

Originality Statement

I hereby declare that this submission is my own work and to the best of my knowledge it contains no materials previously published or written by another person, or substantial proportions of material which have been accepted for the award of any other degree or diploma at IUB or any other educational institution, except where due acknowledgement is made in the report. Any contribution made to the research by others, with whom I have worked at IUB or elsewhere, is explicitly acknowledged in the report. I also declare that the intellectual content of this report is the product of my own work, except to the extent that assistance from others in the project's design and conception or in style, presentation and linguistic expression is acknowledged.

Acknowledgement

Acknowledge all the people who have helped to complete this task.

Dr.MahadyHasan

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1. INTRODUCTION

1.1 BACKGROUND OF THE PROJECT:

In the course CSE303 we have been instructed to construct an automated system for the Energy Efficiency & Conservation (EE&C) Promotion Financing Project. The idea of the project is to get familiar with the information system where the knowledge of the course can be implemented to solve real world problems which is a basic requirement for this course. The project was introduced to us by our course instructor.

The purpose of the project is to save energy and natural resources as much as possible making the best use of it at the same time. Being a densely populated country Bangladesh cannot afford to waste natural resources and energy as they are limited. So making sure that this project a success is very important and to do so an automation system is needed.

The manual process of granting loans and keeping track of everything is a very long term process and costly too. In the automated system the proponent can view all the details of the process before applying for loan. The respective authorities; SREDA and IFI will have access to the documents and information given by the proponent to make the process smooth. The system will be secured with a backup of all the information so that there is no data loss. This system will also ensure the authenticity of the proponents and transparency of the loan granting process.

This automation system will make the whole process easier for both the proponent and respective authorities making it time and cost efficient while maintaining international standards.

1.2 BACKGROUND OF THE ORGANIZATION:

The Energy Efficiency & Conservation (EE&C) Promotion Financing Project encourages to penetrate EE&C equipment in order to contribute to the development of the sustainable society and the reduction of greenhouse effect gas emission. This project is introduced in response to Bangladesh's Seventh Five Year Plan (December 2015). Sustainable and

Renewable Energy Development Authority (SREDA) mandates to contribute to demand side energy management through the provision of low interest loan.

The Government of Japan who is represented by JICA extended the loan to the Government of Bangladesh that is represented by the Finance Division, Ministry of Finance. With JICA providing the original Funding for the loan there are three other executing agencies for the project, which are:

- i. Sustainable and Renewable Energy Development Authority (SREDA) as the administrative authority
- ii. Infrastructure Development Company Limited (IDCOL) as an implementing financial institution (IFI)
- iii. Bangladesh Infrastructure Finance Fund Limited (BIFFL) also as an IFI

The loan fund will be equally allocated between the IFIs. For the sake of using the fund efficiently there will be a mechanism to revise and adjust the fund allocation and re-allocation by the Steering Committee decided through a meeting.



Mission and Vision:

The Japan International Cooperation Agency is an agency of the government of Japan. The governmental agency assists economic and social growth in developing countries and promotes international cooperation. The mission of JICA is to work on human security and quality growth. JICA's vision is to lead the world with trust and create opportunity for the people to explore their diverse potentials through international bonding.

Actions:

- JICA commits to achieve their mission and vision
- Working together with the people on field
- Thinking and acting strategically
- Making best use of resources with diverse wisdom
- Innovating impacts that are groundbreaking



Sustainable and Renewable Energy Development Authority (SREDA) implements the policies, laws and regulations relating to sustainable energy in order to respect and protect the environment. The company aims to meet its goals and objectives in an environmentally and socially responsive manner.

Mission and Vision:

SREDA visions to promote sustainable energy and build a nation who is energy conscious in order to ensure energy security and reduce carbon emission. By coordination and facilitating the development of renewable energy and energy efficiency SREDA missions to increase the share of renewable energy in the energy mix in order to reduce dependency on fossil fuel, to take appropriate measures for energy saving, to assess continuously for new potential sustainable energy solutions.

Goals and Objectives:

SREDA goals for increasing renewable energy generation and increasing the proportion or amount of energy saving. These goals are set so that they can by the year 2020 the

renewable energy power generation will be 10% of the total power generation and by the year 2021 the energy saving will be 15% and 20% by 2030 of total energy consumption.

Organogram:

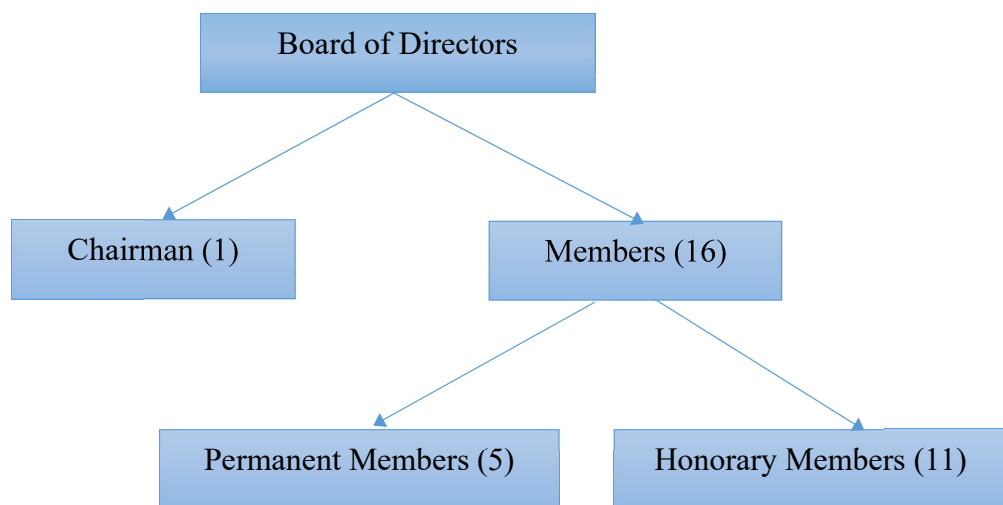


Diagram 1: Organogram of SREDA



Infrastructure Development Company Limited (IDCOL) plays a vital role in bridging the financing gap for developing medium to large-scale infrastructure and renewable energy projects in Bangladesh. Established on May 14, 1997 by the Government of Bangladesh and licensed by the Bangladesh Bank on January 5, 1998 as a non-bank financial

institution (NBFI) the company now stands as the market leader in private sector energy and infrastructure financing in Bangladesh.

