Funding Proposal

FP150: Promoting private sector investment through large scale adoption of energy saving technologies and equipment for Textile and Readymade Garment (RMG) sectors of Bangladesh

Bangladesh | Infrastructure Development Company Limited (IDCOL) | Decision B.27/01

9 December 2020

GREEN CLIMATE FUND

Funding Proposal

Project/Programme title:	***Promoting private sector investment through large scale adoption of energy saving technologies and equipment for Textile and Readymade Garment (RMG) sectors of Bangladesh***
Country(ies):	*Bangladesh*
Accredited Entity:	*Infrastructure Development Company Limited (IDCOL)*
Date of first submission:	*2020/01/23*
Date of current submission	*2020/10/18*
Version number	*V.04*

GREEN CLIMATE FUND

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Note to Accredited Entities on the use of the funding proposal template

- Accredited Entities should provide summary information in the proposal with cross-reference to annexes such as feasibility studies, gender action plan, term sheet, etc.
- Accredited Entities should ensure that annexes provided are consistent with the details provided in the funding proposal. Updates to the funding proposal and/or annexes must be reflected in all relevant documents.
- The total number of pages for the funding proposal (excluding annexes) **should not exceed 60**. Proposals exceeding the prescribed length will not be assessed within the usual service standard time.
- The recommended font is Arial, size 11.
- Under the GCF Information Disclosure Policy, project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Accredited Entities are asked to fill out information on disclosure in section G.4.

Please submit the completed proposal to:

fundingproposal@gcfund.org

Please use the following name convention for the file name:

"FP-[Accredited Entity Short Name]-[Country/Region]-[YYYY/MM/DD]"

A. PROJECT/PROGRAMME SUMMARY

A.1. Project or programme	Programme	**A.2. Public or private sector**	Private
A.3. Request for Proposals (RFP)	Not applicable Not applicable		
A.4. Result area(s)	Mitigation: Reduced emissions from: ☐ Energy access and power generation: — GCF contribution: Enter number% ☐ Low-emission transport: — Enter number% ☒ Buildings, cities, industries and appliances: — 100% ☐ Forestry and land use: — Enter number% Adaptation: Increased resilience of: ☐ Most vulnerable people, communities and regions: — Enter number% ☐ Health and well-being, and food and water security: — Enter number% ☐ Infrastructure and built environment: — Enter number% ☐ Ecosystem and ecosystem services: — Enter number%		
A.5. Expected mitigation impact	*14.53 million t CO2eq*	**A.6. Expected adaptation impact**	Not applicable Not applicable
A.7. Total financing (GCF + co-finance)	340.50 million USD	**A.9. Project size**	Medium (Upto USD 250 million) As per GCF policy, each sub-project will be within the IDCOL accreditation scope.
A.8. Total GCF funding requested	256.48 million USD		
A.10. Financial instrument(s) requested for the GCF funding	*Mark all that apply and provide total amounts. The sum of all total amounts should be consistent with A.8.* ☒ Grant 6.48 million; ☒ Loan 250 million; ☐ Guarantee Enter number ☐ Equity Enter number; ☐ Results-based payment Enter number		
A.11. Implementation period	*12 years ; considering last disbursement for any sub-project loan under this programme will take place at Year 12 as per project implementation timetable*	**A.12. Total lifespan**	*21 Years*
A.13. Expected date of AE internal approval	Within 03 months after signing of FAA.	**A.14. ESS category**	B
A.15. Has this FP been submitted as a CN before?	Yes ☒ No ☐	**A.16. Has Readiness or PPF support been used to prepare this FP?**	Yes ☒ No ☐
A.17. Is this FP included in the entity work programme?	Yes ☒ No ☐	**A.18. Is this FP included in the country programme?**	Yes ☒ No ☐
A.19. Complementarity and coherence	Yes ☒ No ☐		

A.20. Executing Entity information	Component 1, 2 & 4 : AE i.e.Infrastructure Development Company Limited (IDCOL) is also the EE Component 3: Local Financial Institution (LFIs) will be the EEs namely- South East Bank Limited, City Bank Limited, BRAC Bank Limited and IDLC Finance Limited or any other eligible LFIs as per selection criteria. IDCOL may also be the EE in some cases when it lends directly to the RMG manufacturers. Component 5: Infrastructure Development Company Limited (IDCOL) as EE. Sustainable Renewable Energy Development Authority (SREDA), GoB will be the Implementing Partner for this component and a beneficiary, although not an EE.

A.21. Executive summary (max. 750 words, approximately 1.5 pages)

CO_2 emissions per capita of Bangladesh increased from 0.18 metric tons in 1997 to 0.47 metric tons in 2014, having an average annual growth rate of 6%.[1] The rising trend is a ramification of current economic growth due to industrial expansion. In order to support the present industrial and economic growth, energy production is soaring in the country, causing a higher fossil fuel emission[2].

The industrial sector in Bangladesh accounts for 47.8% [3] of the commercial energy consumption, predominantly in the form of natural gas and electricity. Among this the textile sector is the second largest energy consuming industrial sub-sector with 12.40%[4] consumption after Garment sector (15.40%). The GoB's Energy Efficiency and Conservation Master Plan states that manufacturing industries in Bangladesh are not efficient in energy use because of continuous usage of old/ mal-maintained machines and poor energy management. The impetus towards efficient end use of energy in the industrial sector is lagging mostly due to inadequate financial incentives and lack of technical expertise. If the current industrial energy intensity persists then considering the economic growth outlook in the medium to long term, it can be assured that GoB will face difficulties to manage the rising energy demand, and subsequently achieve GHG emission reduction targets under the UN Paris climate accord.

Hence, the proposed programme aims to support business establishments in the textile and RMG sector with financial and market resources to avail investment opportunities for energy saving technology upgrades. The intervention will create a favorable market environment and scalable business model for investment in energy efficiency improvements, leading to sizeable energy savings and accompanying with greenhouse gas (GHG) emissions reductions. It will substantially contribute to achieving Bangladesh's Nationally Determined Contribution (NDC); i.e. 15% GHG emission reduction compared to the Business-As-Usual scenario by 2030 with international support, under the Paris Agreement. Furthermore, the program also contributes to the GoB target to achieve 10% of energy consumption reduction in the industry sector by 2030 and 20% improved energy intensity by 2030.
Overall the proposed program will comprise an integrated package of concessional financing for textile & RMG borrowers, and technical assistance for creation of enabling environment by covering areas such as capacity building, awareness, support in loan disbursal and monitoring and evaluation of the program parameters. The Programme comprises of five interrelated and closely coordinated components:

[1] https://data.worldbank.org/indicator/EN.ATM.CO2E.PC?locations=BD
[2] https://tradingeconomics.com/bangladesh/fossil-fuel-energy-consumption-percent-of-total-wb-data.html
[3] Energy Efficiency and Conservation Master Plan up to 2030 by SREDA, Power Division
[4] Energy Efficiency and Conservation Master Plan up to 2030 by SREDA, Power Division

- **Component 1:** ***USD 133.00 million financing for Energy Saving Equipment & Technology for Textile sector***
- **Component 2:** ***USD 3.05 million GCF Technical Assistance (TA) to develop enabling environment for EE investment in textile sector***
- **Component 3:** ***USD 200.00 million financing for Energy Saving Equipment & Technology for RMG sector***
- **Component 4:** ***USD 2.30 million GCF Technical Assistance (TA) to develop enabling environment for EE investment in RMG sector***
- **Component 5:** ***USD 1.15 million GCF Technical Assistance (TA) to strengthen regulatory & institutional framework at the national level to overcome the operational constraints related to implementing EE&C in the country***

In case of Component 1, 2 & 4: IDCOL will be the Executing Entity for Component 1, 2 & 4. Under Component 1, IDCOL will make GCF funds available in the form of concessional loans to the end borrower who are in this case the private textile manufacturing entities. The end borrower will seek disbursements from IDCOL in both USD and BDT for energy efficient equipment & technology in line with the capacity proposed to be deployed every year over the programme implementation period. Under Component 2, IDCOL will also be responsible for execution of activities under Technical Assistance (TA).
Just like component 2, component 04 will be executed by IDCOL which consists of activities proposed as Technical Assistance to promote access to information & resources and to build capacity for successful implementation of Component 03 to bring about a systemic change in the RMG sector.

In case of Component 3, IDCOL will channelize funds from GCF in the form of loan, to the Executing Entities (EEs) i.e. LFIs viz. BRAC Bank, City Bank, South East Bank and IDLC or any other eligible LFIs as per selection criteria to reach the ultimate end borrowers who are in this case the private garments manufacturing entities. In some instances, IDCOL will lend directly to the RMG manufacturers. The Accredited Entity (AE), IDCOL will receive fund from GCF and channel it to Executing Entities (EEs). The EEs will seek disbursements from IDCOL for energy efficient equipment & technology according to their loan application pipeline every year over the program implementation period. The transaction throughout the channel will be in USD.

Component 05: This component will address the policy level issues for creation of enabling environment for energy efficiency financing of the country. It will target to strengthen regulatory & institutional framework at the national level to overcome the operational constraints related to implementing EE&C in the country. Sustainable and Renewable Energy Development Authority (SREDA) under Ministry of Power, Energy & Mineral Resources, GoB, will be the implementing partner of this component.

Under Component 01 and 03, GCF funding in the form of concessional senior loans will support the end borrowers of textile and RMG sector respectively, by deploying a credit line to ensure that long term concessional financing is available in the market to overcome the barriers of high up-front costs, and longer payback periods, to promote private sector investment in EE equipment. Even though the implementation modality and the addressed sectors of Component 01 and 03 will be different as mentioned above, but the overall objective will be the same which is to progress investment opportunities for energy saving technology

upgrades in the country. Furthermore, GCF non-reimbursable resources (technical assistance), comprising under Component 02 and 04 aims to improve market perception about energy efficiency and provide support to the relevant stakeholders at all stages of implementing energy efficient measures. It is envisaged to create an interface between energy efficiency equipment suppliers or manufacturers and the decision makers behind the investment for energy efficiency i.e. Textile & RMG end borrowers, thereby helping disseminate the information related to energy efficiency and resolve any queries that the unit owners may have. Policy makers will also be apprised the barriers to implementing energy efficiency measures and provide guidance in developing enabling policies, regulations to help overcome these barriers. It is envisaged that without such enabling activities, a concessional line of financing would not help in generating interest among the stakeholders in undertaking energy efficiency measures. Also, given that the energy efficiency market in Bangladesh is in its infancy, such support activities would be critical to enable market transformation and galvanize the equipment procurement decisions of Textile & RMG units. Hence, the TA is viewed to be a critical component to ensure greater uptake of energy efficiency measures during the programme duration in the two sectors, as well as ensure sustainability of energy efficiency market for both the sector beyond the programme duration.

The programme overall is expected to reduce or avoid about 14.53 MtCO2eq of GHG emission reductions over the lifetime of the investments in both the sectors. The programme is first of its kind for the country considering specific focus on mitigation thorough energy efficiency of two largest energy intensive industries i.e. textile & RMG. The other ongoing and past programmes on EE have a broader focus targeting various energy intensive industries of the country. The paradigm shift potential for the proposed programme lies in the project's focus on overcoming technical & financial barriers for the private sector (including the Local Financial Institutions), by providing know-how & capacity building and finally by creating an enabling environment to promote EE&C investments in textile and RMG sector of Bangladesh. Nationwide impact will also be achieved by implementing component 05, by Government owned institution SREDA, to strengthen regulatory & institutional framework at the national level to overcome the operational constraints related to implementing EE&C in the country.

B. PROJECT/PROGRAMME INFORMATION

B.1. Climate rationale and context (max. 1000 words, approximately 2 pages)

Climate rationale: Describe the climate change problem the proposal is expected to address. Describe the mitigation needs (GHG emissions profile) and/or adaptation needs (climate hazards and associates risks based on impacts, exposure, and vulnerabilities) that the proposed interventions are expected to address.

Climate rationale:

Global warming is the most alarming phenomenon of the present time and to combat it, it is high time to take all possible measures in every sector. Bangladesh submitted its INDC to the United Nations Framework Convention on Climate Change (UNFCCC) in September 2015. Bangladesh ratified the Paris Agreement on 21 September 2016 and its NDC can now be found on the UNFCCC's interim NDC Registry[5]. Bangladesh's NDC describes its plans for tackling greenhouse gas (GHG) emissions through a progressive approach to developing its economy on a low carbon pathway. In the NDC, Bangladesh committed to reduce GHG emissions in the power, industry and transport sectors by 5% below 'business-as-usual' GHG emissions by 2030 using only domestic resources, or by 15% below 'business-as-usual' GHG emissions by 2030 if sufficient and appropriate support is received from developed countries.

Energy consumption, especially in the industrial sector is a significant factor for the GHG emissions which makes it imperative to help in the adoption of environment friendly practices by the industries on a priority basis. In Bangladesh, the industry sector accounts for 47.8%[6] of the commercial energy demand, predominantly in the form of natural gas and electricity. However, as per GoB's Energy Efficiency & Conservation Master Plan 2030, most of this commercial energy is inefficiently consumed and utilised for economic activities. Implementation of energy efficiency and conservation (EE&C) measures within the industrial sector can help reduce the energy consumption in the sector by 30%. This is exemplified by the diagram below which gives the break-up of energy consumption in various industrial sub-sectors under business-as-usual (BAU) scenario and an EE&C scenario which take in to account maximum energy efficiency potential for the industrial sector7:

[5] https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Bangladesh%20First/INDC_2015_of_Bangladesh.pdf

[6] Bangladesh's EE&C Master Plan 2030 (March 2015)

[7] Source: Energy Efficiency and Conservation Master Plan up to 2030 (JICA website, 2015)

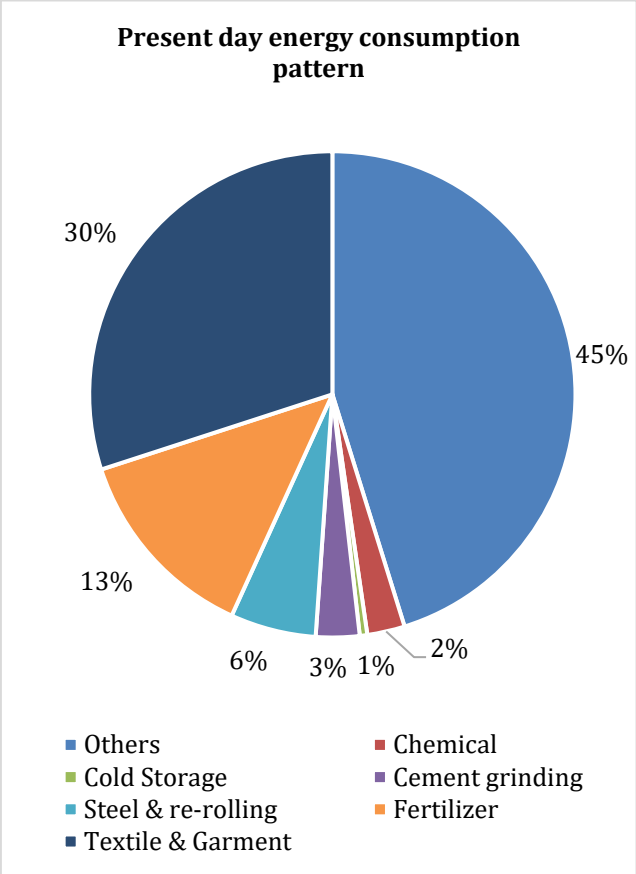


Figure 1: Energy consumption pattern under baseline scenario

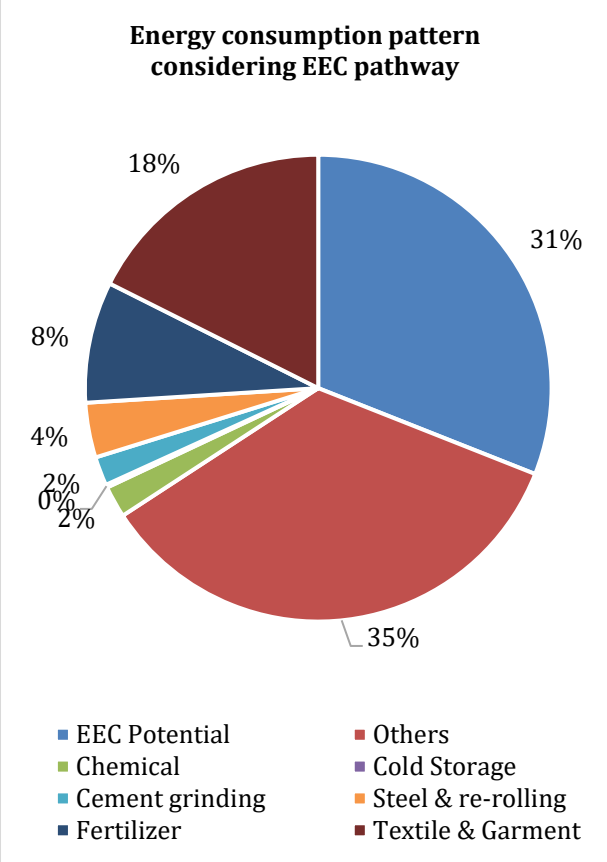


Figure 2: Energy consumption under EE&C scenario

While the energy savings opportunity is present across the various industrial sub-sectors, the Textile and RMG sector in particular provides substantial scope of savings. The textile and RMG sectors combined accounts for approximately 27.80% of the energy consumption in the industrial sector.

The RMG sector being the most energy intensive consumes 15.4% and textile sector being the second most energy intensive consumes 12.4%[8] of the total industrial energy demand (1,701 kTOE/year).

[8] SREDA Energy Balance 2016-17

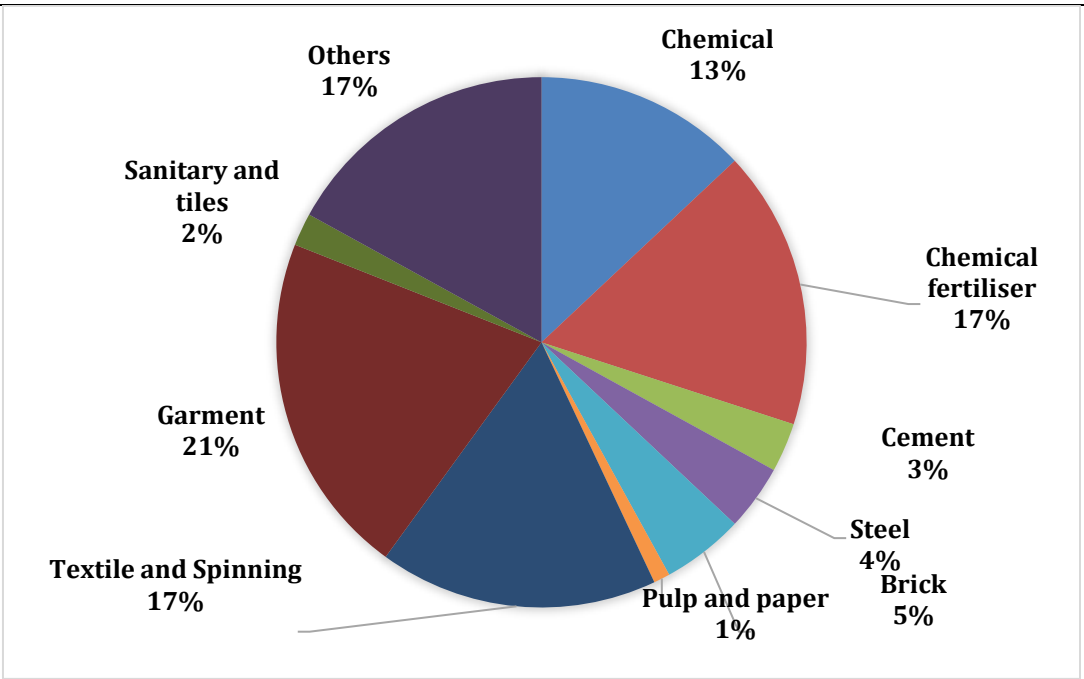


Figure 3: Energy consumption by sectors (source: SREDA energy balance 2016-17)

The feasibility study conducted for the textile sector suggests, the larger textile units are typically 10 to 15% more energy efficient than the 'small and medium' units with efficiency being as high as 50% in some cases. Hence, under Component 01, IDCOL based on successful due diligence may consider financing a segment of small and medium units as part of the programme.

The RMG sector also showed similar trend, in terms of energy efficiency, small factories having small-scale investment are more oriented towards increasing revenues and short-term profits, rather than undertaking initiatives which will help improve productivity and increase profits in the long run. Expenses on energy efficiency is seen as an additional financial burden and is rarely undertaken. Therefore, under Component 03, IDCOL will encourage the LFIs (Executing Entities) to increase awareness among the RMG unit through consultation and to create access to concessional finance for small and medium units on its successful due diligence.

The proposed programme aims to support entrepreneurs and business establishments in the textile and RMG sector, with financial and market resources to avail investment opportunities for energy saving technology upgrades. The programme will create a favorable market environment and scalable business model for investment in energy efficiency improvements, leading to sizeable energy savings and accompanying greenhouse gas (GHG) emissions reductions of 14.53 million tCO_2 over the 20-year lifetime of the project investments.

Also describe the most likely scenario (prevailing conditions or other alternative) that would remain or continue in the absence of the proposed interventions. Include baseline information. The methodologies used to derive the climate rationale should be included in the feasibility study.

Snapshot of Textile Industry in Bangladesh

The modern story of the growth of textile industry in Bangladesh starts with the establishment of the Bangladesh Textile Mills Corporation (BTMC) on March 26, 1972 set up with the point of observing, planning and controlling the exercises of nationalized factories of Bangladesh and building up and growing new enterprises. BTMC began its formal program with 74 nationalized factories from 1 July, 1972.

In addition to BTMC, Bangladesh Textile Mills Association (BTMA) is the prime national trade organization representing Yarn, Fabric Manufacturers and Textile Product Processors mills of the country under private sector and private sectors are registered under BTMA. BTMA has been registered in 1983 and at present, 1476 Member Mills are now listed under BTMA.

Table 1: Composition of Bangladesh's textile sector[9]

Types of Factory	Numbers	Installed Capacity	Annual Capacity
Yarn Manufacturing Mills	430	Spindles 13.17 Million Rotors 0.231 Million	2943 Million Kgs
Fabric Manufacturing Mills	802	Shuttle-less Loom & Shuttle Loom: 52169 Million	3707 Million Mtrs.
Dyeing-Printing-Finishing Mills	244	N/A	Fabric Processing: 3448 Million Mtrs Woven Dyeing: 2480 Million Mtrs Yarn Dyeing: 396 Million Kgs Knit Dyeing: 572 Million Kgs
Total	**1476**		

Textile industries are the one of the fastest growing and amongst the most important industries of Bangladesh and contributes to a significant portion of the nation's economy, employment and global profile. Textile sector contributes more than 13% of Bangladesh's GDP while also supporting 86% of the country's export in the form of the final clothing/garment (from Textiles & Textile related products[10]), which is a testament to the huge importance of the sector in the country's growth. The export of clothing/garment in Bangladesh based on the textile production has increased from USD 24 bn to USD 33 billion from 2014-2019 with an average annual growth of ~8%.

Even though textile sector is a growing industry in Bangladesh, however it is still not self-sufficient in terms of serving the demand of the local garments sector. The local textile millers can meet 85 percent of the demand from the knitwear sector and 35 percent from the woven sector, according to data from the BTMA. Bangladesh needs USD 1.17 billion additional investments in the primary textile sector to reduce its import dependence for fabrics for the export-oriented garment sector[11].

The industry (along with the garment industry) is one of the largest employers in the country, generating more than 65% of the country's industrial employment and employing over 4 million. Out of this a significant proportion of employees is women, with textile and garment overall having around equal number of men and women employed but textile in particular has around 20-30% female employment according to the feasibility study. Thus any improvement in the conditions in this sector will play an important role in the

[9] http://www.btmadhaka.com/wp-content/uploads/2019/01/Basic-Data-of-BTMA-2018.pdf
[10] Ibid
[11] https://www.thedailystar.net/business/news/textile-sector-needs-tk-10000cr-investment-1700014

gender empowerment as well. In general, the state of the textile industry impacts indirectly the well-being of 10-12 million people in Bangladesh[12].

Textile sector energy baseline

Energy in the textile industry is mostly used in the forms of electricity, as a common power source for machinery, cooling and temperature control systems, lighting, office equipment, etc.; diesel oil as a fuel for boilers which generate steam; liquefied petroleum gas; coal; and natural gas.
A breakdown of the processes is done to study the various process deployed in textile units and examine energy consumed in each process.

Table 2: Break down of processes in textile units

Spinning	Weaving	Knitting	Dyeing and drying
•Yarn Fabrication •Blending •Cleaning, carding and combing	•Drawing •Roving •Twisting and Spinning	•Starching and Chemical treatment for tensile strength	•Chemical treatment and coloring •Drying and steaming

Each of the listed processes are energy consuming. The textile units comprise a large number of machines which together consume a significant amount of energy from the grid, diesel and natural gas.

The energy consumption for each process of the sub processes is presented in the graph below.

