# 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. **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 getting 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 effort 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. **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:

1. Sustainable and Renewable Energy Development Authority (SREDA) as the administrative authority
2. Infrastructure Development Company Limited (IDCOL) as an implementing financial institution (IFI)
3. 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.

**JICA:**

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**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

**SREDA:**

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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:**

Board of Directors

Chairman (1)

Members (16)

Permanent Members (5)

Honorary Members (11)

Diagram 1: Organogram of SREDA

**IDCOL:**

****

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:**

Board of Directors

Executive Director and

Chief Executive Officer (1)

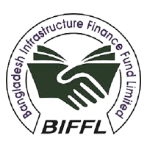
Chairman (1)

Directors

(6)

Diagram 2: Organogram of IDCOL

**BIFFL:**

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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. **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. **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:

1. Component I : Industry or commercial sector component
2. Component II: Building sector component
3. 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.

# **Requirement Analysis**

# **Table 01:**eXISTING Bussineess sYSTEM ALONG WITH sIX eLEMENTS (A-Type Loan)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl** | **Process Name** | **Human** | **Non-Computing Hardware** | **Computing Hardware** | **Software** | **Database** | **Communication and networking** |
| 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 | Proponent: Submit the application form | Pen, Papers include:   * Financial statements * Credit Rating Report | N/A | N/A | N/A | N/A |
| 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 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl** | **Process Name** | **Human** | **Non-Computing Hardware** | **Computing Hardware** | **Software** | **Database** | **Communication and networking** |
| 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 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl** | | **Process Name** | | **Human** | | **Non-Computing Hardware** | | **Computing Hardware** | | **Software** | | **Database** | | **Communication and networking** | |
| 5. | | Submit Request to SREDA for NOC | | Officer In Charge (IFIs): Check for new cases that has completed Institutional Clearance | | Pen, Papers include:   * Two sets of equipment catalogues * Original Copy of TechnicalPre-screening Application Form * Record the decision * Draft of NOC or Rejection letter | | N/A | | N/A | | N/A | | N/A | |
| 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 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 original letter to IFIs. | |
| **Sl** | | **Process Name** | | **Human** | | **Non-Computing Hardware** | | **Computing Hardware** | | **Software** | | **Database** | | **Communication and networking** | |
| 6. | | Forwarding NOC or Rejection letter to proponent | | 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 | | Pen, Papers include:   * Due Diligence Type check sheet * Required documents check sheet | | N/A | | N/A | | N/A | | N/A | |
| Ask Sub Project Proponent to prepare the documentsindicated 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 | |
| Sub Project Proponent: Prepare and send documents indicated in required document check sheet | |
| SREDA Employee: Check Due Diligence Status and consult with IFIs for any delay | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl** | **Process Name** | **Human** | **Non-Computing Hardware** | **Computing Hardware** | **Software** | **Database** | **Communication and networking** |
| 8. | Loan Decision | Manager (IFIs) : Prepare documents (General Due Diligence, Simple Due Diligence, Loan Terms), Update and revise application data | Pen, Papers include:   * 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 |
| 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 date and decision |
| Officer In Charge (SREDA) : Check loan decision status and consult with IFIs for any delay |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl** | **Process Name** | **Human** | **Non-Computing Hardware** | **Computing Hardware** | **Software** | **Database** | **Communication and networking** |
| 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:   * 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:   * 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 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl** | **Process Name** | **Human** | **Non-Computing Hardware** | **Computing Hardware** | **Software** | **Database** | **Communication and networking** |
| 11. | Checking Repayment Status | Sub Project Proponent: Open repayment account within IFI,Remit the repayment money | Pen, Papers include:   * Financial Report Form (Ongoing Sub-Project Summary and Financial Report Form) | N/A | N/A | N/A | N/A |
| 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 delayMonitor the repayment status and submit to JICA on quarterly basis, Report to the manager about the repayment status on monthly basis |