Mission and Vision:

The company's mission is to create opportunity and encourage private sector to participate in promotion, development and financing of infrastructures, renewable energy and energy efficient projects in a sustainable manner through public-private-partnership initiatives. IDCOL visions to help ensuring and achieving economic development and improving the standard of living of people of the country by investing sustainable and environment-friendly projects.

IDCOL commits to deliver financial services to the clients who maintain global standards and competence. The company believes in maintaining transparency and integrity in all activities and is dedicated to perform as a developed financial institution articulating social responsibility.

Organogram:

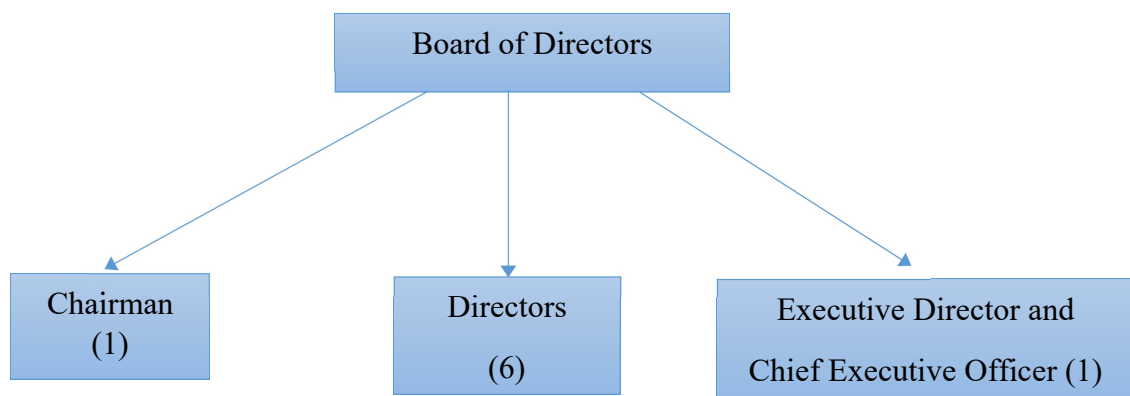


Diagram 2: Organogram of IDCOL



Bangladesh Infrastructure Finance Fund Limited (BIFFL) is a Non-Banking Financial Institution that works under the Ministry of Finance, Government of the peoples, Republic of Bangladesh. BIFFL, the largest NBFI operating in the country, has an ordinance to invest in the large infrastructure project in Bangladesh. The institution invests in sustainable development projects, emphasizing on renewable energy, energy efficiency and eco-friendly project in order to develop a greener Bangladesh.

Mission and Vision:

BIFFL missions to perform as a professional Financial Institution by maintaining the international standards both in moral and ethical practice. The company aims to encourage Private Sector Investment in all infrastructure projects in order to promote country's economic development. It's another mission is to support sustainable economic growth of Bangladesh by facilitating Infrastructure development. BIFFL's vision is to increase the economic growth by influencing the relative strengths of Public and Private Sector through financing Infrastructure Projects.

Goals and Objectives:

BIFFL's major goal is to provide long-term finance to critically important infrastructure projects. The company also goals for assembling co-financing from private financial sources and to provide a unique vehicle for capital market development.

BIFFL's objective is promoting, encouraging and financing Private Sector Investment in all infrastructure sector, extending financing facilities, attracting private investment,

creating funds, sub-funds and any other appropriate kind of fund for the infrastructure projects.

The company's one of the strategic priority is to develop, finance and monitor and implement infrastructure projects and ensure transparency, accountability and fairness in the activities done by BIFFL.

1.3 OBJECTIVES OF THE PROJECT:

The main objectives of the project are:

- Promoting EE&C measures
- Facilitating installation of EE&C equipment in Bangladesh
- Recording and managing the progress of the Project in Online Automated Loan Management System (OALMS) in order to reduce paper work.
- Making the loan process more efficient by reducing the time consuming process of manual data entry and avoiding errors.
- Avoiding processing applications that are not eligible for loan
- Maintaining the standards and control the process by the authority so that the applicants are not mislead
- Maintaining security issues by not storing any sensitive and confidential information
- Avoiding the risk of data loss by storing them in OALMS with security and backup
- Extending loans at low interest and other support in order to alleviate climate change

The basic objective of the project is to develop a system with an improved data sharing and maintenance process which will also be time and cost efficient.

1.4 SCOPE OF THE PROJECT:

There are three components that are covered by the EE&C promotion financing project as subjects of loan. These components are chosen as a priority for low interest loan depending on their scope to utilize it effectively. The components are:

- a) Component I : Industry or commercial sector component
- b) Component II: Building sector component
- c) Component III: Home appliances components

The scopes offered by the project are:

- The automation of the process will lead to view and submit the form online so that the applicants or the sub-project proponents and the respective authority can check the application form for necessary consultation. This will also make the process easier for the applicants as they can apply online which will save time and cost that might lead to increase the rate of interested applicants.
- The interested applicants will be able to view the list for eligible Energy Efficient Equipment list along with details and benefits before processing the application for loan
- SREDA and IFI both will track the process of primary eligibility checking and name clearance in order to ensure better evaluation and decision making. The result will be stored in the system for further consultation if necessary
- The authority related to the application process will have access to the system depending on their respective positions. So the system will have separate encrypted modules for the authorities of IFI and SREDA. IFI will evaluate, save results and notify the decision to the sub-project proponents. SREDA will keep track of the whole process by checking the progress of the applications. It will also track the progress of the projects that for which the loan has been granted
- Decisions in every step of the process will be stored in the system along with reasoning and will be notified to the sub-project proponents so that there are no misunderstandings among the authorities and applicants. It will make the whole process transparent.