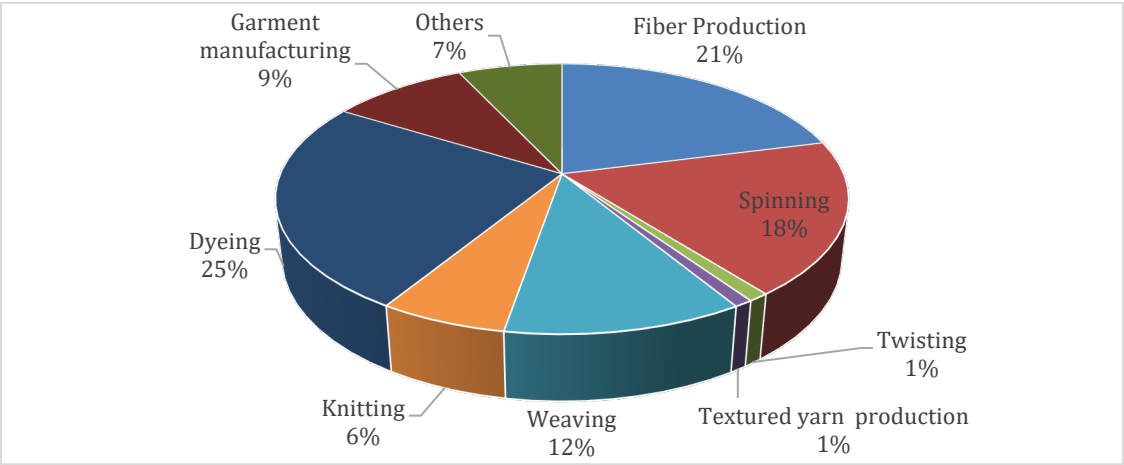


Figure 4: Energy consumption per deployed process in textile units

Feasibility study shows that spinning and weaving are quite energy intensive. However, largest share of energy is consumed in dyeing and drying which uses energy for boiling, cooling and steaming of water.

[12] Ibid (6)

EE&C Master Plan for 2030, indicates in the energy blends for the textile sector that the natural gas in the highest consumed fuel in textile in comparison to other sources i.e. Grid/REB[13] and diesel remain negligible. However, the actual consumption of electricity from Grid is 92 toe/annum and that of natural gas is 1,586 toe/annum[14].Some of the small yarn producing textile units solely rely on electricity from the REB. As the feasibility study conducted under the PPF also include the non-registered small units, the energy blend ratio is a representation of the actual scenario.

The feasibility study[15] indicates that a number of small and medium units utilizes diesel and oils which isn't registered in national statistics while natural gas continue to be the most consumed out of the rest of the energy sources. Figure 02 compares the energy mix indicated in SREDA's Energy Efficiency and Conservation Master Plan 2030, prepared in 2015 with the data identified during the feasibility study of this programme. Even though Natural Gas remains the dominant source of energy but its share has declined by almost 22%, whereas diesel share has increased by 2440 % and share of grid electricity has declined by 75%. This indicates that the textile industry is increasing its carbon footprint (diesel has highest emission factor) in order to maximize production with the available and affordable sources of energy and thus energy efficiency transformation of the sector becomes imperative.

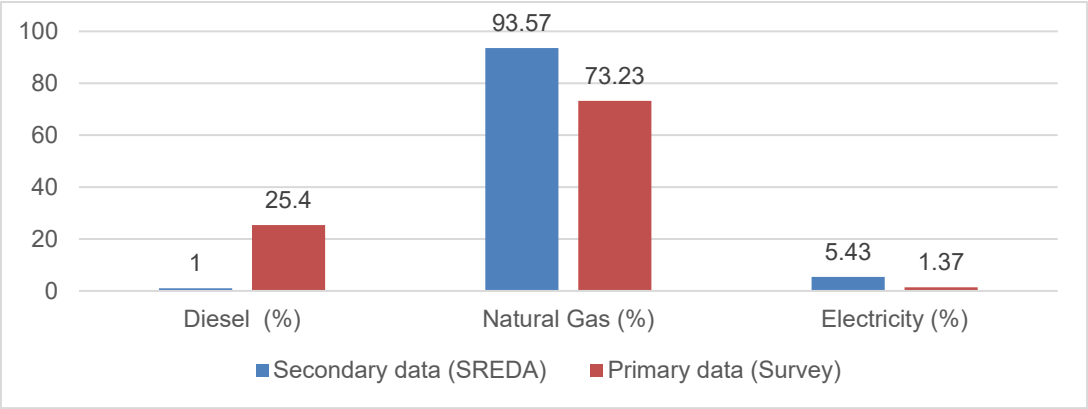


Figure 5: Comparative analysis of energy blends as emerged from National statistics and Survey conducted

Growth of Textile sector and GHG emission:

As of 2018, Bangladesh holds second place [16]after China in apparel export. The expansion of the textile industry in Bangladesh is conceivable mainly due to cheaper labor. However, others factors are also closely linked, such as supportive business conditions, freightage facilities, and so on. There are organizations such as the Bangladesh Textile Mills Association (BTMA), Bangladesh Garment Manufacturers and Exporters Association (BGMEA) and Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA) which focus on reinforcing and promoting the entire apparel industry sector. They take measures including ensuring an amicable atmosphere for business, educating the laborers, making an effort for the betterment of the laborers' social compliance, and building relationships among the concerned stakeholders, with the focus of

[13] Rural Electrification Board
[14] Energy Efficiency and Conservation Master Plan up to 2030 (http://sreda.gov.bd/files/EEC_Master_Plan_SREDA.pdf)
[15] Annex ……
[16] RMG Sector towards a Thriving Future.The Daily Star. 2 February 2016. Available online: https://www.thedailystar.net/supplements/25th-anniversary-special-part-2/rmg-sector-towards-thriving-future-210886 (accessed on 10 October 2018).

expanding the trade income of Bangladesh. The country is aiming now to achieve $50 billion in RMG exports by 2021[17]. Figure 6 illustrates the yearly apparel export of Bangladesh in United States dollars (USD).

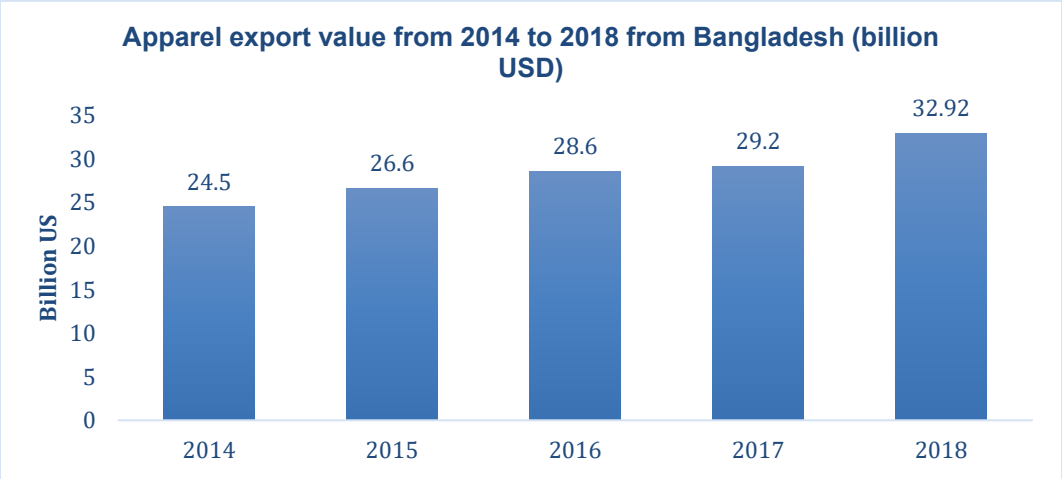


Figure 6: Yearly apparel export of Bangladesh in United States dollars (USD) from 2014-2018

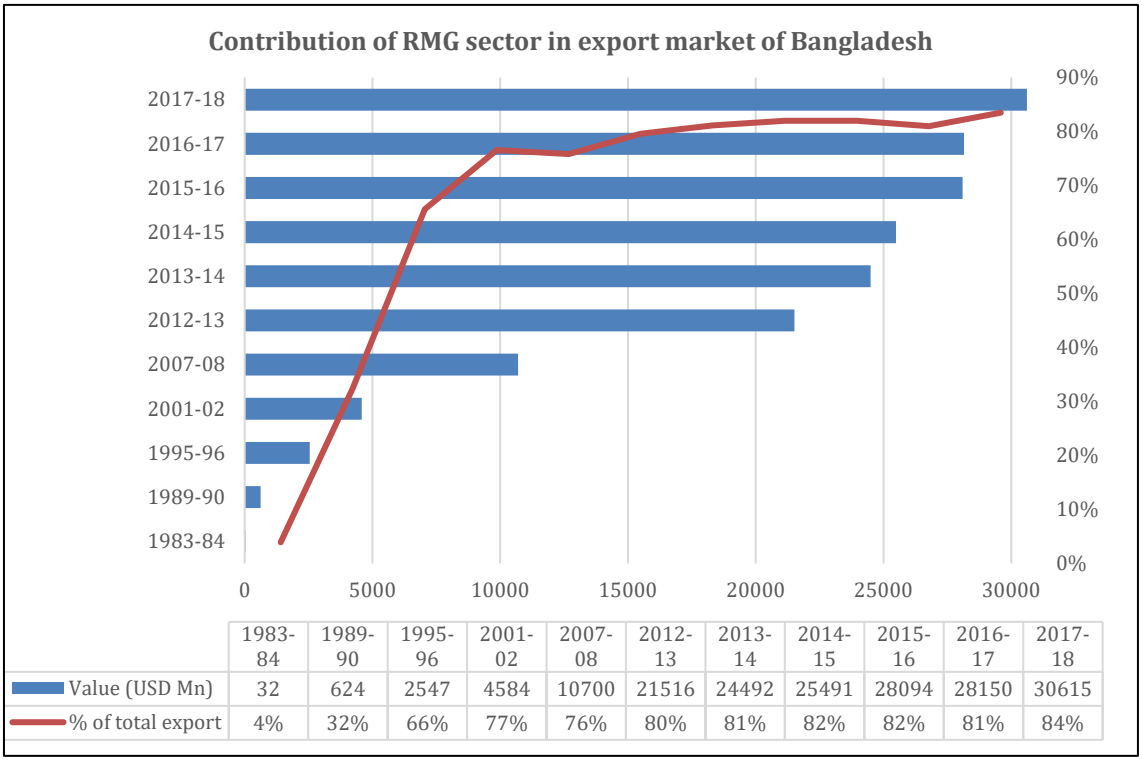
With a yearly average growth of 8% in the textile export, energy demand of this sector is exponentially rising. The historical trend analyzed in the feasibility study identified that the total industrial energy consumption (KTOE) is progressing at a CAGR of 8%, which is mainly driven by the rise in the energy demand in the textile sector. In such case improved energy efficiency will play a critical role, along with sustainable energy, thereby minimizing the anthropogenic greenhouse gas (GHG) emission by the industry as a major energy user.

Snapshot of RMG Industry in Bangladesh

The roots of the RMG sector in Bangladesh, lies in late 1970s with the success of garment manufacturers in catering to export market. The sector gradually became fragmented and formation and institutionalization of the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), one of the largest trade associations in the country, in 1983 helped in structuring the sector and increase its contribution to the country's economy, as well as ensure all legitimate rights and privileges of the garment workers leading to the betterment of the society and environment.

The sector, which comprises over 4500 factories, has been a leading contributor to the economy, accounting for 11% of the country's GDP in 2017-18[18]. It is the largest exporting industry in Bangladesh and has experienced phenomenal growth over the last three decades – contribution in total export increased from 4% in 1983-84 to 84% in 2017-18[2], amounting to USD 30.62 billion. The sector has witnessed a growth of nearly 7.3% CAGR in last 5 years i.e. 2013 to 2018.

[17] Finance Division, Ministry of Finance-Government of the People's Republic of Bangladesh. Available online: https://mof.gov.bd/ (accessed on 15 October 2018).
[18] Source: Statement by BGMEA (Textile Today, 2019)



	1983-84	1989-90	1995-96	2001-02	2007-08	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Value (USD Mn)	32	624	2547	4584	10700	21516	24492	25491	28094	28150	30615
% of total export	4%	32%	66%	77%	76%	80%	81%	82%	82%	81%	84%

Figure 7: Bangladesh RMG sector export contribution

While the sector continues in its growth trajectory, there are a number of hurdles in the horizon which need to be overcome to reach USD 50 billion export by 2021 set by the national body for garments manufacturers in Bangladesh - Bangladesh Garment Manufacturers and Exporters Association (BGMEA). These impediments include rising energy costs, increasing worker wages, low worker productivity, graduation from LDC status of Bangladesh and increased demand of sustainable production practices from customers.

The sector plays a key role in employment generation and in the provision of income to the poor – it employs nearly 4.4 million workers[19]. The sector has also played a significant role in the socio-economic development of the country with women comprising nearly 80% of the total workforce in the sector[20]. It also plays a pivotal role to promote the development of linkage small scale industries, since 99% of the accessories like dyeing, printing, zippers, labels are manufactured in Bangladesh[21]. This had helped open up employment opportunities through indirect economic activities, thereby contributing to the country's overall socio-economic development, woman empowerment and poverty alleviation.

[19] Source: Information disseminated by BGMEA
[20] Source: Statement by BGMEA President (BGMEA website, 2019)
[21] Source: As per presentation provided by BGMEA representative

RMG Sector Energy Baseline

The garments sector combined accounts for about 15% of total energy consumption in Industry sector of Bangladesh i.e. 2107kTOE/yr[22] which translates to 7.5% of the country's total emissions i.e. 6.7 $MtCO_2$ approximately. The energy is consumed in a set of production processes which include fabric production (only in case of weaving, knitting), design, pattern production, grading, fabric relaxing, marking, spreading, laying, cutting, sewing, wet processing, spot cleaning/laundry, fusing, pressing and packaging. Based on the end products, the combination of processes may vary for specific units. In order to understand the energy related features of the sector, a survey of 20 units was conducted along with energy audit of 4 units. Based on the information generated from the survey, the share of energy consumed in RMG across type of process is given below:

FIG 08: ENERGY SHARE ACROSS RMG PROCESSES

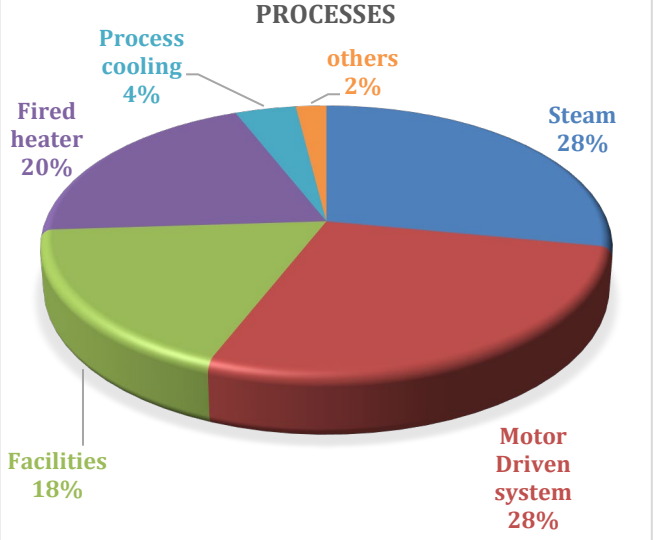
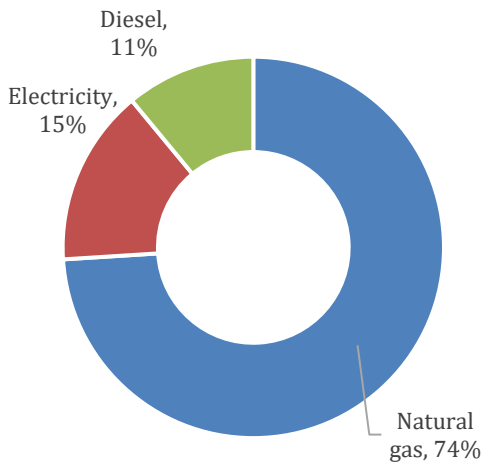


Figure 09: ENERGY MIX ACROSS RMG SECTOR



The energy consumption in the sector is skewed towards use of natural gas, with grid electricity having a minor share. Diesel is mostly used to generate electricity as a back-up and its use depends on non-availability of grid electricity. As per discussions with stakeholders, small RMG units use diesel generators to fulfil power needs. In large units, there are captive natural-gas power plants that supply electricity. While natural gas is used in its primary form as boiler fuel, diesel is almost exclusively used for backup (in most cases) or primary power generation.

In order to enhance the understanding of on-ground realities of RMG sector in Bangladesh and assess energy efficiency opportunities in the context of Bangladesh RMG sector, a series of walkthrough audit and

[22] Source: Information derived from EE & Conservation Master Plan upto 2030 (DANIDA, 2017)

detailed energy audit had been undertaken. Energy survey was conducted in a total of 20 units, while detailed energy audit conducted in 4 units. The findings from the studies as well as audits have been presented below.

In order to provide the idea of the manufacturing of RMG products, a brief description of production processes of a standard RMG unit has been explained.

Figure 10: Flow-chart of the manufacturing processes in RMG sector

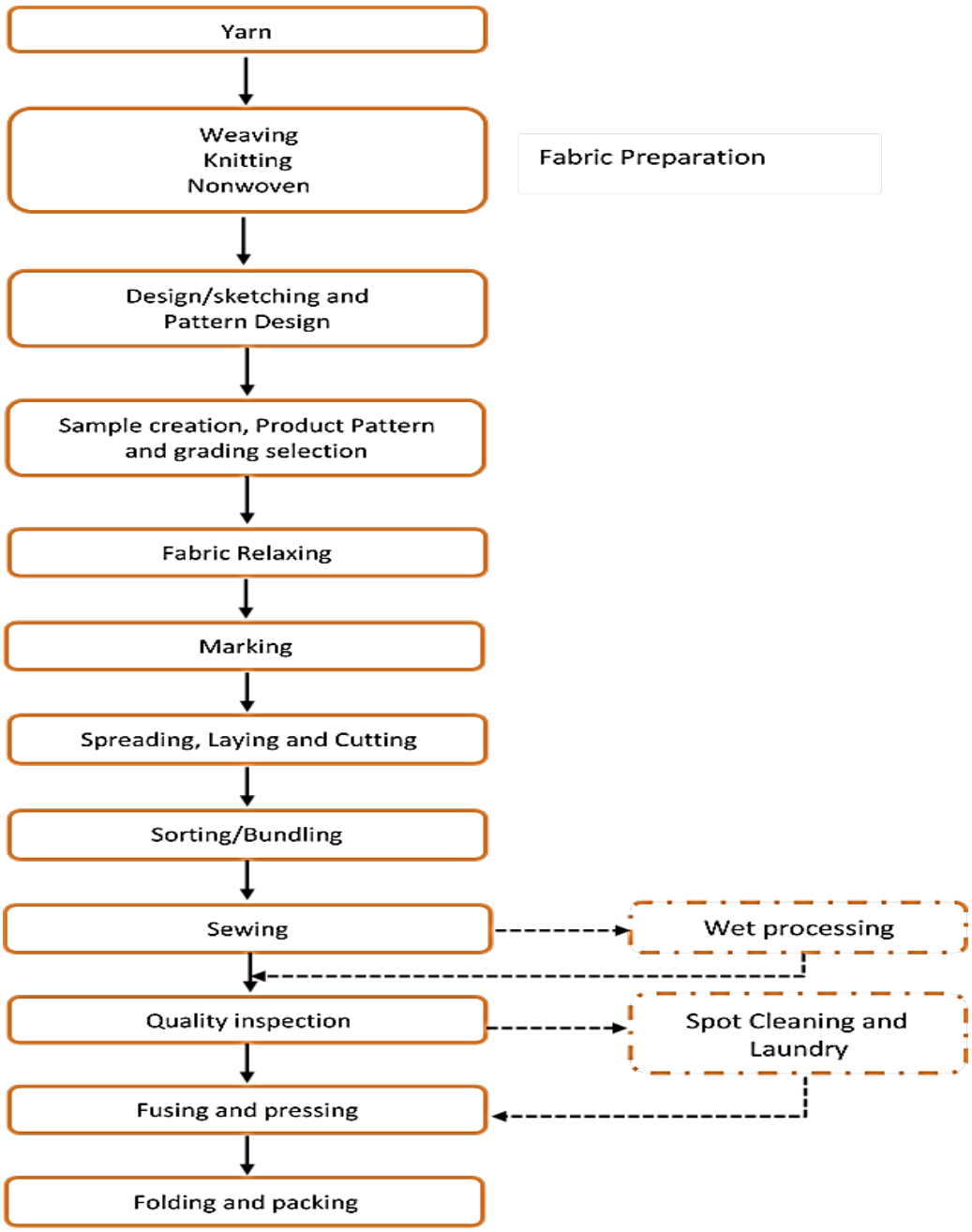


Table 03: Brief Description of RMG unit Processes

Operation	Process description	Method
Fabric production	• **Weaving:** Involves interlacing two or more yarn systems crosswise and vertically. Woven textiles are used in all textile sectors (apparel, home textiles, and technical textiles). On the weaving machine (loom) the weft yarn is inserted into the lengthwise-oriented warp yarns (shed). • **Knitting:** In knitting, fabric is formed by interlocking or intermeshing loops of one or more sets of yarns. Knitting is performed using one of two processes: weft or warp knitting. Each of these processes is done on several different types of machines. • **Nonwovens:** Fabrics made of fibers without intermediate yarn processing are called nonwovens. Nonwovens are essentially sheet or web structures made by bonding and/or interlocking fibers, yarns, or filaments using mechanical, thermal, chemical bond, or solvent means.	Automatic/ manual
Design/sketch	• First step to manufacturing involves designing the product containing measurement defining a particular style	Automatic/ manual
Pattern design	• A sample pattern is prepared based out of the style concept developed from design/sketch. • Pattern provides the design template on the basis of which multiple iterations of a particular style will be produced.	Automatic/ manual
Sample	• A sample garment is produced from the first pattern to analyze pattern fit and design by a panel of designers, pattern makers and sewing specialists. • Any modifications, if required, are incorporated in the pattern	Manual
Production Pattern	• Pattern design is used for creating production patterns which will be used for mass production.	Automatic/ manual
Grading	• Patterns are created based on all (S M L XL XXL or size 10, 12, 14, 16) or else there are standard patterns of and so on for different figure and sizes.	Automatic/ manual

Fabric Relaxing	• "Relaxing" refers to the process that allows the material to relax and contract prior to being manufactured. • Relaxing process allows fabrics to shrink so that further shrinkage during customer use is minimized.	Automatic/ manual
Marking	• Marker making is the process to sketch on fabric before cutting it. • Markers are laid in such a way so that minimum possible fabric gets wasted during cutting operation	Automatic/ manual
Spreading, Laying, and Cutting	• Spreading is the process of superimposing lengths of fabric on spreading table for cutting purpose. • After successfully spreading the fabric and putting all the marks and sketch by the marker; fabric is cut according to design	Automatic/ manual
Sorting/Bundling	• Sorting of pattern shaped cloth according to size and design • Requires much precision since having bundles of mismatched patterns can create severe problems.	Manual
Sewing	• Stitching/sewing undertaken after cut pieces are bundled according to size, color and quantities determined by the sewing room.	Manual
Wet processing	• Includes de-sizing, scouring, bleaching, dyeing, printing and finishing etc. that involve adding colors to fiber, yarn, or fabric • Performed along with a variety of finishing steps that provide certain desired characteristics to the end product.	Automatic/ manual
Quality inspection	• Complete quality checking of product to assess whether it is compliant with quality requirements	Manual
Spot Cleaning and Laundry	• Spots and blemishes are often marked with a sticker and taken to a spot-cleaning area where the garment is cleaned using steam, hot water, or chemical stain removers. • Based on client requirements, some products require to be fully laundered in on-site laundry or with subcontract agreements with off-site laundry operations. • Commercial laundry facilities are equipped with at least three types of machines: washers, spinners, and dryers. Some facilities also have the capability to perform special treatments, such as stone- or acid-washing.	Automatic/ manual

Fusing and pressing	• Finished product released by quality control goes for final pressing. • The ironing station consists of an iron and an ironing platform with steam supplied by an on-site boiler. • In most facilities, the ironing platforms are equipped with a ventilation system that draws steam through the ironing table and exhausts it outside the factory.	Automatic/ manual
Folding and packing	• The finished garments are then folded in a specific dimension, sometimes using a template. • The price tags, hang hags and any other kind of tags are attached to garment after folding. • Different types of packing accessories are used to keep the garment in a desired shape.	Manual

The figure 11 below provided the breakdown of the final energy use in the garments industry as per the walkthrough survey:

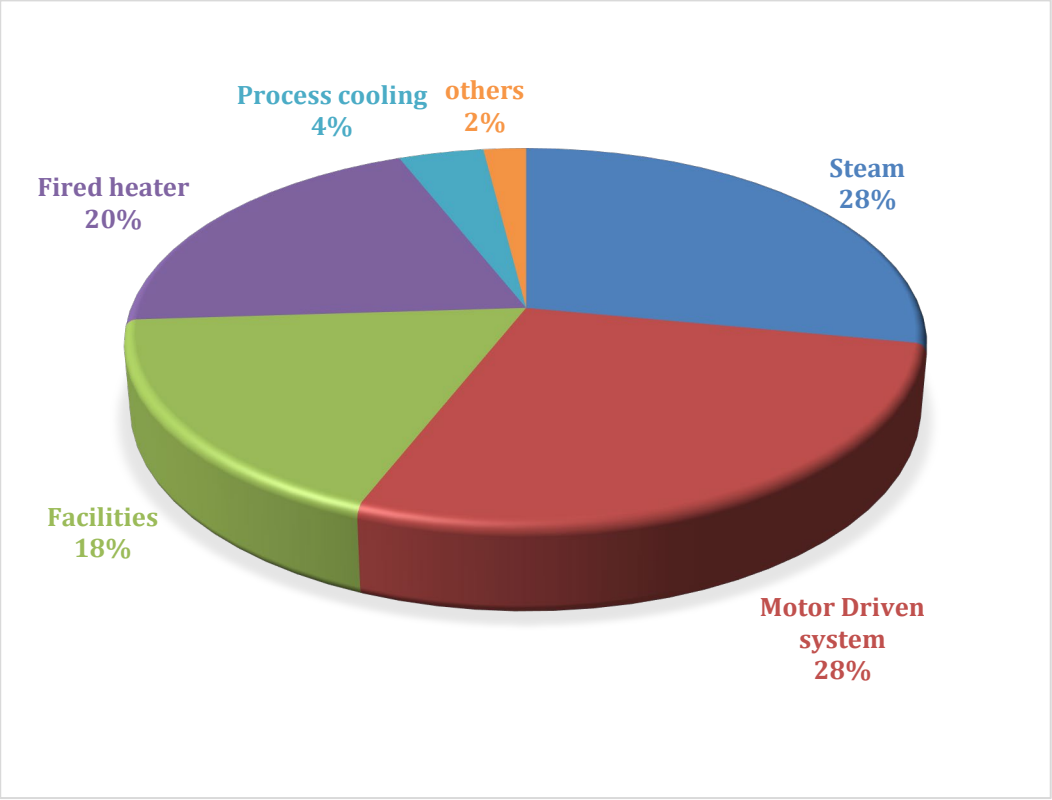


Figure 11: Process wise share of energy consumption in RMG industry

Growth of RMG sector and GHG emission:

Tracking historic growth of the sector for the past 5 years reveals a CAGR of 7.5%. Even though the market is experiencing pressure in generating profits due to high input costs (rising energy, material and labour costs), increased compliance cost, high financing rate, the demand for fast fashion items, which can help in

sustained growth in the sector. While onset of COVID-19 will definitely impede growth in near future, demand in the medium and long term is expected to increase and the sector shall continue its growth trajectory.

