening of international competitiveness" was considered as one of four priority areas for assistance and measures were to be taken for the promotion of energy efficiency. Thus, it was confirmed that the Project would be consistent with these assistance policies.

This Project has been highly relevant to the country's development plan and development needs, as well as to Japan's ODA policy. Therefore its relevance is high.

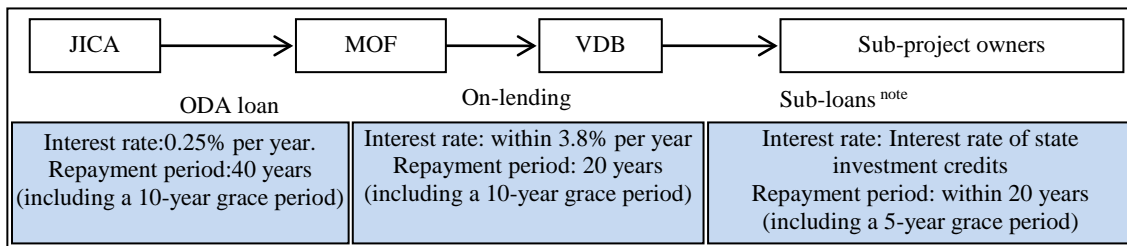
3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

The scheme of the Project was that the borrower, the Ministry of Finance (hereinafter referred to as "MOF") of the Vietnamese government, transferred an ODA loan to VDB, the executing agency, which, in turn, on-lent sub-loans to sub-project owners (end-users).⁵ Interest rates of state investment credits would be applied to sub-loans from VDB to

⁵ The repayment period of the ODA loan is different from the one from VDB to MOF. The reason behind this difference is considered to be that Article 14.2 of Prime Minister Decision 181/2007/QĐ-TTg, which regulates on-lending terms and conditions of ODA loans to financial institutions, set a maximum repayment period of 20 years, including the grace period. Later, Government Decree 78/2010/ND-CP was promulgated to replace the Prime Minister Decision. Article 11.1c of the Government Decree stipulates that the on-lending term and grace period should be equal to the term and period specified in the relevant foreign loan agreement, in the case of on-lending of ODA loans to financial institutions for the implementation of credit programs. According to MOF, it would be possible to review the on-lending terms and conditions if VDB so requests. VDB plans to start discussions with MOF at an appropriate time. However, MOF was of the opinion that the current terms and conditions of the on-lending loan to VDB were preferential ones and that a review would be made in the light of the worsening fiscal conditions of the government.

sub-project owners.⁶



Source: Information provided by JICA and VDB

Note: According to information provided by JICA, the prevailing interest rate of state investment credits at the time of concluding a sub-loan agreement was to be applied as a fixed rate to the interest rate of the sub-loan. However, variable interest rates, which change in accordance with changes in the interest rate of state investment credits, were applied to all the sub-project except one.

Figure 2: Financing Scheme under the Project

Figure 3 below shows the amount of sub-loans from VDB to sub-project owners together with the real growth rate of the Gross Domestic Product (GDP) in order to illustrate the economic conditions at the time. More than 50% of the Japanese ODA loan had been on-lent from VDB to sub-project owners as of the end of FY 2012. However, on-lending stagnated in 2013 and 2014. The initial allocation of the two-step loan portion of the ODA loan was made in such a way that three billion Japanese yen was distributed to energy efficiency sub-projects while the remaining one billion Japanese yen was given to renewable energy sub-projects. However, in 2013, VDB and JICA agreed to adjust the fund allocation based on the actual demand for financing in the respective fields due to the following reasons: (1) because the Project was promoted in a period of recession in the Vietnamese economy, steel and cement companies suspended their investment in energy efficiency, resulting in very small demands on funding investments in energy efficiency (the introduction of technology for energy efficiency and saving does not necessarily lead to a noticeable improvement in the financial condition of sub-project owners⁷); (2) in contrast, the funding demand for renewable energy sub-projects was still high; (3) it was found necessary to accelerate the Project while the deadline of the final disbursement was approaching; (4) a list of standard technology and equipment for energy efficiency was not sufficient when it was applied to the Vietnamese contexts⁸; and (5) seven out of eight candidate sub-projects identified through

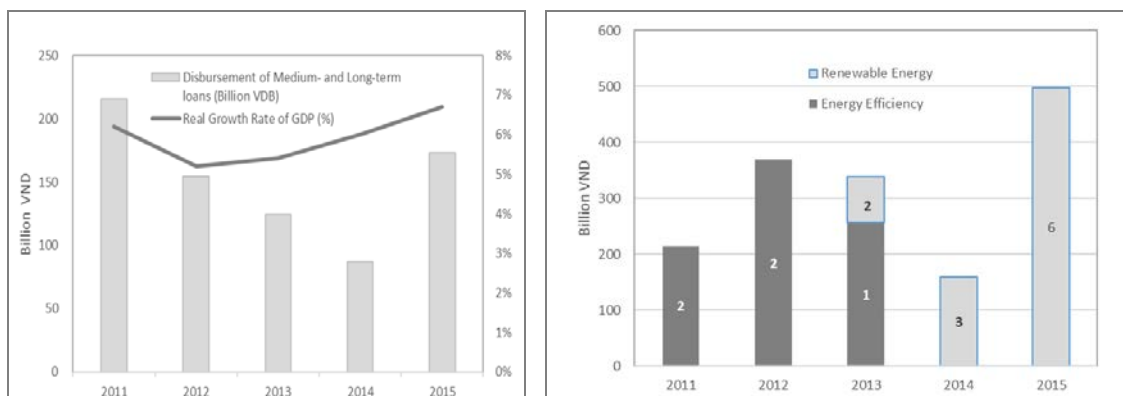
⁶ Government Decree 106/2008/ND-CP set the interest rate of the state investment credit at a level equal to the interest rate of the government bonds of a five year-term plus one percent per year. Later, Government Decree 75/2011/ND-CP stipulated that it must not be lower than the average interest rate for capital sources plus the operating expenses of VDB. Documents provided by JICA at the time of appraisal stated that the interest rate of state investment credit would be determined by MOF in accordance with changes in the market rates. In fact, it was the interest rate announced through the MOF Circular that was actually applied during the Project period.

⁷ Although VDB concerns over insufficient financial capacity on the part of potential sub-project owners, VDB's concern does not necessarily indicate that VDB considered that energy efficiency sub-projects would not be profitable.

⁸ It was pointed out that sub-project owners could not change or add a single unit of equipment but needed to change the entire operation system when technology for energy efficiency was to be newly introduced.

the Special Assistance for Project Implementation (hereinafter referred to as the “SAPI Study”) did not have real demands for sub-loans or did not meet requirements of sub-loans, which made VDB waste a lot of time for accessing and persuading these sub-projects. Removal of the fund allocation between energy efficiency and renewable energy portions helped improve efficiency of the Project, which showed the flexibility of JICA and VDB during implementation of the Project.

As a result of removing the allocation of two-step loan portions by type, the sub-loan amount of 1.98 billion Japanese yen was extended to cover energy efficiency sub-projects while the sub-loan amount of 1.393 billion Japanese Yen was to cover renewable energy sub-projects, exceeding the planned amount of 1.0 billion Japanese Yen. As shown in the outstanding amount of sub-loans by type in Figure 4 below, no sub-loans were extended in the field of energy efficiency after 2013, clearly demonstrating a trend after 2013 when the allocation by type was adjusted.⁹



Source: Information provided by VDB. IMF Staff Report for the 2014 and 2016 Article 4 Consultation for real growth rate of GDP.

Note 1: Figure 3 shows the yearly trend of medium- and long-term loans extended to sub-project owners by VDB. VDB received the funds from MOF and managed them in the project operating account, which administered sub-loans to sub-project owners. Because this account also handled interest revenues, the transfer of VDB funds, etc., the total amount of medium- and long-term loans provided to sub-project owners slightly exceeded the amount on-lent from MOF. The real growth rates of GDP in 2014 and 2015 are estimates.

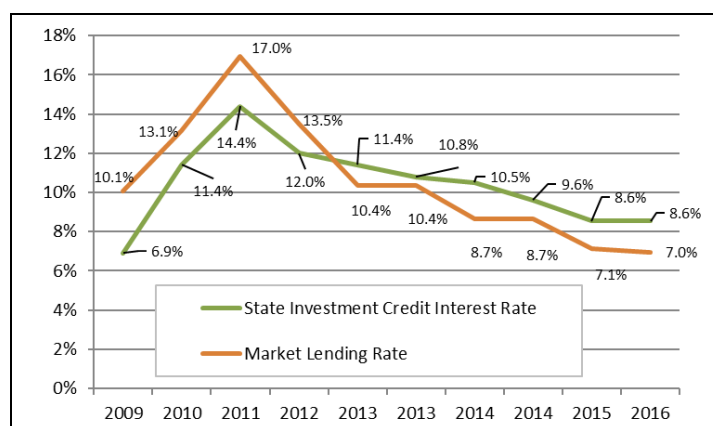
Note 2: Figures inside the bars of Figure 4 indicate the number of sub-projects. The loan amount per sub-loan for renewable energy sub-projects is smaller than that for energy efficiency sub-projects. The ceiling of a sub-loan amount per one small hydropower sub-project, for which VDB was able to extend sub-loans without the concurrence from JICA, was set at five million US dollars.

Figure 3: Amount of Disbursements from VDB to Sub-project Owners and the Real Growth Rate of GDP (Left)

Figure 4: Outstanding Amount of Sub-loans (Right)

⁹ At the time of appraisal, the amount of sub-projects in the first year of the Project, which fell into the category of highly feasible A-ranked sub-projects, was estimated to be 5.2 billion Japanese yen in total, consisting of about 3.8 billion Japanese yen for energy efficiency sub-projects with a remainder of about 1.4 billion Japanese yen for renewable energy sub-projects. Furthermore, as VDB pipeline sub-projects, 15 sub-projects were listed in the field of small-scale hydropower plants, with a total amount of 10.2 billion Japanese yen and 19 sub-projects in the field of cement, with a total amount of 6.5 billion Japanese yen.

Figure 5 below compares sub-loan interest rates (interest rates of the state investment credits) with the lending rates¹⁰ of short-term loans in the market. During the time when the interest rate was exhibiting an increasing trend,¹¹ in the initial period of the Project, the interest rates of the state investment credits applied by VDB to its sub-loans tended to be lower than the market interest rates. However, during the time when the market interest rate was on a decreasing trend, the interest rates of the state investment credits gradually slowed down its declining speed. Three out of the sub-project owners visited by the ex-post evaluation team had made prepayments. One of the reasons behind these prepayments was the decrease in the competitiveness of the interest rates of the state investment credits.¹²



Note 1: Comparison is made with the trends of the lending interest rates of VDB. MOF Circulars were referred to for the state investment credit interest rates. For the market lending rates, “Lending Rate” (line p60: average of rates at the end of the period on short-term (less than 12 months) working capital loans of four large state-owned commercial banks) were quoted from the International Financial Statistics, International Monetary Fund of 2016.

Note 2: The above figure indicates that the interest rate of the state investment credit was revised two times in 2013 and 2014, respectively.

Figure 5: Trends of Lending Rates of VDB to Sub-Project Owners (State Investment Credit Interest Rates) and Lending Rates in the Markets

¹⁰ In general, interest rates of medium- and long-term loans are determined based on the expected interest rate of short-term loans (working capital with a repayment period of less than 12 months), plus a certain premium, by fixing the loans over medium- and long-terms. Therefore, it is considered that the interest rates of medium- and long-term loans were somehow higher than those of short-term loans, as described in Figure 5. Figure 5 is intended not to compare the interest rates in the absolute values but to illustrate overall trends of movements of the interest rates of the state investment credits and the market interest rates.

¹¹ In 2011, both deposit and lending rates increased sharply due to tight monetary control, a measure taken against an increase in the inflation rate.

¹² One of the three sub-project owners, an owner of the renewable energy sub-project, was requested to make pre-payment due to violation of regulations under the Procurement Law. An interview with one of the sub-project owners (an energy efficient sub-project owner), who made prepayment of the sub-loan, revealed that the annual interest rate of the sub-loan was 11.4 % at the time when the company borrowed the sub-loan from VDB. With the application of the interest rate of the state investment credit, the sub-loan by VDB was attractive, considering that the market interest rate ranged from 14% to 16% at that time. However, according to the company, the interest rate of the state investment credit was 8.55% at the time of the ex-post evaluation, while the company had been able to borrow loans from commercial banks with a repayment period of three to seven years at a yearly interest rate of seven to seven point half percent. Thus, the competitiveness of the state investment credit interest rate decreased. On the other hand, some sub-project owners (renewable energy sub-project owners) also commented that the interest rate of the state investment credit fluctuated less compared to the market interest rate and that the state investment credit was advantageous in terms of the collateral requirements.

Under the Project, it was planned that consulting services would be provided targeting VDB and sub-project owners. The services were expected to include implementation assistance, such as assistance for the preparation of a project implementation manual (operation manual), assistance for technical aspects such as support for the technical appraisal process, and implementation of awareness-raising activities for sub-project owners.

It was planned that part of the consulting services would be carried out through the SAPI Study right after the commencement of the Project while the remainder was scheduled to be implemented through loan consultants to be employed under the ODA loan. In reality, the preparation of a project implementation manual (draft), assistance for the screening of candidate sub-projects, and two seminars to raise awareness of energy efficiency and renewable energy, were conducted under the SAPI Study.

However, loan consultants were not employed to assist in capacity improvement in terms of financing energy efficiency sub-projects, etc.¹³

3.2.2 Project Inputs

3.2.2.1 Project Cost

The planned total project cost was 5,520 million Japanese yen (out of which, the Japanese ODA loan amounted to 4,682 million Japanese yen). Out of the total amount, the two-step loan portion was 4,706 million Japanese yen in total (out of which, the Japanese ODA loan amounted to 4,000 million Japanese yen). The total project cost (actual) was 12,153 million Japanese yen, out of which the Japanese ODA loan portion was 3,418 million Japanese yen and the two-step loan portion of the Japanese ODA loan was 3,373 million Japanese yen. Although the actual disbursed amount of the Japanese ODA loan fell within the planned amount, it was far lower than the amount of the ODA loan (the ratios of the actual disbursed amounts against the planned total amounts of the ODA loan and the two-step loan are 73% and 84%, respectively).¹⁴ As explained in the previous section,

¹³ Results of interviews at the head office and branches of VDB can be summed up as having demonstrated that a sub-project was appraised at VDB branches and then at the head office after having been approved by a provincial government, such as the Provincial People's Committee (hereinafter referred to as "PPC"), the Department of Industry and Trade (hereinafter referred to as "DOIT"), the Department of Natural Resources and Environment (hereinafter referred to as "DONRE"), the Department of Science and Technology, or the Department of Construction. VDB focused on examination of the location of a sub-project site, compliance with government policy, and on economic and financial analysis. In terms of the energy efficiency sub-projects, the Energy Conservation Center (hereinafter referred to as "ECC") in Ho Chi Minh city checked the technical aspects of energy efficiency sub-projects. In cases where the relocation of local residents was required, local governments such as the District People's Committee and the Commune People's Committee monitored the relocation process under the instructions of PPC. Thus, reviews of the technical aspects of a sub-project were conducted by other organizations in this appraisal process. While the demand for sub-loans in the area of energy efficiency stagnated, no major problems were encountered in so far as financing activities were carried as they were, despite the fact that the financing system was not strengthened as a result of Project implementation. In addition, awareness-raising campaigns were considered to be basically separate to VDB activities as a financial institution.

¹⁴ At the planning stage during the appraisal, the total cost of sub-projects (i.e., "Total" of the two-step loan in Table 1 in the main text) was calculated simply by applying the financing ratio for sub-projects (85% as an upper limit) and adding the portion to be borne by sub-project owners (15 % of sub-project costs). Sub-project owners, among others,

Project Outputs, the major reason behind the utilization of the ODA loan being lower than the initial estimate is thought to be the sluggish demand for loans, especially for energy efficiency sub-projects.

Furthermore, loan consultants were not employed, as described before. In addition, support for the fees required for feasibility studies (hereinafter referred to as “F/S”) was not utilized. VDB is of the opinion that F/S should be carried out by sub-project owners with their own funds before they apply for sub-loans. It was initially found that it was difficult to utilize such funds to support the implementation of F/S.

Table 1: Project Cost (Plan/Actual)

Item	Planned		Actual	
	Total (million JPY)	Out of which: ODA loan (million JPY)	Total (million JPY)	Out of which: ODA loan (million JPY)
Two Step Loan	4,706	4,000 Out of which: Energy efficiency: 3,000 Renewable energy: 1,000	12,108 ^{note2}	3,373 Out of which: Energy efficiency: 1,980 Renewable energy: 1,393
Consulting Services	163	163	0	0
Consulting Services (support for F/S preparation fees)	30	30	10	10 ^{note3}
Price contingencies	322	230	0	0
Physical contingencies	251	211	0	0
Interest on construction	24	24	22	22
Commitment charges	23	23	13	13
Total	5,520	4,682	12,153	3,418

Source: Information provided by JICA and VDB

Note1: The exchange rate at the time of the appraisal was 0.0059 Japanese yen/Viet Nam Dong (hereinafter referred to as “VND”). The weighted average foreign exchange rate of the on-lending ODA loan from MOF to VDB was 0.0047 Japanese yen/VND.

Note 2: The estimated amount based on the results of interviews for seven sub-projects (Sub-project No. 1 to 7 as described later). In estimating the amount, the average foreign exchange rate (0.0046 Japanese yen/VND) during the Project period was applied by quoting from International Financial Statistics (2016), International Monetary Fund.

Note 3: After the completion of disbursements, the amount was refunded to JICA as an unused remaining balance.