3. Requirement Analysis

Table 01:EXISTING BUSSINEESS SYSTEM ALONG WITH SIX ELEMENTS (A-TYPE LOAN)

SI	Process Name	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Communication and
1.	Preparation	PIU Secretariat (IFIs): Provide the project's overview, application forms and contact details	Pen, Paper (Application form)	N/A	N/A	N/A	N/A
2.	Receiving loan applications	<div>Proponent: Submit the application form</div> <div>Officer In Charge (IFIs) : Ask the proponent to prepare Financial Pre-screening Application Form, Technical Pre-screening Application Form, Financial Statements and Credit Rating Report and fixing a meeting date</div>	<div>Pen, Papers include:</div> <ul style="list-style-type: none"> Financial statements Credit Rating Report 	N/A	N/A	N/A	N/A

SI	Process Name	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Communication and
3.	Preliminary eligibility checking	Officer In Charge (IFIs): Conduct preliminary eligibility checking	Pen, Papers include: ▪ Eligibility Check Sheet	N/A	N/A	N/A	N/A
		Manager(IFIs) : Approve or Decline the checking result,consult SREDA employee and provide preliminary comments if required					
4.	Name Clearance	Officer In Charge (IFIs) : Check the items in the Name Clearance Evaluation Sheet	Pen, Papers include: ▪ CIB Report ▪ Credit Rating report ▪ Financial Statement ▪ Name Clearance Evaluation Sheet	N/A	N/A	N/A	N/A
		Conduct the Name Clearance Evaluation and register the evaluation result using Name Clearance Evaluation Sheet					
		Manager(IFIs) : Approve or Decline the case					
		PIU Secretariat(IFIs) : Define decision body and proceed to institutional clearance, Approve or Decline the case institutionally Register the decision result and consult IFIs for any delay					

SI	Process Name	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Communication and
5.	Submit Request to SREDA for NOC	<p>Officer In Charge (IFIs): Check for new cases that has completed Institutional Clearance</p> <p>Manager (IFIs): Input necessary Information from Technical Pre-screening Application Form, reflect revisions and updates</p> <p>Sub-project proponent: Submit two sets of equipment catalogues</p> <p>SREDA: Check NOC request from IFIs, Receive documents, Physically forward and register the date</p> <p>SREDA: Ensure that there is no duplicate application, Check for Precedent cases, Inquire about additional information of equipment, Register the result of evaluation with reasoning, Receive official signature on NOC draft or rejection letter, Dispatch the original letter to IFIs.</p>	<p>Pen, Papers include:</p> <ul style="list-style-type: none"> Two sets of equipment catalogues Original Copy of Technical Pre-screening Application Form Record the decision Draft of NOC or Rejection letter 	N/A	N/A	N/A	N/A

SI	Process Name	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Communication and
6.	Forwarding NOC or Rejection letter to subproponent	Officer In Charge (IFIs): Forward the NOC or rejection letter to the Sub Project Proponent, Close the rejected case	Pen, Papers include: ▪ Original copy of NOC or rejection letter	N/A	N/A	N/A	N/A
7.	Due Diligence	Officer In Charge (IFIs): Choose the type of due diligence on Due Diligence Type check sheet Ask Sub Project Proponent to prepare the documents indicated in Required Document Check Sheet, Register the received date of documents, Conduct off site and on-site due diligence, Register the completion of Due Diligence	Pen, Papers include: ▪ Due Diligence Type check sheet ▪ Required documents check sheet	N/A	N/A	N/A	N/A

		<div>Sub Project</div> <div>Proponent: Prepare and send documents indicated in required document check sheet</div>					
		<div>SREDA Employee:</div> <div>Check Due Diligence Status and consult with IFIs for any delay</div>					

SI	Process Name	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Communication and
8.	Loan Decision	<p>Manager (IFIs) : Prepare documents (General Due Diligence, Simple Due Diligence, Loan Terms), Update and revise application data</p> <p>Officer In Charge (IFIs): Report to the approving body of completion of loan decision, Notify rejection to Sub Project Proponent</p> <p>PIU Secretariat(IFIs) : Proceed to Approve or Decline the application institutionally, Register the date and decision</p> <p>Officer In Charge (SREDA) : Check loan decision status and consult with IFIs for any delay</p>	<p>Pen, Papers include:</p> <ul style="list-style-type: none"> ▪ Credit report ▪ Loan decision sheet ▪ Loan term sheet ▪ Credit rating rate by Bangladesh bank ▪ Rejection/Approval Letter ▪ Record the decision 	N/A	N/A	N/A	N/A

SI	Process Name	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Communication and
9.	Documentation for loan	Officer In Charge (IFIs): Draft loan documents, Negotiate with sub project proponent, sign the contract and register the date of contract, Revise the equipment category and loan amount if necessary	Pen, Papers include: <ul style="list-style-type: none"> Loan documents Contract Paper 	N/A	N/A	N/A	N/A
		Sub Project Proponent: Sign the Contract					
10	Disbursement	Officer In Charge (IFIs): Ask the sub-project owner to open L/C account, Negotiate on disbursement details, Check if the pre-conditions of disbursement are fulfilled, Transfer money	Pen, Papers include: <ul style="list-style-type: none"> Documents of L/C account Documents of negotiation 	N/A	N/A	N/A	N/A
		Sub Project Proponent: Open L/C account,					
		Agree on disbursement details, Receive money					