Given such a situation, GHG emission will also increase with increased production levels. Given current level of penetration of energy efficient equipment, which is negligible, it is expected that emissions growth will follow a similar trajectory, witnessing a growth of about 7% CAGR in next five years. Thus, increasing penetration of energy efficient equipment would be a key method of stemming the growth of emissions for the sector.

Financial Market baseline for EE&C:

There are several loan facilities for energy efficiency and conservation promotion, however higher lending interest rate and the time required for appraisal have hampered smooth implementation of loan projects. In this context, both minimizing the time for loan procedure through simplification of loan application and speedy appraisal and development of loan having concessional low interest rate and loan scheme will promote energy efficiency and conservation in Bangladesh further.

In Bangladesh progress with industrial energy efficiency has been slow. This situation is expected to prevail with the current market and technical challenges. Hence, interventions in the proposed program aims to increase the rate of adoption of energy efficient machineries in the textile and RMG sectors, which has 25%-30% of energy saving potential[23].

Considering the high cost of changing machinery process optimization is more preferable to the concerned stakeholders. However, the replacement of new machinery can be financially justifiable via low interest loan so that total payment amount for energy efficient equipment (equipment cost and financial cost) break even with acquiring conventional equipment.

The programme will result in a real and visible paradigm shift in the textile and RMG sector of Bangladesh and advance it towards low-carbon sustainable development by limiting the country's GHG emissions, as specifically recommended in the Nationally Determined Contribution 2015, the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) and Energy Efficiency and Conservation Master Plan (EE&C Master Plan) 2030. The programme is expected to result in direct emission reductions of 0.727 tCO2e annually by facilitating and scaling-up investment in energy efficiency improvements. However, gradually the annual emission reduction amount will increase as the energy mix will contain greater share of coal and oil, as domestic natural gas production is declining.

Context: In describing the mitigation and/or adaptation needs, briefly describe the target region/area of the proposed interventions including information on the demographics, economy, topography, etc.

The Bangladesh economy continues to perform well with robust and stable growth. The strong growth comes with stable inflation, moderate public debt, and greater resilience to external shocks. The country continues to make steady progress in reducing poverty and improving social indicators.

Real GDP growth in FY18 (ending June 30) further accelerated to 7.86 percent from 7.28 percent in the previous fiscal year, led by strong private consumption and investment. The current account turned into a deficit with slower export growth, higher imports, and decline in remittances, while the balance of payments

[23] Source: Bangladesh: Industrial Energy Efficiency Program (ADB website, 2014)

remained in small surplus. The debt-to-GDP ratio has remained stable at around 30 percent with the fiscal deficit well below the 5 percent of GDP budget target.

The macroeconomic situation is expected to remain robust in FY19. Growth is projected above 7 percent with strong domestic demand. Inflation is expected to remain below 6 percent. The current account deficit is projected to widen to close to 2 percent of GDP with stronger import demand for food, industrial raw materials, and capital machinery, while remittances and exports start to recover.

Table 4: Economic and Demographic data of Bangladesh[24]

	2017	**2018**	**2019**
Market Size and Growth			
Real GDP (Bt.B)	9,479.0	10,224.4	10,992.0
Real GDP Growth (%)	7.28	7.86	7.50
Nominal GDP ($B)	249.7	274.0	301.7
Population (M)	164.7	166.4	168.1
Population Growth (%)	1.10	1.00	1.00
GDP per Capita ($)	1,516	1,647	1,795
Unemployment Rate (%)	4.37	4.38	4.40
Macroeconomic Stability			
Current Account Balance ($B)	(6.37)	(7.84)	(8.82)
Consumer Prices Growth (%)	5.70	5.54	5.40
Budget Balance/ GDP (%)	(3.42)	(4.80)	(4.80)
External Sector			
Goods: Exports (fob) ($B)	31.39	33.72	35.81
Total Imports (cif) ($B)	47.57	55.39	58.66

In addition to this, prior to the COVID-19 pandemic, ADB reported in its 'Asian Development Outlook 2019' Bangladesh's economy is in good shape & likely to grow. Bangladesh is confident that it will surpass the 8 per cent growth threshold in the current fiscal year on the back of manufacturing and service sectors.[25]

With this expected increasing trend of economic growth & positive future outlook, apparel industry played a significant role being the largest contributor in export income for the country. Textile sector contributes more than 13% of the GDP of Bangladesh while also accounting for over 86% of the country's export (from Textiles & Textile related products), which is a testament to the huge importance of the sector in the country's growth. However, due to COVID-19 pandemic a lot of the expected economic trend of Bangladesh will change, a brief assessment of impact of COVID-19 on Textile and RMG sector is given below.

[24] S&P Global Market Intelligence
[25] https://www.thedailystar.net/country/gdp-growth-rate-of-bangladesh-2019-will-achieve-8-per-cent-adb-1724293

COVID -19 impact on the Textile and RMG industry:

As on 15th May 2020, Bangladesh has reported 20,065 confirmed cases and 298 deaths following the identification of the first imported covid-19 case on March 8th.

On March 23rd, the government declared a general holiday from March 26th to April 4th, which was extended subsequently. Government offices, private offices, and courts are closed, commercial banks are allowed to operate shorter hours. Individuals have been requested not to leave their homes except to collect daily necessities and emergency supplies, and to wear masks when outside. On 10 April, The Bangladesh Garment Manufacturers and Exporters Association (BGMEA) and Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA) announced in a joint statement that the readymade garment (RMG) factories would remain closed until 25 April.

Directives by the Bangladesh government stated that textile & garment factories, which supply some of the biggest brands in the world and produce 84% of the country's total exports, would be allowed to resume operations after 25th April, provided factories complies with health guidelines and maintain physical distancing.

On 13 May, it was reported that the government is likely to extend the shutdown of most private and public workplaces until 30 May.

Impact:

Beyond the domestic impact of the health crisis, the two main channels through which the Bangladesh economy will be impacted are remittances and exports of textile & apparels. Remittances represent over 5 percent of GDP ($16.4 billion in FY 19), and a majority of migrant workers are based in Gulf countries that are affected by the abrupt decline in oil prices. The textile & garment sector accounts for more than eighty percent of the country's exports. As, Bangladesh, the second-largest apparel producer after China, is set to lose roughly US $ 6 billion in export revenue this financial year amid cancellations from some of the world's largest brands and retailers due to Covid-19 outbreak, shared by Bangladesh Knitwear Manufacturers and Exporters Association (BKMEA) Vice President Mohammad Hatem. The industry has been hit by the cancellation or postponement of several billion US dollars in orders from major retailers in importing countries, although top global apparel brands announced on April 1st that they would receive shipments of goods already produced. The decline in national and global demand for manufactured goods, particularly in the garment sector, risks creating unemployment and deepen poverty. The urban poor will be hardest hit while the number of additional poor will be higher in rural areas. The extent of the impact of the pandemic will depend on the duration of the crisis and the mitigation measures taken.

There have been 3 distinct phases, which charts the impact of COVID in textile & particularly RMG sector of Bangladesh. A sample study of 316 RMG units by Penn State Center for Global Workers' Rights (CGWR) provides vital insight on how the COVID situation has shaped the key events for each of these phases. Details are discussed below:

1. ***Phase one – Material supply:*** With the lockdown in China, the single largest source of raw materials (Chinese fabric import accounts for 46% of total imports for RMG sector[26]), RMG units reported delays in raw material shipment or significant increase in raw material prices. This set in to motion the first phase of impacts. Delay in material receipt resulted in delay in product shipment, as a result of which multiple units received imposition of penalty by buyers. Almost all RMG units did not receive any extra payments from buyers on account of increased raw material prices.

[26] Source: Article (LightCaste Partners, 2020)

2. ***Phase two – Delayed payments:*** In the second phase, global incidence of lockdowns started affecting the bottom line of buyers, resulting in delay in payments to RMG units. RMG units were experiencing varying levels of delay, relative to contractually stipulated terms. In most cases, the delay was extended beyond a month.

3. ***Phase three – Order cancellation*****:** Further aggravation of market demand due to continued lockdown, led to cancellation of orders by buyers. While there have been reported variations in cases, mostly buyers cancelling orders have refused to pay for raw materials or production costs incurred by RMG units.

Supportive measures:

As is evident from the discussions above, the COVID pandemic has adversely impacted both demand and supply side of the textile and RMG sector in Bangladesh thereby resulting in cash crunch. National Governments like USA, India are announcing relief package as well as multi-laterals like World Bank. The latter expects to deploy USD 160 billion over the next 15 months to help countries protect the poor and vulnerable, support businesses, and bolster economic recovery[27].

While traditional markets are failing, demand for protective personal equipment has surged and prices of PPE products have risen dramatically since the beginning of the COVID-19 outbreak: a six-fold increase for surgical masks; three-fold for respirators; and a doubling in the price of gowns[28]. However, there is a supply bottleneck in the market with backlog of 4–6 months for supply orders[29]. This provides an opportunity for textile and RMG units to reposition and focus on medical protective kits. The increased demand for personal protective equipment (PPE) is expected to continue in the short to medium term i.e. 1-3 years, given the state of pandemic. Such product diversification can help RMG units to tide over the pandemic in short term.

However, product diversification will also require capital investment, production of specialized equipment requires compliance with established medical standards as well as establishing new supply chains. Given the current scenario, making such adjustments in scale would require support. While Bangladesh government has announced support for the sector, it may not be possible to revive the sectors only through Government help. Exploring financing from other sources can help provide the requisite support to the sector to tide over the short-term demand glut.

Concluding remarks:

IDCOL is seeking concessional finance from Green Climate Fund (GCF) to promote energy efficiency in the textile and RMG sector of Bangladesh. Traditionally, funding from GCF has targeted such projects that can demonstrate positive climate impact, like climate mitigation from energy efficiency. The pandemic offers a unique opportunity to GCF to extend this mandate and bundle an additional supporting financing instrument, like grant, with their traditional debt to help beneficiaries to tide over the immediate aftermath of COVID. The RMG and textile sector in Bangladesh can benefit from such a grant funding – apart from investments in energy efficiency technology, GCF can help promote business recovery in RMG factories and help them emerge stronger and more resilient from the COVID crisis.

Though the impact of covid-19 is being felt in the short run, the growth is expected to recover over the medium term. Textile and RMG industry, the main backbone of the country, is expected to overcome this crisis as a result of various measures taken by the government and support from international developmental organizations.

[27] Source: Article (World Bank, 2020)
[28] Source: Report (ADB, 2020)
[29] Source: Report (ADB, 2020)

The availability of low cost financing through the proposed GCF funded program for energy saving technology upgrades, will be considered positive and beneficial for the sectors and will add to its recovery.

Related projects/interventions: Also describe any recent or ongoing projects/interventions that are related to the proposal from other domestic or international sources of funding, such as the Global Environment Facility, Adaptation Fund, Climate Investment Funds, etc., and how they will be complemented by this project/programme (e.g. scaling up, replication, etc.). Please identify current gaps and barriers regarding recent or ongoing projects and elaborate further how this project/programme complements or addresses these.

Please identify current gaps and barriers regarding recent or ongoing projects and elaborate further how this project/programme complements or addresses these.

Energy Efficiency and Conservation Promotion Financing Schemes in Bangladesh [30]

- **Energy Efficiency Finance Program (IEEFP)**

Among the loan facility for EE&C promotion focused on industry sector in Bangladesh, Global Climate Partnership Fund (GCPF) was one of the earliest funds. GCPF which was initiated in 2011 is the loan facility aiming to extend loans to projects owners for buildings and plants improving energy efficiency by more than 20% and renewable energy project such as small-scale solar power generation, small-scale hydropower, wind power generation and biomass power generation. However, provision of GCPF loan has been limited with just one (1) project which was extended by co-financing of 2 two financial institutions. Reasons for poor achievement could be considered as follows: Firstly, higher lending rate for end-user was raised. As is shown in Table-5, lending rate in BDT denomination was set as about 12%, which is higher than term-loan rate for industry, after considering credit risk cost. Secondly, difficulty in raising fund timely is hampering factor. Financial institutions require longer time to conduct technical appraisal which takes more than 3 months. Thirdly, condition of the loan which needs to meet more than 20% conservation of energy is a big hurdle.

- **Energy Efficiency Finance Program (IEEFP)**

Asian Development Bank (ADB) initiated Industry Energy Efficiency Finance Program (IEEFP) in 2011. IEEFP covered only energy efficiency and conservation equipment while GCPF extended loan for not only energy efficiency and conservation equipment but renewable energy equipment. The team found out that IEEFP fund have comprised of technical assistance and loan facility of USD 30 million. However, it is indicated that no loan has been extended and ADB cancelled most of the fund.

- **Partnership for Clean Textile (PaCT)**[31]

IFC has been implementing “Partnership for Clean Textile (PaCT)”. PaCT is playing a leading role in driving the long-term competitiveness and environmental sustainability of the textile wet processing sector, by addressing high water, energy, and chemical use through the adoption of best practices in the textile sector. These best practices lead to declining resource e consumption, soaring profits, and an enhanced image in the global apparel market.
Outline of PaCT project is as follows: Over the years, IFC has drawn on its global and local experience and has provided a combination of investments and advisory services in Bangladesh. As of June 2018, IFC’s committed portfolio in Bangladesh is around USD 1.52 billion (IFC invested USD 800 million in 2017 and USD 1 billion in 2018 for Bangladesh Textile Sector.).
IFC is promoting sustainable growth and private sector development in Bangladesh through investing in critical infrastructure; boosting financial inclusion; enhancing textiles competitiveness and supporting reforms to make doing business easier for private sector.

[30] JICA Report & KII report
[31] Bangladesh PaCT website.
https://www.thedailystar.net/country/gdp-growth-rate-of-bangladesh-2019-will-achieve-8-per-cent-adb-1724293

However, some of the key points to be noted for the PaCT programme, are as follows:

- PaCT is Resource Efficiency Financing and not a dedicated energy efficiency financing.
- Through PaCT, IFC is playing the role of investment facilitation. It's doesn't have a dedicated credit line like other funds which are there in Bangladesh market, to promote energy efficiency in Industries. Banks and financial intermediaries (FIs) are involved in the process, they have partner bank who review the investment proposals and evaluate the costs and benefits of implementing the proposed resource efficiency projects. After the review, the bank lend customized finance to factories to invest in the resource efficiency projects.
- PaCT advocacy helped create a USD 200 million Green Transformation Fund that the Bangladeshi government uses to support low-cost financing for resource efficiency in the textile industry which is not successful primarily because of the cumbersome disbursement process.

- **Bangladesh Bank (Central Bank) Funds:**

Green Transformation Fund (GTF)

The Green Transformation Fund was established by Bangladesh Bank in 2016. The size of fund is USD 200 million and is intended to facilitate access to financing to export-oriented textile & garment products and leather goods manufacturing industries when they import capital machinery relevant to environment-friendly /green attributes such as energy efficiency, renewable and so on.

The initial lending rate to IFI was set at 3 Month Libor + 2.25% which was lowered to 3 Month Libor + 1% from August of 2017. The team estimates lending rate to end-users from IFI will reach 6-8%. So far only an estimated 10%-15% of the fund has been disbursed.

Following issues are pointed out from financial institution on GTF:

(i) Since the loan facility is USD denominated and Libor-based floating rate loan, borrowers will be affected by change of exchange rate and interest rate;
(ii) Lot of documents are requested from BB;
(iii) About half year to 1 year is spent for loan decision, and;
(iv) Completion of plant and equipment is the condition of loan disbursement.

Bangladesh Bank Re-financing Scheme[32]

The central bank launched the BDT 2 billion green banking refinance scheme in 2009 that provides loans for renewable energy and energy efficiency projects such as solar, bio-gas plants, industrial ETP (effluent treatment plant), Pet bottle recycling plants, vermicomposting, hydro power, Solar Battery recycling plants, LED bulb manufacturing plants, setting up of hybrid Hoffman kiln in brick manufacturing units under the scheme – to help reduce industrial pollution and increase power supply. The fund has been named the "solar energy, biogas and effluent treatment plant sector refinance scheme". More sectors have been brought under the green banking refinance scheme to build environment-friendly economy. Under the scheme, the central bank provides funds to financial institutions at 5% interest, which then provide loans for renewable schemes at 8 - 9 % interest. The cumulative amount refinanced under the scheme up to June, 2018 stood at BDT 3797.25 million. In FY18, total disbursement under the BB's refinance increased by 91 percent to BDT 665.47 million which was BDT 348.80 million in FY17.

[32] Bangladesh Bank website

Long Term Financing Facility (LTFF) under Financial Sector Support Project (FSSP) 33

BB intends to provide long term financing for private sector firms, mainly midsize manufacturing firms under the Financial Sector Support Project (FSSP) financed by the International Development Association (IDA). The main objective of this facility is to provide long term financing for private sector firms. The financing facility would be provided with a view to facilitate the development of economies and to promote socially and environmentally sustainable development outcomes. Estimated total fund of LTFF is USD 292.50 million (BDT 229,612.50), of which BB's contribution is USD 38.50 million (BDT 30,222.50) and IDA's contribution is USD 254.00 million (BDT 199,390.00) in FY18. This Financing would be offered for 3 to 10 years term in US dollar and provided to the PFIs authorized by BB to deal in foreign exchange on lending/refinancing to the private sector firms.

- **JICA:**

The feasibility report revealed the demand for JICA EE&CPF Project loan remains high due to its attractiveness in lower lending rate and fixed interest scheme. This high demand is reflected in the fact that the private banks approach to IDCOL, asking to participate in large plant and equipment as a loan syndication partner by financing eligible energy efficient equipment with JICA loan. The only challenge with JICA EE&CPF is that it focusses on varied sectors and hence, cannot cater the complete demand of any one of the sectors. The sector approach will help to cater the huge demand and potential of energy efficiency in the sector and will percolate deep inside the sector. The second issue with JICA EE&CPF is that the project fund size is very small as compared to the demand and potential of the entire country. The second issue with JICA EE&CPF involves the limitations in ticket size of one project (maximum BDT 100 Crore/USD 11.62 million[34]) and only one company from one group may apply for the loan under this project. This further minimizes the reach of this project across industrial sector. The last point is that, this project has a limited list of EE interventions that may be financed under this project. These limitations do not help the project to percolate deep inside any sector with an approach to bring the entire sector to world standards norms and energy intensity standards.

- **Joint Crediting Mechanism (JCM)**[35]:

The mechanism was introduced, through singing of bilateral document between Bangladesh and Japan in March 2013. The JCM facilitates diffusion of leading low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of Bangladesh. It appropriately evaluates contributions to GHG emission reductions or removals from Japan in a quantitative manner, by applying measurement, reporting and verification (MRV) methodologies, and uses them to achieve Japan's emission reduction target.

Under this scheme, Japanese and Bangladeshi participants work in close co-operation to facilitate financial, technological and capacity building support for implementation of programs which will lead to reduction of GHG emission. Under this mechanism, 3 projects have been approved out of which 2 projects are related to energy efficiency i.e. installation of high efficiency loom at weaving factory and high efficiency centrifugal chiller for AC system in clothing tag factory.

[33] Bangladesh Bank website
[34] Considering 1USD=86 BDT
[35] Source: Basic concept of Joint Crediting Mechanism (JCM, 2019)

- **Support of Safety Retrofits and Environmental Upgrades in RMG Sector of Bangladesh (SSREU/SREUP)[36]:**
  A loan fund has been constituted in March 2019 of EUR 50 million to pre-finance technical up-gradation of eligible RMG factories to improve worker safety and reduce environmental footprint. The loan fund amount is provided by AFD in the form of a 20-year subsidised sovereign loan, with a grace period of seven years. The fund is supplemented by a technical assistance component with total cost of EUR 14.29 million sponsored by EU, KfW, GIZ and Bangladesh Bank.

Under this scheme, a maximum loan amount of EUR 1 million (EUR 3 million in case of exceptional cases) with repayment period of 3-5 years (7 years under exceptional case) will be provided to the RMG owners by participating financing institutions (PFI). The maximum interest rate to the end users has been restricted to 7%, while Bangladesh Bank will on-lend to PFIs at 3.5%.

The project has a performance-based grant mechanism under which a portion of principal amount of loan is waived off (10% and 20% in case of safety remediation and environmental/social investments respectively) in case of verified achievement of targets. The breakdown of investment grants among Eligible RMG Companies and PFIs would be 90:10 i.e. 90% and 10% of the grant will be provided to RMG companies and PFIs respectively.

In case of energy efficiency projects, only those initiatives which reduces energy consumption by at least 20% over baseline scenario and exhibit an internal rate of return (IRR) on investment of 10% are eligible for funding under this scheme.

Table 05: Summary of the key EE&C financing scheme in Bangladesh

Name of Loan Facility	IFIs	Amount	Year of Establishment	Currency	Lending rate to end-user	Tenor	Eligible Areas/Sectors/Products
GCPF	City Bank & Southeast Bank	USD 30 m	2011	BDT	About 12%	5-7 years	Energy efficient equipment & Clean energy
IEEFC (ADB)	Industrial and Infrastructure Development Finance Company (IIDFC)	USD 20 m	2011	-	N.A.	N.A.	Energy efficient equipment
EECPFP (JICA)	IDCOL and BIFFL	USD 100m (JPY 11.9 billion)	2016	BDT	4-6 % (Currency fluctuation risk borne by GOB)	Short to long-term duration	Energy Efficient equipment's.