**Table 02:**eXISTING Bussineess sYSTEM ALONG WITH sIX eLEMENTS (A-Type Loan

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl** | **Process Name** | **Human** | **Non-Computing Hardware** | **Computing Hardware** | **Software** | **Database** | **Communication 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 registered | Pen, Papers include:   * Application form * Eligibility Criteria for PDs * PDs List Form | N/A | N/A | N/A | N/A |
| 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:   * 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, | Pen, Papers include:   * APO Application | N/A | N/A | N/A | N/A |
| Acknowledge decision result |
| PIU Secretariat: Proceed for institutional approval., Inform decision to PD and record |
| 15. | Advance Payment Procedure | PDs: Procurement document of EE&C | Pen, Papers include:   * Application Form for Advance Payment Option |  |  |  |  |
| 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 Charge(IFIs): Check for fund transfer request, Transfer approved fund and record amount and date |
| Manage (IFIS): Approve or reject fund transfer request |
| 16. | Sales Record Keeping | PDs: Check EE&C home appliance sales status, Record sales detailsand install EE&C home appliances according to the down- payment. | * Sales, Installation and Inspection Record Form (Common to both APO and RO) |  |  |  |  |
| 17. | Adjustment against APO | PPDs: Regular update of Installation Reporting Form onSales, Installation and Inspection Record Form (Common to both APO and RO) and Submit adjustment request on Advance Payment Adjustment Form | Pen, Papers include:   * 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\*10=2500tk | 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 books=250\*10=2500tk. | papers might be lost |
| 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  Officer’s Salary 20000-25000 tk Per hour 25000-3000  We can save 1/3 of working hour  So we can save 6000-8000 tk  Manager’s Salary 35000-53000 tk  Per hour 4000-8000 tk  We can save 1/3 of working hour  So we can save 8000-14000 tk | Cost of paper,extra charge of workers |
| 8 | Loan Decision | Time consuming | More than 4 days | Time consuming for revise and updating the application date |
| Lose record | Record book 250tk  10 record books=250\*10=2500tk. | 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 |
|  | 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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl** | **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 will ensure that there is no mistake | The extra pare needed to documenting and 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 saves 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 id=s 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 networking** | **Human** | **Non-Computing Hardware** | **Computing Hardware** | **Software** | **Database** | **Communication and networking** |
| 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 | * Proponent: Submit the application form * 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 | Pen, Papers include:   * Financial statements * Credit Rating Report | N/A | N/A | N/A | N/A | Proponent: Fill up and Submit Application form and other documents,  Register for Technology Equipment and loan amount.  Officer In Charge (IFIs): Review Application form and other documents and Notify Meeting date. | N/A | Desktop/Laptop | Browser, OALMS | Server | Internet |
| 3 | Preliminary eligibility checking | * Officer In Charge (IFIs) : Conduct preliminary eligibility checking * Manager(IFIs): Approve or Decline the checking result, consult SREDA employee and provide preliminary comments if required | Pen, Papers include:   * Eligibility Check Sheet | N/A | N/A | N/A | N/A | Officer In Charge(IFIs): Clarify equipment code (category) for eligibility checking  Manager (IFIs): Check and analyze result. Giving Approval for further process on OALMS. | N/A | Desktop/Laptop | Browser, OALMS | Server | Internet |
| 4 | Name Clearance | * Officer In Charge (IFIs) : Check the items in the Name Clearance Evaluation Sheet * 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 | Pen, Papers include:   * CIB Report * Credit Rating report * Financial Statement   Name Clearance Evaluation Sheet | N/A | N/A | N/A | N/A | Officer In Charge (IFIs): justify Name Clearance Evaluation sheet in System, Register Evaluation result and Submit it on OALMS  Manager (IFIs): Check and analyze result. Giving Approval for further process in OALMS.  PIU: Classify Application for Institutional Decision in the system | N/A | Desktop/Laptop | Browser, OALMS | Server | Internet |
| 5 | Submit Request to SREDA for NOC | * Officer In Charge (IFIs): Check for new cases that has completed Institutional Clearance * 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 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 | Pen, Papers include:   * 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 | Officer In Charge (IFIs): Verify new cases and update Revised Information and documents on OALMS, Notify Proponent about result.  Manager (IFIs): Verify Documents and Send Request for NOC to SREDA on OALMS.  Proponent: 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 and Generate NOC or send rejection notification. | N/A | Desktop/Laptop | Browser, OALMS | Server | Internet |
| 6 | Forwarding NOC or Rejection letter to proponent | * 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 confirmation result from SREDA on OALMS, Bypass NOC or send rejection message to proponent.  Proponent : Download NOC From OALMS | N/A | Desktop/Laptop | Browser, OALMS | Server | Internet |