SI	Process Name	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Communication and
11.	Checking Repayment Status	<p>Sub Project Proponent: Open repayment account within IFI, Remit the repayment money</p> <p>Officer In Charge (IFIs): Check if the repayment account is open, Direct the sub-project owner's bank and IFIs bank, Check the remittance status monthly and follow up with any delay Monitor the repayment status and submit to JICA on quarterly basis, Report to the manager about the repayment status on monthly basis</p>	<p>Pen, Papers include:</p> <ul style="list-style-type: none"> Financial Report Form (Ongoing Sub-Project Summary and Financial Report Form) 	N/A	N/A	N/A	N/A

Table 02:EXISTING BUSSINEESS SYSTEM ALONG WITH SIX ELEMENTS (A-TYPE LOAN

SI	Process Name	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Communi-cation and networking
12.	Participating Distributor (PD) Selection and Appointment	PIU Secretariat (IFIs): Formulate PD selection committee and agree on the selection and appointment rules by discussing, Send Published invitation letter to PDs and receive the application, Check the eligibility on Eligibility Criteria for PDs and inform result to PDs and SREDA, register the PD's on a PD List Form PDs:Send the application to IFIs,Notified about the selection result,Sign the Participating Agreement and get	Pen, Papers include: ■ Application form ■ Eligibility Criteria for PDs ■ PDs List Form	N/A	N/A	N/A	N/A

		registered					
		Manager (IFIs): Sign the participation agreement.					
		SREDA: Informed and notified about the PD selection committee and selection result					
13.	Loan Payments to PDs (Reimbursement Option)	PDs: Agreement with EE&C of home appliance purchase who meets the required report sales, Inspect the record on monthly basis, Install of EE&C home appliances, Request for fund transfer	Pen, Record Book, Papers include: <ul style="list-style-type: none"> ■ Sales, Installation and Inspection Record Form (Common to both APO and RO) ■ Request Form 	N/A	N/A	N/A	N/A
		Officer in Charge (IFIs): Periodically observer sales, installation and inspection record, Check fund transfer request and record					

		the fund transfer					
		Manager: Approve or reject fund transfer					
	Loan Payments to PDs Advance Payment Option(APO)						
14.	Approving a PD for APO	PDs: Request for APO is send to IFIs, Acknowledge decision result PIU Secretariat: Proceed for institutional approval., Inform decision to PD and record	Pen, Papers include: ■ APO Application	N/A	N/ A	N/ A	N/A
15.	Advance Payment Procedure	PDs: Procurement document of EE&C Home appliances along with shipping documents, letter of PD's bank attn. IFIs and advance payment of Application Form for Advance Payment Option is submitted on monthly basis. Receive approved Fund transfer Officer In	Pen, Papers include: ■ Application Form for Advance Payment Option				

		<p>Charge(IFIs): Check for fund transfer request, Transfer approved fund and record amount and date</p> <p>Manage (IFIS): Approve or reject fund transfer request</p>					
16.	Sales Record Keeping	<p>PDs: Check EE&C home appliance sales status, Record sales details and install EE&C home appliances according to the down- payment.</p>	<ul style="list-style-type: none"> ▪ Sales, Installation and Inspection Record Form (Common to both APO and RO) 				
17.	Adjustment against APO	<p>PPDs: Regular update of Installation Reporting Form on Sales, Installation and Inspection Record Form (Common to both APO and RO) and Submit adjustment request on Advance Payment Adjustment Form</p>	<p>Pen, Papers include:</p> <ul style="list-style-type: none"> ▪ Sales, Installation and Inspection Record Form (Common to both APO and RO) ▪ Advance Payment Adjustment Form 				

		Officer In Charge (IFI): Check for adjustment request, Adjust fund and record date and time					

Table 03:EXISTING BUSSINEESS SYSTEM PROBLEM ANALAYSIS (A-TYPE LOAN)

Sl	Process Name	Problem	Quantify the cost	Problem Analysis
1.	Preparation and receiving loan applications	Printing the application form	10 tk per page 10 pages for 500 forms $=500*10*10=50000$	Printing the form is expensive process thus we need to find mechanism to get rid of this printing process.
		Time consuming	About 50min (minimum) needs to reach Gulshan from Bashundhara Residential Area.	Visiting IFI and waiting for procedure for loan is lengthy process. It's difficult and time consuming for the proponents to manage time for double meeting
		Problem of Transportation	Average transport cost(1person) from Bashundhara to Gulashan , BUS:30tk CNG:300tk Uber:450tk	Transports are not Available always; moreover there is traffic jamwhich makes it difficult for the proponent to

				reach destination.
2.	Preliminary eligibility checking	Time consuming	Almost 7 days	Lengthy process impacts on emergency
		Data loss	Record book 250tk	Multiple papers are needed for keeping records which might get lost
3.	Conducting Preliminary Eligibility Checking and Name Clearance Evaluation	Data loss	1 book=250tk Per page cost 10 taka, for 250 member, Cost will be $250 \times 10 = 2500\text{tk}$	Printing the form is expensive process thus we need to find mechanism to get rid of this printing process.
		Time consuming and hectic	It takes about 4/5 hours to go through all the papers	Manually conducting this step might cause the loss of data. The workload will be time consuming and hectic too
4.	Submission of request for NOC	Time consuming	Almost 3days	Lengthy process makes the whole system slow
		Loss of records	Record book 250tk 10 record	papers might be lost

			books=250*10=2500tk.	
5.	Eligibility checking	Loss of recorded data	1 book=250tk (for record data)	Extra cost for collecting data
		Time consuming	Almost 7days	Lengthy process
		Check duplicate application	For duplicate application ,cost of paper becomes double	Need extra paper and time
6.	Due Diligence	Time consuming and costly	250tk=1book	Files saved manually can be lost and takes time to search and also costs money
		Data loss		Tracking the due diligence information and date might be hard and information might get lost
7.	Institutional Clearance and documentation for loan	miss out information		By ,mistake might skip some necessary information
		Extra cost	Transport cost almost 450tk	Cost of paper,extra charge of