[36] Source: Circular on loan fund of SSREU (Bangladesh Bank, 2019)

ADB-Financing Brick Kiln Efficiency Improvement Project	Commercial Banks	USD 50m	2012	BDT	-	-	Applicable for Brick Manufacturers
JCM	Govt. of Japan	Project Specific	2013	-	N/A	N/A	Implementation of low carbon technologies including energy efficient technologies
SSREU/SREUP	Participating FIs	EURO 01 million	2019	-	upto 7%	3-7 years	Technical up-gradation of eligible RMG factories
Bangladesh Bank Fund							
GTF	Commercial Banks	USD 200m	2016	USD	6-8 %	5 to 10 years with 1-year grace period	Available only for capital machinery import for three selected sectors; export-oriented textiles & textiles products, leather manufacturing and jute sectors for implementing green/ environment-friendly initiatives
Refinancing Scheme for Green Products/Initiatives	Commercial Banks	USD 23.97m (BDT 2 billion)	2009	BDT	8-9 %	4 to 10 years with 3 to 12 months grace period based on products/initiatives	Available for specific 51 green products in 8 sectors. The sectors; RE, EE Technology, alternative energy/fuel, waste management, Recycling or Recyclable Goods Manufacture, Environment- friendly brick manufacturing, environment-
LTTF	Commercial Banks	USD 300 m	2015	BDT	6-9 %	3 to 10 years	Available for: a) Purchase of capital machineries and equipment for up-gradation (including improving Health and Safety compliance) b) Relocation of factories to

							designated industrial zones
IFC PaCT	Partner Banks	PACT Phase 1: USD 11 million in development assistance. IFC helped catalyze USD 39 million in additional investments in the programme's member factories. PACT Phase 2: USD 7 million in development assistance.	Phase 1: Launched in 2013 Phase 2: Launched in 2017	BDT/ USD	6-9%	3 to 10 years	Resource Efficiency Financing. The partner banks review the investment proposals and evaluate the costs and benefits of implementing the proposed resource efficiency projects. After the review, the bank lend customized finance to factories to invest in the resource efficiency projects and also provides linkage with relevant technology service providers.
	Note: IFC PACT advocacy helped create a USD 200 million Green Transformation Fund that the Bangladeshi government uses to support low-cost financing for resource efficiency in the textile industry. *IFC's Global Trade Supplier Finance (GTSF) programme also offers suppliers financial incentives to improve factories' environmental and social standards. This USD 500 million investment and advisory programme helps suppliers manage working capital, convert sales receivables to immediate cash, and access lower-cost financing.*						

As mentioned above, although there are several loan facilities for energy efficiency and conservation promotion, higher lending interest rate and the time required for appraisal have hampered smooth implementation of loan projects.

Demand for JICA EE&CPF Project loan remains high due to its attractiveness in lower lending rate and fixed interest scheme (4-6 %) and simplified loan application procedure. However, JICA is not sector focused and only covers a small part of spinning in textiles and during JICA outreach it was observed that there are many instances of textile units willing to adopt energy efficiency if similar funding is available, hence there is need for a dedicated line for textile sector.

GCF Fund is targeted for overall Textile and RMG Sectors in Bangladesh which will include spinning, weaving, knitting, dyeing, spreading, laying & cutting, sewing, wet processing, cleaning & laundry, fusing & pressing and folding & packaging, which have larger energy saving potential. In this context, fund from GCF, both minimizing the time for loan procedure through streamlining of loan application procedure and speedy appraisal as well as development of loan proceeds having concessional low interest rate and loan scheme will have catalytic effect and promote energy efficiency and conservation in Bangladesh textile and RMG sectors further.

GCF fund will have catalytic impact on energy efficiency market for Textile & RMG sectors as no dedicated fund is currently catering to energy efficiency of Textile & RMG sectors as a whole. Further, most of the

current loans are catering to larger client base whereas in this credit line a mix of smaller and larger textile clients is proposed which would open a new market for financing availability for this clientele.

Thus, GCF fund will not have crowding impact but will have market making effect on energy efficiency for textile & RMG sectors, where other fund can come later on and contribute towards energy efficiency in Textile & RMG sectors of Bangladesh which will lead to multiple benefits such as:

Production floor		
Enhanced productivity	Superior product quality and value	Competitive edge
Lower production costs (energy, labor raw material etc.)	Enhanced asset value	Increased disposable income
Operation and maintenance		
Extended life-time for plant & machinery	Reduced process / plant downtime	Deferred capital costs towards replacing plant and machinery
Working environment		
Improved thermal comfort and lighting	Increased worker safety and well-being	Retain and attract skilled staff
Reduced health insurance costs and medical expenses	Improved labor productivity	Reduced noise levels
Environmental		
Reduced compliance costs, fines etc.	Reduced hazardous waste, dust etc.	Reduced CO, CO2, NOx, SOx emissions
Other economic		
Decreased liability/risks	Re-investment of savings/disposable income	New income streams; increased production capacity

Additionally for GCF Fund

1. The engagement is relevant because it addresses the key challenge for Bangladesh - climate change mitigation.
   The scope of the programme is in alignment with the SDG targets– SDG 7, SDG 9 and SDG 13. Sustainable energy use remains of critical importance to the Bangladesh economy. Availability and the rising price of gas is a significant and growing constraint on the growth of textile and RMG industries.
2. Presently Bangladesh market is not fully explored or catered from a financing perspective. IDCOL with the help of the Fund and LFIs will solely focus on mainstreaming EE in the various size and type

of textile & RMG factories (by relaxing the major market constraints), to establish the concept as a business as usual practice so that it can be replicated in other industrial sector.

3. The loan product will be directed to increase energy efficiency across complete value chain in Textile and RMG industries of Bangladesh, which will be a unique product catering to only energy efficiency in complete value chain of both the industries (Different from Partnership for cleaner textile (PaCT) led by IFC whose focus area is investment facilitation for financing resource efficiency projects in textile factories)
4. The loan facility will have following features which will make it highly attractive in the market.
    - Simplified loan application procedure and speedy appraisal minimizing the time for loan processing.
    - Availability of Grace period & Long Tenure and low interest.
5. In addition, the broad experience of the Executing Entities (IDCOL and LFIs) in financing industrial energy efficiency will have following advantages:
    - Executing Entities have built their capacity by successfully implementing EE&C funds
    - Strong pipeline built by IDCOL and the LFIs for Textile and RMG sector while implementing EE&C fund which will ensure fast disbursal of GCF fund.

Major Gaps and Barriers identified in the previous & existing EE&C credit lines and how it will be addressed in the proposed programme

As mentioned above, although there are several loan facilities for energy efficiency and conservation promotion, higher lending interest rate and the time required for appraisal have hampered smooth implementation of loan projects. In this context, both minimizing the time for loan procedure through simplification of loan application and speedy appraisal and development of loan having concessional low interest rate and loan scheme will promote energy efficiency and conservation in Bangladesh further.

The analysis of the alternative financing indicates a number of issues required to be addressed for being successful:

1. **Concessional interest rate in comparison to commercial rate**

   Due to higher initial investment requirement for energy efficient equipment, users may be reluctant to purchase them compared to conventional equipment. As such, incentivizing the purchase of energy efficient equipment through concessional lending would be required.

2. **Flexible tenure & grace period in line with project viability**

   Some available with significant grace period (1-2 years) and longer tenures which ensures that repayment can be made without cash-flow problems. Easy access of fund through experienced financial intermediary of the energy efficient projects have longer payback period which can only be viable if financing is

3. **Due diligence compatible with prevailing investment environment**

   While it is important that credit-worthy borrowers are selected under any programme, it is also important to ensure that the approval process is streamlined and doesn't lead to significant delays. Some of the alternative financing programme involve multiple agencies in the due diligence and approval process which causes delays.

4. **Proper management of currency fluctuation if repaid in foreign currency**

Foreign currency loans need to be carefully managed to minimize forex risk. This is especially true for USD loans as BDT has been depreciating at an average rate of 2.94% per year in the past and this trend is likely to continue in the future as well. As such, currency fluctuation exposure needs to be managed through adequate hedging mechanisms, if available or by having a currency risk fluctuation premium which will get added to the cost of the lending.

- **Complex technical requirements for processing loans:** In order to access loans, detailed technical documents need to be prepared which provide the financial justification for undertaking the project and helps banks understand the risks in recovery of loans. Development of these documents involve hiring of energy auditors by the RMG units, which further adds to the cost component and also increase the technical complexity of applying for loans for the unit owners.

  In some cases, eligibility for loans include presence of company policy documents like Environment and Social (E&S) policy - a practice which is largely absent in the sector. This reduces the financing options available to an RMG unit to fund its energy efficiency measure.

- **Limited number of banks providing energy efficiency financing:** Under existing market scenario, there is limited number of banks in Bangladesh providing energy efficiency financing. Also, large scale units have greater access to market information in this regard as compared to medium and small scale units. This further limits the option available to unit owners to finance their energy efficiency measures.

- **Limited capacity in bank in apprising energy efficiency projects:** Like RMG unit owners, LFIs have limited technical knowledge in assessing an energy efficiency project and are completely dependent on energy auditor for assessment. Also, there is limited market information available for the banking staff to effectively understand energy efficiency as a concept and specifically energy efficiency in RMG sector. This limited understanding is also contributing to lack of active interest in financing energy efficiency.

Hence, it is observed that limited penetration of energy efficiency measures can be effectively overcome by providing access to concessional financing sources at the same time providing access to technical and market related information to both demand side i.e. RMG units and supply side i.e. banks of the financing requirement for the sector. The TA component sought under the programme will support in reviewing all existing and planned public and private EE financing mechanisms in Bangladesh with a brief review of energy consumption in textile industries and their access to financing and identify financial gaps for realization of the planned EE programmes /activities. This will help in understanding the present requirements/needs of the credit line; including but not limited to institutional setting (management of the credit line), human resources need, indicative timeline for establishing the credit line, structure for raising capital or allocation of state budget to establish and maintain the credit line, structure for the utilization of fund and even diversification of financing facilities. Once the financing strategy is finalized, a financing road-map along with time-based action plan will be developed, which will be subject to annual review. The effectiveness of the new financing mechanism in terms of filling the financing gap for reaching the EE targets and physical impact (energy and GHG savings) will be assessed annually and based on the assessment (includes stakeholder consultation) the financing strategy will be revised.

Initiatives by other development partner:

KfW and AFD: In Bangladesh, National Determined Contribution (INDC) by 2030 under Paris Agreement are defined as the following two types. One is unconditional contribution as 5 % below BAU. The other is conditional contribution assuming international support as 15% below BAU. With reference to this

background, KfW and AFD are each planning to formulate investment pipeline to reduce not only energy consumption but also GHG emission.

GIZ : Not in financial support but in technical cooperation fields, GIZ has been continuously supporting SREDA in capacity development in promoting EE&C. Major focused issues are supporting establishment of legal frameworks to promote EE&C and strengthen energy audit skill etc.

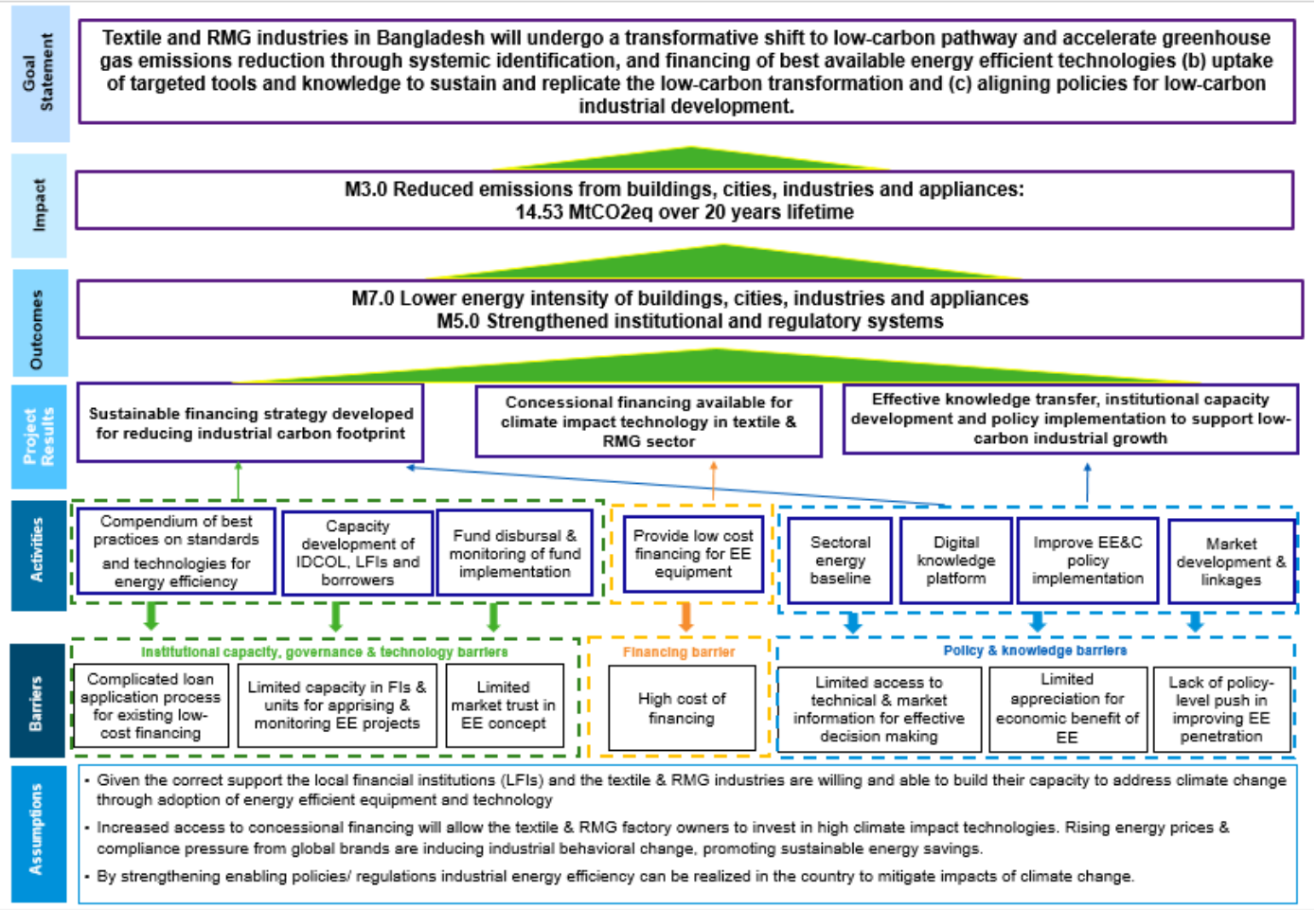
B.2. Theory of change (max. 1000 words, approximately 2 pages plus diagram)

Describe the theory of change and provide information on how it serves to shift the development pathway towards a low-emission and/or climate resilient direction. Provide the diagram of the theory of change (approximately 1 page).

The theory of change should include any barriers (social, gender, fiscal, regulatory, technological, financial, ecological, institutional, etc., as relevant) that need to be addressed. Use a results chain of inputs, activities, outputs, outcomes, and impact statements, and identify the how and why of causal relations to deliver the project's expected results.

Theory of Change of the programme (EE&C in the Textile and RMG Sector):

Figure12:



Bangladesh has been consistently witnessing high economic growth (over 6% GDP growth for the last decade[37]). This has led to nearly 49% increase in its final energy consumption between 2008 and 2018[38]. With the country expected to continue in its high growth trajectory, the corresponding energy consumption is also expected to increase significantly. In order to ensure energy access Government of Bangladesh provides generous subsidies in energy supply. The volume has been rising steadily over the past years – national subsidy bill for power generation and energy increased from USD 510 million in 2016-17 to USD 1.62 billion in 2019-20[39]. Allocation for gas subsidy in annual budget of Bangladesh witnessed a 2x increase in 2019-20. The increasing energy subsidy bill can have a crippling effect of Bangladesh' economy. Efficient use of energy can provide a solution to help reduce the subsidy bill and unlock the investment for overall economic development of Bangladesh and effectively reducing GHG emissions.
Within Bangladesh, Garments and Textiles sector are the highest energy consuming sector within industries – which has the 2nd highest energy consumption after residential sectors[40,41]. Multiple studies have shown energy savings potential of nearly 25% is present for the sectors, as compared to international best practices[42]. However, there are multiple barriers to ensure benefits are accrued from implementing energy savings measure are realized.

As gathered from stakeholder interviews, the unit owners are generally skeptical of the energy savings that can be achieved from implementing energy efficient equipment which priced significantly higher over normal inefficient variant. The lack of adequate number of demonstration projects for the sector is considered as the reason for the skepticism. Also, under the current financing landscape unit owners have to pay an interest in the range for 11%-14% - under such high interest rates, financing equipment for which lower priced variants are available is unviable for unit owners. The appreciation of cost savings arising of lower energy consumption is absent in the market. The investment decisions are further influenced by the lack of technical knowledge among the unit owners on how to assess the energy savings and the financial benefits are derived. There is also limited information available to the unit owners on the OEMs supplying energy efficient equipment and other information like pricing, which can help assist decision making.

Apart from unit owners, the financing institutions also have limited capacity to assess and apprise an energy efficiency project, leading to lower to no preference of banks to fund energy efficiency projects as compared to other green projects. While, there is currently financing line for energy efficiency through Green Transformation Fund (GTF) of Bangladesh Bank, the complicated loan application process leads to disbursement of loans, delayed by months at a time.
There is also a clear lack of policy push through measures like standards and labelling, minimum energy performance standards etc. that will create a demand side push for energy efficient equipment.
Given this landscape, the introduction of low-cost financing coupled with technical assistance activities can help bring a transformative change aligned with GCF key mitigation area of reducing emissions from industries. Thus in the above shown diagram of Theory of Change we can assume that -

- given the correct support the local financial institutions (LFIs) and the textile & RMG industries are willing and able to build their capacity to address climate change through adoption of energy efficient equipment and technology

[37] Source: Bangladesh Statistical Yearbook 2018 (Bangladesh Bureau of Statistics, 2019)
[38] Source: Bangladesh Energy Sankey Diagram (IEA, 2018)
[39] Source: Bangladesh national budget(Daily star, 2020)
[40] Source: Energy Efficiency and Conservation Master Plan up to 2030 (JICA website, 2015)
[41] Source: Information derived from EE & Conservation Master Plan upto 2030 (DANIDA, 2017)
[42] Source: Bangladesh: Industrial Energy Efficiency Program (ADB website, 2014)

- increased access to concessional financing will allow the textile & RMG factory owners to invest in high climate impact technologies. Rising energy prices & compliance pressure from global brands are inducing industrial behavioral change, promoting sustainable energy savings.
- by strengthening enabling policies/ regulations industrial energy efficiency can be realized in the country to mitigate impacts of climate change.

The proposed programme can accelerate investment in a portfolio of high impact climate technologies and supportive changes in business practices especially in the Textile & RMG sectors.

The major barriers that are identified can be classified into three segments (a) institutional capacity, governance & technology barriers: this includes complicated and lengthy loan approval process related to concessional green financing, lack of capacity of the financial institutions to appraise and monitor concessional loans related to industrial energy efficiency and finally the lack awareness in the market about the benefits of energy efficient equipment. (b) Financing barrier: this is lack of availability of concessional financing in the market that can widely cover the premium/additional costs of energy efficient equipment (c) Policy & knowledge barriers: this includes the limited access to technical & market information for effective decision making regarding investments in energy efficiency, limited appreciation for economic benefit of energy efficiency and lastly the lack of policy-level push in improving EE penetration.

In order to overcome these barriers the programme will ensure access to low-cost financing for the program along with effective monitoring of fund implementation will help drive uptake of energy efficient equipment and create demonstrative effect to develop market trust in energy efficiency. In order to facilitate effective appraisal of energy efficiency project application and monitoring capacity building of banks disbursing low cost financing is required, as well as capacity development in units to undertake monitoring and handholding in the loan application process. Handholding activity will include assessment of the key issues in existing loan application process of IDCOL and LFIs and accordingly provide recommendations for the modification of disbursement process of the low-cost loan instrument under this programme.

In order to improve access to market and technical information related to energy efficiency for unit owners, a digital platform is envisaged which will contain case studies, guides, manuals of successful energy efficient equipment implementation. The digital platform will help also in registering various stakeholder types (mainly unit owners and energy efficient OEM) and stimulate conversations between the stakeholder' group. The platform will also provide a sectorial baseline energy consumption database which coupled with the information on energy consumption and savings of individual projects within the programme, will help understand sector level impact of energy consumption in Bangladesh.

Apart from virtual conversations, real-life interaction between unit owners and OEMs will be stimulated through technology fairs wherein OEMs will exhibit their energy efficient technologies and will clarify any queries of unit owners. Specific workshops aimed at increasing awareness of units (particularly unit owners) on the benefit of energy efficiency and the various policy levers utilized globally for appraisal of policy makers of Bangladesh is planned to improve awareness of benefits of energy efficiency.

In order to stimulate policy level push, manuals and other supporting documents will be prepared to access to relevant information by policy makers in developing appropriately designed policies/schemes aimed at increasing penetration of energy efficient equipment in Bangladesh. Overall, these activities are expected to bring in the paradigm shift in Bangladesh energy efficiency market and create a replicable model that can be emulated in other sectors of the country to ensure increased penetration of energy efficiency.

Paradigm shift potential: The concessional loan has the potential to trigger behavioural change at industrial sector energy management level to incorporate climate change targets and corporate climate governance principles into strategic decision making. The transformative shift within textile & RMG sectors can be made possible through: the uptake of climate impact technologies; the additional shift triggered by behavioural change at institutional governance and management levels due to capacity development and sensitization on energy efficiency; and all supported by an enabling policy framework, in particular gender-responsive sectorial low-carbon roadmaps. The resulting paradigm shift will be (1) a shift and acceleration of industrial decarbonisation trajectories; (2) transformation of the supply and demand for energy efficiency finance; and (3) acceleration of the market for climate technologies.

B.3. Project/programme description (max. 2000 words, approximately 4 pages)

Define the project/programme. Describe the proposed set of components, outputs and activities that lead to the expected Fund-level impact and outcome results. Components should reflect the project/programme level outcomes.

This should be consistent with the financing by component in section C.2, the results and performance indicators provided in section E.5, and the implementation timetable in annex 5.

Referring to the feasibility study, describe why this set of interventions was selected instead of alternative solutions and how the project/programme can help unlock the needed support in a sustainable manner. Also identify trade-offs of the selected interventions, if applicable.

For Enhanced Direct Access (EDA) proposals and projects/programmes with financial intermediation (loans or on-granting), describe the selection criteria of the sub-project and types.

The proposed programme aims to enable market transformation of Textile and RMG sectors in Bangladesh to increase penetration of energy efficiency measures, leading to a shift to low-emission sustainable development pathways. The programme is broadly divided into 05 components, where Component 1& 2 addresses the barriers and needs of the textile sector for swift adoption of energy efficiency technologies, whereas Component 3 & 4 does the same for the RMG sector and component 05 addresses regulatory issues. The implementation plan designed for both the sectors are different to improve efficiency in the financial access and also to influence market participation to enable replication in other energy intensive sectors of the country.

DESCRIPTION OF COMPONENT 01 & 02:

Even though the textile sector of Bangladesh has significant energy saving potential, but due to higher cost of energy efficient equipment compared to conventional equipment, end users are often deterred to install them. While there are a few products that have been launched by various financial institutions, however, except a few they have not been able to significantly meet their objectives due to either procedural issues or high cost of funding. The feasibility study indicates the need for ~ 5.7%[43] (11%-5.28%) concessionality in the interest rate for energy efficient equipment, compared to commonly available commercial loans (i.e around 11%[44]) in order for EE equipment to be widely adopted in Bangladesh. Using GCF and IDCOL funding, this can be achieved. Similarly minimizing the time for loan procedure through simplification of loan application and speedy appraisal will promote energy efficiency and conservation in Bangladesh further. The key measures proposed to simplify lending are as follows:

[43] Please refer to table 06-09 of this document

[44] https://www.bb.org.bd/fnansys/interestlending.php

- Since the financing will be list based, it will be easier to apprise the project. The eligibility would be supported by certificate/catalogue/ brochures/ report from energy auditor or declaration by the supplier. The transactional cost of the parties involved would decrease significantly.
- IDCOL has significantly built its capacity in apprising the loan application of energy efficiency projects. The loan appraisal process for GCF credit line will take significantly less time compared to any other fund. The project will have to meet pre-set criteria approved by GCF and will have to only go through internal approval process of IDCOL. In the case of credit lines where third parties are involved (like central regulatory body SREDA, in case of JICA Fund) or where intermediary financing institutes are involved (e.g. Partner bank in GTF and IFC PaCT project), a significant time (3 month to 1 years) gets wasted in loan approval process which will be saved in this credit line.

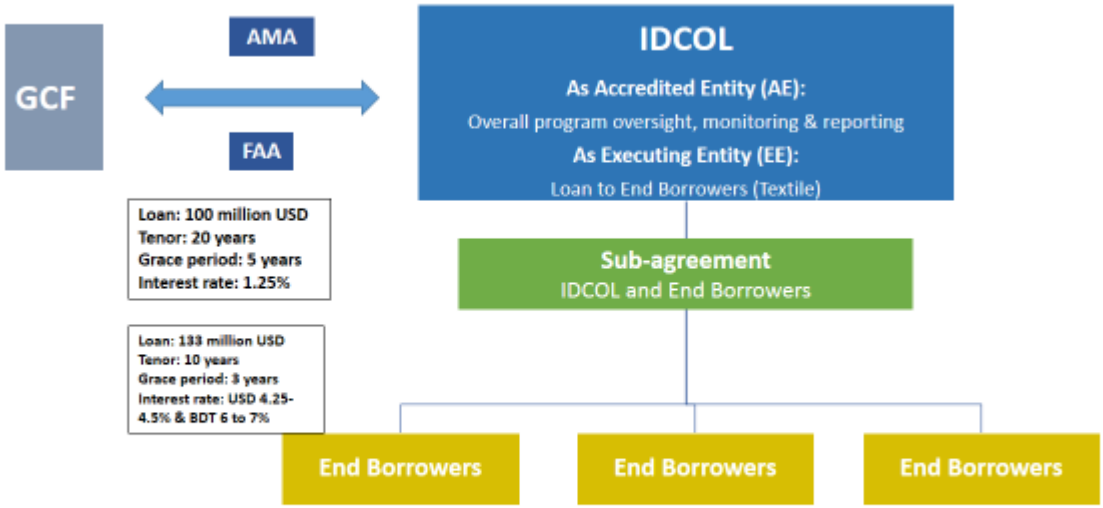


Figure 13: Fund flow from GCF to the end borrowers (reflecting the interest rate and tenor)

This would ensure a catalytic impact on energy efficiency measures in the textile sector.