3.2.2.2 Project Period

It was planned that the Loan Agreement (hereinafter referred to as “L/A”) would be signed in November 2009 and the Project¹⁵ completed in December 2012 (total Project period: 38 months). The L/A was actually signed in November 2009 and the Project was completed in January 2015 (total project period: 63 months). [166% over the planned period (= 63 months against 38 months)]

VDB screened energy efficiency sub-projects based on requests from sub-project owners

carried out sub-projects by utilizing other financial sources in addition to the ODA loan. Therefore, it was not appropriate to make a simple comparison between the plan and the actual based on the Project cost estimated at the planning stage. Accordingly, the plan- and actual- comparison was made only for the ODA loan portion.¹⁵ Project completion was defined as “completion of disbursements of sub-loans”.

¹⁵ Project completion was defined as “completion of disbursements of sub-loans”.

as well as on the results of the SAPI Study. However, the only one of the sub-project owners who submitted applications for sub-loans was actually selected. Due to the economic downturn during the period from 2011 to 2013, energy efficiency sub-projects were not considered as a major area for investments. Accordingly, the formulation of sub-projects using the Japanese ODA loan did not progress and the disbursement of the Japanese ODA loan was delayed compared to the original plan. Under such conditions, VDB shifted the focus of its sub-loan operations from energy efficiency to renewable energy (refer to Figure 4 above). Thus, as a result of adjustments made for the implementation of the Project in consideration of the status of the economy after commencement of the Project, the Project period was significantly longer than planned.

Although the Project cost fell within that planned, the Project period was significantly longer than planned. Therefore, its efficiency is fair.

3.3 Effectiveness¹⁶ (Rating: ②)

The Project objective was set as “provision of medium- and long-term loans required for the utilization and promotion of energy efficiency and renewable energy and the raising of awareness on the part of the enterprises involved”. The achievement level of the Project objective was examined with the following operation and effect indicators, and qualitative effects.

3.3.1 Quantitative Effects (Operation and Effect Indicators)

The operation and effect indicators of the Project are shown in the table below:

Table 2: Operation and Effect Indicators

Indicators	Base Number (2008)	Target Number (2014) 2 years after Project completion	Actual (2017) 2 years after Project completion
Number of People who attended seminars (seminars on the promotion of energy efficiency) (persons)	—	To be determined by the time the Project starts ^{note 1}	About 80 persons
The number of sub-projects implemented and the amount of medium- and long-term sub-loans extended to them ^{note 2}	—	—	8 sub-projects in the amount of 723 billion VND

Source: Information provided by JICA, VDB and others.

Note 1: The targets had not been determined at the time when the Project started.

Note 2: The indicator was added at the time of the ex-post evaluation as an indicator to examine the status of medium- and long-term loans being extended.

¹⁶ The sub-rating for Effectiveness is to be put with consideration of Impact.

- (1) Number of People who attended Seminars (seminars for the promotion of energy efficiency)¹⁷

As shown in Table 2 above, VDB held a total of two seminars in Hanoi and Ho Chi Minh City in January 2010 with the support of the SAPI Study. The seminars aimed to deepen understanding on energy efficiency systems and technology (introduction of technology and machinery eligible for sub-loans under the Project), and on the utilization of renewable energy. It was also intended that public relations activities would be carried out for promotion of the use of the two-step loan. Aside from staff members of VDB head office and branches, participants came from relevant governmental organizations, consulting firms engaged in fields relating to energy efficiency and renewable energy, and potential sub-project owners under the Project. According to VDB, the number of participants in the seminars was about 40 each and the introduction of the Japanese experience concerning energy efficiency was made in a limited way.

It was pointed out that Japanese technology and equipment in the field of energy efficiency had already reached such a high level that Vietnamese enterprises were unable to use them as useful references. Furthermore, energy efficiency would have to be promoted not simply by replacing a single unit of equipment but by changing the entire operation system (an entire chain of technology). No seminars other than the aforementioned ones supported by the SAPI Study were carried out under the Project. Promotion activities for energy efficiency were left to the initiative of the respective VDB branches.

- (2) Provision of Medium- and long-term Sub-loans required for the Utilization and Promotion of Energy Efficiency and Renewable Energy (the Number of Sub-projects implemented and the Amount of Medium- and long-term Sub-loans extended for the Sub-projects)

Medium- and long-term sub-loans required for the utilization and promotion of energy efficiency and renewable energy were provided to a total of eight sub-projects, two energy efficiency sub-projects and six renewable energy sub-projects. Out of these, the sub-projects that utilized a pool of funds (revolving funds) to be repaid by sub-project owners in addition to the initial ODA loan were the Suoi Tan 2 Hydropower Plant (Sub-project No. 5), the Nam Can 2 Hydropower Plant (Sub-project No.6), and the Suoi Chan 2 Hydropower Plant (Sub-project No.7). By making use of the ODA loan, VDB extended medium- and long-term sub-loans in a total amount of 723 billion VND (corresponding to the initial disbursements) for the utilization and promotion of energy efficiency and renewable energy. It is noted, however, that prepayments were made for three sub-projects out of these projects as already

¹⁷ As target values were not set, it was not possible to determine the achievement level at the time of the ex-post evaluation.

explained earlier.

Table 3: List of Energy Efficiency and Renewable Energy Sub-Projects to which Medium- and Long-term Sub-Loans were Extended

Sub-project No.	Sub-project	Type	Amount of ODA loan (Billion VND)	Fixed/ Variable Interest Rate	Repayment period (Grace) months	Remarks ^{Note1}
1	Hoa Phat Power Station	Energy Efficiency	240.9	Variable	180 (24)	Prepayment in 2014
2	Bagasse Thermal Power Plant	Energy Efficiency	139.5	Variable	120 (24)	Prepayment in 2013
3	Hang Dong A Hydropower Plant	Renewable Energy	77.0	Variable	96 (12)	
4	Ta Trach Hydropower Plant	Renewable Energy	85.0	Variable	132 (12)	
5	Suoi Tan 2 Hydropower Plant	Renewable Energy	31.9	Variable	144 (14)	RF
6	Nam Can 2 Hydropower Plant	Renewable Energy	97.0	Fixed	120 (11)	RF ^{note2}
7	Suoi Chan 2 Hydropower Plant	Renewable Energy	43.7	Variable	144 (24)	RF
8	Dar Cao Hydropower Plant	Renewable Energy	8.0	Variable	120 (24)	Prepayment ^{note3}
Total			723.0			

Source: Information provided by VDB

Note 1: "RF" indicates sub-projects implemented with revolving funds in addition to sub-loans sourced from the original ODA loan.

Note 2: With regard to small hydropower sub-projects in the field of renewable energy, it was agreed at the time of appraisal that concurrence would be required from JICA when the sub-loan amount per sub-project exceeded five million US dollars. In October 2014, when the expiry date of the disbursement approached, VDB submitted a request to JICA for a change in the terms and conditions of a sub-loan. As the total sub-loan amount (sourced from the ODA loan) to the Nam Can 2 Hydropower Plant exceeded five million US dollars per sub-project, the credit ceiling applied for a hydropower project, VDB requested that JICA concur in the removal of the credit ceiling and in the reimbursement of the VDB funds with the ODA loan, which had already been used to finance the Nam Cam 2 Hydropower Plant. JICA concurred the request from VDB and as a result, the total disbursed amount of the ODA loan reached 297 billion VND.

Note 3: VDB requested that the sub-project owner make prepayments of the sub-loan as it had observed some problems with the sub-project owner regarding compliance with the procurement law.

3.3.2 Qualitative Effects (Other Effects)

(1) Raising of Awareness on the part of Vietnamese Enterprises regarding the Promotion and Utilization of Energy Efficiency and Renewable Energy

As the two energy efficiency sub-projects aimed to expand existing facilities, it is considered that the sub-project owners made use of the existing technology and further introduced new technology. These energy efficiency sub-projects later expanded their capacity for the generation of electricity having received assistance through the ODA loan. They earned sales revenues from electricity through implementation of the sub-projects. The Project contributed to the raising of awareness on the part of sub-project owners in the sense that they recognized an improvement in profitability with the introduction of energy

efficiency equipment, which led to additional investment by them.

Five renewable energy sub-projects visited by the ex-post evaluation team (sub-projects except the Dar Cao Hydropower Plant (Sub-project No.8)) were projects with new investment while the sub-project owners operated similar hydropower plants in other areas. Therefore, it is considered that the investments were made with an anticipation of profitability, based on past experience of power generation projects.

As mentioned before, under the Project, medium- and long-term loans required for the utilization and promotion of energy efficiency and renewable energy were provided to a total of eight sub-projects. In addition, through implementation of the Project, the awareness of energy efficiency and renewable energy projects on the part of sub-project owners that had received financial assistance was raised as a result. However, awareness-raising seminars were not implemented except for seminars on the promotion of energy efficiency held under the SAPI Study. It is not certain whether or not raising of the awareness of enterprises towards investments in facilities, etc. which would contribute to the utilization and promotion of energy efficiency and renewable energy, was implemented at the level originally targeted.

3.4 Impacts

3.4.1 Intended Impacts

The impacts of the Project were set as “contribution to an increase in the efficiency of energy utilization at enterprise level, and the acceleration of environmental conservation and the sustainable economic growth of Viet Nam, and the further mitigation of global climate change”.




(1) Acceleration of the Utilization of Facilities for Energy Efficiency and Renewable Energy¹⁸




Table 4 below describe the outlines, commencement years of operations, and the operating statuses of the respective sub-projects. Except for the Dar Cao Hydropower Plant (Sub-project No. 8),¹⁹ which was not visited by the ex-post evaluation team, all the sub-projects were either operating without problems or were scheduled to commence operations shortly. It is evaluated that the utilization of facilities for energy efficiency and renewable energy was accelerated and that the efficiency of energy utilization was promoted at an enterprise level.


¹⁸ This indicator was added in consideration of the logical sequence from Outputs, Outcome and Impacts.

¹⁹ VDB requested that the sub-project owner make prepayments of the sub-loan as it had observed some problems with the procurement procedures.

Table 4: Outlines, Commencement Years of Operations and Operating Status of Sub-projects

Sub-project No.	Sub-project (Province)	Commencement Year of Operations	Generation Capacity (MW)	Outline and Operating Status of Sub-project
1	Hoa Phat Power Station (Hai Duong)	2013	22	 <p>The sub-project owner produced coke for steel manufacturing. They were able to recover waste heat liberated when processing coal into coke and to use it for power generation. Electricity was utilized for the production of coke and sold to steel factories. By doing so, the sub-project owner saved on electricity consumption from external sources and earned sales revenues. The sub-project owner introduced three units of power generation facilities and the total generation capacity of electricity was 52 MW. Out of this, 46 MW was actually utilized. The facilities financed by the VDB sub-loan were the second generating facilities (22 MW: Photo). Technology was transferred from China.</p>
2	Bagasse Thermal Power Plant (Thanh Hoa)	2012	12.5	 <p>The sub-project owner introduced power generation facilities making use of bagasse (residues left after sugarcane is processed) at sugar refineries. The owner installed a total of four power generation facilities: two units in 1998 (3MW each), one unit in 2011 (12.5MW: Photo) with the VDB sub-loan, and the fourth-generation facilities (15MW) in 2015. The total installed capacity was 33.5MW but not all the facilities were simultaneously put into operation. As operations were rotated among the generation facilities for efficiency, the actual generation capacity turned out to range from 22MW to 24MW. The turbine procured with the VDB sub-loan was made in India and the manufacturer in India received investment from Japan.</p>
3	Hang Dong A Hydropower Plant (Son La)	2016	16	 <p>The new hydropower plant sub-project includes two units of generating facilities, buildings for power generation, dams, reservoirs, tunnels and transmission lines. The facilities were procured from an Indian subsidiary of an Austrian manufacturing group. In order to make effective use of available water, the sub-project owner operated the plant for five hours per day during the dry season, targeting a time when the unit sales price of electricity was high. The sub-project owner was engaged in construction, operation and management of various hydropower plants. At the time of the site visit by the ex-post evaluation team, the owner operated and managed five hydropower plants and was undertaking construction of four power plants.</p>

Sub-project No.	Sub-project (Province)	Commencement Year of Operations	Generation Capacity (MW)	Outline and Operating Status of Sub-project
4	Ta Trach Hydropower Plant (Thua Thien-Hue)	2014	21	 <p>The sub-project was formulated by the Ministry of Agriculture and Rural Development (hereinafter referred to as “MARD”) for the purpose of irrigation and flood-control in 2007. The original MARD plan included hydropower plants. The sub-project owner group responded to the invitation for private investment in the hydropower plants and came to construct and operate the power facilities. Under the sub-project, two units of power generation facilities, sub-stations, transmission lines and so on were introduced. The equipment and facilities were made mainly in China.</p>
5	Suoi Tan 2 Hydropower Plant (Son La)	2016	4	 <p>The sub-project was a new hydropower plant consisting of generating facilities, buildings for power generation, tunnels, etc. Generators and turbines were manufactured in China. A Japanese private organization introduced a micro hydropower plant (10kV) at the project site. However, as the power supply capacity of the micro hydropower plant was limited, a new hydropower plant was constructed to replace it. In order to make effective use of available water, the sub-project owner operated the plant for five hours per day during the dry season, targeting a time when the unit sales price of electricity was high.</p>
6	Nam Can 2 Hydropower Plant (Nghe An)	2015	20	 <p>The sub-project was a new hydropower plant consisting of two units of generating facilities, substations, tunnels, reservoir facilities, etc. The facilities were procured from an Indian subsidiary of an Austrian manufacturing group. In order to make effective use of available water, the sub-project owner operated the plant for five hours per day during the dry season, targeting a time when the unit sales price of electricity was high. Furthermore, the sub-project owner constructed, operated and managed hydropower plants other than the sub-project concerned. At the time of the site visit by the ex-post evaluation team, the sub-project owner operated and managed a total of five hydropower plants.</p>

Sub-project No.	Sub-project (Province)	Commencement Year of Operations	Generation Capacity (MW)	Outline and Operating Status of Sub-project
7	Suoi Chan 2 Hydropower Plant (Lao Cai)	2017	14	 <p>The sub-project was a new hydropower plant consisting of two units of generating facilities, reservoir facilities, tunnels, transmission lines, etc. The main facilities were made in China.</p> <p>A test run was conducted in May 2017 (Photo). Operations were commenced in June 2017. The hydropower plant was scheduled to operate 24 hours a day throughout the year.</p>
8	Dar Cao Hydropower Plant (Lam Dong)			The existing conditions were unknown.

Source: Information provided by JICA and VDB. Results of interviews with the sub-project owners.

(2) Contribution to the Mitigation of Global Climate Change

Quantitative effect indicators were set as shown below at the time of the appraisal. However, except for the indicator “Reduction of Energy Consumption resulting from Investments in Energy Efficiency performed by Sub-projects (Tons of Oil Equivalent/year)”, neither base nor target numbers (values) were worked out.

Table 5: Operation and Effect Indicators (Quantitative Effects)

	Base Number (Value) (2008)	Target Number (Value) (2014) 2 years after Project Completion	Actual
Reduction of Green House Gas Emissions performed by sub-projects (Tons of CO ₂ Equivalent/year, electricity consumption/year, etc.)	—	Determined by the time of the commencement of the Project ^{note 1}	As shown below ①
Reduction of energy consumption resulting from investments in energy efficiency performed by sub-projects (Tons of Oil Equivalent/year)	—	Reduction of energy consumption by 20% compared to the situation prior to commencement of a sub-project	As shown below ②
Amount of renewable energy generated by sub-projects (Tons of Oil Equivalent/year)	—	Determined by the time of the commencement of the Project ^{note 2}	As shown below ③ and Table 6 below

Source: Information provided by JICA and VDB, etc.

Note 1 and 2: The target numbers/values determined by the time of the commencement of the Project were not confirmed at the time of the ex-post evaluation.

① Reduction of Green House Gas Emissions performed by sub-projects²⁰

According to interviews with the sub-project owner of the Bagasse Thermal Power Plant (Sub-project No.2), payments were received based on Certified Emission Reductions (hereinafter referred to as “CER”). According to the monitoring report,²¹ the amount of Green House Gas Emissions reduced was 85,278 CO₂ Equivalent Tons in total between September 2012 and the end of August 2016.

② Reduction of energy consumption resulting from investments in energy efficiency performed by sub-projects

The Hoa Phat Power Station (Sub-project No. 1) and the Bagasse Thermal Power Plant (Sub-project No. 2) are classified into energy efficient sub-projects. However, under these sub-projects, electricity was generated by making use of waste heat and bagasse. Some of this electricity was consumed internally at the factories, replacing consumption of grid-connected power. Therefore, it was considered not appropriate to examine the amount of energy consumption reduced resulting from investments in energy efficiency. Instead, the effects of replacing power consumption from grid-connected power were evaluated in the following item ③, Amount of renewable energy generated (Table 6 below).

③ Amount of renewable energy generated by sub-projects

The amount of renewable energy generated by the sub-projects financed is shown in the column, “Amount of Power generated or sold” in Table 6 below. The total generation or sales volumes of electricity of six sub-projects from the Hoa Phat Power Station (Sub-project No.1) to the Nam Can 2 Hydropower Plant (Sub-project No.6) in the table was 375 million kwh²² (=32,250 Tons of Oil Equivalent²³) in 2016. The volume of electricity can be evaluated as the volume substituted for fossil fuel-based energy. The power generation and sales activities of the respective sub-projects were carried out more or less smoothly, shoring up economic growth.

²⁰ With regard to this indicator, the conditions were described for one sub-project as they were confirmed.