			<p>Officer's Salary 20000-25000 tk Per hour 25000-3000</p> <p>We can save 1/3 of working hour So we can save 6000-8000 tk</p> <p>Manager's Salary 35000-53000 tk Per hour 4000-8000 tk</p> <p>We can save 1/3 of working hour So we can save 8000-14000 tk</p>	workers
8	Loan Decision	Time consuming	More than 4 days	Time consuming for revise and updating the application date
		Lose record	<p>Record book 250tk 10 record books=250*10=2500tk.</p>	papers might be lost

Table 04 : EXISTING BUSSINEESS SYSTEM PROBLEM ANALAYSIS (B-TYPE LOAN)

	Process	Problem	Quantify the cost	Analysis
1.	Submitting application form and Checking eligibility of the applicants	Expensive	Average transport cost(1person) from Bashundhara to Gulashan , BUS:30tk CNG:300tk Uber:450tk	Procedure of filling up manual from , which is lengthy process and costly
				Cost of transportation, electric bill charge of office room, percentage of salary of officer in charge, refreshment are also involved.
		Time Consuming		Proponents may have to go through a long process
2.	Registration of Participating Distributor(PD)	Expensive	1 Record book =250tk 10 tk per page 10 pages for 500 registration forms = $500*10*10=50000$ tk	Printing is expensive so need to make a system where we can save the expense.
		Time consuming		Manual input is not suitable for every PD which is lengthy process
		Data Loss		The data will be stored in a file that might not have any sequence The file or book which the proponent is registered might get lost
3.	Reporting and checking sales record	-Lack of Communication -Costly	1 Record book =250tk 10 record books=250*10=2500tk.	-It will be difficult to keep IFIs up to date -record books are needed to record the so many data which costs money and space

4.	Fund transfer request	Expensive	Average transport cost(1person) from Bashundhara to Gulashan BUS:30tk CNG:300tk Uber:450tk	Printing the form costs money and also the transportation cost adds up to the expense
		Time Consuming		PD needs to go to IFIs office for submitting application which is time consuming .-Apart from location ,transportation matters for communication
5.	Request for Advance Payment Option(APO)	-Time Consuming -Expensive -safety of record book or file		PD needs to go to IFIs office for submitting application which is time consuming and costly

TABLE 5: SOLUTION

SI	Process Name	Problem	Solution	Quantify the saving
1.	Preparation and Receiving loan Applications	Printing the application form	Form will be available in the OALMS.	40000tk
		Time consuming	As form will Be available in the OALMA the times it takes to visit IFIs will be saved	About 40 minutes
		Problem of Transportation	As form will Be available in the OALMA the cost of transportation will be saved.	Average transport cost(1person) from Bashundhara to Gulashan , BUS:30tk CNG:300tk Uber:450tk
2.	Preliminary Eligibility Checking	Time consuming	The eligibility checking will be done with the OALMA which will save the time	Almost 7 days
		Data loss	No files or papers will be needed as everything will be saved on OALMS. This will save the cost of papers and also environment	250tk per Record book

3.	Conducting Preliminary Eligibility Checking and Name Clearance Evaluation	Data loss	Everything will be saved in the system which will save the cost of printing all the documents	Saves about 2500tk
		Time consuming and hectic	All the papers will be checked in the OALMS	Saves about 4/5 hours
4.	Submission of request for NOC	Time consuming	Submit the request for NOC via OALMS	Saves almost 3days of the process
		Loss of records	The decision will be recorded on the OALMS with backup so there is no chance of misunderstandings and lost in formation	Saves the money of the papers needed for documenting which is about 2500tk
5.	Eligibility checking	Loss of recorded data	The OALMS will check the eligibility and record everything on the system	Cost for documenting data which is about 2500tk will be saved
		Time consuming	OALMS will take the least amount of time needed to check eligibility	Saves almost 7 days.
		Check duplicate application	The OALMS will check for duplicate applications which	The extra pare needed to documenting and

			will ensure that there is no mistake	the time of going through all the documents manually will be saved
6.	Due Diligence	Time consuming and costly	The forms will be available in OALMS	Files saved manually can be lost and takes time to search and also costs money
		Data loss	Received documents will be saved in the system	Tracking the due diligence information and will be easy and error free
7.	Institutional Clearance and documentation for loan	Loss of information	Information will be saved in OALMS with backup	The time of re-checking in case of missing information which is about 2/3 hours
		Extra cost		Saves transport cost which is about 450 tk. The system will be able to save 1/3 of the working hour which will save 8000 tk to 15000tk depending on the employee