Component 01 & 02 envisages the creation of concessional fund with USD 133 million, including USD 100.00 million senior loan from GCF and USD 33 million from IDCOL. End borrower's equity investment for USD 33.00 million will be the leveraged financing. IDCOL, an Accredited Entity with GCF, will make available the GCF funds in the form of loans to the end borrowers, who are in this case the private textile manufacturing companies. Using this fund, the projected IRR estimated to be achieved is 7.0 %. The implementation of these energy efficiency measures equivalent envisages annual GHG reductions estimated at 0.20 million tCO2 and 4.00 million tCO2 equivalent over the lifetime of the project (20 years) which if included in the economic benefit would lead to an EIRR of 23%. The payback period for various equipment varies between 4-13 years. In addition to these economic and financial benefits, the project will also lead to other intangible social and gender impacts such as better community living standards, providing safe and better working environment leading to higher gender balance in workforce and skill up gradation for workers.

As such, the envisaged program is closely aligned to the GCF objective of catalyzing financing for this initiative and helping scale up the initiative across the country in future through increased showcasing of economic and societal benefits leading to a market transformation in energy efficiency. The investments enabled through this program will help improve the productivity & competitiveness of the local textile industry in Bangladesh thereby leading to sustainable development pathways. The investments would also create a

climate resilient built environment through deep penetration of energy saving technologies, equipment and appliances in the textile industries.

The proposed programme will addresses the energy efficiency adoption needs of textile sector with following components-

Component 1: USD 133.00 million financing for Energy Saving Equipment & Technology for Textile sector
Component 2: USD 3.05 million GCF Technical Assistance (TA) to develop enabling environment for EE investment in textile sector

Component 1: USD 133.00 million financing for Energy Saving Equipment & Technology for Textile sector

To encourage the industry and businesses to choose energy-efficient equipment which, in many of the cases, is more expensive compared to conventional ones, there is a need to reduce the cost difference by providing concessional lending for energy efficient equipment.

Although energy-efficient equipment may become economical on lifecycle cost basis, equipment buyers are most likely to decide solely based on investment cost, resulting in choosing cheaper, conventional non-energy-efficient equipment. Against this background, the Programme aims to provide a low interest loan to the buyers so that total payment amount for energy efficient equipment (equipment cost and financial cost) will break even with the cost of acquiring conventional equipment.

During the feasibility study, based on the payment simulations for a few types of equipment it was identified that there is a need of for 4.3% to 5.7% concessionality in the interest rate in order to breakeven the cost of EE equipment with that of cheaper traditional equipment. For example, market price of energy efficient and traditional/conventional spinning and boiler machine were compared .The price of energy efficient spinning and bolier machine were found to be 25% and 26% respectively higher than the traditional/conventional equipment. Subsequently, the cost impact of purchase of conventional equipment and energy efficient equipment by changing tenure period and grace period have been analyzed.

The purchase of an energy efficient spinning machine which is ~25% more expensive compared with a conventional type, which will require a 5.53% interest rate loan(considering 8 year loan tenure and 1 year grace period) for the total payment to become par with that of a conventional one. Similarly, a 27% more expensive once-through boiler requires 5.28% interest rate (considering 8 year loan tenure and 1 year grace period) to be even with the conventional type in terms of the total payment amount.

Table 6: Spinning machine with permanent magnet motor (In comparison with induction motor-driven spinning machine)

		Commercial Finance	**GCF Loan Finance**
		Conventional equipment	Energy Efficient equipment
Price	USD	119,000	149,000
Interest Rate	%	11%	5.53%
Tenure Period	yrs.	8	8
Grace Period	yr.	1	1

Total Payment	USD	**189,983**	**189,983**

Table 7: Small sized once-through boiler (in comparison with fire-tube boiler)

		Commercial Finance	**GCF Loan Finance**
		Conventional equipment	**Energy Efficient equipment**
Price	USD	48,000	60,750
Interest Rate	%	11%	5.28%
Tenure Period	yrs.	8	8
Grace Period	yr.	1	1
Total Payment	**USD**	**76,632**	**76,632**

The purchase of an energy efficient spinning machine will require a 6.67% interest rate loan (considering 10-year loan tenure and 2 year grace period) for the total payment to become par with that of a conventional one. Similarly, once-through boiler will require 6.47% interest rate (considering 10 year loan tenure and 2 year grace period) to be even with the conventional type in terms of the total payment amount.

Table 8: Payment Simulation changing loan tenure and grace period. Spinning machine with permanent magnet motor (In comparison with induction motor-driven spinning machine)

		Commercial Finance	GCF Loan Finance
		Conventional equipment	Energy Efficient equipment
Price	USD	119,000	149,000
Interest Rate	%	11%	6.67%
Tenure Period	yrs.	10	10
Grace Period	yr.	2	2
Total Payment	USD	**222,860**	**222,860**

Table 9: Small sized once-through boiler (in comparison with fire-tube boiler)

		Commercial Finance	GCF Loan Finance
		Conventional equipment	Energy Efficient equipment
Price	USD	48,000	60,750
Interest Rate	%	11%	6.47%
Tenure Period	yrs.	10	10
Grace Period	yr.	2	2
Total Payment	USD	**87,678**	**89,894**

The above analysis clearly demonstrates that to ensure the feasibility of the project, concessional lending is required from GCF to IDCOL to enable IDCOL to extend loan at the low interest to the end borrower. Further analysis on how the proposed financial package is seemed to be appropriate and reasonable is described in section D.6.

However, one thing to be noted is that the credit provided by GCF to IDCOL will be in the form of USD while IDCOL will be lending 60% of the amount to the end users in BDT and the rest 40% in USD. As such, IDCOL will have to manage the currency risk as well in this case which is not the case for other similar credit lines.

In time series analysis done for exchange rate movement of Bangladeshi Taka against USD from 1998 to 2018 it is observed that Bangladeshi Taka is depreciating on an average rate of 2.94%[45] every year. Hence, IDCOL will be managing the currency risks by charging risk premium to the end borrowers. The feasibility study also indicates that some market exists for USD loans amongst the textile industries, so IDCOL plans to have a portion of the lending in USD as well. Given that such loans will not be exposed to currency fluctuation risk, they can be priced lower than BDT loans.

Eligibility criteria for Textile Borrowers/Sub proponent:

Each of the following criteria must be met by a local project to be considered as an eligible to be financed by GCF credit facility provided through IDCOL. Innovative projects could be considered on a case-by-case basis after having conducted a full-fledged feasibility study to assess whether it complies with the eligibility criteria set under the programme. GCF will be notified in advance in such cases.

Nota bene: if deemed appropriate for the management of the Project, the Lender may agree to modify or further detail the general objectives and technical and financial eligibility criteria in the Operational Manual (to be developed under TA activity). With approval from GCF, the Operational Manual may be updated if needed during the Credit Facility's implementation upon agreement between the Lender and the Borrower.

A. General criteria

- The project developer will be a business entity of limited company only
- For both Green field and Existing project related to up-gradation to energy efficiency technologies/machines. For a Project loan application already being processed at Accredited Entity, a letter of credit (L/C) for purchasing the EE&C equipment, anticipating the use of the Project Loan, may be opened up to 12 months prior to either GCF financing or IDCOL approval of the loan.
- The borrower will be a Textile company
- For procurement of Brand-New machines
- Having Energy Efficient component of proposed equipment to be financed
- Supported by suppliers' declaration/ catalogue/ brochures or report/certificate from independent/certified energy auditor acceptable to IDCOL or the baseline developed under TA activity

[45] https://data.worldbank.org/indicator/PA.NUS.FCRF?end=2018&locations=BD&start=2018&view=bar

- Fulfillment of other required criteria as mentioned in IDCOL's CRM guideline and lending policy
- 100% of the eligible equipment price can be financed

B. Technical Eligibility criteria

Eligibility should be confirmed for each loan application. The Eligible Technology & Equipment List is a predefined list of technologies and equipment as prescribed during the programme formulation. This list will be updated every year, if required, to reflect the accurate market scenario and will be subject to approval by GCF.

Table 10: List of identified EE equipment under feasibility study

Category	Major EE&C Equipment	Condition
Spinning	• Roving Frame • Automatic Winder • Ring Spinning Frame • Air Jet Spinning • Air Compressor • Electric generator • Energy Efficient Boiler • Waste Heat Recovery System • Absorption Chiller • Chiller • LED Light	• Any Equipment/technology eligible for financing , not limited to this list, must have minimum 15% energy saving potential compared to the prevailing inefficient/ less efficient equipment used in the sector • The eligibility would be supported by catalogue/ brochures/declaration form supplier's or report/certificates from independent/certified energy auditor or the baseline developed under TA activity • Common equipment will be interchangeable within the category.
Weaving	• Air Jet Loom • Warper & Sizer • Sewing Machine • Stenters • VFD for Fan, Blower, pump etc. • Air Compressor • Energy Efficient Boiler • Waste Heat Recovery system of Boilers • Waste Heat Recovery System of Stenters • Absorption Chiller • Chiller • LED Light	

Knitting	• Efficient Knitting Loom • Circular Knitting Machine • Flat-bed Knitting Machine • VFD for Fan, Blower, pump etc. • Air Compressor • Energy Efficient Boiler • Waste Heat Recovery System • Absorption Chiller • Chiller • LED Light	
Dyeing	• Energy Efficient Boiler • Jet Flow Dyeing Machine • Cold Pad Batch (CPB) Dyeing for Knit Fabrics • Waste Heat Recovery System • Absorption Chiller	

C. Eligible Investment Cost

The cost of purchasing the energy saving technology and equipment will be the main subject of the loan, which will be utilized by the borrowers to retrofit and/or expand or establish their new factories, processes and building infrastructure.

Financing modality to the Sub-projects / end borrowers can be any of the followings:

A: Financing to procure only energy efficiency Equipment as replacement

B: Financing to procure energy efficiency Equipment for expansion of existing project

C: Financing to setup a new facility comprises of different energy efficiency technologies. In this case, the GCF Loan will only cover the portion of the financing for the energy efficiency technologies rather than the full cost of the facility.

	Investment areas/cost heads	**Component 01 -Textile**		**Component 03-RMG**	
		Amount-USD million	%	Amount-USD million	%
GCF contribution	**Cost item I :** Purchase price with freight, customs duty, related insurance **Cost item II :** • Transport, assembly, installation • Training and technical transfer; • Customs duty and other administrative costs and	100.00	60%	150.00	60%

	commissions; • Auxiliary / ancillary equipment, connection and accessories, • Other incidental costs.				
IDCOL/LFIs contribution	**Cost item I :** Purchase price with freight, customs duty, related insurance **Cost item II :** • Transport, assembly, installation • Training and technical transfer; • Customs duty and other administrative costs and commissions; • Auxiliary / ancillary equipment, connection and accessories, • Other incidental costs. **Cost item III :** Transport, assembly, installation and related civil construction;	33.00	20%	50.00	20%
End borrowers contribution	**Cost item I :** Purchase price with freight, customs duty, related insurance **Cost item II :** • Transport, assembly, installation • Training and technical transfer; • Customs duty and other administrative costs and commissions; • Auxiliary / ancillary equipment, connection and accessories, • Other incidental costs. **Cost item III :** Transport, assembly, installation and related civil construction; **Cost Item IV:** Ancillary infrastructure setup such as civil construction and other engineering and procurement related costs etc.,	33.00	20%	50.00	20%

	required for the successful installation and subsequent operation of the energy efficient equipment.				
	Total	**166.00**	**100%**	**250.00**	**100%**

D.1 Financial Criteria

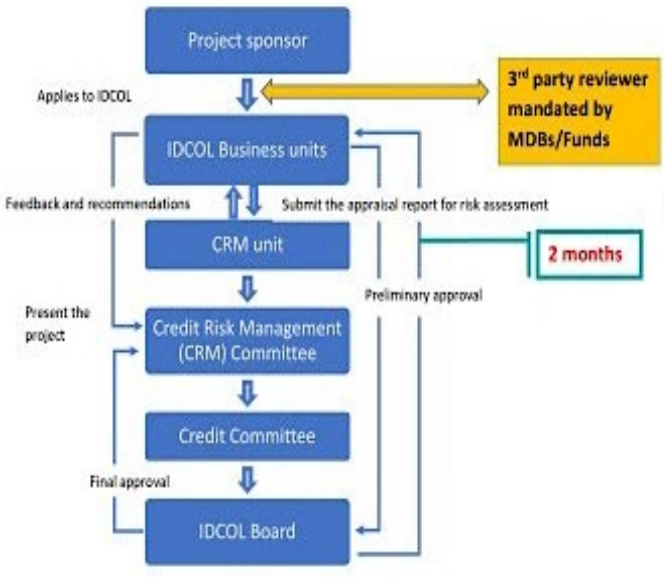
The Eligible Investment should be profitable, to enable the loan repayment with enough cash flow.

- The pay-back period, including financial costs, shall be minimum two (2) years;
- The loan granted by IDCOL to the end borrowers will have a minimum maturity of three (3) years for energy efficiency investments;
- Minimum DSCR of 1.00x
- Any other criteria set by IDCOL approving authority in excess of criteria set out in FP. For deviation of any criteria mentioned in this FP will require GCF approval.

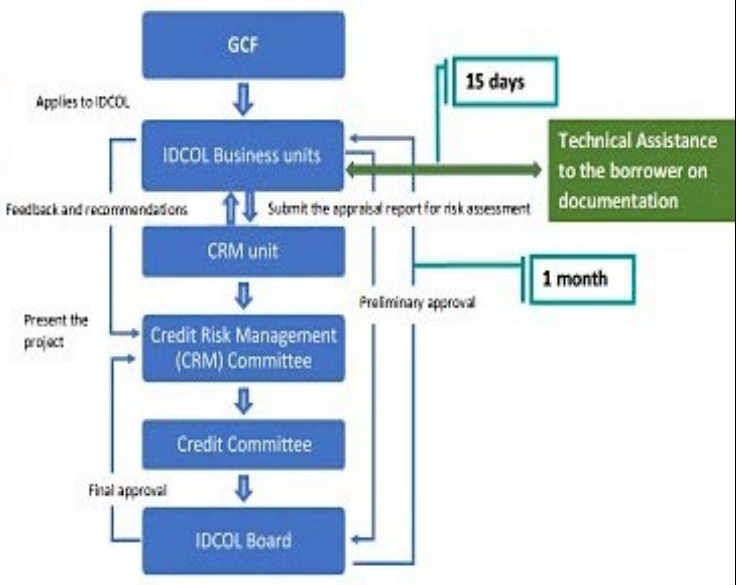
D.2 Lending Conditions- Details in Term Sheet

E. Timing of Loan Application and Appraisal

- Usually IDCOL will consider for loan application from the beneficiary prior to procurement of the equipment. However, for retirement of any machinery L/Cs into GCF project term loan, the L/Cs can be opened maximum 12 months prior to application.



Typical MDB Fund Credit Line



GCF Credit Line

Figure 14: Simplified loan approval process for GCF credit line

A typical loan proposal under other credit lines has a three-month long project approval process where in the third-party reviewers are involved, as mandated by the respective MDBs/funds. In the GCF credit line has the same timeline is envisaged to slash to half of the existing i.e. 1.5 months. This will be possible owing to improvements in the application process leading to streamlined applications which will be implemented as part of the TA component where in end borrowers will be provided with technical assistance for documentation and data sharing which will expedite the entire process of eligibility assessment. Further, since external reviewers are not involved in this process, this again will lead to faster approvals which will be a significant improvement on other credit lines

F. Collateral & security arrangements:
As per "Lending policy" of IDCOL and prevailing industry practice.

Component 2: USD 3.05 million GCF Technical Assistance (TA) to develop enabling environment for EE investment in textile sector

GCF non-reimbursable resources (technical assistance) will support to address real or perceived risks and barriers that are currently limiting EE investments in the textile sector. IDCOL requires the service of a consultant/consultancy firm to perform technical assistance activities. Key output areas under TA will be to (a) develop a sustainable financing strategy to achieve programme milestones and maximize impact potential of the sub-project (GHGE reduction) (b) sensitize and create awareness among the stakeholders about EE equipment to develop a strong project pipeline, which may increase participation of LFI's in future (c) develop capacity and knowledge at the institutional levels required for faster adoption of EE technology (d) develop standards and mechanisms for robust monitoring, reporting and verification of energy savings and GHG emissions reductions and (e) advisory support to the textile borrowers/end users on loan application process to expedite the due diligence process of IDCOL.

The detail activities are described below:

Output 2.1: Sustainable financing strategy developed for large scale adoption of EE equipment in textile sector.

Activity 2.1.1: Devise a financing roadmap and time-based action plan
Activity 2.1.2: Develop operational manual for the program.
Activity 2.1.3: Develop whistle blower policy for the program.
Activity 2.1.4: Classification of Textile units based on scale and type of products and data collection through energy audit of sample plants

Activity 2.1.5: Consolidation of data and developing sector-level baseline

Activity 2.1.6: Interact with stakeholders/market players to prepare a list of equipment already implemented in Bangladesh and having proven energy savings results.

Activity 2.1.7: Revision of baseline by conducting energy audit and data consolidation

Activity 2.1.8: Develop technically-robust, bankable EE project pipeline

Output 2.2: Market awareness on importance of EE equipment in textile sector strengthened

Activity 2.2.1: Organizing programme launching event, to introduce the new concessional credit line and it unique features dedicated to promote EE in Textile Sector.

Activity 2.2.2: Organizing workshops to disseminate to stakeholders on broad policy framework and incentive mechanisms for energy efficiency in textiles, business case and economic benefits, women involvement in energy efficient textile operations (Covering entire key stakeholders of the country related to textile sector. Trade bodies like BTMA, BGMEA .etc. are expected to be on board and be sensitized of EE issues for encouraging their members during decision making. Stakeholders will be selected by IDCOL as per consultation with the expert consultants hired under this TA component. IDCOL's previous stakeholder lists developed during scoping & validation workshops under the PPF, will also be considered).

Activity 2.2.3: Preparing various information materials in the form of brochures/flyers/pamphlets and other related information documents for the dissemination activities

Activity 2.2.4: Develop and launch advocacy campaign on energy conservation and efficiency measures, such as workshops, animations, video clips, brochures, etc.

Output 2.3: Capacity developed at the institutional levels for faster adoption of EE technology

Activity 2.3.1: Perform capacity needs assessment to map the current and desired level of capacity for IDCOL staff and textile end borrowers.

Activity 2.3.2: Conduct capacity building workshops and training sessions for IDCOL and textiles sector end borrowers (participants not limited to end borrowers being eligible for component 01. It will include both eligible & other prospective textile sector end borrowers) who are the applicants for the loan on the tools and requirements to be fulfilled for successfully securing the loan

Output 2.4: Standards and mechanisms for adequate monitoring, reporting and verification of energy savings and GHG emissions developed

Activity 2.4.1: Updating the parameters and requirements for establishing MRV framework, including energy audit and post retrofit performance evaluation for the textile factories (establishing as-is baseline and EE investment-based evaluation KPIs on best effort basis)

Activity 2.4.2: Updating parameters and updating the monitoring framework for environment and gender evaluation of projects for the end borrowers & for IDCOL.

Activity 2.4.3: Carry out yearly energy, financial and environmental audit to establish baseline for monitoring and revisit GHG and other programme targets if required

Activity 2.4.4: Revising and applying guidelines and monitoring methodologies for textile factories

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Activity 2.4.5: Requirements for "Management Information Systems (MIS)" in different types of textile factories to be provided to end borrowers for ensuring monitoring and reporting and dashboard preparation covering energy data, environment & social reporting (Common Dashboard for both Component 01-Textile & Component 04-RMG)

Activity 2.4.6: Revision of applicable environmental and social policies of IDCOL and gender specific actions, if required

Activity 2.4.7: Review/audit of environmental, gender and social safeguard compliances

Output 2.5: **Advisory support to the Textile Borrowers to shorten appraisal timeline**

Activity 2.5.1: Support the end borrowers, eligible under Component 01, in fulfilling the documentation process, completing due diligence during appraisal, checking eligibility and making disbursement process faster.

This will be done through requirement standardization, capacity building of borrowers, facilitating certification from equipment suppliers and empanelment of the vendors all of which will significantly cut down on documentation and disbursement time.

- Create standardized document requirements for loan application under the credit line. The standardization of documents and simplified approval process (internal to IDCOL) will help borrowers cut down on application time
- The TA component will hold workshops to appraise borrowers on the application process and the documentation requirement, so the awareness levels is increased
- Work with the equipment suppliers to facilitate certification and other documentation requirements, so the equipment impact can be clearly mapped
- Vendor's due diligence etc. can be carried out so time can be saved on their selection/finalization as equipment suppliers. They will also work with borrowers to help them speed up application process
- Application process status would be available to borrowers through an MIS tool which they can access, to bring in speed and transparency in the approval process.

Output 2.6: **Engagement with global clothing brands to increase EE adoption in textile sectors**

The brands play a catalytic role in driving change in the textile and related sectors. The global brands in presence of international competition influence other stakeholders as seen through the feasibility analysis. As part of the TA programme, the connection of the brands to the textile manufacturers can be leveraged by working closely with the brands and developing customized modules to increase the reach and impact of the programme. This will be carried out by:

Activity 2.6.1 Encouraging textile units to be more aligned to the brands' sustainability targets and invest in energy efficient equipment and measures to reduce emissions and encouraging leading global brands by arranging round table discussions

Activity 2.6.2 Encouraging textile units to improve on the social and gender inclusion in workforce ratio to increase the co-benefits impact through sensitization and by stakeholder consultation

- Carrying out capacity building trainings and workshop for the textile units to disseminate the information on the programme and the benefits of the EE adoption (Under activity 2.3.2 above)

The TA component will be executed by IDCOL within the disbursement period of 06 years within project time line (Year 01-06). The main beneficiary of the component will be the textile sector borrowers for sustainable implementation of the program.

DESCRIPTION OF COMPONENT 03 & 04:

The RMG industry is the most energy intensive industrial sub-sector of Bangladesh. As per situation analysis conducted in feasibility studies, energy consuming processes in the sector employ old equipment and exhibit potential for replacement with equipment which lead to efficient use of energy through incorporation of new

technologies. Apart from capital intensive measures, there are system inefficiencies caused due to leakages which can be reduced by undertaking low-cost or no-cost measures. In the context of the RMG sector, it has been established in the previous sections that there is a considerable scope for adopting energy efficiency measures along with the benefits of adopting such measures. However, there are also multiple barriers which are preventing large scale adoption of energy efficiency measures, thereby deferring realization of benefits arising out of it. A key barrier is the availability of concessional financing to support high upfront costs of the energy efficiency equipment and longer payback periods as well as limited market information regarding available options for energy efficiency.