²¹ The monitoring report is the “Monitoring report” uploaded at the web site (<http://cdm.unfccc.int/Projects/DB/RWTUV1345703360.84/view>) of the United Nations Framework Convention on Climate Change.

²² For the sub-projects that started in August 2016 (Sub-project No. 3: the Hang Dong A Hydropower Plant and Sub-project No.5: the Suoi Tan 2 Hydropower Plant), the amount of sales up to April or May 2017 when the ex-post evaluation team visited the sub-project sites was recorded. As for the Bagasse Thermal Power Plant (Sub-project No.2), it was not possible to estimate the amount of electricity generated by facilities purchased with the VDB loan only. Therefore, the amount includes the amount of electricity generated by the four generating facilities.

²³ 1 MWh = 0.086 Tons of Oil Equivalent (TOE)

Table 6: The Amount of Electricity Generated by Sub-projects

Sub-project No.	Sub-project	Amount of Power generated or sold ^{note1} (Million kwh)	Amount of Sales (Billion VND)	Remarks
1	Hoa Phat Power Station	<u>Amount of Power generated (total of 3 units)</u> Planned: NA Actual: 330 in 2016 (out of which: 149 estimated for the sub-project financed by VDB)	Actual: 504.9 in 2016 (out of which: 227.2 estimated for the sub-project financed by VDB)	The sub-project owner utilized the power generated for the production of coke at his own factories and also sold 77% of the generated power to steel factories. If there were no generating facilities, power would have to be purchased from external sources. Therefore, the amount of sales shown in the left column is the estimated amount, including the amount consumed internally at the own factories as an opportunity cost.
2	Bagasse Thermal Power Plant	<u>Amount of Power generated (total of 4 units)</u> Planned: 81.9 Actual: 29.8 in 2015 53.5 in 2016 (including the power generated by generation facilities not supported by the VDB loan)	Actual: 10.7 in 2015 33.2 in 2016	About 50 percent (%) of the electricity generated was utilized internally at the factories in 2016. The sub-project owner concluded an agreement on unit sales price with the Northern Power Corporation under Vietnam Electricity (hereinafter referred to as "EVN") during a period from 2013 to 2015 and with EVN during a period from 2015 to 2017.
3	Hang Dong A Hydropower Plant	<u>Amount of Power sold</u> Planned: 52 Actual: 31 from August 2016 to April 2017 (9 months)	Actual: 48.7 (excluding taxes) from August 2016 to April 2017 (9 months)	The electricity was sold to the Northern Power Corporation under EVN.
4	Ta Trach Hydropower Plant	<u>Amount of Power generated/sold</u> Planned: 84.2 Actual: 73 in 2015 83 in 2016	Actual: 85 in 2015 95 in 2016	The annual operating hours of the power plant ranged from 4,200 hours to 4,600 hours. During the period when the plant was not in operation, maintenance works were conducted. The electricity was sold to the Central Power Corporation under EVN.
5	Suoi Tan 2 Hydropower Plant	<u>Amount of Power generated/sold</u> Planned: 14 Actual: 8.7 to 9.2 from August 2016 to May 2017 (about 10 months)	Actual: 10.3 from August 2016 to May 2017 (about 10 months)	The electricity was sold to the Northern Power Corporation under EVN.
6	Nam Can 2 Hydropower Plant	<u>Amount of Power generated/sold</u> Planned: 64 Actual: 23.4 from September to December 2015 (4 months) 49.5 in 2016 4.3 from January to February 2017 (2 months)	Actual: 19.8 from September to December 2015 (4 months) 62.2 in 2016 10.7 from January to February 2017 (2 months)	During the dry season, the plant was operated for five hours a day. The generation volume in 2016 was 49.5 million kwh, which was less than 80% of the volume planned. According to the sub-project owner, this was due to bad weather conditions. The electricity was sold to the Northern Power Corporation under EVN.

Sub-project No.	Sub-project	Amount of Power generated or sold ^{note1} (Million kwh)	Amount of Sales (Billion VND)	Remarks
7	Suoi Chan 2 Hydropower Plant	<u>Amount of Power sold</u> Planned: 61 ^{note 2} <hr/> Actual The plant was yet to be in operation at the time of the site visit by the ex-post evaluation team.	Planned: 64	The electricity was scheduled to be sold to the Northern Power Corporation under EVN.

Source: Results of interviews with sub-project owners, information provided by them and information provided by VDB.

Note 1: Some sub-project owners replied with a sales volume of electricity for the generation volume. Others requested that the ex-post evaluation team calculate the generation volume by multiplying the sales volume with 1.015, and did not see major differences between these two records.

Note 2: According to the VDB Web-site in June 2017, it was planned that 56 million kwh would be generated in a year.

As described above, no major problems were observed in the use of equipment and facilities at the seven sub-projects visited and the generation and sales of electricity at the sub-projects continued. In addition, one of the sub-projects was emission reductions certified and received payments based on the CER. Therefore, impacts on the mitigation of Global Climate Change were also observed.

3.4.2 Other Positive and Negative Impacts

(1) Impacts on the Natural and Social Environment

DONRE is in charge of approval of the Environmental Impact Assessment and approval by DONRE is a pre-condition for VDB financing. In order to review environmental and social impacts of sub-projects, it had been agreed that an environmental screening form²⁴ be submitted to JICA. However, the form was not submitted.^{25 26} According to sub-project owners interviewed, they received regular reviews by the agency of local government in charge of the environment. There was a sub-project where measures were taken to mitigate negative environmental impacts. These included the planting of trees and the construction of embankments along roads in order to prevent soil erosion, landslides, etc.

All the renewable energy sub-projects are newly constructed hydropower plants. The sub-project owners made compensation to affected local residents according to their customary rights. In addition, the sub-projects made certain contributions such as generating

²⁴ JICA classifies projects into four categories according to the extent of environmental and social impacts. The submission of the environmental screening form was agreed at the time of the appraisal in order to avoid financing sub-projects in Category A (sub-projects that are likely to have significant adverse impacts on the environment and society).

²⁵ DONRE was in charge of environmental monitoring during the construction period of the sub-projects. However, at the sub-project sites visited, the ex-post evaluation team was not able to confirm collaboration between DONRE and VDB on the environmental aspect, such as information-sharing.

²⁶ VDB prepared reports for the Ministry of Planning and Investment on a quarterly basis, but no reports prepared for JICA. VDB commented that as preparation of such reports was initiated by sub-project owners, the reporting format for JICA should follow the regulations of Viet Nam.

employment opportunities for local residents in remote areas where the hydropower plants were located and improving access roads. Furthermore, there is a sub-project (the Suoi Tan 2 Hydropower Plant (Sub-project No.5)) where all the villages within the commune were connected to the grid through negotiation with EVN.²⁷ Thus, the Project made contributions to social improvements as well as improvements in the living environment.

As described above, medium- and long-term loans required for the utilization and promotion of energy efficiency and renewable energy by enterprises were extended and the awareness of the sub-project owners who received the sub-loans was raised. However, it was neither confirmed qualitatively nor quantitatively whether or not there was a raising of awareness regarding the utilization and promotion of energy efficiency and renewable energy to the extent that it was intended the Project would achieve for Vietnamese enterprises. At the sub-project owner level, the efficiency of energy utilization was promoted and contributions towards environmental conservation and sustainable economic growth through substitution of energy that controls the environmental burden were observed, as was the mitigation of global climate change through the reduction of Green House Gas Emissions, although this was to a limited extent.²⁸

The Project has to some extent achieved its objectives. Therefore, the effectiveness and impacts of the Project are fair.

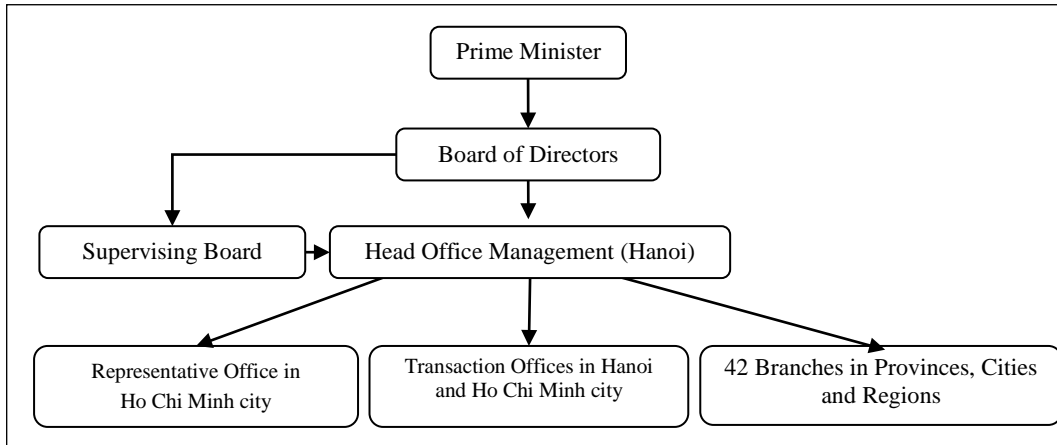
3.5 Sustainability (Rating: ②)

3.5.1 Institutional Aspects of Operation and Maintenance

VDB was established through Prime Minister Decision 108/2006/QĐ-TTg as an agency to implement policy on state investment credits and export credits. VDB has a nation-wide network including its head office, the Ho Chi Minh city representative office, two transaction offices (Hanoi and Ho Chi Minh city) and 42 branches with about 2,600 personnel as of 2016.

²⁷ Until that time, some of the residents in the commune received an unstable power supply from a micro hydropower plant in the commune.

²⁸ Since activities in the field of energy efficiency were new in Viet Nam, a Project Consultancy Committee of the Energy Efficiency and Renewable Energy Promoting Project, which is a committee across different ministries, was established (Decision of the General Director of VDB 163/QĐ-NHPT dated March 12, 2010) at the beginning of the Project. However, energy efficiency activities did not draw great attention and it is understood that the committee was not particularly active. However, as described in Section 3.1.1 under “Relevance”, the inclusion of energy efficiency as a new category on the “list of projects eligible to borrow investment loans” was considered to be a national level impact of the implementation of the Project.



Source: Information provided by VDB

Figure 6: Organization Structure of VDB

A Project Management Unit (hereinafter referred to as “PMU”) was established during the Project period. PMU played a coordinating role in implementing the Project and continued to exist and coordinate with other relevant departments after completion of the Project. PMU consisted of six members including the Vice General Director and staff members from departments such as the Foreign Capital Management Department, the Investment Credit Department and the Appraisal Department.

Funds repaid to VDB by sub-project owners were managed as revolving funds and utilized again to finance sub-project owners. The revolving funds were operated and maintained by the Foreign Capital Management Department and the Accounting Department at the head office of VDB. Appraisal of the sub-projects for which the revolving funds would be utilized was conducted by the Appraisal Department and the Foreign Capital Management Department and the collection of repayments was carried out by VDB branches. No problems were observed in the institutional aspects of operation and maintenance

The monitoring of sub-projects was carried out by the staff of VDB branches. In particular, they visited sub-project sites and examined implementing schedules, the condition of equipment and materials for which reimbursement was requested, accounting records prior to disbursements and so on. In addition, sub-project owners reported on the progress of sub-projects to VDB. No major concerns were observed in the monitoring aspect.

Other than the monitoring of VDB, sub-project owners were subject to monitoring by DOIT and DONRE. For the Suoi Chan 2 Hydropower Plant (Sub-project No. 7), which was under construction when the ex-post evaluation team visited, monitoring was conducted on the quality of the equipment, the conditions of waste treatment, the effects of digging activities and so on, every three months.

3.5.2 Technical Aspects of Operation and Maintenance

During the Project period, training was organized on specific topics such as the points to which VDB staff needed to pay attention when appraising sub-projects on energy efficiency and renewable energy. However, after completion of the Project, this training was no longer conducted. As for the technical appraisal of energy efficiency sub-projects, VDB planned to utilize external resources post-Project as they had with the support of experts from ECC in Ho Chi Minh City under the Project. However, the number of energy efficiency sub-projects actually supported under the Project was only two and the training was not continued. Therefore, there are some concerns over the way in which appraisal is to be conducted on new sub-projects, including the monitoring of improvements in energy efficiency and so on.

The SAPI Study supported the preparation of the Operation Manual (draft), which incorporated the selection criteria of sub-projects, data management methods, lending procedures, etc. However, it was considered that the manual was not effectively utilized at the time of the ex-post evaluation.

As lending making use of revolving funds had started and the monitoring of sub-projects was conducted at branches, no major problems were observed in the overall financing activities. However, as described above, some minor concerns can be raised, particularly, on the technical aspects of the financing activities for energy efficiency sub-projects.

3.5.3 Financial Aspects of Operation and Maintenance

According to the income statement from 2012 to 2014, funding costs exhibited an increasing trend while the total revenues tended to decrease. Subsequently, net losses increased in 2013 and 2014. As a policy-based financial institution of the government, VDB implemented government policies on a non-profit basis and received support from the government budget to fill the gaps. VDB continued to receive support for interest payments from the government to fill the gaps for losses incurred through the implementation of projects. Financial sustainability is foreseen, provided that VDB continues to receive support from the government.

Table 7: Financial Indicators of VDB

Unit: Million VND

Item	2012	2013	2014
Receipts from loan interest	8,930,837	10,645,521	9,619,148
Receipts from deposit interest	2,919,078	1,202,312	525,614
Non-interest revenue	6,299,908	5,547,143	6,200,837
Total Revenue (A)	18,149,823	17,394,976	16,345,599
Payments for loan interest	1,101,991	522,643	785,035
Payments for deposit interest	1,428,103	643,044	466,323
Payments for interest on valuable papers	12,742,560	14,215,333	14,245,619
Non-interest expenses	2,266,886	2,371,263	1,863,675
Total payment (B)	17,539,540	17,782,283	17,360,652
Net profits	610,283	-357,307	-1,015,053
Total assets	291,700,892	298,986,367	324,526,866
Out of which: Assets in operating activities	242,990,839	257,489,601	274,326,337
Liabilities	275,282,191	283,145,853	309,349,863
Net worth (Capital Funds) ^{note 2}	16,418,701	15,840,514	15,177,003
Capital-to-asset ratio	5.6%	5.3%	4.7%

Source: VDB homepage

Note 1: The total does not tally in some years.

Note 2: Sum of VDB equity and VDB funds.

3.5.4 Current Status of Operation and Maintenance

The revolving fund accounts were managed as shown in the table below. Repayment of sub-loans sourced from the original ODA loan commenced in 2013 and lending from the revolving funds started in 2016. The year-end balance of the revolving fund accounts averaged at 310 billion VND over the four years from 2013 to 2016. As the current status of the revolving fund accounts showed, it was considered that the utilization of the funds was not active at the time of the ex-post evaluation. However, the funds are expected to be utilized from now on.²⁹

²⁹ The prospect of a high demand for funds for energy efficiency projects was not confirmed at branches visited at the time of the ex-post evaluation. In terms of small hydropower sub-projects in the field of renewable energy, the prospect varied depending on the region and sub-project owner. In addition, according to the VDB head office, VDB received proposals for solar- and wind-power generation sub-projects. Although active financing and endorsement of such potential was yet to take place, the utilization of revolving funds could be expected for such renewable energy sub-projects.

Table 8: Revolving Fund Accounts

Unit: Million VND

	2013	2014	2015	2016
Beginning balance	0	178,029	394,146	436,053
Sub-loans repaid	155,150	265,640	20,062	42,570
Interest received	21,919	18,599	20,108	24,623
Others	960	1,833	4,476	2,326
Total receipts	178,029	286,073	44,646	69,518
2 nd sub-loan disbursement	0	0	0	230,200
Others	0	69,956	2,740	43,243
Total expenditures	0	69,956	2,740	273,444
Ending balance	178,029	394,146	436,053	232,127

Source: Information provided by VDB

Note 1: As for the revolving funds, there existed several records with different data. Therefore, data directly received from the head office of VDB at the time of the ex-post evaluation was used.

Note 2: Disbursement to the Nam Can 2 Hydropower Plant was included in the second sub-loan disbursement in 2016. It is not known why this was recorded in the revolving fund accounts after completion of the disbursement.

It was understood by both the JICA Viet Nam Office and VDB that the auditing of the revolving fund accounts by the independent auditor started after completion of the disbursement. Therefore, no audit report from an independent auditor was submitted to JICA at the time of the ex-post evaluation (the selection of an independent auditor was underway at that time). The collection of sub-loans was carried out without any problems.

Some minor problems were observed in terms of the technical aspects and the current status of operation and maintenance although sustainability was foreseen on the institutional and financial aspects provided that VDB would continue to receive support from the government. Therefore the sustainability of the Project effects is fair.