8.	Loan Decision	Time consuming	Revise and update the application date and all the information in OALMS	Saves about 4 days
		Lose record	Record the decision with backup	Cost of papers for documenting and time will be saved. 250 tk per record book.
9	Submitting application form and Checking eligibility of the applicants	Expensive	Submit the form on OALMS	Saves the time and cost of going to the office to submit form. Transport cost:450 tk Time:1/2 hour; depending on the distance
		Time Consuming	Submit the form on OALMS	The automated system speeds up the whole process and helps to avoid traffic jam.
10.	Registration of Participating Distributor(PD)	Expensive	Register online via OALMS	Saves the money for printing the registration forms which is about 45000 tk
		Time consuming	Register online via OALMS	Saves the time and cost of going to the

				office to submit form. Transport cost:450 tk Time:1/2 hour; depending on the distance
		Data Loss	Save the required data in the system with backup	Easy to find any information and ensure everything is fine
11.	Reporting and checking sales record	Lack of Communication	Report and check sales record on OALMS	IFIs will be up to date
		Costly	Checking everything online will reduce paperwork	Saves around 2500tk per case Which was needed for manual documentation
12.	Fund transfer request	Expensive	Fill up the request form on OALMS	Saves the printing cost of the form (10 tk per form) and transport cost (450tk) too.
		Time Consuming	PD and IFI both will be able to access the documents on OALMS	The time (1/2 hour/s) and cost (450tk) of going one from office to another.
13.	Request for Advance Payment Option(APO)	Expensive	Fill up the request form on OALMS	Saves the printing cost of the form (10 tk per form) and transport cost

				(450tk) too
		Safety of record book or file	Save the required data in the system with backup with security and not storing any sensitive data on OALMS	Documents will be safely recorded saving the time of redoing all the process in case of data loss
		Time Consuming	PD and IFI both will be able to access the documents on OALMS	The time (1/2 hour/s) and cost (450tk) of going one from office to another.

TABLE 06: EXISTING AND PROPOSED SYSTEM ANALYSIS

SL	Process	Existing						Proposed					
		Human	Non-Computing Hardware	Computing Hardware	Software	Database	Communication and	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Communication and
1	Preparation	PIU Secretariat (IFIs): Provide The project's overview, application forms and contact details	Pen, Paper	N/A	N/A	N/A	N/A	PIU (IFIs): Upload Project Overview and Contact Information	N/A	Desktop/Laptop	Browser, OALMS	Server	Internet
2	Receiving loan applications	<ul style="list-style-type: none"> Proponent: Submit the application form Officer In Charge (IFIs) : 	Pen, Papers include: <ul style="list-style-type: none"> Financial 	N/A	N/A	N/A	N/A	Proponent: Fill up and Submit Application form and other	N/A	Desktop/Laptop	Browser, OALMS	Server	Internet

		Ask the proponent to prepare Financial Pre-screening Application Form, Technical Pre-screening Application Form, Financial Statements and Credit Rating Report and fixing a meeting date	<ul style="list-style-type: none"> state-ments Cred- it Rat- ing Re- port 					documents, Register for Technol- ogy Equipment and loan amount. Officer In Charge (IFIs): Review Applica- tion form and other documents and Notify Meeting date.					
3	Prelimi-	• Officer In	Pen,	N/A	N/A	N/A	N/	Officer In	N/A	Desk-	Bro	Serv-	In-

	nary eligibility checking	Charge (IFIs) : Conduct preliminary eligibility checking • Manager(IFIs): Approve or Decline the checking result, consult SREDA employee and provide preliminary comments if required	Papers include: ▪ Eligibility Check Sheet				A	Charge(IFIs): Clarify equipment code (category) for eligibility checking Manager (IFIs): Check and analyze result. Giving Approval for further process on OALMS.		top/Lap top	wse r, OA LM S	er	ter- net
4	Name Clearance	• Officer In Charge (IFIs) :	Pen, Papers	N/A	N/A	N/A	N/ A	Officer In Charge	N/A	Desk- top/Lap	Bro wse	Serv- er	In- ter-

		<p>Check the items in the Name Clearance Evaluation Sheet</p> <ul style="list-style-type: none"> Conduct the Name Clearance Evaluation and register the evaluation result using Name Clearance Evaluation Sheet Manager(IFIs) : Approve or Decline the case 	<p>include:</p> <ul style="list-style-type: none"> CIB Re- port Cred- it Rat- ing report Fi- nan- cial State- ment <p>Name Clearance Evalua- tion Sheet</p>				<p>(IFIs):</p> <p>justify Name Clearance Evaluation sheet in System, Register Evaluation result and Submit it on OALMS</p> <p>Manager (IFIs):</p> <p>Check and analyze result. Giving Approval</p>		top	r, OA LM S		net
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		<ul style="list-style-type: none"> PIU Secretariat(IFIs) : Define decision body and proceed to institutional clearance, Approve or Decline the case institutionally <p>Register the decision result and consult IFIs for any delay</p>						for further process in OALMS. PIU: Classify Application for Institutional Decision in the system					
5	Submit Request to SREDA for NOC	<ul style="list-style-type: none"> Officer In Charge (IFIs): Check for new cases that has completed Institutional 	<p>Pen, Papers include:</p> <ul style="list-style-type: none"> Two sets of equip 	N/A	N/A	N/A	N/A	Officer In Charge (IFIs): Verify new cases and update	N/A	Desktop/Laptop	Browser, OALMS	Server	Internet

		<p>Clearance</p> <ul style="list-style-type: none"> • Manager (IFIs): Input necessary Information from Technical Pre-screening Application Form, reflect revisions and updates • Sub-project proponent: Submit two sets of equipment catalogues • SREDA: Check NOC request from IFIs, Receive 	<p>ment cata- lo- gues</p> <ul style="list-style-type: none"> ▪ Original Copy of Technical Pre-screening Application Form ▪ Record the deci- 					<p>Revised Information and documents on OALMS, Notify Proponent about result.</p> <p>Manager (IFIs): Verify Documents and Send Request for NOC to SREDA on OALMS. Proponent:</p>					
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		documents, Physically forward and register the date SREDA: Ensure that there is no duplicate application, Check for Precedent cases, Inquire about additional information of equipment, Register the result of evaluation with reasoning, Receive official signature on NOC draft or rejection letter, Dispatch the	sion Draft of NOC or Rejection letter					Upload Two sets of Equipment Catalog. SREDA: Check notification and verify documents there is no duplicate application on OALMS, check eligibility and Register Result on OALMS					
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								and Generate NOC or send rejection notifica- tion.					
6	Forwarding NOC or Rejection letter to proponent	<ul style="list-style-type: none"> Officer In Charge (IFIs): Forward the NOC or rejection letter to the Sub Project Proponent, Close the rejected case 	Pen, Papers include: Original copy of NOC or rejection letter	N/A	N/A	N/A	N/A	Officer In Charge (IFIs): Check notification and confirma- tion result from SREDA on OALMS, Bypass NOC or send	N/A	Desk- top/Lap top	Bro wse r, OA LM S	Serv- er	In- ter- net