Financing for RMG units is provided from participants in Formal Sector like *Banks*, *Non-Bank Financial Institutions (FIs)*, *Insurance Companies*, *Capital Market Intermediaries* like Brokerage Houses, Merchant Banks etc.; *Micro Finance Institutions (MFIs)*. The inherent high level of risk of lending in the country explains the high lending rates, as compared to nearest competitors in RMG export market. A comparison of the prevalent lending interest rates in the competing markets is given below for reference:

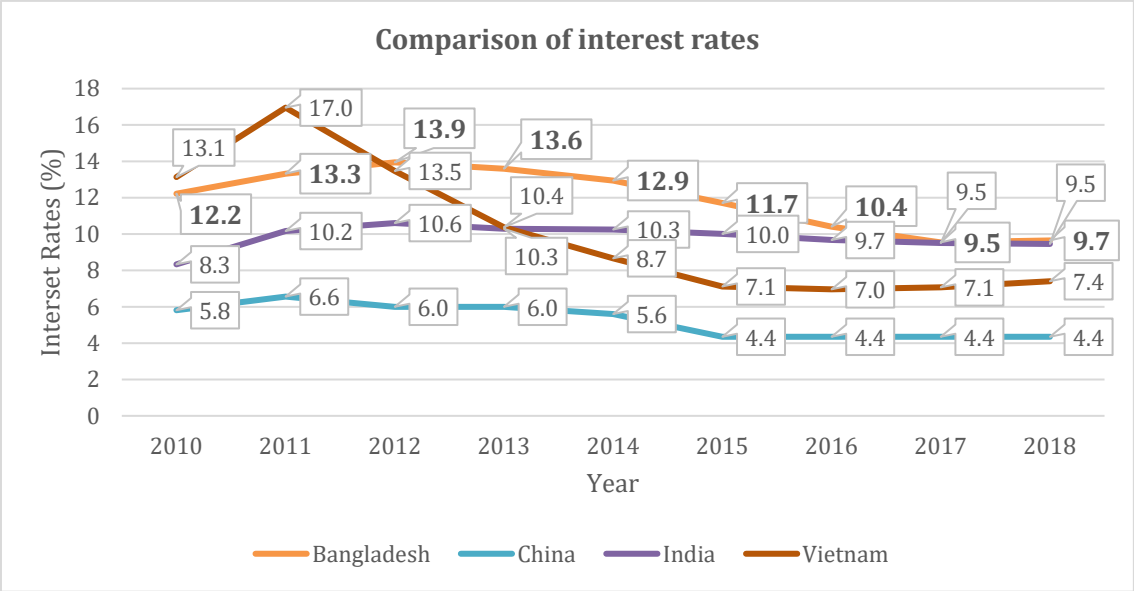


Figure 15: Comparison of interest rates among major RMG exporters

Even though the overall market level interest rates have exhibited a sharp fall in recent times, RMG units in the country[46] are reported to be receiving funding at 10-12% interest rates from banks and at 11-13% from FIs, depending on financial institution's internal loan process and the creditworthiness of RMG units. In case higher risk is assessed, the interest rates may exceed these limits. Also, the lowering of interest rates has been offset to a degree by increase in labour wages and increased operational costs due to compliance with Accord/Alliance requirements. As exemplified in the figure above, even with the best-case scenario, interest rates in Bangladesh are still considerably higher than its immediate competitors. In the near future, the interest rates are expected to remain in the current state or even increase given the performance of the banking sector in the nation based on key indicators[47]: The feasibility study conducted for the RMG sector indicates the need for ~ 5.7%[48] (11%-5.28%) concessionality in the interest rate for energy efficient

[46] Source: Stakeholders discussions with bankers to RMG units and individual RMG unit owners
[47] Source: Banking Sector in Bangladesh - Moving from diagnosis to action (CPD, December 2018)
[48] Please refer to table 06-09 of this document

equipment, compared to commonly available commercial loans (i.e around 11%[49]) in order for EE equipment to be widely adopted in Bangladesh. Using GCF and LFIs funding, this can be achieved.

Also, there are a number of areas related to implementation where the RMG unit requires expert guidance and external consultancy support. Banks, being a key stakeholder, also have limited capacities in assessing an energy efficiency project and estimating the cost savings potential. Given this situation where, on the one hand, both RMG units as well as the banks have limited technical capacity and on the other hand the prevailing market interest rates are considerably high, energy efficiency measures are largely avoided. This Program therefore attempts to address both these barriers though a structured technical assistance program and a concessional line of financing. In order to access financing from the Program, the end borrowers will always be required to take on risk via minimal capital requirements, which is considered as equity participation and considered as part of the project amount.

Component 03 & 04 of the proposed program aims to address the key barriers of RMG sector to increase their energy efficiency by supporting entrepreneurs and business establishments in the garments sector with financial and market resources through the LFIs/IDCOL, to avail investment opportunities for energy saving technology upgrades. In order to facilitate the implementation of the program, the Accredited Entity (AE) Infrastructure Development Company Limited (IDCOL) has proposed LFIs[50] to be the Executing Entities for Component 03 and requested financial support by means of concessional financing from Green Climate Fund (GCF).

The proposed program will comprise following two components addressing the energy efficiency needs of the RMG sector:

Component 3: USD 200.00 million financing for Energy Saving Equipment & Technology for RMG sector

Under this component, IDCOL will sign subsidiary agreements with the EEs to create a term loan facility which provides term loans with preferential rates directly to RMG sector end borrowers.

G. General criteria for lending to RMG unit:

- End borrowers i.e. project developer will be a business entity of limited company
- End borrowers should have operations in the production of RMG sector in Bangladesh
- For both Green field and Existing project related to up-gradation to energy efficiency technologies/machines. For a Project loan application already being processed at LFIs, a letter of credit (L/C) for purchasing the EE&C equipment, anticipating the use of the Project Loan, may be opened up to 12 months prior to either GCF financing or LFIs approval of the loan. In case of project having multiple expense heads, only Energy Efficient component of the proposed equipment to be financed
- All financing requests need to be supported by suppliers' declaration/ catalogue/ brochures or report/certifactes from independent/certified energy auditor acceptable to the LFIs or the baseline developed under TA activity
- Fulfillment of other required criteria as mentioned in LFIs CRM guideline, lending policy or other applicable policies/requirement
- 100% of the eligible equipment price can be financed

[49] https://www.bb.org.bd/fnansys/interestlending.php

[50] Initial target LFIs are BRAC Bank Limited, Southeast Bank Limited, City Bank Limited and IDLC Finance Limited

H. Technical Eligibility criteria:

Eligibility should be confirmed for each loan application. The **Eligible Technology & Equipment List** is a predefined list of technologies and equipment as prescribed during the programme formulation. This list will be updated every year, if required, to reflect the accurate market scenario and will be subject to approval by GCF.

Category	Major EE&C Equipment	Condition
Cutting	• Optimized Air Compressor system • Ducting for hot air exhaust in compressors • LED Light • Absorption Chiller • Dehumidifier	• Any Equipment/technology eligible for financing, not limited to this list, must have minimum 15% energy saving potential compared to the prevailing inefficient/ less efficient equipment used in the sector • The eligibility would be supported by catalogue/ brochures/declaration form supplier's or report/certificates from independent/certified energy auditor or the baseline developed under TA activity • Common equipment will be interchangeable within the category
Sewing	• Servo motors for sewing machine • Optimized air Compressor system • Ducting for hot air exhaust in compressors • Exhaust Fans • LED Light • Gas Generators • Absorption Chiller	
Dyeing	• Steam Boilers with waste heat recovery system • FD fans for boilers • Oxygen control system for flue gas in boilers • Jet Dyeing • Soft Flow • Stenter • Steam Condensate Recovery system • LED Light • Absorption Chiller • Hydro • Insulation of Steam Distribution Lines	
Ironing & Finishing	• Steam Boiler with waste heat recovery systems • FD fans for boilers • Oxygen control system for flue gas in boilers • Insulation of Steam Distribution Lines • Steam Condensate Recovery system • Optimized air Compressor system	

	• Ducting for hot air exhaust in compressors • LED Light	

I. Eligible investment cost: Same as "C. Eligible Investment Cost" for Textile.

J. Financial criteria: The eligible investment should be profitable, to enable the loan repayment with enough cash flow.

- The pay-back period, including financial costs, shall be minimum 02 (two) years;
- The loan granted by LFIs to end borrowers will have a minimum maturity of three (3) years for energy efficiency investments;
- Minimum DSCR of 1.00x
- Any other criteria set by LFI's approving authority in excess of criteria set out in FP. For deviation of any criteria mentioned in this FP will require GCF approval.

K. Timing of Loan Application and Appraisal: LFIs will consider loan application from end borrowers for procurement of new energy efficiency equipment. However, for retirement of any machinery L/Cs into GCF project term loan, the L/Cs can be opened maximum 12 months prior to application. As mentioned in Component 1 above, loan processing time will be minimized due to non-existence of external reviewers and pre-set terms & conditions.

L. Lending Conditions- Details in the Term Sheet

M. Collateral & security arrangements: As per "Lending policy" of LFIs and prevailing industry practice

During implementation of the project, LFIs will undertake due diligence activities to determine eligibility of the RMG units for concessional financing. Based on the information provided by the LFIs, IDCOL will provide final approval on the eligibility of the sub-projects for access to concessional line of financing. LFIs will receive funds from GCF as per the disbursement schedule shared under the term sheet. The repayment of the loan from the EEs will also be supervised by IDCOL.

As per the preliminary analysis in the program concept note, it has been estimated that the program would require a financial support of USD 250 million – USD 150 million coming from GCF loan and USD 100 million from co-financing sources. The disbursement period has been considered to be five years and the repayment period has been considered to be of maximum 20 years at this stage.

Component 4: USD 2.30 million GCF Technical Assistance (TA) to develop enabling environment for EE investment in RMG sector

Based on the discussion with key stakeholders it has observed that there is limited market awareness and overall scepticism amongst stakeholders regarding implementation of energy efficiency measures, monitoring and verification of benefits accruing from such measures apart from need for concessional

financing. Banks feel that the institutional capacity in appraising an energy efficiency project and determine bankability of such projects is low as well as the capacity to ensure effective monitoring and verification of these projects to ensure benefits accrual is taking place and hence, repayment is also on track. RMG units, despite appreciating the benefits of energy efficiency, are strained due to reduced profitability and have limited awareness regarding implementation, maintenance and operational requirement of such projects. Also, the lack of demonstration projects within the sector and country, in general, is preventing otherwise interested RMG units in undertaking energy efficiency measures.

Given this context, along with concessional line of financing, there is a definitive need to improve market perception about energy efficiency and provide support to the relevant stakeholders at all stages of implementation energy efficient measures. Also, creating an interface between energy efficiency equipment suppliers or manufacturers and the decision makers behind the investment for energy efficiency i.e. RMG unit owners, can help disseminate the information related to energy efficiency and resolve any queries that the unit owners may have. Policy makers are also required to be apprised the barriers to implementing energy efficiency measures and provide guidance in developing enabling policies, regulations to help overcome these barriers.

It is envisaged that without such enabling activities, a concessional line of financing would not help in generating interest among the stakeholders in undertaking energy efficiency measures. Also, given that the energy efficiency market in Bangladesh is in its infancy, such support activities would be critical to enable market transformation and galvanize the equipment procurement decisions of RMG units. Hence, the TA is viewed to be a critical component to ensure greater uptake of energy efficiency measures during the programme duration as well as ensure sustainability of energy efficiency market for RMG sector beyond the programme duration.

The detail activities are described below:

Output 4.1: Preparatory activities & Base lining energy consumption of RMG sector

Activity 4.1.1: Devise operational manual for the program & selection of prospective LFIs for the program (if required)

Activity 4.1.2 Develop whistle blower policy for the program

Activity 4.1.3 Organizing programme launching event, to introduce the new concessional credit line and it unique features dedicated to promote EE in RMG Sector.

Activity 4.1.4: Classification of RMG units based on scale and type of products and data collection through energy audit of sample plants

Activity 4.1.5: Consolidation of data and developing sector-level baseline

Activity 4.1.6: Interact with stakeholders/market players to prepare a list of equipment already implemented in Bangladesh and having proven energy savings results. List will be integrated with knowledge platform and disseminated through other means to ensure adequate public outreach

Activity 4.1.7: Revision of baseline by conducting energy audit and data consolidation

Output 4.2: Capacity building of Local Financial Institutions (LFIs)/IDCOL

Capacity building of LFIs/IDCOL to assess funding proposal and monitor implementation of energy efficient technologies in factories of RMG borrowers.

Activity 4.2.1: Conduct capacity building trainings/workshops to develop capacity of corporate/head office level officials to effectively conduct banking due diligence of loan applications for implementation of energy efficient technologies.

Activity 4.2.2: Conduct capacity building trainings/workshops to develop technical capacity of banking officials at branch/field level to efficiently monitor implementation of energy efficient technologies over the duration of repayment of loan amount.

Output 4.3: Capacity building of RMG units to enable implementation of energy efficient technologies

Capacity building of RMG units to enable implementation of energy efficient technologies

Activity 4.3.1: Conduct workshop to establish and disseminate business case of energy efficiency among RMG unit owners/top officials to help generate interest in owners in energy efficiency concept as well as provide select real-life case studies to instil confidence among them in pursuing energy efficiency projects

Activity 4.3.2: Impart training to facility/utility managers on the technical requirements for implementing energy efficiency projects as well as necessary steps (i.e. equipment working condition, energy supply stability etc.) to be undertaken during operations to ensure theoretical energy savings are realized.

Activity 4.3.3: Develop awareness of workers on importance of energy efficiency and impart knowledge key skills required to implement energy efficient equipment. This will help them adapt to any possible change in the operations due to introduction of new machinery and ensure seamless transition to new machinery without a loss in productivity.

Output 4.4: Provide on-demand technical support to participating banks on monitoring, reporting and verification (MRV) of energy efficiency projects

Provide on-demand technical support to LFIs/IDCOL on monitoring, reporting and verification (MRV) of energy efficiency projects within TA period of 05 years. On-demand technical support means LFIs/IDCOL will be able to send queries to TA consultant related to any issues faced during MRV of live projects. TA consultant will provide response to the issue or get back to LFIs/IDCOL for further information within 5 days of request being raised.

- *Activity 4.4.1:* MRV Support provided to LFIs/IDCOL (in form of technical trainings, resolve queries on request, handholding support). Impart trainings on technical capacity (i.e. concepts related to energy and emission savings, methods for calculating energy, emission and cost savings etc.) required for appraisal of energy efficiency projects. Resolve queries and provide technical support to LFIs/IDCOL on MRV related issues for projects to develop capacity in the banks to conduct MRV of projects even after TA consultant expires its tenure of 5 years.

Resolve queries and provide technical support to LFIs/IDCOL on MRV related issues for projects to develop capacity in the banks to conduct MRV of projects even after TA consultant expires its tenure of 5 years.

Activity 4.4.2: Develop standard solutions document and case study for gender based on experience of commonly issues encountered in previous activity. Identify most commonly faced issues of banks in MRV and develop standard solution document addressing those issues to provide LFIs/IDCOL with troubleshooting guide and help them conduct MRV after tenure of TA consultant expires

Output 4.5: Provide assistance to RMG units in loan application process

Output 4.5: Provide assistance to RMG units in loan application process

Rapid Diagnostic study report, Guidance documents, Troubleshooting guide and periodic query resolution response to RMG units

- *Activity 4.5.1* Conducting rapid diagnostic study of key areas related to loan application process for which RMG units require handholding as well as nature of support required.
- *Activity 4.5.2* Prepare guidance documents and filled up templates of loan application forms along with step-by-step explanation of process of loan application along with development of check list on list of supporting documents and guides on where and how they can be available.
- *Activity 4.5.3* Respond to queries related to loan application process received from through Query Management module present in proposed digital platform (discussed under Output 4.8).

Output 4.6: Provide on-demand technical support for implementation to RMG units which have secured GCF funding under this programme

Periodic query resolution and handholding support provided to RMG units; troubleshooting guide

- *Activity 4.6.1:* Implementation support provided to RMG units on request: Resolve queries and provide technical support to borrowers to ensure effective implementation of energy efficiency intervention
- *Activity 4.6.2:* Develop standard solutions document i.e. Troubleshooting manual based on experience of common issues encountered in previous activity:
  Identify most commonly faced issues of borrowers in implementation and develop standard solution document addressing those issues. The responses and queries will be consolidated to a troubleshooting guide to provide ready reference to any borrower after tenure of TA consultant ends.

Output 4.7 : Technology fair to create market awareness and develop access to energy efficient technology

02 days long Technology fairs organized (in Year 3) with participation of minimum 30 different technology suppliers and representation from 60 different Textile/RMG units

Activity 4.7.1: Organization of 01 technology fair: In order to create market awareness and develop access to energy efficient technology, IDCOL along with the LFIs will organize technology fair to create interface between international manufacturers/suppliers of energy efficient equipment and Textile/RMG unit owners to stimulate market development for energy efficiency in the sector.

This fair will also be covering both Textile sector under component 01 & 02 and RMG sector under Component 03 & 04

The TA component will be executed by IDCOL within the disbursement period of 06 years. The main beneficiary of the component will be the IDCOL, LFIs and Textile-RMG sector borrowers for sustainable implementation of the programme. The TA consultant will be selected from a list of international consultants based on competitive bidding procedures and the scope of work developed from activities given above.

- **Component 5: *USD 1.15 million GCF Technical Assistance (TA) to strengthen regulatory & institutional framework at the national level to overcome the operational constraints related to implementing EE&C in the country***

The component has been incorporated to address the policy/regulatory support issue that is preventing faster adoption of EE equipment in the textile & RMG sector of Bangladesh. Sustainable Renewable Energy Development Authority (SREDA) under Ministry of Power, Energy & Mineral Resources, will be the nodal Executing Entity for the proposed activities under this component.

The component includes several activities under two broad outputs (5.1) Development of relevant policies, strategies & plans addressing energy efficiency and (5.2) Strengthening capacity of relevant national institutions to overcome their existing operational barriers related to implementing EE&C projects.

The activities under Output 5.1 are as follows:

- 5.1.1: Review of existing national policies, strategies & plans regarding Energy Efficiency
- 5.1.2 Identify any policy gap & develop mechanism to address such gaps & stock taking of baseline
- 5.1.3 Development of relevant policies, strategies & plans
- 5.1.4 Implementation of the policies, strategies & plans developed under Activity 5.1.3

The activities under Output 5.2 are as follows:

- Activity 5.2.1 Assessment of detail capacity development requirement at policy level
- Activity 5.2.2: Develop training manuals based on the world best practices focusing on performance measurement, EE standards & labelling and financial support mechanism for implementation of energy efficiency projects; (prospective business model with feasible payback and IRR)
- Activity 5.2.3: Organize 03 training of the trainers (ToT) for Government officials for institutionalization of the training manual
- Activity 5.2.4: Organize 10 training session for the policy makers and relevant government official by the trained trainers. National relevant officials mean officials from different government offices related to environment, power, energy, energy efficiency .etc.
- Activity 5.2.5: Organizing 02 workshops to disseminate outcome of the programme to policy makers and EE practitioners and also the learning from implementing energy efficiency in textile and garments sector (financing scenario, business case and economic benefits, women involvement and role of government for long-term sustainability) to ensure institutional capitalization of knowledge.
- Activity 5.2.6: Mass awareness for energy efficiency through other disseminating tools like media coverage, bill board. etc.

The proposed activities under component 05 will facilitate institutionalization of the EE&C measures in the country and will be the key exit strategy to ensure additional concessional funding continues after programme concludes.

Sustainable and Renewable Energy Development Authority (SREDA) has been formed under the provision of "Sustainable and Renewable Energy Development Authority Act, 2012" on 22nd May, 2014 as a nodal agency to ensure energy security and promote, facilitate and disseminate sustainable energy (SE) in both areas of Renewable Energy (RE) and Energy Efficiency(EE).

Earlier, different ministries and departments, including the Bangladesh Power Development Board (BPDB), the Rural Electrification Board (REB), the Local Government Engineering Department (LGED), autonomous bodies like IDCOL and also the private sector was working on renewable energy projects. But the necessity of an authoritative organization in renewable energy sector to maintain coordination among them was being felt. So, an institution like SREDA was inevitable. The institution is now working under Power Division of the Ministry of Power, Energy and Mineral Resources (MPEMR) of the Government of the People's Republic of Bangladesh as a coordination body for the development of the renewable energy in the country.[51]

The below diagram represents the implementation arrangement proposed for Component 05:

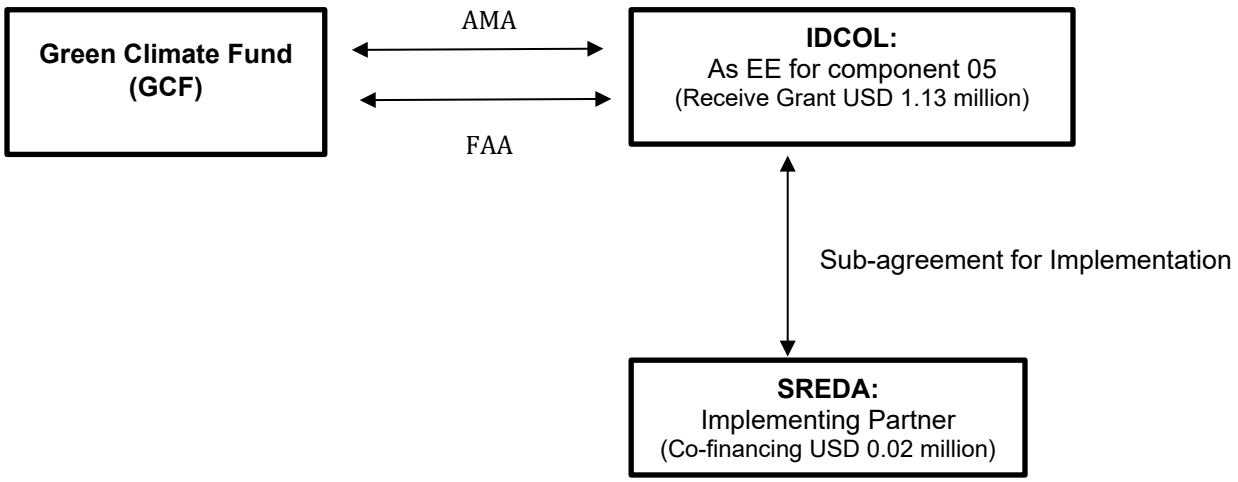


Figure 15.1: Component 05 for SREDA

IDCOL as the accredited entity to GCF will have to sign the Funded Activity Agreement (FAA) with GCF to ensure proposer implementation of Component 05. IDCOL as the EE will be liable to supervise & monitor proper implementation during the implementation timeline. Since, SREDA will be the Implementing Partner for delivering this component, IDCOL will sign a separate sub-agreement with SREDA. IDCOL will engage the required consultant/consultant firm under its own procurement policy in consultation with and engagement of SREDA. SREDA will co-finance for this program in-kind which has been detailed under the budget calculation. SREDA as the Implementing Partner will carry out specific activities mentioned above and IDCOL will facilitate SREDA for the management and operation for component 05.

In excess of activities under component 05, IDCOL will regularly report the energy savings achieved under this entire program to SREDA, in line with reporting to GCF (with the same frequency). This information will be incorporated in national data base for energy savings.

B.4. Implementation arrangements (max. 1500 words, approximately 3 pages plus diagrams)

[51] https://mpemr.gov.bd/power/details/26

Provide a description of the project/programme implementation structure, outlining legal, contractual, institutional and financial arrangements from and between the GCF, the Accredited Entity (AE) and/or the Executing Entity(ies) (EE) or any third parties (if applicable) and beneficiaries.

- *Provide information on governance arrangements (supervisory boards, consultative groups among others) set to oversee and guide project implementation. Provide a composition of the decision-making body and oversight function, particularly for Enhanced Direct Access (EDA) proposals.*
- *Provide information on the financial flows and implementation arrangements (legal and contractual) between the AE and the EE, between the EE or any third party and beneficiaries. For EEs that will administer GCF funds, indicate if a Capacity Assessment has been carried out. Where applicable, summarize the results of the assessment.*
- *Describe the experience and track record of the AE and EEs with respect to the activities (sector and country/region) that they are expected to undertake in the proposed project/programme.*

Provide a diagram(s) or organogram(s) that maps such arrangements including the governance structure, legal arrangements, and the flow and reflow of funds between entities.

FOR COMPONENT 01 AND 02:

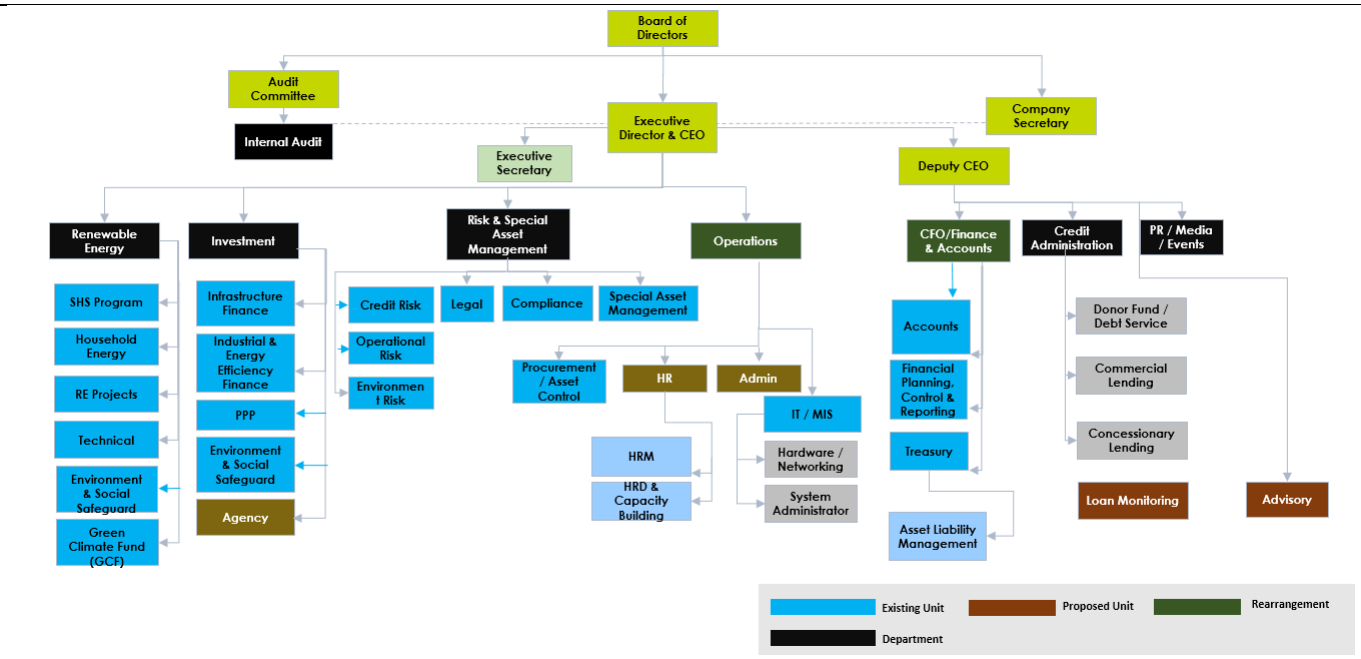
Governance arrangements under the programme for *Component 01 and 02:***:**

IDCOL will play the significant role as Executing Entity to assess the eligibility of the sub-projects of the Textile sector for financing under the program as per the set criteria and accordingly will place disbursement request to GCF. IDCOL will be the borrower & Executing Entity (EE) where the Textile owners will be the end borrower. IDCOL will channelize the loans to the ultimate beneficiaries, textile borrowers. This business unit(s) of IDCOL will be in primary contact with the end borrowers. IDCOL will have separate role as Accredited Entity (AE) & Executing Entity (EE).