4. Conclusion, Lessons Learned and Recommendation

4.1 Conclusion

The Project aimed to provide Vietnamese enterprises, sub-project owners, with medium- and long-term funds, through VDB, for the promotion of energy efficiency activities and the utilization of renewable energy, and at the same time to promote awareness campaigns to encourage investment in these fields, thereby accelerating the efficient utilization of energy by enterprises, the pursuit of environmental conservation and sustainable economic development in the country. Furthermore, the Project was intended to assist VDB in strengthening its financing capacity for areas such as the energy efficiency of enterprises, by utilizing the experience of environmental financing in Japan. The Project is highly relevant to the development policy and needs of the Vietnamese government as well as to Japan's ODA policy from the perspective that it supported efficiency of energy utilization and diversification of energy supplies through the management of the environmental burden. While the actual cost of the Project fell within the planned one, the Project period exceeded that planned. Therefore, the efficiency of the Project is fair. Under the Project, medium- and long-term loans required for the utilization and promotion

of energy efficiency and renewable energy by enterprises were extended and awareness on the part of the sub-project owners who received sub-loans was raised. However, it has not been sufficiently confirmed either qualitatively or quantitatively as to whether or not awareness of Vietnamese enterprises was raised towards the utilization and promotion of energy efficiency and renewable energy to the extent that it was intended it should be achieved by the Project. At the level of sub-project owners who had received sub-loans, efficiency of energy utilization was promoted and contributions were observed towards environmental conservation and sustainable economic growth through the substitution of energy to control the environmental burden, and to the mitigation of global climate change through reduction of greenhouse gas, to a limited extent. Therefore, the effectiveness and impacts of the Project are fair. As for sustainability, some minor problems were observed in terms of the technical and current status of the Project although sustainability was foreseen on the institutional and financial aspects. Therefore, the sustainability of the Project effects is fair. In light of the above, this Project is evaluated to be partially satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Executing Agency

Review of on-lending terms and conditions of the ODA loan from MOF to VDB

Under the Project, it was planned that the principal and interest portions repaid by sub-project owners would be managed in revolving fund accounts to be opened by VDB. Sub-loans from the revolving funds were to be extended to other sub-project owners under the same terms and conditions. With regard to the terms and conditions of the ODA loan from JICA to MOF, the repayment period was set at 40 years including a 10-year grace period. On the other hand, the repayment period of the on-lending ODA loan from MOF to VDB was set at 20 years, including a 10-year grace period. There will be a period when the ODA loan will not be utilized for sub-loans to sub-project owners, i.e., a period between the time after VDB makes repayments to MOF and the time before MOF makes repayment to JICA. According to the on-lending agreement between VDB and MOF, VDB will start making repayments to MOF from 2020. It is recommended that VDB hasten to start discussions on the repayment terms with MOF in order to make effective use of the ODA loan in the period before repayment is made to JICA

4.2.2 Recommendations to the Executing Agency and JICA

Review of the terms and conditions of sub-loans from VDB to sub-project owners

Under the Project, revolving funds were expected to be established utilizing surplus funds temporarily generated from the difference between the repayment period of sub-loans and the repayment period of the ODA loan. The revolving funds were to be utilized in extending

new sub-loans with the same terms and conditions. Accordingly, new sub-loans were extended with basically the same terms and conditions. However, the economic conditions of Viet Nam in 2009 when the appraisal of the Project was conducted were considerably different to those at the time of the ex-post evaluation. In addition, based on the visits to the sub-project owners by the ex-post evaluation team, as well as on the prepayment status of the sub-loans, it was considered that the competitiveness of the terms and conditions of the sub-loans had decreased in the environment where the interest rates exhibited a downward tendency. This was observed despite the fact that interest rates of sub-loans had been made vary in tandem with the interest rates of the state investment credits, which were expected to reflect changes in the market conditions, in order to offer preferential interest rates in harmony with the prevailing conditions in the Vietnamese financial markets. In order to meet the needs of sub-project owners in an appropriate manner, it is recommended that the Executing Agency and JICA continue to study and review the terms and conditions of sub-loans through regular discussions with potential sub-project owners and relevant agencies such as MOF.

4.3 Lessons Learned

(1) Review and revisions of the terms and conditions of sub-loans as required

Under the Project, interest rates of sub-loans were made vary in tandem with the interest rates of the state investment credits, which were expected to reflect changes in the market conditions, in order to offer preferential interest rates in harmony with the prevailing conditions in the Vietnamese financial markets. However, the financial institution, the executing agency, was not able to offer competitive terms and conditions for sub-loans in an environment where the market interest rates tended to decrease. It is considered that the executing agency being unable to offer competitive terms and conditions for sub-loans led to the prepayment of sub-loans and the slow progress of the disbursement of sub-loans. In similar types of projects, in order to respond to newly generated funding needs and changes in economic environment surrounding projects, the executing agency and JICA should review the terms and conditions of sub-loans and make necessary revisions throughout the different stages of a project, i.e., at the time when the project is formulated, during the time when the project is implemented and at the time after the project is completed, grasping the needs of potential sub-project owners as they proceed.

(2) Support for the implementation costs of feasibility studies

The Project planned to support part of the costs required for feasibility studies of sub-projects eligible for finance. However, there is the possibility that the feasibility of a sub-project cannot be confirmed as a result of the F/S. VDB was of the opinion that sub-project owners need to bear the costs required for conducting the F/S as sub-project owners were to carry out the F/S

when they applied for sub-loans. Under this Project, the funds set aside for supporting the preparation of F/S were not utilized and were finally refunded to JICA. In other similar types of projects, the executing agency and JICA should examine the appropriateness of supporting the costs of the preparation of the F/S, including the clarification of ideas and methods with regard to which party should bear the costs for formulation of sub-projects at the executing agency and how they should be borne.

(3) Reporting formats for monitoring the results of a project and of project completion from the executing agency

VDB submitted a report after completion of the Project but the description in the report was insufficient in many aspects of the agreed reporting format. Therefore, it was difficult to make a comparison between the plan and actual in terms of the Project costs, operation and effect indicators and so on at the time of the ex-post evaluation.

In other similar types of projects, JICA should guide the executing agencies so that all the important items in the reporting formats are thoroughly covered when reports are prepared during the project period and at the time of project completion. Furthermore, at the same time, in order to help executing agencies submit reports smoothly, it is important that the reporting formats already utilized at government agencies in recipient countries are taken into consideration.

End

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1. Project Outputs		
(1) Provision of medium- and long-term loans required for taking measures to promote energy efficiency and to utilize renewable energy, etc.	<ul style="list-style-type: none"> • Provision of sub-loans to sub-project owners: 4,000 million Japanese yen <ul style="list-style-type: none"> - Out of which: 3,000 million Japanese yen for energy efficiency sub-projects - Out of which: 1,000 million Japanese yen for renewable energy sub-projects • Number of sub-projects for finance: Not stated but the number of potential sub-projects was listed up. • Terms and conditions of sub-loans: Interest rate (State investment credit interest rate), Repayment period (20 years including a 10-year grace period) 	<ul style="list-style-type: none"> • Provision of sub-loans to sub-project owners: 3,373 million Japanese yen <ul style="list-style-type: none"> - Out of which: 1,980 million Japanese yen for energy efficiency sub-projects - Out of which: 1,393 million Japanese yen for renewable energy sub-projects • Number of sub-projects for finance: eight sub-projects <ul style="list-style-type: none"> - Out of which: two sub-projects for energy efficiency sub-projects - Out of which: six sub-projects for renewable energy sub-projects • Terms and conditions of sub-loans: as planned
(2) Strengthening of the financing capacity of VDB for energy efficiency and renewable energy through technical assistance	<ul style="list-style-type: none"> • Technical assistance through the SAPI Study and loan consultants 	<ul style="list-style-type: none"> • Technical assistance through the SAPI Study was conducted for the drafting of manuals and the holding of seminars, etc. • Loan consultants were not employed.
2. Project Period	November 2009 – December 2012 (38 months)	November 2009 – January 2015 (63 months)
3. Project Cost		
Amount Paid in Foreign Currency	4,682 million yen	3,418 million yen
Amount Paid in Local Currency	838 million yen	8,735 million yen
Total	5,520 million yen	12,153 million yen
ODA Loan Portion	4,682 million yen	3,418 million yen
Exchange Rate	1 VND=0.0059 yen (as of April 2009)	1 VND=0.0046 yen (Average during the Project period)
4. Final Disbursement	February 2015	

Socialist Republic of Viet Nam

FY2016 Ex-Post Evaluation of Japanese ODA Loan Project

“Small and Medium-sized Enterprises Finance Project (III)”

External Evaluator: Tomoo MOCHIDA, OPMAC Corporation

0. Summary

The Project aimed to provide Small and Medium-sized Enterprises (hereinafter referred to as “SME”) with medium- and long-term loans through Participating Financial Institutions (hereinafter referred to as “PFI”) from the executing agency, the State Bank of Vietnam (hereinafter referred to as “SBV”), while improving loan access for SME by enhancing the capacity of PFI in extending loans to SME.

The Project was consistent with Viet Nam’s SME policy and development needs, and with Japan’s ODA policy. Therefore, the relevance of the Project is high. While the actual cost of the Project fell within the planned one, the Project period exceeded that planned. Therefore, the efficiency of the Project is fair. The access to medium- and long-term loans for end-borrowers, SME, was improved and the loans were utilized for the investment purpose. In some cases, this led to effects such as the enhancement of production and sales of enterprises, and the maintenance and creation of employment. Therefore, the effectiveness as well as the impact are high. Concerning the sustainability, at the time of this ex-post evaluation, no major problems were observed in the institutional, technical, financial aspects and the current status of the operation and maintenance of the Project.

In light of the above, the Project is evaluated to be highly satisfactory.

1. Project Description



Project Location



The company introduced plastic molding equipment by utilizing a medium- and long-term loan extended under the Project and thus increased its production capacity.

1.1 Background

Viet Nam has accelerated its transition to a market-based economy and its integration into the world economy, resulting in significant economic development. In order to maintain the steady growth of the economy, promotion of the private sector was found to be an urgent issue to be addressed. As a result of restructuring state-owned enterprises, the private sector accounted for 46% of the Gross Domestic Product (GDP) in 2007 and 42% of the net profits of the entire enterprises, out of which SME took the majority share. However, loan access, a shortage of management know-how, technology, etc. were found to be bottlenecks for SME. In particular, capital shortage for SME, among others, posed a significant problem.

1.2 Project Outline

The Project was designed to provide two-step loan and technical assistance through on-lending to PFI from SBV, thereby improving loan access for SME and subsequently, contributing to an acceleration of economic growth and a strengthening of international competitiveness through private sector development.

Loan Approved Amount/ Disbursed Amount	17,379 million yen / 16,926 million yen						
Exchange of Notes Date/ Loan Agreement Signing Date	October, 2009 / November, 2009						
Terms and Conditions	<table> <tr> <td>Interest Rate</td> <td>1.2% (0.01% for consulting services)</td> </tr> <tr> <td>Repayment Period (Grace Period)</td> <td>30 years (10 years)</td> </tr> <tr> <td>Conditions for Procurement</td> <td>General Untied</td> </tr> </table>	Interest Rate	1.2% (0.01% for consulting services)	Repayment Period (Grace Period)	30 years (10 years)	Conditions for Procurement	General Untied
Interest Rate	1.2% (0.01% for consulting services)						
Repayment Period (Grace Period)	30 years (10 years)						
Conditions for Procurement	General Untied						
Borrower / Executing Agency	The Government of the Socialist Republic of Viet Nam / State Bank of Vietnam (SBV)						
Project Completion	December, 2014						
Main Contractor (Over 1 billion yen)	NA						
Main Consultant (Over 100 million yen)	Nomura Research Institute, Ltd. (Japan) / Vision and Associates, Ltd. (Viet Nam) (Joint Venture)						
Feasibility Studies, etc.	The Special Assistance for Project Formation Study for Small and Medium-sized Enterprises Finance Project (III) (2008)						
Related Projects	<p>[Japanese ODA Loan]</p> <ul style="list-style-type: none"> • Small and Medium-sized Enterprises Finance Project (I) (Loan Agreement Signing: March 1999) • Small and Medium-sized Enterprises Finance Project (II) (Loan Agreement Signing: March 2005) 						

	<p>[Technical Cooperation]</p> <ul style="list-style-type: none"> • The Project for Strengthening Training Capability for the Technical Workers Course in Hanoi Industrial College (2000 - 2005) • Vietnam-Japan Human Resources Cooperation Center (2000 - 2010) • Policy advisor on SME development (2004 - 2009) • Reinforcement of the SME Technical Assistance Center (2006 - 2008) • Senior Volunteers to organizations relevant to SME promotion (2001 - Present) • Project for Strengthening Public Functions for Supporting Small and Medium Enterprises (2011 - 2014) <p>[Multilateral Agencies]</p> <ul style="list-style-type: none"> • Asian Development Bank (ADB): “SME Sector Development Program Loan” (2004 - 2008) • European Union (EU): “EU-Vietnam Private Sector Support Programme” (2005 - 2008) • Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ): “SME Development Programme” (2005 - 2009), etc.
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2. Outline of the Evaluation Study

2.1 External Evaluator

Tomoo Mochida, OPMAC Corporation

2.2 Duration of Evaluation Study

This ex-post evaluation study was conducted with the following schedule:

Duration of the Study: December, 2016 - February, 2018

Duration of the Field Study:

February 18, 2017 - March 22, 2017, May 13, 2017 - May 26, 2017

3. Results of the Evaluation (Overall Rating: A¹)

3.1 Relevance (Rating: ③²)

3.1.1 Consistency with the Development Plan of Viet Nam

At the time of the Project appraisal, it was found that a clear definition of SME had been laid out and decisions had been made to establish a Small and Medium Enterprise Development Department³ responsible for the support of SME under the Ministry of

¹ A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory

² ③: High, ②: Fair, ①: Low

³ It was referred to as the “Small and Medium Enterprise Development Department” under Government Decree 90/2001/ND-CP, but called the “Agency for Enterprise Development (hereinafter referred to as “AED”)” at the time of the ex-post evaluation.

Planning and Investment (hereinafter referred to as “MPI”). Technical Assistance Centers (hereinafter referred to as “TAC”) were also established and were responsible for technical support to SME in Hanoi, Da Nang and Ho Chi Minh city through Government Decree 90/2001/ND-CP aiming to develop SME. The *SME Development Plan (2006-2010)* (Prime Minister Decision 236/2006/QD-TTg) laid out an SME support plan, which consisted of seven groups of measures including the simplification of administrative procedures concerning support for SME, the quality development of a labor force of SME, and the facilitation of access for SME to finance. Furthermore, the Ministry of Industry and Trade (hereinafter referred to as “MOIT”) formulated the *Planning on development of supporting industries to 2010, vision to 2020* in order to take measures to strengthen the competitiveness of local industries (Decision of Minister of Industries 34/2007/QD-BCN). Government Decree 90/2001/ND-CP was later revised to Government Decree 56/2009/ND-CP. In the revised decree, the definition of SME was sub-divided and given more details, measures were described to soften the loan conditions of credit institutions, the roles and functions of governmental organizations concerning SME support were clarified and so on. It was intended that support for SME, which are vulnerable to adverse impacts of economic downturns, would be strengthened.

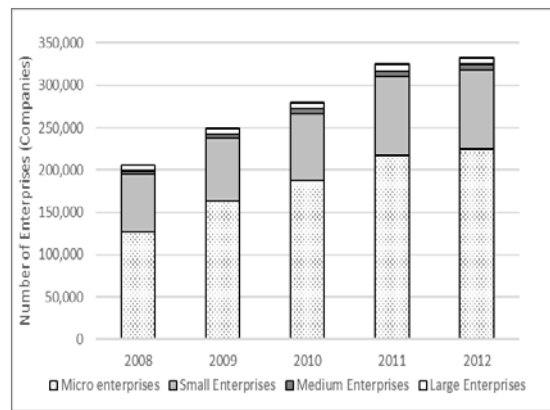
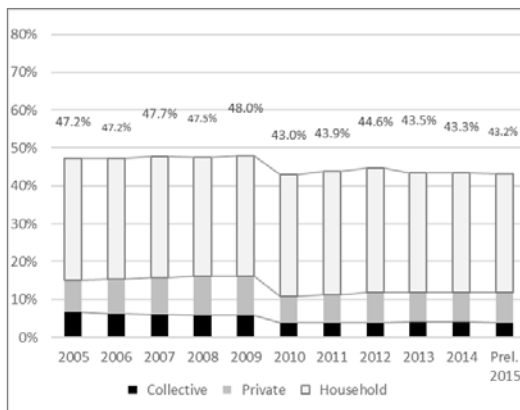
In 2012, the *Decision approving the plan for developing small and medium enterprises 2011 - 2015*, which covers the implementation period of this Project, was issued (Prime Minister Decision 1231/2012/QD-TTg). The SME development plan in the above decision aimed to improve investment environment for SME, thereby contributing first to an increase in the growth rate and the competitiveness of SME and then to the economic growth of the country and improvement in competitiveness in the international economy. Furthermore, based on the *Planning on development of supporting industries to 2010, vision to 2020*, the government prepared *policies on development of a number of supporting industries* (Prime Minister Decision 12/2011/QD-TTg), which is considered as a basic policy to promote supporting industries in Viet Nam.

At the time of the ex-post evaluation, a new decree on the development of supporting industries was issued (Government Decree 111/2015/ND-CP). In relation to that decree, SBV issued detailed guidance on policies on granting loans to develop supporting industries (SBV Circular 01/2016/TT-NHNN). In addition, at the time of the ex-post evaluation, drafting of a law for support for SME was under way. According to the draft received at the beginning of 2017, the draft stipulates the principle of supporting SME, the content of support (including support to improve access to bank loans), support programs, the tasks, authority and responsibilities of agencies, organizations and individuals that are engaged in supporting SME, budgets for supporting SME, a mechanism for coordination, supervision and evaluation in supporting SME, and so on.

Based on the above, implementation of the Project, which aimed to improve access for SME to investment loans, was deemed to be relevant to the direction of Viet Nam’s development policy in supporting SME.

3.1.2 Consistency with the Development Needs of Viet Nam

At the time of the appraisal, it was found that development of the private sector would be key to the achievement of steady economic growth. In Viet Nam, as a result of reforms of the State-Owned Enterprises (SOE), the non-state sector accounted for 47.5% of GDP in 2008 (compared with 35.1% for the state sector), it accounted for 53.3% of the net revenue from business of the whole business sector and 15.0% of earnings before tax of the whole business sector in 2008, as shown in Figure 1 below.⁴ In addition, as seen from Figure 2 below, the number of micro-enterprises and SME accounted for 97% in 2008 out of the total number of active enterprises. Limited capital access and a shortage of managerial know-how and technology, etc. became bottlenecks to the growth of SME. Among others, a shortage of capital posed a serious problem. Reasons behind such capital shortages for SME were found to lie in the underdeveloped financing system (it was difficult for financial institutions to analyze creditworthiness based on overall assessment of corporations and their investment plans) and in large adverse impacts of the economic crisis, especially on export-oriented enterprises (worsened financial conditions of enterprises).