| 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 documentsindicated 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   * Sub Project Proponent: Prepare and send documents indicated in required document check sheet   SREDA Employee: Check Due Diligence Status and consult with IFIs for any delay | Pen, Papers include:   * Due Diligence Type check sheet   Required documents check sheet | N/A | N/A | N/A | N/A | Officer In Charge (IFIs) :  Create Due diligence Check sheet on OALMS and Give access to proponent another form to upload require documents for registration.  Proponent : Fill up the due diligence form and Submit it, Upload asking Documents on OALMS for registration  Manager : Confirm Registration for after Reviewing Documents on OALMS | N/A | Desktop/Laptop, Scanner Machine | Browser, OALMS | Server | Internet |
| 8 | Loan Decision | * Manager (IFIs) : Prepare documents (General Due Diligence, Simple Due Diligence, Loan Terms), Update and revise application data * 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 date and decision  Officer In Charge (SREDA) : Check loan decision status and consult with IFIs for any delay | Pen, Papers include:   * 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 | Officer In Charge(IFIs):  Generate Credit Report, Loan Decision sheet, Loan Term Sheet, Upload Credit Rating Grade By Bangladesh Bank and CIB Report  PIU secretariat : Review the necessary documents on OALMS and After approval Proceed with the institutional decision  Manager: After Reviewing Clarify all documents and Give Approval or Suspend Confirmation on OALMS. | N/A | Desktop/Laptop | Browser, OALMS | Server | Internet |
| 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   Sub Project Proponent: Sign the Contract | Pen, Papers include:   * Loan documents   Contract Paper | N/A | N/A | N/A | N/A | Officer in Charger (IFI): Send Precondition terms and Condition form to Proponent for confirmation on OALMS and fix a meeting date.  Manager : Review and Sign Loan Contact and give Confirmation on OALMS  PIU Secretariat: Register and Revised necessary documents loan amount and contact date on OALMS. | N/A | Desktop/Laptop | Browser, OALMS | Server | Internet |
| 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   * Sub Project Proponent: Open L/C account, * Agree on disbursement details,   Receive money | Pen, Papers include:   * Documents of L/C account   Documents of negotiation | N/A | N/A | N/A | N/A | Officer In Charge : Send Message to Proponent to Open L/C account on OALMS, Suggest Certain Bank list, Report Proponent after Debited money on L/C Account  Proponent: Open L/C account and Update Bank Account Information on OALMS.  Manager: Review all disbursement Successfully checked and Approved date Registration. | N/A | Desktop/Laptop | Browser, OALMS | Server | Internet |
| 11 | Checking Repayment Status | * Sub Project Proponent: Open repayment account within IFI,   Remit the repayment money   * 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 | Pen, Papers include:  Financial Report Form (Ongoing Sub-Project Summary and Financial Report Form) | N/A | N/A | N/A | N/A | Proponent: Open Repayment Account, Update repayment account information and Upload Repayment status on OALMS  Officer In Charge: Generate Remittance Report Monthly and monitor repayment status. | N/A | Desktop/Laptop, Scanner Machine | Browser, OALMS | Server | Internet |
| 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 registered   * Manager (IFIs): Sign the participation agreement.   SREDA: Informed and notified about the PD selection committee and selection result | Pen, Papers include:   * Application form * Eligibility Criteria for PDs * PDs List Form | N/A | N/A | N/A | N/A | *PIU Secretariat:*  -Formulate PD selection committee for B-type loan and give updates to SREDA about appointment  -Receive applications and *check for appropriate Annex 21*  -Give outcomes to PDs and SREDA  Participating Distributor(PD):submit application form on online  Manager: Allow the agreement of participants  . | N/A | Desktop/Laptop | Browser, Email | Server | Internet |
| 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 * 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 | Pen, Record Book, Papers include:   * 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 for Component (PD): Covenant with EE&C of home appliance purchase and required report sales, installation and inspection record based on monthly basis.  Officer in Charge for Component (IFI): Overlook recent installation and inspection record.  Manager: Justify f or further fund | N/A | Desktop/Laptop | Browser, Email | Server | Internet | Server | Internet | |
| 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 | 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 | Desktop/Laptop | Browser, OALMS | Server | Internet | Server | | Internet | |
| 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 Charge(IFIs): Check for fund transfer request, Transfer approved fund and record amount and date   Manage (IFIS): Approve or reject fund transfer request | Pen, Papers include:  Application Form for Advance Payment Option | N/A | N/A | N/A | N/A | Office in Charge for component (PD):  -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)  -Accept Funds by IFIs(depends on approval or rejection )  Manager: Justify f or further fund | N/A | Desktop/Laptop | Browser ,Email | Server | Internet |
| 16 | Sales Record Keeping | * PDs: Check EE&C home appliance sales status, Record sales details and install EE&C home appliances according to the down- payment. | Sales, Installation and Inspection Record Form (Common to both APO and RO) | N/A | N/A | N/A | N/A | Officer In Charge (IFIs):  Verify EE&C home appliance sales status and fix EE&C according to down- payment. | N/A | Desktop/Laptop | Browser, OALMS | Server | Internet |
| 17 | Adjustment against APO | * PDs: 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   Officer In Charge (IFI): Check for adjustment request, Adjust fund and record date and time | Pen, Papers include:   * Sales, Installation and Inspection Record Form (Common to both APO and RO)   Advance Payment Adjustment Form | 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 28 | N/A | Desktop/Laptop | Browser, OALMS | Server | Internet |
| 18 |  |  |  |  |  |  |  |  |  |  |  |  |  |