IDCOL's Organogram (Figure 16) shows all the functional departments and detail reporting structure under the respective functional departments including Finance, Internal Audit, Procurement, and other key functions. IDCOL Board has the following three special committees comprising board members: Audit Committee, Credit Committee and Organization Committee (Recruitment and Promotion Committee). Composition and roles and responsibilities of Board Committees is annexed.

Among the list of internal oversight bodies/committees IDCOL has the following committees for maintaining internal oversight in different aspects of company operations: Management Committee, Credit Risk Management Committee, Asset Liability Management Committee, Internal Control and Compliance Unit, Risk Management Forum, Risk Analysis Unit and Integrity Committee. The terms of reference of the aforesaid committees are enclosed in Annex. All these committees are assigned to ensure dedicated internal oversight on vital corporate governance issues. The committees comprise senior management officials of IDCOL with appropriate functional designation and responsibilities that best fit to serve the purpose of the committees.

Figure 16: Organogram of IDCOL



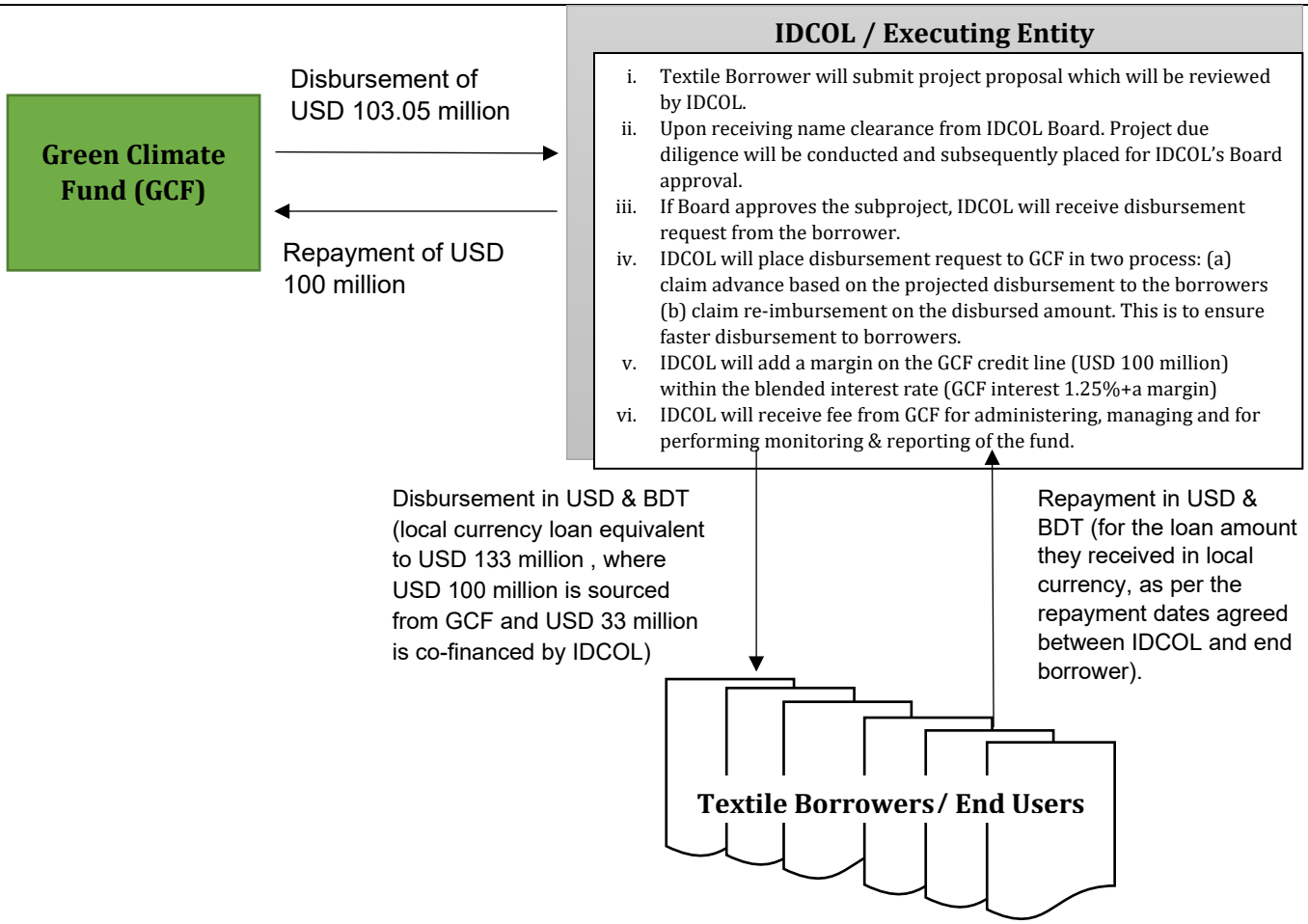
Financing Flow under Component 01: (please refer to figure 17)

1. IDCOL will open a designated GCF "Project Account Textile" for receiving, disbursement & repayment of the GCF fund under this project.
2. After receiving the GCF fund in ""Project Account Textile", IDCOL will disburse the fund to the respective end borrower's account.

- ***GCF financing to IDCOL-*** under component 01 of the programme GCF will provide IDCOL USD 100.00 million senior loan. The senior loan will be passed down to the end borrowers as concessional loan to make EE equipment affordable in comparison to cheaper traditional equipment.

- ***IDCOL financing to end borrowers:*** IDCOL will on-lend to the end borrower/ textile borrowers in both USD & local currency loan equivalent to USD 133.00 million , where USD 100 million is sourced from GCF and USD 33.00 million is co-financed by IDCOL.

Figure 17: Fund Flow under Component 01&02



- ***Repayment from end user/ textile borrower to IDCOL:*** Repayment will be made by the end borrower to IDCOL in USD/local currency for the loan amount they received in USD/local currency, as per the repayment dates agreed between IDCOL and end borrower.

- ***Repayment from IDCOL to GCF:*** IDCOL will repay USD 100 million to GCF as per the agreed amortisation schedule mentioned in the Term Sheet.

- ***Re-investment management:***
  - IDCOL will re-invest a portion of reflows till Year 12.
  - The details management of reflows will be described in Term Sheet.

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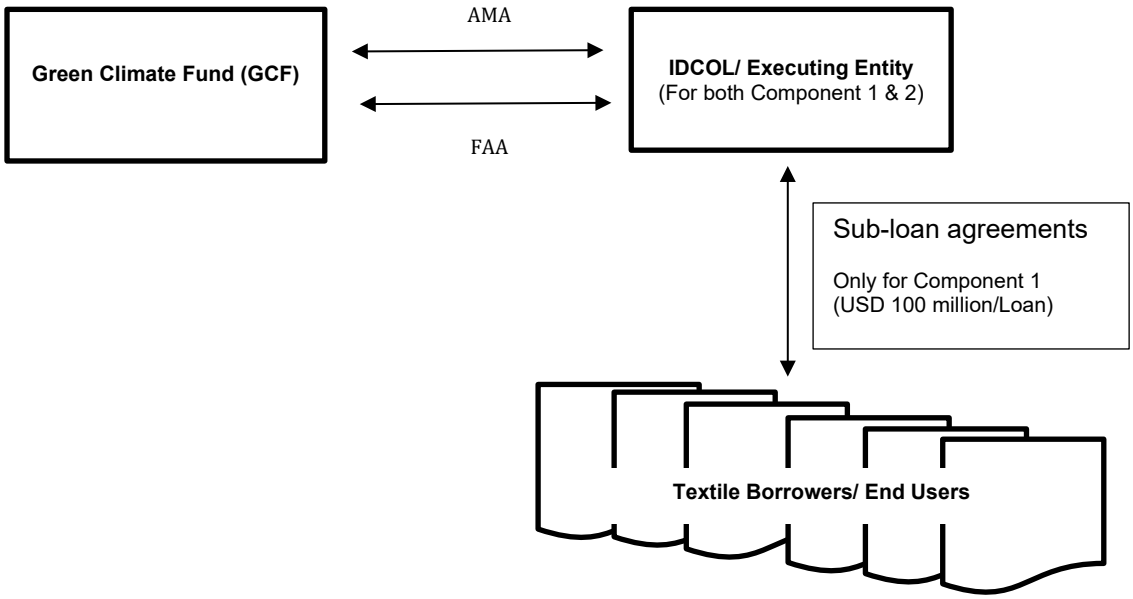
Financing Flow under Component 02:

- ***GCF to IDCOL*** – GCF will provide IDCOL USD 3.05 million as technical assistance (TA) for market development in the form of grant.

- ***IDCOL to consultant***- IDCOL will execute the TA amount via consultant or consulting firm to carry out activities mentioned in section B.3.

Figure 18 : The Implementation arrangement under the programme for Component 01& 02



IDCOL as an AE and EE of the proposed programme will sign Funded Activity Agreement (FAA) with GCF and subsequently sign sub-loan agreements with textile borrowers/ end borrowers. IDCOL will take the FX risk for Component 01 in arrangement with the end borrowers.

Programme implementation capacity of IDCOL:

IDCOL' experience in EE&C

The Energy Efficiency and Conservation Promotion Financing Project (EECPF) is a 100 Mn USD JICA credit line administered by SREDA, and IDCOL is one of the participating financial institutions for further on-lending this fund at preferential rates to eligible projects based on a predefined criteria. Under the JICA funded Energy Efficiency and Conservation Promotion Financing Project (EECPFP), IDCOL has approved USD 42 million in the in the RMG and Cement sectors, out of which USD 25.15 million has been already disbursed. The financed project would help the end consumer in saving 25 percent and 34 percent of primary energy consumption in the RMG and Cement facility respectively. This means that an electricity of savings of approximately 17 MWh over the life of the equipment. This would also result in a cost saving of approximately BDT 14 Crore per year for these installations for the end consumers

IDCOL has already started approving projects under the second tranche of JICA's EECPF, which aggregates to an amount of USD 84.07 million. IDCOL targets to fully disburse the first and the second tranche of EECPF by the end of 2021.

IDCOL's financial performance

Looking at long-term loan outstanding of IDCOL by sector, renewable energy projects account for 33.15% (December 2018) while that of Infrastructure projects has 66.85% (December 2018). The share of

renewable energy projects has been decreasing from 70% in December 2015. The importance of financing to infrastructure project including energy efficient project is increasing. It implies that due to expected weaker demand for renewable energy project especially for solar home system, loan for infrastructure would become more significant sector of IDCOL in the future.

From IDCOL's financial data, the total assets increased by 22.86% between December 2015 and December 2018 while loans and advances grew by 64%. Observing profit and loss statements, total operating income have increased by 6.94% within 4 years, while profit before tax and provision have increase 3.4% as well during the same period.

Looking at financial indicators ROE and ROA of IDCOL shows better than or almost same level as the Non-Bank average. Regarding Capital Adequacy Ratio (CAR), BB require at least 10% of total Risk Weighted Assets according to the guidelines. That of IDCOL was 11.53% in 2018 and more than 10% from 2015 to 2018.

Financial indicators of IDCOL for 4 years.[52]

	2015	**2016**	**2017**	**2018**
ROE (%)	24.1	6.7	8.4	10.34
ROA (%)	2.0	0.5	0.7	0.85
Capital Adequacy Ratio (%)	11.87	12.44	11.18	11.53

Credit rating obtained from credit risk assessment institutions is as follows:

IDCOL obtained AAA from Credit Rating Agency of Bangladesh[53]; this rating grade is ranked as first grade in the Bangladesh Bank's rating rate. It is observed under the current corporate finance environment in Bangladesh that loan outstanding has continued to increase by 18% from a year earlier backed by strong credit demand, while the growth rate of deposit which is the source of lending has lowered to 10% or 11%. As a result, advance deposit ratio (ADR: advance/deposit) stays at 77% which is higher than before. This requires tightening in growth of lending which resulted in introduction of private banks' clients to IDCOL or in requesting those NBFI to participate in loan syndication by private banks.

Private commercial banks and NBFIs were the dominant players in financing most of the categories, such as renewable energy (4.7%%), **Energy Efficiency (5.9 %),** Green Brick Manufacturing (15.4%), recycling and recyclable products (5.4%), setting up green industries (15.8%), and waste management (49.6%) However, IDCOL continues to be the main non-bank financial institution (NBFI) contributor and promoter of renewable energy technologies.

IDCOL's experience with DFIs

Since inception IDCOL has implemented loan and grant amount of more than USD 2.1 billion from DFI's, that has been channeled through the GoB. IDCOL's major development partners are World Bank, ADB, JICA, SNV, KfW, GIZ, IDB, USAID, GPOBA and DFI.

FOR COMPONENT 03 AND 04:

Implementation arrangement for *Component 04: GCF Technical Assistance (TA) to develop enabling environment for EE investment in RMG sector* will be the same as implementation arrangement of

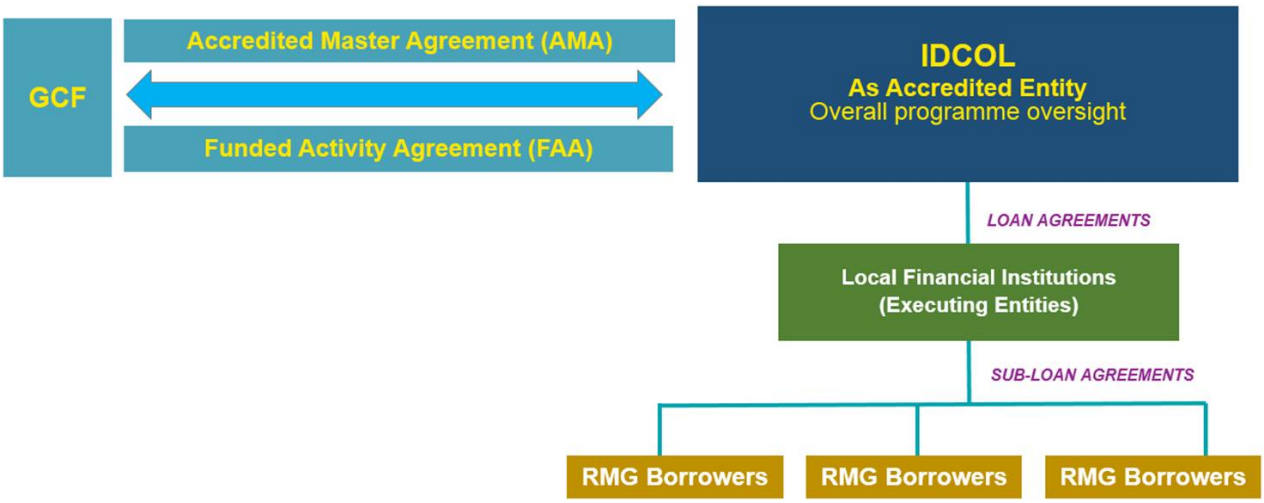
[52] Annual report of IDCOL
[53] As per disclosure on IDCOL's website

Component 2: GCF Technical Assistance (TA) to develop enabling environment for EE investment in textile sector. IDCOL will be the Executing Entity for both component 02 & 04 and will receive fund form GCF for execution.

The implementation modality for RMG loan component 03 is described below:

A. Basic Funding modality:

- Initially, four LFIs namely Southeast Bank Limited, BRAC Bank Limited, City Bank and IDLC Finance Limited have been selected for the RMG component 03. If any of these LFIs does not agree on GCF approved terms & conditions, then IDCOL may select few more LFIs (details in C. Selection process of LFIs). IDCOL can also utilize a portion of RMG fund to lend directly to RMG borrowers (in this case the implementation arrangements would be equivalent to component 1).
- In addition of the roles & responsibilities as the Accredited Entity (AE), IDCOL will play the role of "Borrower" under "Limited Recourse Loan" modality where the repayment obligation of IDCOL will be limited only to the repayment amounts received by IDCOL from time to time from the local FIs; Incase IDCOL utilizes any portion of GCF RMG fund, then IDCOL will be liable for repayment of this respective amount.
- The contractual arrangement for the RMG Loan component 03 will be as follows:



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B. Funding allocation: Details in Term Sheet

approval.

C. Selection process of LFIs: Details in Term Sheet

D. Approval of eligible sub-project for GCF financing:

- If IDCOL utilizes a portion of RMG fund to lend directly to RMG borrowers, then the approval process will be the same as described for textile loan component (Component 1).
- In case of financing through LFIs, LFIs will submit required information of the eligible sub-projects to IDCOL, as per the specific format, for checking the eligibility of the sub-project.

  Information required from LFIs:

  - Short description of the project & the borrower

- List of energy efficiency or investment eligible equipment & technology
- Environment Assessment (Category B)
- Co-financing planning with project cost break up
- Board Approval (Tenure, amount, currency, rate)

- After FP approval, specific format for eligibility checking will be developed during Operation Manual preparation under TA support
- Credit Risk Management (CRM) unit of IDCOL will receive the information/document from LFIs (as per specific format along required documents mentioned above). They will check/verify submitted information/document as per eligible criteria of the GCF. After satisfactory review, IDCOL CRMC will provide No-objection to LFI for specific sub-projects.
- Once the sub-project becomes eligible for GCF financing, the LFIs can place disbursement request to IDCOL for that sub-project in future.

E. Disbursement & Repayment of Fund under Component 03:

- IDCOL will open a designated GCF "Project Account RMG" for receiving, disbursement & repayment of the GCF fund.
- "Proceed Account LFI" will be opened & operated by LFI. Subject to BB permission, IDLC will open an FC account with any schedule commercial Bank.

- The LFIs will place disbursement request to IDCOL, for their eligible sub-projects in advanced against their upcoming disbursement or reimbursement for already disbursed fund for their sub-projects. Any regulatory requirement for USD financing to be obtained by LFIs at its own arrangement and inform to IDCOL.

- Credit Administration (CAD) of IDCOL will receive the disbursement requests from LFIs and will verify information/document against disbursement criteria of the GCF Operation Manual. After FP approval, specific format will be developed during Operation Manual preparation under TA support

  Required information:

  - Sanction advice (commercial terms, acceptance to ESMF/Gender issues. etc.)
  - Relevant evidence for compliance with ESMF/Gender policy
  - Relevant evidences of disbursement

  Upon satisfactory review, IDCOL will approve for disbursement.

- After approval, Accounts Department of IDCOL will submit disbursement request to GCF. IDCOL will place disbursement requests to GCF in any month and several times in a year. After receiving the fund in "Project account RMG", Accounts Department will disburse the fund to ""Proceed Account LFIs" or to "Machinery L/C beneficiary A/C" as per LFI's discretion.

F. Pricing for co-financing by LFIs: Details in Term Sheet

G. Repayment of Loan & Reflows Management- Details in Term Sheet

Brief Profile of Initial Target Local Financial Institutions (LFIs):

1. **BRAC Bank,** established in 2001, is well known for its SME Banking in Bangladesh. It has also grown rapidly in retail Banking, Corporate Banking, Treasury and other financial services. BRAC Bank Limited's authorized share is 2,000 million ordinary shares of BDT 10 each. Issued, subscribed and paid-up is

approximately 1,072 million ordinary shares of BDT 10 each (2018). Earnings per share is BDT 5.17 in 2018. Revenue of BRAC Bank in the year 2018 is BDT 19,164 million with a CAGR of 8.30% from year 2015 and net profit after tax is BDT 5,547 million in the year 2018 with a CAGR of 31.57% from year 2015. BRAC Bank is implementing green banking practices through 'Green Reporting' to the Bangladesh Bank. Emphasizing on the conservation of natural resources that include paper, water and energy. At the end of the year 2018, the financing amount in green projects is BDT 12,000 million.

Total asset of the BRAC Bank is BDT 315.42 billion showing CAGR of 12% over the last 4 years while compounded annual growth rate of loans and advances is 17.4% per annum flourishing the business of the bank. Net interest Income as a percentage of total earnings asset stands at 4.49% in 2018 which has slightly declined from 2017. BRAC Bank's interest on deposit has increased resulting in increase in cost of fund and reducing spread over time. Still, spread around 6% in 2018.

The Bank improved their common equity Tier-1 ratio taking it to 12.31% from 11.24%. On the other hand, Capital to Risk (Weighted) Assets Ratio (CRAR) increased to 13.67% in 2018 and this is well above the requirement as per Basel III. On the back of marked improvement in asset quality, that is manifested due to Net NPL ratio being restricted at 0.97%. The Bank is improving its financial health in all criteria. However, it is being strategically aggressive in case of asset liability mismatch but they are maintaining statutory requirement in capital adequacy to withstand any shock. BRAC Bank Limited also maintaining improvement in their profit after tax in the year 2018.

2. **IDLC Finance Limited,** established in 1985, is one of the pioneers in the non-banking sector in Bangladesh. Started as a single product lease finance company, it has a strong and diversified position in Corporate, SME, Retail and Capital Market segments now. In the year 2018, IDLC Finance Limited has Authorised Share Capital of 1,000 million ordinary shares of BDT 10 each. The paid-up capital is 377 million ordinary shares of BDT 10 each. Earnings per share of IDLC Finance Limited in the year 2018 is BDT 4.22. Revenue and net profit after tax in the year 2018 is BDT 4,705 million and BDT 1,591 million, exhibiting a CAGR of 5.9% and 8.54% from year 2015 respectively. IDLC offers 52 green products under 8 categories as defined by Bangladesh Bank to cater the specialized needs of different industries and segments. At the end of the year 2018, the Green Banking portfolio stands at BDT 648 million and cumulative disbursement in green segment is BDT 1,255 million.

   Throughout last four year, IDLC is able to maintain AAA (Triple A) long term credit rating and ST-1 short term credit rating to the IDLC Finance Ltd. In 2017, following issuance of Rights Share, their total capital to risk weighted asset ratio taking it to 15.47% from 15.30% and common equity Tier-1 (CET1) capital ratio taking it to 14.62% from 14.57% in the previous year. IDLC has made a marked improvement in asset quality manifested in the improved NPL (Non- Performing Loans) ratio, which was restricted at 2.20%. Total asset of IDLC is BDT 105 billion registering CAGR of 13.6% over the last 4 years while the compounded growth of loan and advance is 15.7% per annum accelerating the growth of the business. Loan productivity has increased steadily over the last 4 years.

   The holdings in the portfolio of IDLC remain fundamentally strong and are expected to generate value in coming periods and aid in improving the ROE and ROA, which took a fall in 2018. IDLC has been paying cash dividend consistently to its shareholders over the years.

3. **Southeast Bank Limited** is a private commercial Bank, which launched its activities in Dhaka in 1995, providing conventional banking products and services to retail and business clients, along with specialized products/services like investment fund, automatic fraud monitoring. A dedicated unit named as 'RMG, Textile and Export Financing Unit' at Head Office has been handling the credit portfolio of export-oriented clients, providing both project finance and working capital finance. Total lending amount

in RMG sector in the year 2018 is BDT 50,850 million and total lending amount in green projects is in year 2018 is BDT 12,671 million.

As of 2018, Southeast Bank Limited has Authorized Share Capital of 1,500 million ordinary shares of BDT 10 each. The paid-up capital is 1,045 million ordinary shares of BDT 10 each and Earnings per share of in the year 2018 is BDT 2.33. Total asset is BDT 381.095 million showing CAGR of 13.6% over the last 4 years while compounded annual growth rate of loans and advances is 16.1% per annum flourishing the business of the bank. Revenue in the year 2018 is BDT 14,724 million and net profit after tax is BDT 2,456 million in the year 2018. Capital to Risk Weighted Assets Ratio (CRAR) increased in 2018 despite the growth in loan assets, on the back of marked improvement in asset quality, which is manifested in the improved NPL ratio. SEBL has maintained strong equity base, as on December 31, 2018, and it reflects the bank's long-term viability. Improved CRAR of 12.47% in 2018, which indicates that the bank has kept adequate capital providing cushion against the risk bearing asset.

The bank is improving its financial health in all criteria. However, it is being aggressive in case of asset liability mismatch but they are maintaining statutory requirement in adequacy in capital to withstand any shock. Liquidity management is also satisfactory while maintaining profitability, leading to improvement of earning quality in 2018. The Asset quality has improved too in the most recent years and their effective NPL management has made it one of the few commercial banks in Bangladesh with low NPL.