Source: General Statistics Office for GDP share of the non-state sector. Business performance of enterprises by Vietnamese standard industrial classification, VSIC 2007, Statistical Yearbook 2012, General Statistics Office (Quoted from White Paper Small and Medium Enterprises in Vietnam 2014, AED) for number of active enterprises by size.

Note: The GDP share of the non-state sector, which consist of collective, private and household sectors, is a share of the non-state sector in nominal prices,.

Figure 1: GDP share of the non-state sector Figure 2: Number of active enterprises by size

⁴ Business performance of enterprises by Vietnamese standard industrial classification, VSIC 2007, Statistical Yearbook 2012, the General Statistics Office (Quoted from White Paper Small and Medium Enterprises in Vietnam 2014, AED).

While SME continued to play an important role in Viet Nam at the time of the ex-post evaluation, SME had still not yet reached a sufficient level of development. The non-state sector accounted for 43.3% of GDP in 2014 (as opposed to 28.7% for the state sector), 43% of the net revenue from business of the whole business sector and 7% of earning before tax of the whole business sector in 2012. The number of micro-enterprises and SME accounted for 98% in 2012 out of the total number of active enterprises. In particular, it was considered that the major thrust for expanding the private sector in Viet Nam would be found in the promotion of SME and that the promotion of domestic enterprises would accelerate growth, leading to stabilization of the economy and society. In addition, SBV Circular 06/2016/TT-NHNN had been issued to revise and supplement part of SBV Circular 36/2014/TT-NHNH in order to tighten regulations over financing in the real estate sector and others at the time of the ex-post evaluation. According to the new circular, the maximum ratio of short-term funds to be used for medium- and long-term loans by commercial banks and branch offices of foreign banks, etc. would be gradually reduced: the ratio would remain unchanged at 60% until the end of 2016, would be reduced to 50% from January 1st, 2017 and then to 40% from January 1st, 2018. In this regulatory environment, the provision of medium- and long-term loans under this Project (Small and Medium-Sized Enterprises Finance Project (III), hereinafter referred to as “SMEFP 3”⁵) is expected to continuously contribute to enhancement of the availability of medium- and long-term funds on the PFI side. Furthermore, with Prime Minister Decision 601/2013/QĐ-TTg, Small and Medium Enterprise Development Fund⁶ (hereinafter referred to as “SMEDF”) was established under MPI in order to extend support to SME. Although SMEDF is still on the road to developing its institutional arrangements, the fact remains that it was established to meet the development needs of SME in Viet Nam from the financial aspect.

Thus, the Project has met the development needs to improve SME access to medium and long-term loans.

⁵ Under the title of Small and Medium-Sized Enterprises Finance Project (SMEFP), the first phase (SMEFP 1) and the second phase (SMEFP 2) had been provided up to that time.

⁶ The government allocated chartered capital in the amount of two trillion VND for the provision of loans with a maximum amount of 30 billion VND per loan, a maximum financing ratio of 70% of the total investment capital, the interest rate being set under 90% of the average lending rate of five state-owned banks (a fixed interest rate of 7% as of February 2017), and the repayment period being set within seven years. As of February 2017, loans were extended through three commercial banks from SMEDF and SMEDF paid authorized fees to these three banks. On the other hand, the commercial banks bear credit risks. SMEDF explained that SMEDF approved 10 projects in 2016. According to PFI interviewed, eligible enterprises are limited to companies such as start-up enterprises and enterprises that introduce high-technologies. Therefore, assistance is difficult to receive even though an application is submitted. Furthermore, it was commented that the level of the authorized fees of SMEDF would not be a level comparable to credit risks borne by a bank.

3.1.3 Consistency with Japan's ODA Policy

Japan's Country Assistance Program for Viet Nam (April 2004) had the "promotion of growth" as one of the three priority areas for development and placed particular importance on the promotion of SME and the private sector within this priority area. In the "Country Assistance Program for the Social Republic of Viet Nam", which was prepared in July 2009, the "promotion of economic growth and strengthening of international competitiveness" was regarded as one of the priority areas for assistance, under which cooperation in terms of improvements in the business environment and promotion of the private sector was taken up. The Project is found to be in line with the said plan. In addition, in the Country Assistance Implementation Report (April 2009) prepared by Japan International Cooperation Agency (hereinafter referred to as "JICA"), "improvements in the business environment and promotion of the private sector" is regarded as one priority area. In this area, "improvements in the business environment and promotion of the private sector" and "development of the financial sector" are considered as pillars of support.

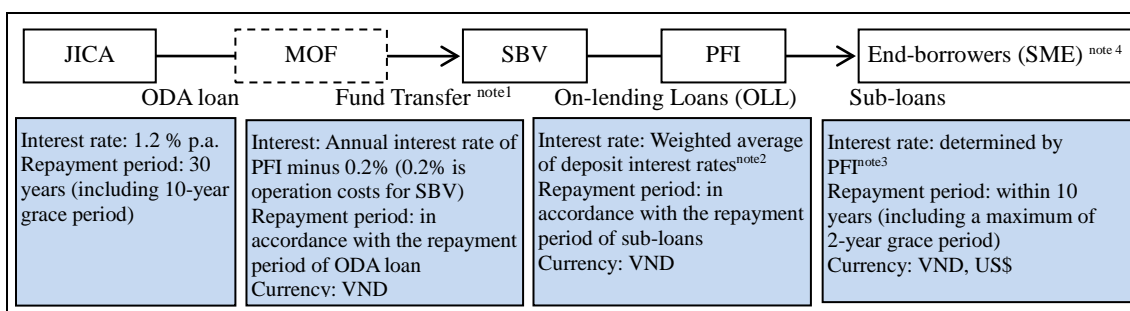
Based on the above analysis, the implementation of the Project can be seen to be highly relevant to the country's development policy towards SME support, to development needs in terms of improvement of access for SME to medium- and long-term loans, as well as to Japan's ODA policy, which puts emphasis on SME support and promotion of the private sector.

3.2 Efficiency (Rating: ②)

3.2.1 Project Outputs

(1) Provision of medium- and long-term investment funds to PFI

The scheme of the Project is that the borrower, Ministry of Finance (hereinafter referred to as "MOF"), transfers an ODA loan to SBV and SBV, in turn, re-lends the loan to PFI, which further on-lend sub-loans to SME, the end-borrowers. Terms and conditions are described in Figure 3 below. Compared with the conditions set at the time of the appraisal, interest rates of on-lending loans and re-lending sub-loans have been set so as to reflect the prevailing market rates.



Source: Information provided by JICA and SBV

Note 1: MOF bears exchange risks between Japanese yen and Viet Nam Dong (hereinafter referred to as “VND”).

Note 2: It was planned that the base interest rate minus 1.5 % would be used as the OLL rate, but this was changed to the weighted average of deposit interest rates announced on a quarterly basis in order to reflect market interest rates.

Note 3: It was originally planned that the interest rates of sub-loans in VND would be determined by PFI within a range of 150% of the base interest rate (SBV Decision 16/2008/QD-NHNN dated May 16, 2008). However, the decision ceased its effectiveness with the SBV Circular 12/2010/TT-NHNN dated April 14, 2010.

Note 4: The definition of SME based on the Government Decree 56/2009/ND-CP is shown below.

Sector	Micro	Small-sized enterprises		Medium-sized enterprises	
	No. of laborers	No. of laborers	Total Capital (Total Assets)	No. of laborers	Total Capital (Total Assets)
Agriculture, forestry and fishery	10 persons or fewer	Between over 10 persons and 200 persons	VND 20 billion or less	Between over 200 persons and 300 persons	Between over VND 20 billion and VND 100 billion
Industry and construction	10 persons or fewer	Between over 10 persons and 200 persons	VND 20 billion or less	Between over 200 persons and 300 persons	Between over VND 20 billion and VND 100 billion
Trade and service	10 persons or fewer	Between over 10 persons and 50 persons	VND 10 billion or less	Between over 50 persons and 100 persons	Between over VND 10 billion and VND 50 billion

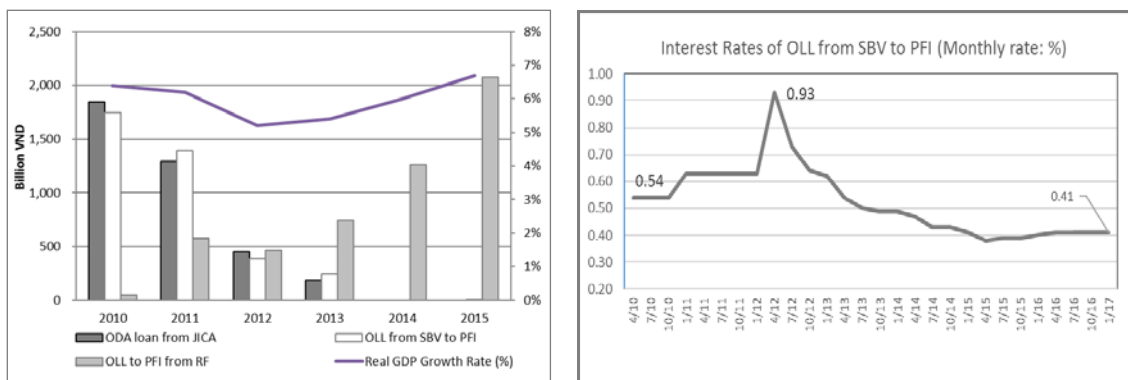
Figure 3: Structure of Financing Scheme under the Project

Figure 4 below shows the amount actually disbursed from JICA to SBV and the amount on-lent from SBV to PFI (On-lending Loan, hereinafter referred to as “OLL”). In order to show the trend of economic conditions, the real growth rate of GDP is also shown in the figure. In terms of OLL, initial loans out of the ODA loan are shown separately from loans from the revolving funds, which were set up with the repayment of OLL. It was found that over 80% of the ODA loan amount had been disbursed from SBV to PFI by the end of 2011 but also that the disbursement of the initial loans as well as OLL by making use of repayment quickly decelerated from 2012. It is noted that most of the initial loans had been disbursed by 2013.

Figure 5 below shows the trend of the interest rates of OLL from SBV to PFI. The interest rate rapidly increased up to 2012, exhibiting a decreasing trend thereafter. Changes in the interest rates seem to have affected the trend of disbursement.⁷ However, disbursement has

⁷ In 2011, deposit and lending interest rates rapidly increased due to tight monetary policies taken against an increase in the inflation rate. The re-lending interest rate of OLL from SBV to PFI was revised based on a weighted average of deposit interest rates on a quarterly basis. Due to a three-month time lag, there was a difference between the revised interest rate and the prevailing interest rate. According to interviews with personnel concerned, it was learnt that because of the difference between the two interest rates due to this time lag, OLL tended to be accelerated when the interest rate exhibited an increasing trend and tended to be decelerated when the interest rate showed a downward

been relatively smooth despite economic downturns. There are a number of reasons behind the relatively smooth disbursement.



Source: Information provided by SBV. IMF Staff Report for the 2014 and 2016 Article 4 Consultation was referred to for the real GDP growth rate.

Note 1: With regard to Figure 4 on the left, it is not possible to segregate sub-loans from PFI to SME into initial sub-loans and sub-loans from the revolving funds. The real GDP growth rates in 2014 and 2015 are estimates.

Note 2: With regard to Figure 5 on the right, information was provided by SBV. The interest rates and corresponding periods are slightly different depending on the documents referred to. However, the general trends during and after the Project period can be grasped. According to SBV, interest rates of OLL were changed from the base interest rates to weighted averages of deposit rates from July 2012.

Figure 4: The amount of ODA loan disbursement, the amount of OLL from SBV to PFI, the amount of sub-loan disbursement from PFI to SME and the real GDP growth rate

Figure 5: Interest Rate of OLL from SBV to PFI

Table 1 below shows the number of PFI in the three different phases of SMEFP. SBV assesses newly participating PFI in the accreditation process and existing PFI every year in terms of financial conditions and the necessity of SMEFP participation by applying three selection criteria. These consist of A. Financial Soundness (maximum 60 points), B. Governance and Management (maximum 20 points), and C. Competence and Necessity to Participate in SMEFP (maximum 25 points). In order to participate in SMEFP 3, PFI need to score 53 points or more out of a total of 105 points. Commercial banks, which had not taken part in SMEFP 1 and SMEFP 2, were also involved in SMEFP 3. The number of accredited PFI exceeded 20 every year and they extended sub-loans to SME.

trend. Part of the stagnation of OLL in 2012 and 2013 can be explained by the fact that an increase or a decrease in the spread between the funding and lending rates would accelerate or decelerate provision of sub-loans by PFI.

Table 1: The number of accredited PFI under SMEFP ^{note1}

	SMEFP1	SMEFP2	SMEFP3							
			2009	2010	2011	2012	2013	2014	2015	2016
No of PFI	4	13 ^{note 2}	0	18	22	23	24	22	23	23

Source: Information provided by SBV

Note 1: The amounts of Japanese ODA loans was 4.000 billion JPY for SMEFP 1, 6.146 billion JPY for SMEFP 2, and 17.379 billion JPY for SMEFP 3, respectively. The size of the loan for SMEFP 3 was far larger than the amounts of loans for the preceding phases.

Note 2: The initial number of PFI was nine but another four were accredited as PFI under SMEFP 2 later. For example, there was a case where a bank was accredited in 2011 as PFI under SMEFP 3. Later in 2015, the same bank was newly accredited as PFI under SMEFP 2.

SBV set credit lines to each PFI and increased or decreased the amounts depending on the actual amount disbursed and the amount applied. For this purpose, the amount of PFI's disbursement relevant to this Project was reviewed on a monthly and quarterly basis. The items subject to review include the number of disbursements, the amount of outstanding sub-loans, the amount of sub-loans to be required thereafter, and compliance with the terms and conditions of sub-loans and eligibility requirements. For example, the upper half of Table 2 shows the outstanding amounts of OLL and the amount of the credit lines set for several PFI. The lower half of Table 2 shows the descriptive statistics, including the total amount of the credit lines and the average amount of credit lines. The table reveals that the total amount, ranging from 3,700 billion VND to 3,800 billion VND, was allocated to more than 20 PFI as credit lines. The average credit line per PFI ranges from 170 to 180 billion VND, with the standard deviation exhibiting an increasing trend to some extent. The maximum amount as of December 2015 was 560 billion VND while the minimum was found to be 20 billion VND. The maximum amount in April 2017 was 810 billion VND while the minimum was 32 billion VND.⁸ It is considered that an agile review of credit lines contributed to the establishment of a competitive environment among PFI.⁹

⁸ The amount of credit lines differs from PFI to PFI. It is considered that the reasons behind such differences include various factors such as the asset size of PFI, approaches towards SME business and the utilization status of credit lines.

⁹ At the time of the ex-post evaluation, many PFI visited by the evaluation team requested increases in credit line allocations.

Table 2: The outstanding amounts of OLL at the end of the period and the amounts of the credit lines (examples for three PFI), the descriptive statistics of the credit lines to all the PFI

Unit: Billion VND

PFI	Item	2014	12/2015	12/2016	4/2017
PFI A	Credit Line	NA	495	365	327
	Outstanding amount of OLL at end of the period	512	451	332	326
PFI B	Credit Line	NA	260	251	251
	Outstanding amount of OLL at end of the period	122	253	242	237
PFI C	Credit Line	NA	62	42	32
	Outstanding amount of OLL at end of the period	84	53	28	28
Descriptive Statistics of Credit Lines extended to All the PFI					
Number of PFI			21	22	22
Total Amount of Credit Lines			3,715	3,787	3,790
Average per PFI			177	172	172
Standard Deviation			155	169	176
Median			120	123	118
Maximum			560	750	810
Minimum			20	23	32

Source: Information provided by EA.

Another reason behind the realization of relatively smooth disbursement despite the economic downturn can be found in the fact that the ceiling of lending rates applied for sub-loans under SMEFP 3 was abolished and PFI were allowed to set own interest rates reflecting the credit risks of end-borrowers. Thus, it was understood that PFI were able to be actively engaged in extending sub-loans to SME. The table below shows the level of lending interest rates found through the beneficiary survey¹⁰ and interviews with PFI. Under SMEFP 3, PFI were able to set relatively larger interest spreads.

¹⁰ For the beneficiary survey, 23 PFI accredited under SMEFP 3 were classified into the three categories (“very active”, “medium” and “less active”) depending on the conditions of SMEFP 3 utilization (the amount of disbursement). Based on the classification, 11 PFI were chosen for interviews. Later, upon visits to these 11 PFI, a request was made for the selection and introduction of about 10 SME per PFI for the beneficiary survey. However, the number of SME introduced by some PFI was limited only to a few due to smaller amounts of sub-loans extended by them when compared with other PFI. When SME were chosen by PFI, requests were made that SME were selected from as many different sectors as possible, especially from supporting industries, and also that SME to which sub-loans had been provided before 2015 were chosen to the extent possible. The survey areas were selected from areas centering on Hanoi, Hai Phong, Da Nang and Ho Chi Minh City and also provinces located within a one-day travel distance from these four areas. As a result, having received cooperation from 10 PFI, 101 SME were interviewed through a questionnaire-based face-to-face interview survey. The geographical distributions of the total 101 SME surveyed in 20 provinces are as follows: 51 SME (50.5%) in nine provinces in the northern region, 33 SME (32.7%) in seven provinces in the central region, and 17 SME (16.8%) in four provinces in the southern region. The selection of SME surveyed was carried out not through a random sampling method but a purposive selection method. Therefore, the survey results are not data that enables a statistical inference for specific characteristics and features of the population but data that can be used for reference only.