								rejection message to proponent. Proponent : Download NOC From OALMS					
7	Due Diligence	<ul style="list-style-type: none"> Officer In Charge (IFIs): Choose the type of due diligence on Due Diligence Type check sheet Ask Sub Project Proponent to 	Pen, Papers include: <ul style="list-style-type: none"> Due Dili- gence Type check sheet Required docu- ments	N/A	N/A	N/A	N/A	Officer In Charge (IFIs) : Create Due diligence Check sheet on OALMS and Give access to proponent	N/A	Desk- top/Lap top, Scan- ner Ma- chine	Bro wse r, OA LM S	Serv- er	In- ter- net

		<p>prepare the documents indicated in Required Document Check Sheet, Register the received date of documents, Conduct off site and on-site due diligence, Register the completion of Due Diligence</p> <ul style="list-style-type: none"> • Sub Project Proponent: Prepare and send documents indicated in 	check sheet					<p>another form to upload require documents for registration.</p> <p>Proponent : Fill up the due diligence form and Submit it, Upload asking Documents on OALMS for</p>					
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		<p>required document check sheet</p> <p>SREDA</p> <p>Employee: Check Due Diligence Status and consult with IFIs for any delay</p>						<p>registration</p> <p>Manager : Confirm Registration for after Reviewing Documents on OALMS</p>					
8	Loan Decision	<p>■ Manager (IFIs) : Prepare documents (General Due Diligence, Simple Due Diligence, Loan Terms), Update and revise</p>	<p>Pen, Papers include:</p> <ul style="list-style-type: none"> ■ Credit report ■ Loan decision sheet ■ Loan term 	N/A	N/A	N/A	N/A	<p>Officer In Charge(IFIs):</p> <p>Generate Credit Report, Loan Decision sheet, Loan Term</p>	N/A	Desk-top/Laptop	Browser, OALMS	Server	Internet

		<p>application data</p> <ul style="list-style-type: none"> Officer In Charge (IFIs): Report to the approving body of completion of loan decision, Notify rejection to Sub Project Proponent PIU Secretariat(IFIs) : Proceed to Approve or Decline the application institutionally, Register the 	<p>sheet</p> <ul style="list-style-type: none"> Credit rating rate by Bangladesh bank Rejection/ Approval Letter Record the decision 					<p>Sheet, Upload Credit Rating Grade By Bangladesh Bank and CIB Report</p> <p>PIU secretariat : Review the necessary documents on OALMS and After approval Proceed with the institu-</p>					
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		date and decision Officer In Charge (SREDA) : Check loan decision status and consult with IFIs for any delay						tional decision Manager: After Reviewing Clarify all documents and Give Approval or Suspend Confirmation on OALMS.					
9	Documentation for loan	<ul style="list-style-type: none"> Officer In Charge (IFIs): Draft loan documents, Negotiate with sub project proponent, 	Pen, Papers include: <ul style="list-style-type: none"> Loan documents Contract Paper	N/A	N/A	N/A	N/A	Officer in Charger (IFI): Send Precondition terms and Condition	N/A	Desk-top/Laptop	Browser, OALMS	Server	Internet

		<p>sign the contract and register the date of contract, Revise the equipment category and loan amount if necessary</p> <p>Sub Project</p> <p>Proponent: Sign the Contract</p>						<p>form to Proponent for confirmation on OALMS and fix a meeting date.</p> <p>Manager : Review and Sign Loan Contact and give Confirmation on OALMS</p> <p>PIU</p>					
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								Secretariat: Register and Revised necessary documents loan amount and contact date on OALMS.					
10	Disburse- ment	<ul style="list-style-type: none"> Officer In Charge (IFIs): Ask the sub-project owner to open L/C account, Negotiate on disbursement details, Check if the 	Pen, Papers include: <ul style="list-style-type: none"> D o c u m e n t s o f L/ 	N/A	N/A	N/A	N/A	Officer In Charge : Send Message to Proponent to Open L/C account on OALMS, Suggest	N/A	Desk- top/Lap top	Bro wse r, OA LM S	Serv- er	In- ter- net

		<p>pre- conditions of disbursement are fulfilled, Trans- fer money</p> <ul style="list-style-type: none"> ▪ Sub Project Proponent: Open L/C account, ▪ Agree on disbursement details, Receive money 	<p>C ac c o u nt</p> <p>Docu- ments of negotia- tion</p>					<p>Certain Bank list, Report Proponent after Debited money on L/C Account</p> <p>Proponent: Open L/C account and Update Bank Account Informa- tion on OALMS.</p> <p>Manager:</p>					
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								Review all disbursement Successfully checked and Approved date Registration.					
11	Checking Repayment Status	<ul style="list-style-type: none"> Sub Project Proponent: Open repayment account within IFI, Remit the repayment 	Pen, Papers include: Financial Report Form (Ongoing Sub-Project	N/A	N/A	N/A	N/A	Proponent: Open Repayment Account, Update repayment account informa-	N/A	Desk-top/Lap top, Scan-ner Ma-chine	Bro wse r, OA LM S	Serv-er	In-ter-net