Table 3: Comparison of lending interest rates of sub-loans under SMEFP 3 and regular SME loans at PFI (for reference only)

Item	SMEFP 3	Regular SME sub-loan
Lending rate (p.a.)	7.5 - 10.38%	7.0% - 12%
Funding rate (p.a. in February 2017)	4.92%	6.5% ^{note}
Spread	2.58 - 5.46%	0.5 - 5.5%

Source: Interviews with PFI
 Note: Refinancing rate of SBV (SBV Decision 496/2014/QD-NHNN)

Table 4: Sub-loan interest rates (% p.a.) from PFI to SME (for reference only)

Descriptive Statistics	Interest rates applied for ODA loan portion	Interest rates applied for PFI portion
No. of SME	99 SME	98 SME
Average	9.32	10.13
Median	9.00	10.00
Standard Deviation	1.13	1.36
Max	15.00	15.50
Min	7.50	7.50

Source: Beneficiary survey
 Note: Some PFI apply different interest rates for ODA and PFI portions, while others apply the same.

At SBV, an International Credit Projects Management Unit (hereinafter referred to as “ICPMU”) has been responsible for implementation of the Project. ICPMU smoothly carried out Phase 1 (SMEFP 1) and Phase 2 (SMEFP 2) of the Project. In executing SMEFP 3, a Policy Manual was prepared to describe the structure, terms and conditions and procedures applied for SMEFP 3 and a Reporting Manual was compiled to guide the preparation of reports under the Project. Regular training was also organized for PFI. ICPMU has been engaged in the long-term management of SMEFP 3, revolving funds from the preceding phases and so on. In the process, ICPMU have adjusted the terms and conditions of SMEFP based on requests from PFI and meeting results with them. For instance, the ceiling amount of sub-loans under SMEFP 3 was increased from the one applied to SMEFP 2 and simplified procedures were also adopted for sub-loans of less than 5 billion VND. It was also learnt that the integration of the policy manuals in the different phases of 2015 was a result of discussions with PFI. The fact that, having been established as a specialized permanent unit, ICPMU managed SMEFP and continued to improve procedures from a medium- and long-term perspective has also been a contributing factor in accelerating the Project.

(2) Strengthening of financing capacity of SBV and PFI for investment loans through technical assistance

Under the Project, consultants were employed by SBV. They carried out: 1) assistance for implementation of the Project and 2) study of ways to develop supporting industries. A more concrete description of their consulting services is provided as follows:

1) Assistance for Implementation of the Project

a) Improvement of Manuals

Preparation of the Policy Manual, which explains the implementing structure and terms and conditions of SMEFP (May 2013), and the Reporting Manual, which

shows the reporting system, including the preparation of standard reports (November 2013).¹¹

b) Development and Set-up of the Management Information System (hereinafter referred to as “MIS”)

c) Promotion of SMEFP 3

Implementation of promotion activities (seminars, preparation of leaflets, posting of articles in newspapers, issuance of handbooks, etc.), targeting PFI and SME, in order to attract more SME for the Project funds, especially SME operating in the supporting industry sector, also to boost financing for the supporting industries.

d) Develop training programs for the implementation of the Project.

2) Study of Ways to Develop Supporting Industries

Collection and analysis of information on the financing of SME in the supporting industries, proposal of relevant incentive mechanisms to promote the financing of SME in the supporting industries, training for SBV to promote financing of SME in the supporting industries, training for the staff of PFI to enhance understanding of the new mechanism, provision of a supplementary manual, and promotion of the Project to increase the number of SME benefitting from sub-loans of the Project, especially in the supporting industry sector.

At the time of the appraisal of the Project, assistance to the supporting industries was regarded as one of its main pillars. However, preferential measures targeting the supporting industries were not taken under the financing scheme. Having received assistance from consultants, SBV tried to take a number of measures. For instance, one of the measures was “to apply preferential on-lending interest rates for sub-loans from PFI to SME in the supporting industries”. However, although the application of preferential interest rates was supported by MOIT, it was not approved by MOF. As a result, this was not put into practice. It was pointed out that one of the reasons behind it not being approved was non-existence of a clear definition of the supporting industries.

3.2.2 Project Inputs

3.2.2.1 Project Cost

The planned total Project cost (which includes portions borne by PFI and sub-borrowers (end-borrowers) in addition to the Japanese ODA loan) was 27,628 million Japanese yen (out of which, the Japanese ODA loan amounted to 17,379 million Japanese yen). Out of

¹¹ In order to ensure efficient use of the funds and meet loan demands from PFI and SME, SBV coordinated with other organizations concerned and consolidated policy manuals used in the respective three phases of the Project from SMEFP 1 to SMEFP 3 in May 2015.

the total amount, the two-step loan portion was 23,529 million (out of which, the Japanese ODA loan amounted to 15,000 million Japanese yen). The total Project cost (actual) was not known,¹² but the Japanese ODA loan portion was 16,926 million Japanese yen (the actual amount disbursed). Out of this, the two-step loan portion of the Japanese ODA loan was 16,031 million Japanese yen. The Japanese ODA loan portion fell within the planned amount (the actual amount was 97% of the planned amount).

Table 5: Project Cost (Plan/Actual)

Item	Planned in 2009		Actual as of 2015	
	Total	Out of which: ODA loan	Total	Out of which: ODA loan
	(million JPY)	(million JPY)	(million JPY)	(million JPY)
Two Step Loan	23,529	15,000	NA ^{note 2}	16,031 ^{note 3}
Consulting Services	144	144	161	141
Price Escalation	2182	949	-	-
Physical Contingencies	1286	797	-	-
Interest in Construction	401	401	733	733
Commitment Charges	86	86	20	20
Total	27,628	17,379	NA	16,926 ^{note 4}

Source: Information provided by JICA

Note 1: The exchange rate at the appraisal was 0.0059 JPY/VND. The average exchange rate during the Project period from 2010 to 2015 was 0.0046 JPY/VND.

Note 2: The amounts of the respective portions of the Project costs borne by PFI and end-borrowers, which were associated with sub-loans from the initial ODA loan portion, were not available. Therefore, "NA" was placed in the table in order to stand for "Not Available".

Note 3: In response to an increasing demand for sub-loans, the two-step loan portion of the ODA loan was increased from 15 billion Japanese yen to 16.7 billion Japanese yen by reallocating the contingencies of the ODA loan (JICA concurred with a request for reallocation in July 2011). Subsequently, the disbursement of sub-loans amounted to 16.031 billion Japanese yen, an increase of 1.031 billion Japanese yen against the original plan.

Note 4: After completion of the disbursement, an unused balance of 72.3 million Japanese yen was refunded to JICA. Therefore, the net amount of the actual disbursement was 16,853 million Japanese yen.

3.2.2.2 Project Period

The signing of the Loan Agreement (hereinafter referred to as "L/A") was planned for October 2009 and Project completion¹³ was scheduled for December 2012 (total Project period: 39 months). The L/A was actually signed in November 2009 and the final disbursement was made in December 2014 (total Project period: 62 months). As the Project was also designed as an urgent economic measure against the economic crisis (worldwide recession) in which adverse impacts centered on export-oriented enterprises, nine PFI accredited under the previous phase (SMEFP 2) were selected as PFI and disbursement of ODA loans were commenced prior to employment of consultants in order to jump-start the Project. However, as the demand for investment stagnated due to the economic slowdown,

¹² The actual total Project cost was not known because the portions borne by PFI and sub-borrowers, which would be relevant only to the initial Japanese ODA loan portion, were not obtained. In this section, a comparison was made between the planned and the actual disbursed amounts of the Japanese ODA loan (not the total project cost).

¹³ As project completion is defined as "completion of the ODA loan", the final disbursement date of the ODA loan was considered as the project completion date. "

the Project was delayed as compared with the original plan.¹⁴ As a result, the Project period significantly exceeded the plan (the actual period exceeded the plan by 159%.)

In conclusion, although the Project cost was within the plan, the Project period exceeded the plan. Therefore, efficiency of the Project is fair.

3.3 Effectiveness¹⁵ (Rating: ③)

3.3.1 Quantitative Effects (Operation and Effect Indicators)

Operation and effect indicators concerning the quantitative effects of the Project are shown in Table 6 below.

Table 6: Operation and effect indicators of the Project (quantitative effects)

Indicator	Base Line (2008)	Target number (2014) 2 years after Project completion	Actual (2016 ^{note1}) (after adjustment to 2008 price ^{note 2})
Total loan outstanding of PFI to enterprises established under the Law on Enterprises (billion VND) ^{note 3}	171,794 (a sum of the amounts of nine PFI under Phase 2)	Expansion from the base line	1,387,947 (780,857)
Ratio of lending to the SME in total loan outstanding of PFI to enterprises established under the Law on Enterprises (%) ^{note 3}	65 (An average of nine PFI under Phase 2)	Expansion from the base line	29.72

Source: Information provided by JICA

Note 1: A sum of the amounts of the six PFI that responded to the questionnaire.

Note 2: Adjusted by GDP deflators. International Financial Statistics (IMF) and IMF Article 4 Consultation Report (2016) were referred to for GDP deflators.

Note 3: Indicators in Japanese documents are described differently from those in English documents. In English documents, the corresponding indicators are described respectively as follows: “Total loan outstanding of the PFIs to the joint stock and limited companies (billion VND)” and “Ratio of lending to the SMEs in total loan outstanding of the PFIs to the joint stock and limited companies (%)”.

1) Outstanding loans by PFI to enterprises established under the Law on Enterprises.

Nine PFI at the time of the Project appraisal were: the Bank for Investment and Development of Vietnam (hereinafter referred to as “BIDV”), the Vietnam Bank for Industry and Trade (hereinafter referred to as VietinBank”), the Asia Commercial Bank (hereinafter referred to as “ACB”), the Eastern Asia Commercial Bank (hereinafter referred to as “EAB”), Techcombank, Sacombank, the Housing Development Bank (hereinafter referred to as “HDB”), the Central Credit Fund of Vietnam (hereinafter referred to as “CCF”), and the

¹⁴ As previously described, while the deposit as well as the lending interest rates drastically increased in 2011 because of the tight monetary policy taken against an increase in the inflation rate, one of the reasons behind the delay is found in the stagnation in loan provision due to changes in the interest rates. Furthermore, according to SBV, MOF, which was concerned with an increase in public debts, was said to be inactive in submitting new requests for disbursement despite the existence of fund demands because of a large fluctuation in the exchange rate between Japanese yen and VND during a period from 2011 to 2012. This also served as a factor in delaying the schedule compared to the original plan. For instance, VND was depreciated against Japanese yen by more than 20 percent if the period average of the exchange rates of 2011 and 2012 is compared with that of 2010.

¹⁵ Sub-rating for Effectiveness is to be put with consideration of Impact.

Mekong Housing Bank (hereinafter referred to as “MHB”).¹⁶ Data in 2016 was received from six banks out of the above (i.e., BIDV (after a merger with MHB), VietinBank, ACB, Sacombank and HDB). The total amount of data from these six banks is shown in Table 7 below. The outstanding amount of sub-loans to enterprises as of the end of 2016 was 1,387,947 billion VND, eight times as large as the total outstanding amounts of nine banks in 2008 (four and half times as large as the total amounts if adjusted to the value of 2008 with the GDP deflators). The target values of this indicator have been fulfilled.

Table 7: The outstanding amounts of loans to enterprises, loans to SME, and medium- and long-term loans to SME, which were established under the Law on Enterprises, from six PFI

Unit: Billion VND

Indicator	2008	2016 (After adjustment to 2008 price ^{note 1})
The total amount of outstanding medium- and long-term loans to SME (A)	NA	138,060 (77,673)
The total amount of outstanding loans to SME (B)	111,647 ^{note 2}	412,377 (232,003)
The total amount of outstanding loans to enterprises ^{Note 3} (C)	171,794	1,387,947 (780,857)
The ratio of outstanding medium- and long-term loans against the total outstanding loans to SME (A)/(B)	NA	33.48%
The ratio of outstanding loans to SME against the outstanding loans to enterprises (B)/(C)	65%	29.72%
The ratio of outstanding medium- and long-term loans to SME against the outstanding loans to enterprises (A)/(C) ^{note 4}	NA	9.95%

Source: Information provided by PFI

Note 1: Adjusted by GDP deflators. International Financial Statistics (IMF) and IMF Article 4 Consultation Report (2016) were referred to for GDP deflators.

Note 2: The amount was calculated by multiplying 65% with the outstanding loans to enterprises.

Note 3: Documents prepared in English at JICA use a different expression for this indicator. It is described as “Total loan outstanding of the PFIs to the joint stock and limited companies”.

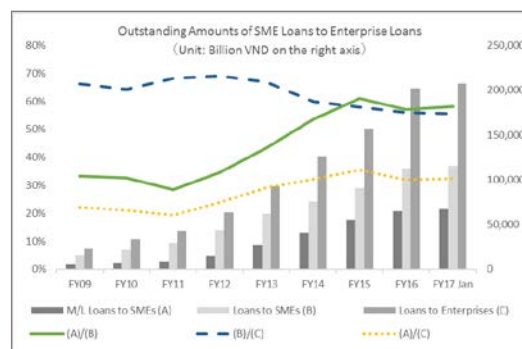
Note 4: In general, the remaining repayment period of loans is longer than one year.

2) Ratio of the amount of outstanding sub-loans to SME against the amount of outstanding sub-loans to enterprises established under the Law on Enterprises extended by PFI (%)

As shown in Table 7 above, the ratio of the amount of outstanding loans to SME against the amount of outstanding loans to enterprises established under the Law on Enterprises (%) for the six PFI was about 30 % in 2016, which is much lower than 65% in 2008. However, if comparison is made in terms of the absolute values, it can be noted that the outstanding amount was three point seven times as large as the one in 2008 (two point zero times after the amounts have been adjusted to those in 2008 prices with the GDP deflators). While the amount of loans to enterprises sharply increased, the share of loans to SME got relatively smaller.

¹⁶ MHB merged with BIDV in 2015.

Moreover, the government also revised the definition of SME¹⁷ during this period, and furthermore, some PFI have applied their own definitions of SME for loans extended to SME under schemes other than SMEFP 3. For example, PFI that the ex-post evaluation team visited have applied amount of sales to classify SME. Accordingly, it is not necessarily appropriate to make a simple comparison across the banks in terms of the ratios of 2008 and 2016. Therefore, instead of making a comparison across different PFI, a comparison was undertaken for a same PFI chronologically over past trends. Figure



Source: Information provided by PFI (ABB, SHB and HDBank)

Note: At some PFI which responded to this question, the ratio of outstanding loans to SME is far lower than the ratio of the three PFI that provided the data to the question. Depending on the PFI, the status of SME finance is different.

Figure 6: Amount and the ratio of outstanding loans to SME and enterprises

6 compares the past trends in terms of the total outstanding amount of loans for the three PFI which gave the outstanding amount of sub-loans from 2009 through January 2017. The three PFI are An Binh Commercial Joint Stock Bank (hereinafter referred to as “ABB”), Saigon Hanoi Commercial Joint Stock Bank (hereinafter referred to as “SHB”) and Ho Chi Minh City Development Bank (hereinafter referred to as “HDBank”).¹⁸ The ratio of the amount of outstanding sub-loans to SME against the amount of outstanding sub-loans to enterprises established under the Law on Enterprises [(B)/(C)] decreased from 66.3% in 2009 to 56.0% in 2016 (by around 10%). The outstanding amount of loans to enterprises increased eight point seven times from 23,066 billion VND in 2009 to 201,593 billion VND in 2016, while the outstanding amount of loans to SME increased seven point four times from 15,286 billion VND in 2009 to 112,793 billion VND.

It has been made clear that although provision of loans to SME increased, the provision of loans to enterprises exceeded the former, resulting in a decrease in the ratio of the outstanding loans to SME. Although the ratio of the amount of outstanding loans to SME against the amount of outstanding loans to enterprises decreased, the absolute values in terms of the amounts increased. Furthermore, the ratio of the amount of the outstanding medium- and long-term loans against the amount of outstanding loans to SME [(A)/(B)] increased

¹⁷ Prior to the definition of SME given under Government Decree 56/2009/ND-CP, Government Decree 90/2001/ND-CP provided the following definition for SME: establishments that have an average number of annual employees of less than 300 or a registered capital of less than 10 billion VND.

¹⁸ Under SMEFP 3, ABB received a credit line amounting to 80 billion VND for the first time in 2010. Their credit line had increased to 330 billion VND as of April 2017. SHB received a credit line amounting to 80 billion VND for the first time in 2011 and their credit line had increased to 331 billion VND as of April 2017. HDBank was accredited under SMEFP 3 for the first time in 2010 and their credit line was 141 billion VND as of April 2017. Both SHB and HDBank got accredited in 2015 and 2008 respectively, under SMEFP 2, and received their credit lines. HDBank is a commercial bank originating from HDB.

from 33.3% in 2009 to 57.1% in 2016. Data has been taken from a limited number of PFI so that this conclusion may not necessarily apply to all the PFI. However, it is considered that this partly implies improvement of access to funds for SME, access to medium- and long-term funds in particular.

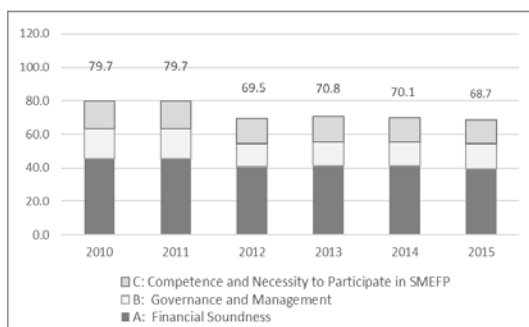
3.3.2 Qualitative Effects

Although improvement in the capacity of PFI to provide sub-loans to SME and improvement in fund access for SME have been set as quantitative effects, concrete criteria to judge the achievements were not indicated.

(1) Improvement in the capacity of PFI to extend sub-loans to SME

As described before, SBV applies the three selection criteria: Financial Soundness (Criteria A with a maximum of 60 points), Governance and Management (Criteria B with a maximum of 20 points), and Competence and Necessity to Participate in SMEFP (Criteria C with a maximum of 25 points), and reviews the performance of PFI every year. In order to be qualified as PFI, 53 points or more have to be attained. Averaged total scores of qualified PFI in the respective years are shown in Figure 7 below. Sub-criteria include such criteria as Return on Equity (ROE), which is likely to be affected by economic conditions. Therefore, PFI could possibly lower scores when profitability decreases due to macro-economic conditions. Having been subject to a regular screening by SBV that may possibly result in the disqualification of banks as PFI, about 20 or more PFI have been qualified every year in the light of the three sub-criteria for continuous participation in SMEFP 3. It is considered that this fact, to some extent, manifests an improvement in the capacity of PFI to extend sub-loans to SME.

Criterion C is further divided into sub-criteria: Focus on Private SME (share of loans to domestic private enterprises, growth of loans to domestic private enterprises, etc.), Necessity of SMEFP (ratio of medium- and long-term (MLT) funding and SME assistance), and Other Competence (experience of participating in the loan programs of other donors and outreach of branch networks). In particular, the process of PFI being reviewed in the light of Criteria C (Competence and Necessity to Participate in SMEFP) is considered to have led to the raising of awareness on the part of PFI of SME finance.



Source: Information provided by SBV

Note: One PFI attained a score of more than 52 in 2010 but got disqualified. Therefore, this bank was excluded from the calculation. The number of PFI that attained a score of 53 or more in the datasheet used for the score calculations is slightly different from the number of accredited PFI reported by SBV.

Figure 7: Trend of the average scores of accredited PFI

In addition to the renewal process of the above accreditation, it is considered that the monitoring by SBV of SMEFP (through visits to PFI and SME) and training (training on the policy manual, etc.) have served in tandem to improve the financing capacity of PFI for SME.

(2) Improvement of SME Fund Access

As shown in Table 9 below, the disbursement of the ODA loan from SBV to PFI was nearly completed by 2013. On-lending by making use of repaid sub-loans had already started from 2010 and the amount accumulated up to 2015 (5,168 billion VND) was more than 130% of the accumulated amount of the ODA loan initially disbursed (3,772 billion VND). OLL from SBV to PFI accounts for about 75% of sub-loans to SME from PFI and for about 50% of the total sub-project costs. Using the Japanese ODA loan, medium- and long-term investment sub-loans were extended to SME. Furthermore, Table 9 below describes the average amount of sub-loans. The average of sub-loans in 2011 amounted to 7.3 billion VND per sub-loan, although this amount decreased to 2.0 billion VND per sub-loan in 2015. As a part of the simplification, SBV revised procedures for the sub-loan approval process from 2015 in case of sub-loans of less than 5.0 billion VND, whereby PFI would simply submit a list of sub-projects. It is considered that this revision is one of the reasons behind the decrease in the sub-loan size.

Table 8: Descriptive Statistics of Scores gained by Accredited PFI

Year	2010	2011	2012	2013	2014	2015
No. of PFI	19	19	22	21	22	21
Average	79.7	79.7	69.5	70.8	70.1	68.7
Median	81.0	81.0	72.0	73.0	70.0	68.0
Standard Deviation	7.0	7.0	6.4	8.1	6.1	6.3
Max	91.0	91.0	79.0	85.0	85.3	83.0
Min	67.0	67.0	55.0	54.0	59.0	56.0

Source: Information provided by SBV

Table 9: Amount of OLL from SBV to PFI and Amount of Sub-loans disbursed from PFI to SME

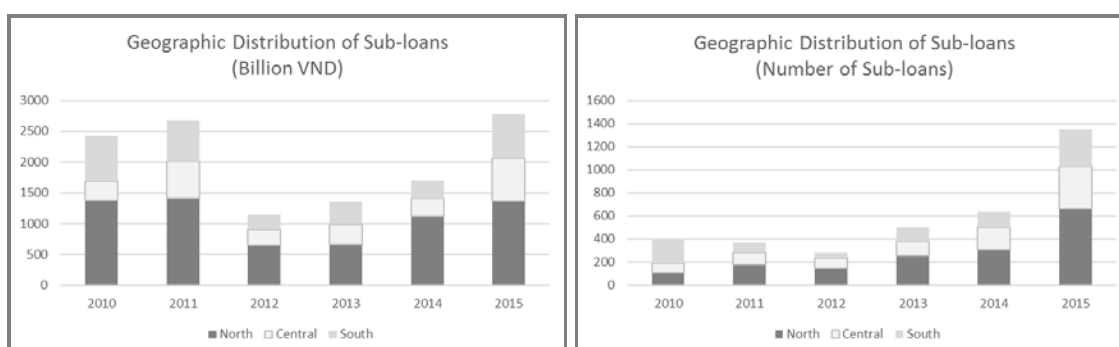
Year	2010	2011	2012	2013	2014	2015	Total
OLL from SBV to PFI (a)	1,791	1,967	851	991	1,263	2,078	8,941
Out of which: initial disbursement	1,744	1,391	391	251.7	0	0.3	3,778
Out of which: disbursement from repaid sub-loans (second disbursement from revolving funds)	47	576	460	739.3	1,263	2,077.7	5,163
Amount of sub-loans from PFI to SME note (b)	2,432	2,675	1,150	1,352	1,707	2,771	12,087
Number of sub-loans (c)	391	367	284	503	636	1,356	3,537
Sub-project Costs note (d)	3,892	4,112	1,962	2,134	2,388	3,879	18,367
Average amount per sub-loan [(b)/(c)]	6.2	7.3	4.0	2.7	2.7	2.0	3.4
OLL/Sub-loans [(a)/(b) x 100%]	73.6%	73.5%	74.0%	73.3%	74.0%	75.0%	74.0%
OLL/Sub-project costs [(a)/(d) x 100%]	46.0%	47.8%	43.4%	46.4%	52.9%	53.6%	48.7%

Unit: Billion VND

Source: Information provided by SBV

Note: It is not possible to classify sub-loans (from PFI to SME) as well as sub-project costs (of SME) into two separate categories such as the amount related to the initial OLL and the amount related to the repaid sub-loans (revolving funds).

Figure 8 below depicts the amount and the number of sub-loans by region. Sub-loans have been extended through more than 20 PFI. The geographical distribution of sub-loans from 2010 to 2015 shows that the northern, central and southern regions account for 54.4%, 20.6% and 25.0%, respectively. Likewise, the distributions in terms of the number of sub-loans are 47.0%, 27.1% and 25.9% for the northern, central and southern regions, respectively. It is found that the share of the northern region is more than half in terms of the amount and the number of sub-loans.¹⁹

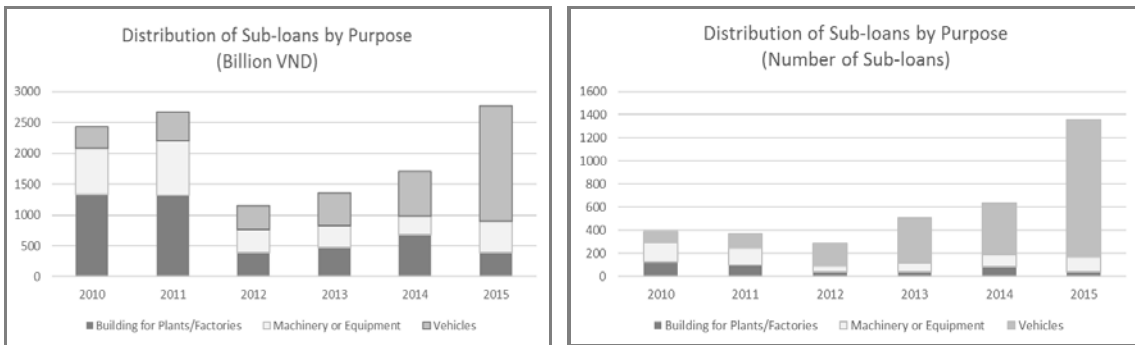


Source: Information provided by SBV

Figure 8: Amount and Number of Sub-loans by Region

¹⁹ According to progress reports received from SBV, the number of provinces where sub-loans were extended over the last six-month-period was 55 from June 2012 to June 2016 and then 63 in December 2016. At the time of the ex-post evaluation, there were 58 provinces and five municipalities or centrally-controlled cities in Viet Nam. The data from SBV indicates a wider coverage of the Project and improvement in fund access.

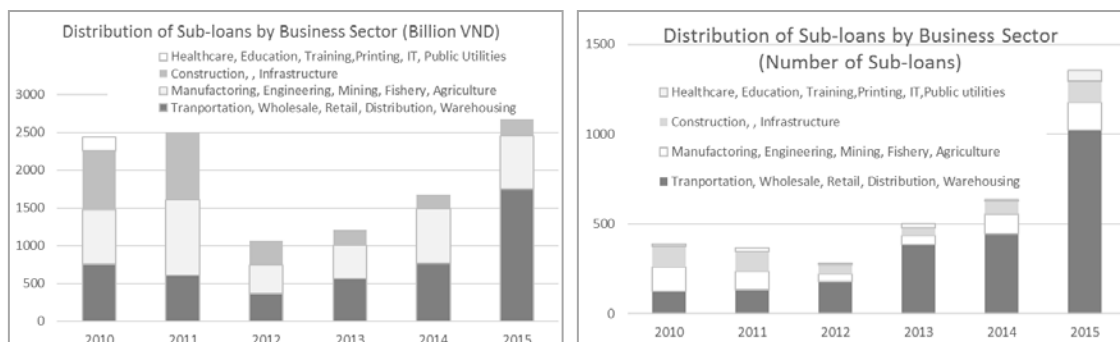
Figure 9 below shows the amount and the number of sub-loans by purpose. The distribution of the amount of sub-loans by purpose from 2010 to 2015 shows that vehicles, machinery or equipment, building for plants/factories account for 35.9%, 26.2% and 37.9%, respectively. The distribution in terms of the number of sub-loans is 68.6%, 19.2% and 12.2%, respectively. It is noted that the share of vehicles is high in terms of the amount and the number of sub-loans. In particular, the share of vehicles in 2015 is high in both amount and number.



Source: Information provided by SBV

Figure 9: Amount and Number of Sub-loans by purpose.

Figure 10 below shows the amount and the number of sub-loans by business sector. The distribution of the amount of sub-loans by business sector from 2010 to 2015 shows 40% for “Transportation, Wholesale, Retail, Distribution, and Warehousing”, 33% for “Manufacturing, Engineering, Mining, Fishery, and Agriculture”, 22% for “Construction and Infrastructure”, and 6% for “Healthcare, Education, Training, Printing, IT, and Public Utilities”. It is noted that the share of “Transportation, Wholesale, Retail, Distribution, and Warehousing” is high. In terms of the number of sub-loans by business sector, the distribution shows 65% for “Transportation, Wholesale, Retail, Distribution, and Warehousing”, 17% for “Manufacturing, Engineering, Mining, Fishery, and Agriculture”, 14% for “Construction and Infrastructure”, and 4% for “Healthcare, Education, Training, Printing, IT, and Public Utilities”. It is noted that the share of “Transportation, Wholesale, Retail, Distribution, and Warehousing” is high.



Source: Information provided by SBV

Figure 10: Amount and Number of Sub-loans by Business Sector

Table 10 below shows the distribution of the number of sub-loans by more detailed breakdowns of the business sector based on the results of the beneficiary survey. In terms of the number of sub-loans, the shares of the Transportation service (passengers and goods) (29.6%), Manufacturing (25.5%) and Construction (10.3%) are high. With the cooperation of one PFI, a study was made on the items procured in the major business sectors over the past three years. It was found that trucks were often the goods procured, even in such business sectors as “Agriculture, Forestry and Fishery”, “Construction” and other infrastructure development sectors. The total amount of sub-loans extended from SMEFP 3 by that PFI was 456.23 billion VND and the number of transactions was 317 over the past three years. Out of this amount, the amount of sub-loans used for the purchase of trucks and other vehicles was 409.91 billion VND (89.9%) and the number of transactions was 306 (96.5%). The reason behind the increase in sub-loans for trucks and other vehicles could be because of the relatively smaller amount of sub-loans allowed the use of simplified procedures. At the same time, sub-loans of this kind made it easier to ensure collection of repayment. It was intended that SMEFP3 would focus on assistance for supporting industries (in particular, capital investment such as that in machinery in factories). However, as one of the features of this Project, the results reveal the fact that a relatively large amount of medium- and long-term sub-loans were allocated for the purchase of trucks and other vehicles.

Table 10: Number of Enterprises by Business Sector to which Sub-loans were extended
(for reference only)

Business sector	No. of Enterprises	Ratio
Agriculture, forestry and fishery	3	2.1%
Mining and quarrying	5	3.4%
Manufacturing	37	25.5%
Electricity, gas, steam, hot water and air conditioning supply	2	1.4%
Water supply, sewerage, waste management and remediation activities	1	0.7%
Construction	15	10.3%
Wholesale	6	4.1%
Warehousing and storage	2	1.4%
Distributor	5	3.4%
Retail	4	2.8%
Import-Export Trade	4	2.8%
Transportation services (passengers) such as taxis	18	12.4%
Transportation services (goods) such as trucks	25	17.2%
Printing and publications	1	0.7%
Hotel and accommodations	3	2.1%
Restaurant and food service activities	1	0.7%
Information and communications	1	0.7%
Engineering	4	2.8%
Human health and social work activities	1	0.7%
Others	7	4.8%
Total	145	100.0%

Source: Beneficiary survey

Note: The number of enterprises exceeds 101 because some responding enterprises are engaged in operations in more than one business sector.

It is also noted that among the PFIs visited, some classify the SME sector as a sector for finance and have set up a specialized unit for SME within the PFI. It is thought that fund access for SME will be further improved in the future when PFI perceive the SME sector as a sector that could secure profitability

3.4 Impacts

3.4.1 Intended Impacts

Operation and effect indicators relating to Impact are shown in Table 11 below.

Table 11: Operation and Effect Indicators of the Project (Impact)

Indicators	Base Number (2008)	Target Number (2014) 2 years after Project completion
Sales of the benefited SME (Billion VND)	Data in the preceding year will be recorded when sub-loans are extended	Expansion from the current level
Profit of the benefited SME (Billion VND)	Data in the preceding year will be recorded when sub-loans are extended	Expansion from the current level

Source: Information provided by JICA

(1) Sales and Profits of Benefited SME

In the beneficiary survey, a comparison was made between sales before investment and sales in 2016. Out of 101 SME surveyed, the number of SME which responded to this question and whose answers can be compared, is 92. Out of these, 79 SME (86%) show an increase in sales (in nominal prices). In terms of profits before taxes, the number of SME which responded to this question and whose answers can be compared, is 84. Out of these, 68 SME (81%) show an increase in profits before taxes (in nominal prices). The trial calculation results of the profit-to-turnover ratio (profits before taxes)²⁰ are shown in the upper part of the table below. The lower part of the table below shows the ratio of the number of SME in the major three sectors where the SME's profit-to-turnover ratio exceeded five percent. Compared with the conditions before investment, profitability shows more or less an increasing trend.

Table 12: Profit-to-Turnover Ratio, etc. (for reference only)

Descriptive Statistics	Before Investment	2014	2015	2016
No. of SME	82	86	92	97
Average	7.0%	6.7%	5.1%	8.9%
Median	5.1%	5.7%	7.4%	6.6%
Standard Deviation	15.8%	14.5%	47.1%	12.9%
Max	44.2%	44.0%	59.6%	61.1%
Min	-89.1%	-89.1%	-430.5%	-58.8%
Ratio of the number of SME in major business sectors where the SME's profit-to turnover ratio exceeded five percent.				
Manufacturing	61.5%	60.0%	64.5%	70.6%
Transportation services (passengers/goods)	47.1%	51.4%	62.2%	56.4%
Construction	42.9%	46.2%	53.3%	42.9%
Total	51.2%	54.7%	60.9%	59.8%

Source: Beneficiary Survey

This data is compared with the data for all enterprises and the non-state sector described in the “Statistical Yearbook” issued by the General Statistical Office (hereinafter referred to as “GSO”) together with the data concerning SME in the “White Paper SME in Vietnam, 2014” issued by AED. The data varies depending on the year, but the ratio of the profit before tax against the turnover for SME under the beneficiary survey is more or less higher than that shown in the statistical data. For example, the average of the ratio of the profit before tax against the turnover in 2014 was 6.7% according to the beneficiary survey while the median was 5.7%, which exceeds the ratio (4.12%) of the profit before tax against the net turnover of all the enterprises in 2014.

²⁰ The ex-post evaluation team received information on sales and profits from some PFI, which correspond to the indicators originally set. However, this data is not considered to have been chronologically and consistently collected from a fixed group of enterprises. Therefore, the data was not used for the analysis.