		<p>money</p> <ul style="list-style-type: none"> Officer In Charge (IFIs): Check if the repayment account is open, Direct the sub-project owner's bank and IFIs bank, Check the remittance status monthly and follow up with any delay <p>Monitor the repayment status and submit to JICA on quarterly basis, Report to</p>	Summary and Financial Report Form)					<p>tion and Upload Repayment status on OALMS</p> <p>Officer In Charge: Generate Remittance Report Monthly and monitor repayment status.</p>					
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		the manager about the repayment status on monthly basis											
12	Participating Distributor (PD) Selection and Appointment	<ul style="list-style-type: none"> PIU Secretariat (IFIs): Formulate PD selection committee and agree on the selection and appointment rules by discussing, Send Published invitation letter to PDs and receive the application, Check the 	Pen, Papers include: <ul style="list-style-type: none"> Application form Eligibility Criteria for PDs PDs List Form 	N/A	N/A	N/A	N/A	<i>PIU Secretariat:</i> <ul style="list-style-type: none"> -Formulate PD selection committee for B-type loan and give updates to SREDA about appointment -Receive applica- 	N/A	Desk-top/Lap top	Browser, Email	Server	Internet

		<p>eligibility on Eligibility Criteria for PDs and inform result to PDs and SREDA, register the PD's on a PD List Form</p> <p>PDs: Send the application to IFIs, Notified about the selection result, Sign the Participating Agreement and get registered</p> <p>■ Manager (IFIs): Sign the</p>						<p>tions and <i>check for appropriate Annex 21</i></p> <p>-Give outcomes to PDs and SREDA</p> <p>Participating Distributor(PD):submit application form on online</p> <p>Manager: Allow the agreement of participants</p> <p>.</p>					
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		participation agreement. SREDA: Informed and notified about the PD selection committee and selection result												
13	Loan Payments to PDs (Reimbursement Option)	<ul style="list-style-type: none"> PDs: Agreement with EE&C of home appliance purchase who meets the required report sales, Inspect the record on monthly basis, Install of EE&C home appliances, 	Pen, Record Book, Papers include: <ul style="list-style-type: none"> Sales, Installation and Inspection Record Form (Common to both APO 	N/A	N/A	N/A	N/A	Officer in Charge for Component (PD): Covenant with EE&C of home appliance purchase and required report sales,	N/A	Desktop/Laptop	Browser, Email	Server	Internet	Server

		<p>Request for fund transfer</p> <ul style="list-style-type: none"> Officer in Charge (IFIs): Periodically observer sales, installation and inspection record, Check fund transfer request and record the fund transfer <p>Manager: Approve or reject fund transfer</p>	and RO) Request Form					<p>installation and inspection record based on monthly basis.</p> <p>Officer in Charge for Component (IFI): Overlook recent installation and inspection record.</p> <p>Manager: Justify f or further</p>						
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								fund						
14	Approving a PD for APO	<ul style="list-style-type: none"> PDs: Request for APO is send to IFIs, Acknowledge decision result PIU Secretariat: Proceed for institutional approval., Inform decision to PD and record 	Pen, Papers include: APO Application	N/A	N/A	N/A	N/A	Officer in Charge for Component :Appeal for APO that send to IFIs PIU Secretariat: update decision result to PD and submit record on OALMS	N/A	Desk-top/Lap top	Browser, OALMS	Server	Internet	Server
15	Advance Payment Procedure	<ul style="list-style-type: none"> PDs: Procurement document of 	Pen, Papers include: Applica-	N/A	N/A	N/A	N/A	Office in Charge for component	N/A	Desk-top/Lap top	Browser	Server	Internet	

		EE&C	tion				(PD):						
		• Home appliances along with shipping documents, letter of PD's bank attn. IFIs and advance payment of Application Form for Advance Payment Option is submitted on monthly basis.	Form for Advance Payment Option				-Propose document of EE&C along with shipping documents, letter of PDS bank attn. IFIs and advance payment of Annex 26 (based on monthly basis)				,Em ail		
		Receive approved Fund transfer					-Accept Funds by IFIs(de-						
		• Officer In					pends on						

OALMS
(Online Automated Loan Management System)

Group 2

		<p>Charge(IFIs):</p> <p>Check for fund transfer request,</p> <p>Transfer approved fund and record amount and date</p> <p>Manage (IFIS):</p> <p>Approve or reject fund transfer request</p>						<p>approval or rejection)</p> <p>Manager:</p> <p>Justify f or further fund</p>						
16	Sales Record Keeping	<ul style="list-style-type: none"> PDs: Check EE&C home appliance sales status, Record 	Sales, In-stalla-tion and In-spec-tion	N/A	N/A	N/A	N/A	Officer In Charge (IFIs): Verify EE&C home appliance sales status	N/A	Desk-top/Lap-top	Bro wse r, OA LM S	Serv-er	In-ter-net	

		sales details and install EE&C home appliances according to the down-payment.	Record Form (Common to both APO and RO)					and fix EE&C according to down-payment.					
17	Adjustment against APO	<ul style="list-style-type: none"> PDs: Regular update of Installation Reporting Form on Sales, Installation and Inspection Record Form (Common to both APO and RO) and 	<ul style="list-style-type: none"> Pen, Papers include : Sales, Installation and Inspection Re- 	N/A	N/A	N/A	N/A	Officer in Charge for Component : update current reporting form of Annex 27 And verify adjustment to Annex	N/A	Desktop/Laptop	Browser, OALMS	Server	Internet

		Submit adjustment request on Advance Payment Adjustment Form Officer In Charge (IFI): Check for adjustment request, Adjust fund and record date and time	cord Form (Com mon to both APO and RO) Advance Payment Adjust- ment Form					28					
18													