Table 13: Profit before Tax against the Net Turnover from 2008 to 2012

	2008	2009	2010	2011	2012	2013	2014
Enterprises in All Sectors	4.17%	5.55%	4.76%	3.25%	3.21%	4.00%	4.12%
Enterprises in the Non-State Sector	1.25%	2.32%	2.84%	1.51%	1.18%	1.27%	1.74%
SME	1.23%	2.34%	2.21%	1.03%	0.45%	NA	NA

Source: The ratio in all sectors and the non-state sector is calculated from the data in Statistical Yearbook 2012-2015, GSO and the ratio for SME is quoted from the business performance of enterprises by Vietnamese standard industrial classification, VSIC 2007, Statistical Yearbook 2012, GSO quoted in White Paper Small and Medium Enterprises in Vietnam, 2014, AED.

Note 1: Explanation was not provided on the collection method of the statistical data.

Note 2: Profit is profit before tax.

(2) Promotion of the Private Sector

Under SMEFP 3, private SME were basically set as the target and sub-loans were extended as investment capital for their production activities. Based on the results of the beneficiary survey, a trend could be seen whereby SME have expanded their business activities and increased their profitability with the introduction of equipment and facilities as shown in the above “(1) Sales and Profits of Benefited SME”, although this data should be considered only as reference. In addition, beneficiaries in the manufacturing and transportation sectors point out effects on the quality such as a decrease in product defects (processing industry), improvements in durability and appearance (manufacturer of bricks), clean and less noisy services (transportation services). The following two cases describe the business expansion of two SME in the south and central regions which were visited by the ex-post evaluation team. Both SME augmented their equipment and facilities using medium- and long-term loans through SMEFP 3. As a result, it is considered that contributions were made to promotion of the private sector in such fields as a decrease in unit costs, an increase in sales and the creation of employment opportunities.

(a) Manufacture of plastic products (medical use, toys, etc.) (Ho Chi Minh City in Southern Region of Viet Nam)

With a sub-loan from PFI (10 billion VND, out of which the ODA loan accounted for 70%), the company introduced 14 units of injection molding machines (Photo) in 2014. Having observed the injection molding machine of a Japanese manufacturer, which had invested in mainland China, at an industrial exhibition held in Ho Chi Minh City, the company decided to purchase their own. Out of plastic products, 70% is supplied to the domestic market while the remaining 30% is exported to ten countries.

The company considers that the labor required for one unit of newly-introduced machine is less than that required for the machines previously used. Because of savings in electricity consumption and maintenance costs, contributions have been made in terms of a decrease in the unit production cost. The amount of sales and the number of employees in 2016

increased more than three times compared to those of 2014.



(b) Passenger transportation services (Da Nang city in Central Region of Viet Nam)

At the time of the ex-post evaluation, the company owned 18 units of buses with a seating capacity ranging from seven to 45. In response to requests from travel agents and others, the company provided nation-wide transportation services to passengers (Photo: a bus purchased under a sub-loan from SMEFP 3). The company runs a restaurant, creating a synergy effects with the transportation services. Since 2012, when the company was at the start-up stage, it has repeatedly received sub-loans from commercial banks including the PFI concerned. The total amount of sub-loans has reached 9.3 billion VND (the Japanese ODA accounts for 70% of the sub-loans). When sub-loans are necessary, the company places importance on simplified procedures and a quick disbursement of sub-loans.

The company owner explained that “With an increase in the number of vehicles, the rotation of transportation services has been eased. As business remains robust, we can hardly find a time to rest vehicles”. As customers commented that services were “good”, the company feels that the quality of their services has improved. The amount of sales and the number of employees in 2016 increased, six times and three times respectively, compared to 2014.



3.4.2 Other Positive and Negative Impacts

(1) Impacts on the Natural Environment

According to SBV, no sub-loans have been classified into Category A under the JICA “Guidelines for Environmental and Social Considerations”. In addition, no sub-projects had major negative environmental or social impacts, and no sub-projects were inconsistent with the guidelines. No negative impacts from the Project were seen.

(2) Creation of Employment Opportunities

In the beneficiary survey, the responses below were obtained to questions concerning the number of employees before investment and during a period of the last three years. The median value of the number of employees per enterprise was 30 before investment, and this increased to 55 (median) in 2016. Although the results of the survey should be treated as a reference, it is considered that the Project had positive impacts on the creation of employment opportunities as business has expanded.

Table 14: Descriptive Statistics of Employment Creation (for reference only)

Unit: Persons				
Items	Before investment	2014	2015	2016
No. of Enterprises	88 Enterprises	93 Enterprises	96 Enterprises	101 Enterprises
Total number of employees (A)	4,542	6,353	8,800	10,734
Out of (A): permanent	2,910	4,153	5,224	6,624
Out of (A): women	1,439	2,067	2,649	3,351
Out of (A): men	3,033	4,135	5,902	7,191
Item	Before investment	2014	2015	2016
Average	52	69	91	106
Median	30	40	50	55
Standard Deviation	65	92	141	149
Max	300	500	925	832
Min	1	3	3	6

Source: Beneficiary survey

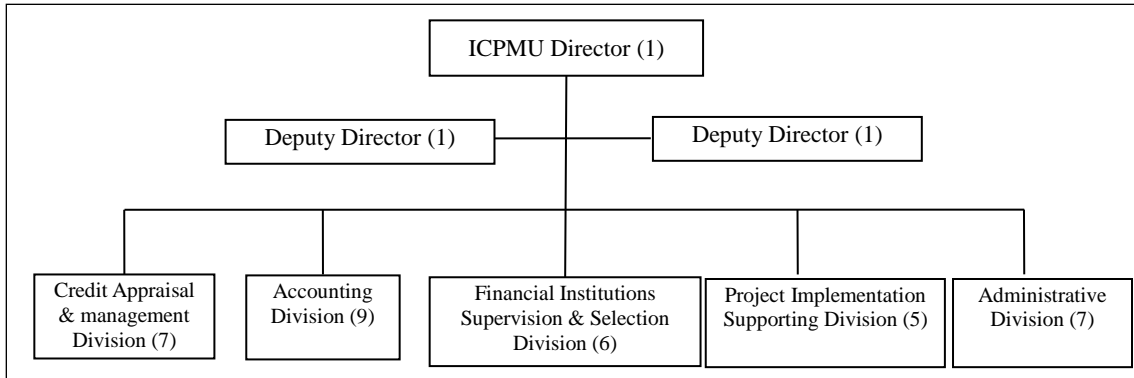
Based on the above, it can be by and large seen that there was a chain of effects in the way that the Project provided medium- and long-term funds to SME, promoting private sector development through investment in equipment and facilities with the loans, then contributing to economic growth. Therefore, the effectiveness and impact of the Project are high.

3.5 Sustainability (Rating: ③)

3.5.1 Institutional Aspects of Operation and Maintenance

Revolving funds were operated and maintained by ICPMU of SBV after completion of the Project as was the case during the Project period. The organizational set-up of ICPMU basically remains unchanged²¹ and the number of staff, as of February 2017 at the time of the survey in Viet Nam, was 37. This organizational set-up and number of staff members were determined in consideration of smooth operations from 2016 to 2021. It is considered operations will continue to be smooth and without difficulty.

²¹ ICPMU was restructured during the Project period and remained basically unchanged thereafter. The restructure was undertaken in 2012 due to completion of a project on housing finance that ICPMU had been engaged in and also due to an increasing volume of works under SMEFP 3.



Source: Information provided by SBV

Note: The numbers in the brackets indicate the numbers of staff members as of March 2017.

Figure 11: Organizational Structure of ICPMU

As for sub-loans, PFI monitor the repayment in accordance with their respective guidelines. In addition, SBV sets up a basic monitoring framework in the Policy Manual and the Reporting Manual and prepares their own progress reports based on the reports from PFI. No problems have been reported for either PFI or SBV in terms of the monitoring system. No major problems have been observed in the institutional aspects of the operation and maintenance.

3.5.2 Technical Aspects of Operation and Maintenance

As described earlier, SBV adjusted the amount of credit lines depending on the actual amounts of disbursements by PFI. For this purpose, SBV reviews disbursement relating to this Project on a monthly and quarterly basis. According to SBV, the amount of disbursements, outstanding amounts of sub-loans, demands on OLL thereafter, compliance with terms and conditions, eligibility criteria, and so on are subject to review.

Based on MIS developed under SMEFP 1 and SMEFP 2, SBV has further upgraded MIS in order to adjust it to revisions in Policy Manual.²² However, the current level of MIS has not reached the level required for the operation and management of SMEFP in providing consistent information on a timely basis. Development of MIS was under way at the time of the ex-post evaluation.

As for training, SBV regularly organizes training for staff members at SBV and PFI (guidance on the Policy Manual, etc.). Both internal and external resources are utilized in training. For example, external consultants are mobilized for the improvement of management skills while staff who previously worked at the accounting department of SBV are asked to lead training on accounting. The following training was organized in 2016.

²² For example, in concrete terms, it was learned that the data relating to all three phases of SMEFP had been integrated into one database and managed by a single software.

Table 15: Training Courses held in 2016

Name of Training Courses ^{note}	Period	Number of Participants (persons)
English for project management	June 27 to July 1, 2016	28 in Hanoi
Skills to manage changes in banking operations	August 17 to 19, 2016	34 in Da Nang
Communication skills and contract implementation	September 14 to 16, 2016	20 in Vung Tau
Project Policy Manual	October 14, 2016 October 25, 2016	47 in Hanoi 35 in Ho Chi Minh City

Source: Information provided by SBV

Note: Staff members of ICPMU played the role of instructors in training courses on the Project Policy Manual while the Banking Training School, a training unit of SBV, organized other training courses.

According to interviews with PFI, about two personnel per PFI were sent for training on the Policy Manual. At SBV and PFI, training has been continued to maintain and improve technical levels. No major problems have been observed in the technical aspects of SBV and PFI in their maintenance of effects of the Project.

3.5.3 Financial Aspects of Operation and Maintenance

The status of the expenditures of ICPMU from 2010 to 2016 is shown below. While the number of staff more or less remained unchanged, personnel expenditures and others continued to increase on a nominal basis except in 2016. According to the interview at ICPMU, the budgets were said to be at a level that would not cause difficulties in the operation and maintenance of SMEFP. It is noted that the expenditures in 2016 decreased compared to the amount in 2015. This is due to the retirement of some staff members as well as a request from the government for the reduction of expenditure.

Table 16: Operation and Maintenance Expenditure of ICPMU

Fiscal Year	Unit: Million VND						
	2010	2011	2012	2013	2014	2015	2016
Total expenditure	5,508	5,953	7,918	10,159	10,913	13,155	13,050
Salaries	1,124	1,372	2,041	2,396	3,705	4,162	4,333
Other expenditure ^{note}	4,384	4,581	5,877	7,763	7,208	8,993	8,717

Source: Information provided by SBV

Note: Other expenditure includes items such as training costs, per diems, computer-related costs, social security-related costs, electricity charges and costs for stationery. The expenditure includes that required for not only SMEFP 3 but also SMEFP 1 and SMEFP 2, projects of other donors, other duties assigned by the government, and so on.

PFI is subject to an annual review of SBV in their qualifications for participating in SMEFP, out of which financial soundness accounts for a larger weight (60 points out of 105). SBV is in a position to select financially sound PFI in order to carry out sustainable operation and maintenance of SMEFP.

Based on the above, no major problems were observed in the financial aspects of operation and maintenance for maintaining the effects of the Project.

3.5.4 Current Status of Operation and Maintenance

The amounts repaid to SBV by PFI are managed as revolving funds in operating accounts set up at three state-owned commercial banks and then utilized again for sub-loans to be extended to end-borrowers through PFI. At the time of the ex-post evaluation, the status of the revolving funds was reported by SBV as in the table below. The initial disbursement of the ODA loan was nearly completed by 2013. According to SBV, the repayment from PFI was made without delay. By utilizing the repaid amount, sub-loans were extended by 2016, amounting to about one point seven times the size of the initial disbursed amount.

Table 17: Revolving Fund Accounts

Unit: Billion VND

Year	2010	2011	2012	2013	2014	2015	2016
Beginning balance	0	148	14	659	1,150	962	122
ODA Loan Disbursement	1,847	1,295	452	185	-	-	-
Collection of OLL	92	538	1,043	1,297	1,074	1,238	1,522
Disbursement of Sub-loans	1,791	1,967	851	991	1,263	2,078	1,350
Out of which: Sub-loans from the initial OLL	1,744	1,391	391	251.7	0	0.3	NA
Out of which: Sub-loans from the Revolving Funds	47	576	460	739.3	1,263	2,077.7	NA
Ending balance	148	14	659	1,150	962	122	294

Source: Information provided by SBV

Note: The number does not tally in some years.

SBV has submitted progress reports to JICA twice a year, which include information on the utilization of the revolving funds. External auditing of the revolving funds has been carried out in accordance with the stipulations of the loan agreement.

No major problems were observed in the institutional, technical or financial aspects nor in the current status of the operation and maintenance system. Therefore, the sustainability of the Project effects is high.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The Project aimed to provide SME with medium- and long-term loans through PFI from the executing agency, SBV, while improving loan access for SME by enhancing the capacity of PFI in extending loans to SME.

The Project was consistent with Viet Nam's SME policy and development needs, and with Japan's ODA policy. Therefore, the relevance of the Project is high. While the actual cost of the Project fell within the planned one, the Project period exceeded that planned. Therefore, the efficiency of the Project is fair. The access to medium- and long-term loans for end-borrowers,

SME, was improved and the loans were utilized for the investment purpose. In some cases, this led to effects such as the enhancement of production and sales of enterprises, and the maintenance and creation of employment. Therefore, the effectiveness as well as the impact are high. Concerning the sustainability, at the time of this ex-post evaluation, no major problems were observed in the institutional, technical, financial aspects and the current status of the operation and maintenance of the Project.

In light of the above, the Project is evaluated to be highly satisfactory.

4.2 Recommendations

4.2.1 Recommendations to JICA

Revolving funds are supposed to be generated by utilizing surplus funds temporarily generated from differences between the repayment period of sub-loans and the repayment period of the ODA loan. Under the Project, revolving funds were to be set up in order to extend new sub-loans with the same terms and conditions. Accordingly, the executing agency have extended OLL to PFI using revolving funds basically with the same terms and conditions. However, the economic conditions of Viet Nam in 2009 at the time when the appraisal was conducted were different to those at the time of the ex-post evaluation. In order to meet the needs of PFI and SME in an appropriate manner, it is recommended that JICA continue to review the terms and conditions of OLL and sub-loans and, if necessary, revise them through discussions with the executing agency.

4.3 Lessons Learned

(1) Review of the terms and conditions of revolving funds

ICPMU of SBV, an executing agency of the Project, has managed the revolving funds, adjusting the terms and conditions of OLL and sub-loans from revolving funds in the process, based on requests from PFI. If changes in the terms and conditions, including an increase in the maximum amount of sub-loans, are flexibly handled, it will be possible to extend policy-based funds that will meet the needs of the executing agency, PFI and end-borrowers such as SME in a more appropriate manner, in order to respond to needs for funds which will newly emerge and to changes in the economic environment. An executing agency and JICA will be able to provide end-borrowers with sub-loans, which meet their needs more appropriately, by organizing periodical meetings with PFI and SME in order to review, and depending on necessity, revise the terms and conditions at the time of the project formulation stage, during the project implementation phase and after completion of the project.

(2) Setting of appropriate impacts

The impact of this Project was set as “contributing to acceleration of economic growth and

strengthening of international competitiveness through private sector development”. However, if taken the outcome (improvement of access to funds) of the Project and the level of intervention into consideration, the level of impact does not necessarily match the level of intervention as the contribution of the Project to the acceleration of economic growth and the strengthening of international competitiveness at the national level is limited. It is considered that a more appropriate impact would be, for example, “contributions to the enhancement of production and investment for SME”.

(3) Setting of more appropriate indicators

At the time of the appraisal, indicators such as “total loans outstanding from PFI to enterprises established under the Law on Enterprises” were set as quantitative operation and effect indicators. However, the outstanding amounts of loans include loan amounts for items other than equipment and facilities for which sub-loans to SME were extended particularly under the Project. Therefore, the indicators are not necessarily considered appropriate when the effects of the Project are to be examined. In order to set up indicators for future similar types of projects, it is important that indicators that can be used to systematically evaluate the level of achievement of the project objective, etc. are set up. Furthermore, it is also important to examine whether or not the indicators are ones with which the executing agency can confirm the level of these achievements, without difficulty, by utilizing the data that the executing agency and others collect through their daily activities.

End

Comparison of the Original and Actual Scope of the Project

Item	Plan	Actual
1. Project Outputs		
(1) Provision of medium- and long-term investment funds to PFI	- Provision of medium- and long-term investment funds to PFI: 15 billion Japanese yen - Terms and conditions: Interest rate (base interest rate announced by SBV minus 1.5%), Repayment period (in accordance with the repayment period of sub-loans)	- Provision of medium- and long-term investment funds to PFI: 16.031 billion Japanese yen - Terms and conditions: Interest rate (weighted average of deposit interest rates), Repayment period (in accordance with the repayment period of sub-loans)
(2) Strengthening of financing capacity of SBV and PFI for investment loans	- Implementation assistance including development of information system, assistance for coordination with support to supporting industries	- As planned
2. Project Period	October 2009 - December 2012 (39 months)	November 2009 - December 2014 (62 months)
3. Project Cost		
Amount Paid in Foreign Currency	17,379 million Japanese yen	16,926 million Japanese yen
Amount Paid in Local Currency	10,249 million Japanese yen	NA
Total	27,628 million Japanese yen	NA
ODA Loan Portion	17,379 million Japanese yen	16,926 million Japanese yen
Exchange Rate	1VND =0.0059 Japanese yen (as of April 2009)	1VND =0.0046 Japanese yen 1 USD = 95.3 Japanese yen (Average between 2010 and 2015)
4. Final Disbursement	February 2015	