4. **The City Bank Limited** is one of the prominent private banks in Bangladesh. Established in 1983, the Bank provides a wide suite of deposit and loan products and solutions, catering to requirements of the widest socio-economic population cross-section. The authorized Share Capital of the City Bank Limited is 1,500 million ordinary shares with BDT 10 each. Paid-up capital of the bank is approximately 968 million ordinary shares of BDT 10 each. Earnings per share is BDT 2.08. At the end of the year 2018, the lending amount in RMG sector is BDT 39, 251 Million and cumulative disbursement in green projects is BDT 1,359 million.

   The total asset of the City Bank is BDT 324.78 billion in the year 2018 registering CAGR of 14.8% per annum over the last 4 years along with consistent growth of loan and advances. The business of the bank has grown rapidly over the 4 years. Cash flow base accrual ratio was observed to be negative in all years except for 2017 demonstrating that earning of bank was of high quality. The spread of the bank is quite high enough to provide high interest revenue margin. Gross NPL ratio is moving downwards over the years along with net NPL ratio which indicates high quality of the loan asset.

   The bank is improving its financial health in all criteria. However, it is being aggressive in terms of ADR. But they are maintaining statutory requirement in capital adequacy to withstand any shock. Liquidity management is also satisfactory. Overall, it can be observed that City Bank's core operational income margin has experienced growth; which indicates, the bank is able to run its main operations efficiently. Moreover, they have had sufficient surplus capital adequacy for risk weighted assets; resulting in both having enough cushion to absorb any unpredicted liquidity shock and complying with Bangladesh Bank's regulations as well.

For component 05:

The implementation arrangement has already described in project description in section B

B.5. Justification for GCF funding request (max. 1000 words, approximately 2 pages)

Explain why the project/programme requires GCF funding, i.e. Why is the project/programme not currently being financed by public and/or private sector? Which market failure is being addressed with GCF funding? Are there any other domestic or international sources of financing?

Explain why the proposed financial instruments were selected in light of the proposed activities and the overall financing package. i.e. What is the coherence between activities financed by grants and those financed by reimbursable funds? How were co-financing amounts and prices determined? How does the concessionality of the GCF financing compare to that of the co-financing? If applicable, provide a short market read on the prevailing of the pricing and/or financial markets for similar projects/programmes.

Justify why the level of concessionality of the GCF financial instrument(s) is the minimum required to make the investment viable. Additionally, how does the financial structure and the proposed pricing fit with the concept of minimum concessionality? Who benefits from concessionality?

In your answer, please consider the risk sharing structure between the public and private sectors, the barriers to investment and the indebtedness of the recipient. Please reference relevant annexes, such as the feasibility study, economic analysis or financial analysis when appropriate.

Need for GCF funding for proposed mitigation intervention for Textile Sector (Component 01 &02):

- ***Addressing highest energy savings potential:*** Textile is one of the most energy intensive industry in Bangladesh and a transition into an energy efficient, climate resilient, internationally competitive industry will require a sustainable blend of private and public sector funding. In Bangladesh's context, private commercial banks and NBFIs are the dominant players in financing energy efficiency, however, IDCOL continues to be the main non-bank financial institution (NBFI) contributor and promoter of energy efficiency and renewable energy technologies because of its experience in executing successful EE programs with blended finance.
- ***Overcoming existing barriers:*** There exist some funding and technical cooperation for energy efficiency and conservation in Bangladesh's industry, such as programmes supported by the GoB and multi/bilateral agencies. These include Global Climate Partnership Fund (GCPF), Asian Development Bank's Industry Energy Efficiency Finance Program (IEEFP), IFC's Partnership for Clean Textile (PaCT), GIZ's support for technical cooperation, Bangladesh Bank's Green Transformation Fund, Bangladesh Bank Re-financing Scheme, Bangladesh Bank's Long-Term Financing Facility (LTFF) under Financial Sector Support Project (FSSP) and JICA's Energy Efficiency and Conservation on promotion financing project (see Feasibility study Annex 2) These initiatives were introduced based on the industrial demand and GoB's commitment towards tackling climate change. However, most of such instruments have not been able to meet their full potential due to several challenges like higher lending rate for end-user; difficulties in approval and disbursement due to delay in operations and loan decision; overly ambitious targets for EE; selective assistance either technical or financial; delayed realization of the investment pipeline etc. Further, due to constraints in availability of traditional financing, energy efficiency is not getting adequate *funding from the commercial banks to the textile sector.*

  The key reasons why this funding from GCF will be very important for the sector as follows:
- The scope of the programme is in alignment with the SDG targets– SDG 7, SDG 9 and SDG 13. Sustainable energy use remains of critical importance to the Bangladesh economy. Availability and the rising price of gas is a significant and growing constraint on the growth of industrial Activity.
- IDCOL will target to offer 50 % of the loan amount to medium and small textile factories in Bangladesh, a market which is not fully explored or catered at present form a financing perspective. This will increase their access to debt-based instruments at affordable terms, and ultimately build

their creditworthiness. Without GCF funding, these smaller segment factories wouldn't be able to access available loans from mainstreamed FIs.

- The loan product will be directed to increase energy efficiency across complete value chain in Textile industries in Bangladesh, which will be a unique product catering to energy efficiency in complete value chain of Textile industry (Different from Partnership for cleaner textile (PaCT) led by IFC whose focus area is investment facilitation for financing resource efficiency projects in textile factories)
- The loan facility will have following features which will make it highly attractive in the market.
    - Simplified of loan application procedure and speedy appraisal minimizing the time for loan processing.
    - Availability of Grace period & Long Tenure and low interest.

In addition, since the programme will be implemented by IDCOL it will have following advantage

- Experienced implementing partner. IDCOL has built its capacity by successfully implementing EE&C for JICA Fund.
- Strong pipeline built by IDCOL for Textile and RMG sector while implementing EE&C under JICA will ensure fast disbursal of fund.

- ***Ensuring suitable financing options:*** As a result of all of the above-mentioned factors, there is a high need for a programme that can support the transition to energy efficiency in Bangladesh. The market failure due to inefficacy and restricted scope of some of these instruments present a learning experience for any new financial instrument. The proposed programme has been designed after a detailed study of the existing and the past market experiences and have incorporated the lessons learned for long term sustainability of the proposed programme. Since the feasibility studies suggest that the requirement for concessional, low interest rate, loan scheme is quite high, the proposed programme will have a lower lending rate as compared to the other lending instruments in market to attract more beneficiaries especially the small and medium textile units for a greater impact. Moreover, it will minimize the time for loan procedure through simplification of loan application and speedy appraisal.

Relevance of the proposed financial instruments and Concessionality

Existing or past EE financing products available in Bangladesh, provided capital at a very high interest rate to the end users. This restricted the clientele base to only large borrowers who can afford high interest rates. Table 6-9, indicated that due to significant price difference of EE equipment a concessional rate is required with a tenor of 8-10 years and grace period of 1-2 years. Analysis of the viability of few[54] energy efficient equipment for textile industry indicate that 4% to 5% interest rate for local currency loan will be appropriate to compensate the extra capital cost of EE equipment. However, it has been learned from JICA- Energy Efficiency and Conservation programme (Phase 1) that end users are willing to pay up to 6%. .

In addition to GCF funds, the programme is proposed to be co-financed equally from IDCOL's own funds as well as the end borrower's' equity, thus ensuring all the stakeholders have a significant stake in the programme's success. The co-financing amounts and prices were determined based on the institutional and financial capacities of the beneficiaries and the trends in market. The associated financial assessment is discussed in detail in the feasibility report in annex 2.

Risk sharing

[54] Two types of equipment were analysed, comparing the cost impact of purchase of conventional equipment and energy efficient equipment by changing tenure period and grace period.

The programme has been designed to address the anticipated risks and ensure that risks are shared and mitigated by the stakeholders best suited for the same. A detailed risk assessment has been carried out & mitigation measures have been idenfied during the program design (Annex: Risk Report). While IDCOL will be selecting the borrowers to ensure credit risk is minimized, equipment and technoilogy risk will best be mitigated at the end user level. One of the key risks to IDCOL would be on account of currency fluctuation risk since GCF will be lending in USD while IDCOL will be lending to the end users in BDT.

In time series analysis done for exchange rate movement of Bangladeshi Taka against USD from 1998 to 2018 it is observed that Bangladeshi Taka is depreciating on an average rate of 2.94%[55] every year,

Need for GCF funding for proposed mitigation intervention for RMG Sector (Component 03 &04):

While adoption of energy efficiency measures can help in reduction of GHG emissions from the RMG sector and increasing in operating margins, the units must have finances available for their implementation. A comparison of the interest rates across major RMG producing economies is given in Figure 15 above for reference.

Even though the interest rates have exhibited a sharp fall in recent years, RMG units in the country are reported to be receiving funding at 10-12% interest rates from the banks and at 11-13% from other financial institutions namely Non-Banking Financial Insitutions (NBFIs). The interest rates depend on the lending agency's risk appetite, loan appraisal process and the creditworthiness of the particular RMG unit. In case higher risk is assessed, the interest rates may go beyond this range as well. As per discussions with stakeholders is was established the actual cost of capital of RMG units may vary between 10-17%. The higher risk perception about energy efficiency loan is also contributed by a combination of insufficient quality of collateral from the units and, low collateral asset value of energy-efficient equipment. The target markets of RMG units in Europe, USA have very low inflation rates, leading to near stagnant selling prices. On the other hand, the input markets of Bangladesh experience higher inflation rates, leading to increasing input costs. The labour wages have also been increasing as well as the overall cost of compliance due to the presence of 'Alliance' in Bangladesh's RMG sector. The increasing input cost and stagnated sales prices are reducing the profitability of RMG units. This tightened economic environment negatively affects RMG units' willingness to invest in energy-efficiency projects.

Even future outlook for financing in the country does not provide any indication of lowered interest rates. It is observed that State-owned Commercial Banks (SCBs), which have a 48% share of loans in the country, have been historically performing poorly in the major banking performance indicators. In order to prevent the SCBs from collapsing, Government of Bangladesh has taken the recourse of recurrent recapitalization under which, it has spent USD 1.8 billion during the period FY2009-FY2017[56]. In order to stimulate growth in the country, it is expected that GoB may continue bank recapitalization to ensure capital infusion in the market. Continued bank recapitalization by the Government is expected to constrain the government exchequer to invest in social and physical infrastructure.

There are a number of financing schemes related to energy efficiency and green financing in general. While all of the schemes include energy efficiency as one area of financing and/or RMG sector as one of the participatory sectors, none of them are focused exclusively on energy efficiency improvement in the RMG sector. Discussions with sector stakeholders were undertaken to identify the extent to which the schemes have been able to achieve their intended targets and understand the gaps, if any, which limits the success of these schemes. Based on the discussion the following key gaps have been identified:

[55] https://data.worldbank.org/indicator/PA.NUS.FCRF?end=2018&locations=BD&start=2018&view=bar
[56] Source: Monthly Fiscal Frameworks & Budget Briefs, Finance Division (CPD, December 2018)

1. ***Lower interest rates required:*** In order to ensure competitive advantage, the unit owners are operating with continually decreasing margins. In such a scenario, interest rates much lower than the existing market rate (in the range of 5-6%) would be required to encourage unit owners in taking loans exclusively for energy efficiency projects.

2. ***Complicated loan application process:*** In order to get access to energy efficiency financing, unit owners are required to conduct energy audits. After the audit, the usual loan appraisal process is undertaken by the banks, making the entire process a lengthy and complicated one. Also, unit owners have to pay upfront the cost of energy audit, further adding to the cost of undertaking energy efficiency.

3. ***Limited capacity of banks in appraisal process:*** Officials from the banks have limited understanding in the technicalities of energy efficiency project though they understand the RMG business. The bank officials have limited access to the standard tools, techniques and framework for appraisal of energy efficiency projects. This leads to lack of focus in the banks to neither develop financial products targeting energy efficiency investment nor conducts processing of loans for such project in a faster and efficient manner.

4. ***Non-availability of loans with banks having existing relationship with RMG units:*** RMG owners prefer to continue business relationships with their existing bankers rather than starting new relationships and in case of prolonged relationships, RMG owners secure loans at lower interest rates than prevailing market rates from their existing bank. In case the existing bankers do not provide energy efficiency loans, the RMG owners are wary of reaching out to new banks for energy efficiency loan – a deterrent which adds to the issues of energy efficiency financing.

Given this context of of Bangladesh and the key concerns highlighted above, concessional financing can help break this vicious cycle by stimulating the willingness to lend by the banks as well as the willingness to invest by the RMG owners in energy efficiency projects.

Risk sharing: The programme has been designed to address the anticipated risks and ensure that risks are shared and mitigated by the stakeholders best suited for the same. A detailed risk assessment has been carried out & mitigation measures have been idenfied during the program design (Annex: Risk Report). The credit risk, in this case, will be borne by the Executing Entities.

B.6. Exit strategy and sustainability (max. 500 words, approximately 1 page)

Explain how the project/programme sustainability (financial, institutional, social, gender equality, environmental) will be ensured in the long run after project closure, including how the project's results and benefits will be sustained.

Include information pertaining to the longer-term ownership, project/programme exit strategy, operations and maintenance of investments (e.g. key infrastructure, assets, contractual arrangements). In case of private sector, please describe the GCF's financial exit strategy through IPOs, trade sales, etc.

Provide information on additional actions to be undertaken by public and private sector or civil society as a consequence of the project/programme implementation for scaling up and continuing best practices.

Programme sustainability

The programme activities are designed to impact the sector in a way that the growth is inevitable. A catalytic change in financial, institutional, social, gender equality and environment aspect which will have longer influences far beyond the scope and timeline of this programme. (refer performance indicators annex 11)

Based on the interactions with RMG sector stakeholders, it has been established that the environmental, economic and resource conservation benefits of energy efficiency is recognized by over 60% of the top management of the garment manufacturing firms. However, lower prevalence of energy efficiency is due to combination of factors like

1. ***Excessive focus on top-line over bottom-line by the factory owners:*** In a competitive market scenario, the factory owners are more inclined to invest in adding production capacity to increase revenue i.e. top-line rather than invest in efficiency upgrade to increase profitability i.e. bottom-line. Hence, investment in energy efficiency is not always a high-priority item for the owners.

2. ***Capital investment requirement:*** The investment payback in energy efficiency is not immediate and depends on the specific measure being undertaken. In most cases, units do not have adequate capital availability to undertake additional capital investment in increasing production efficiency and hence, are sceptical to undertake such an investment. Also, in order to identify energy efficiency initiatives, owners have to expend on hiring energy audit firms. This adds to the cost component for undertaking energy efficiency measures.

3. ***Insufficient demonstration examples:*** Examples of actual savings achieved from energy efficient equipment is few and far between in Bangladesh. Owners are normally not hesitant on making additional investment when they have case studies which make help them be fully aware of the on-ground requirements for getting benefits from implementing energy efficiency measures.

4. ***Lack of standardization of energy efficient technologies and processes:*** There is limited market information available to owners to understand the technical specifications of the energy efficient technologies and are completely dependent on the opinion of energy auditors to implement a specific measure. A list of standardized technologies along with normally used technical specifications that can be used in the RMG sector can prove to be a useful tool to apprise owners as well as the on-ground staff about the energy efficient equipment.

5. ***Limited market information:*** Also, there is limited information available in the market regarding the processes and procedures to be undertaken to identify energy savings opportunities and for assessing the benefits received from the opportunities. Standardized templates and SOPs can help bridge this knowledge gap and instil a sense of confidence in the owners regarding the entire energy savings assessment process.

The proposed programme aims to address these issues by providing concessional loans and technical assistance to stimulate the energy efficiency market in Bangladesh***.*** Since the programme has been designed as loan to the beneficiaries – only the projects which are bankable in nature i.e. projects which, on an average, can generate returns over and above the cost of capital, are considered under the targeted solution set for the programme. Thus, the programme will help kick starting energy efficiency projects in the RMG sector at an accelerated pace. This will generate a strong sector-wide demonstration effect. Hence, it is expected that after the programme implementation period ends (a) unit owners will be far more willing to invest in energy efficiency projects and, (b) banks and FIs will also be ready to offer a greater number of financial products and instruments designed to cater to the appropriate need of the factory owners for investing in energy efficiency projects.

As mentioned above, the programme is expected to improve the risk perception of investment in energy efficiency in the sector by creating strong demonstration effects and increasing the availability of

standardized energy efficient equipment in the market. This in the long run will also drive down the capital costs of the equipment making energy efficiency investments more attractive and viable. Also, the project will help create new asset classes i.e. industrial energy efficiency, putting the right mechanisms in place and building confidence among investors.

Component 02 & 04, in particular, will help to ensure long-term sustainability of the programme, by providing capacity building and technical support to relevant stakeholders such as the textile and RMG factory owners, operators and the select bank officials. This in turn will augment the local capacity to prepare bankable, high-quality energy efficiency projects as well as to appraise those projects for accessing bank credits. Hence, even after the end of the GCF prgramme post recovery of loans from IE through, the market for energy efficiency in Bangladesh is anticipated to be more mature and self-sustainable.

Financial	Financial support to the industries to procure EE equipment which would otherwise be filtered out of their options due to capital constraints. The EE equipment procured under the programme, if costly, will not burden the textile and RMG industry owners since the cost saving on energy will, in sometime, reach the break-even and the loan is bearable due to the concessionality.
Institutional	Institutional capacities will be built financially, technologically and in terms of the work force. Internationally competitive EE equipment will facilitate growth in terms of production and reduce cost of production from energy savings. Moreover, the textile and RMG industries will timely be reporting the social impact on their workforce especially gender empowerment and the initiatives towards environmental cleaning of their processes.
Social	Institutional and financial growth of the industries will bring about growth of the communities associated with them. The workforce will experience growth in wages as an indirect benefit of industrial growth/profit-making; with expansion in production, older employees will undergo training and new jobs will be created; as a mandate, the industries will have to provide for basic needs like medical facilities, savings account, provision of safer working environments, etc.
Gender equality	A specialized gender action plan is devised to ensure that neither of men or women experience discrimination. There has to be equity in opportunities for financial opportunities in loan disbursement and job opportunities; skill training; provision of special needs like separate washrooms and maternity leaves, improving work environment, etc.
Environmental	The programme scope is designed to continually prevent a great amount of emissions from textile and RMG sectors of Bangladesh. The endorsement and installation of EE equipment will prevent emissions during the programme life cycle and beyond.

Sustainability ex-post

The programme aims to achieve catalytic impact in the textile and RMG sectors on various parameters. These, if successful, would be replicated across other sectors and ensure significant momentum for the objectives. Post 20 years, the impacts of the programme will continue to benefit the environment, society

and the beneficiaries since, the transformational change in societal mindset and technology transfer would have happened which the beneficiaries of the loan can't revert to the two-decade old practices (ex-ante).

GCF'S EXIT STRATEGY

For Component 01 & 02:

The long-term sustainability of the programme and responsible stakeholder behavior will ensure smooth exit for GCF. IDCOL will execute pre-screening of the potential textile end borrowers to disburse fund and or their progress through the respective deliverables as mention in MRE. Evaluation of progress reports and timely repayment of loan will be done to ensure continued sustainability of the sub-projects. These instruments will reduce financial risks for IDCOL. Repayment of GCF's reimbursable funds is IDCOL's responsibility to facilitate GCF to exit the programme once the tenure has been completed.

For Component 03 & 04:

The programme activities under Component 03 & 04, have been designed with a view of developing market for energy efficiency equipment in RMG sector through capacity building and awareness generation activities i.e. market and technical knowledge related barriers as given under the scope of Component 4. In order to overcome the immediate financial barrier that prevents RMG units considering energy efficient equipment, a concessional loan is envisaged under Component 3.

As a result of the activities in the two components, there will be real-life examples of implementation which will demonstrate the actual benefits that can be achieved and hence establish business case behind adopting energy efficient equipment. This will improve risk perception of energy efficiency measures and create a demand push. The participation of banks in the program will ensure that banking sector will become aware of the demand, thereby increasing availability of financing options in response. The market development activities will help increase operations of equipment supplier, thereby increasing market access of energy efficient equipment. The increased demand is also expect to bring down the prices of equipment, making it more affordable. Thus, the GCF funding will kick-start positive market transformation, which will be self-sustaining and continue after GCF closes the program.

The program design also includes screening of loan application based on established due diligence processes of the 4 EEs. This will ensure only those entities which are capable of repayment are selected for loan disbursement, thereby, insulating GCF from any default risk and facilitate safe exit from programme.

For Component 05:

Under this component certain policy will be developed upon proper assessment of policy gap, if any. Sustainable capacity building of key regulatory stakeholders will be ensured through capacity building initiatives. Energy savings data from this program will be reported to SREDA & will be incorporated into national database.

C. FINANCING INFORMATION

C.1. Total financing

(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)	Total amount	Currency
	256.48	million USD ($)

GCF financial instrument		Amount	Tenor	Grace period	Pricing
(i)	Senior loans	250.00	20 years	As per term sheet	As per term sheet
(ii)	Subordinated loans	…….	Enter years	Enter years	
(iii)	Equity	……			
(iv)	Guarantees	……	Enter years		
(v)	Reimbursable grants	…….			
(vi)	Grants (TA)	6.48	…….	…….	…….
(vii)	Result-based payments	…….			

(b) Co-financing information	Total amount	Currency
	84.02 million	million USD ($)

Name of institution	Financial instrument	Amount	Currency	Tenor & grace	Pricing	Seniority
IDCOL (EE)	Senior Loans	33.00	million USD ($)	As per term sheet	As per term sheet	pari passu
	In kind (PMC)	1.00	million USD ($)	-	-	-
LFIs (EEs)	Senior Loans	50.00	million USD ($)	As per term sheet	As per term sheet	pari passu
SREDA	In kind	0.02	million USD ($)	….		

(c) Total financing (c) = (a)+(b)	Amount	Currency
	340.50	million USD ($)

(d) Other financing arrangements and contributions (max. 250 words, approximately 0.5 page)	Not applicable

C.2. Financing by component

Component	Output	Indicative cost million USD ($)million USD ($)	GCF financing		Co-financing		
			Amount million USD ($)million USD ($)	Financial Instrument	Amount million USD ($)million USD ($)	Financial Instrument	Name of Institutions
Component 01: Energy Saving Technology financing for Textile sector	EE equipment & technology installed	133.00	100.00	Senior Loan	33.00	Senior Loan	IDCOL

Component 02 : USD 3.05 million GCF Technical Assistance (TA) to develop enabling environment for EE investment in textile sector	Creation of enabling situation for EE financing	3.05	3.05	Grants	….	….	….
Project Management Cost (PMC) for Component 01	-	1.00	-	-	1.00	In-kind	IDCOL
Component 03: USD 200 million financing for Energy Saving Equipment & Technology for garments sector	EE equipment & technology installed	200.00	150.00	Senior Loan	50.00	Senior Loan	LFIs/IDCOL
Component 04 : USD 2.30 million GCF Technical Assistance (TA) to develop enabling environment for EE investment in garments sector	Creation of enabling situation for EE financing	2.30	2.30	Grant	…	…	…
Component 05: USD 1.15 million for strengthening regulatory & institutional framework at the national level to overcome the operational constraints related to implementing EE&C in the country	Strengthening regulatory & institutional framework	1.15	1.13	Grant	0.02	In-kind	SREDA
Indicative total cost (USD)		**430.50**	**256.48**		**84.02**		

Special Note:

- For Component 1: Energy Saving Technology financing for Textile sector, IDCOL will co-finance (from own source or will arrange co-financing from other sources at own responsibility) the GCF credit line to the tune of USD 33.00 Million. This co-financing will be blended with GCF funds to develop a lending facility for the borrowers or loan component for GCF funding & co-financing will be separate.

- Similarly, for Component 3 the LFIs/IDCOL will co-finance (from own source or will arrange co-financing from other sources at own responsibility) the GCF credit line to the tune of USD 50.00 Million. This co-financing will be blended with GCF funds to develop a lending facility for the borrowers or loan component for GCF funding & co-financing will be separate.
- GCF loan will be pari passu with the IDCOL and LFI loans, which means that it will have the same seniority (both senior loans as opposed to senior from IDCOL and subordinated from GCF).

C.3 Capacity building and technology development/transfer (max. 250 words, approximately 0.5 page)

C.3.1 Does GCF funding finance capacity building activities?	Yes ☒ No ☐
C.3.2. Does GCF funding finance technology development/transfer?	Yes ☐ No ☒

The activities under Component 02, including the package of standardized tools which the programme is expected to develop has a strong replication potential in other market segments and elsewhere. The implementation of the proposed intervention includes a number of consultations, technical assistance activities and capacity building process of key implementing partners of the program (i.e., IDCOL and the textile industries) and a strong dissemination and communications strategy around these standard tools and business model. In addition, the monitoring activities during implementation of the Program will provide information and early lessons from good practices to be further replicated in later implementation stages of the Program and disseminated to market players. This would allow to exchange experiences and replicate results in other regions with similar challenges for investment in EE projects.

The activities under Component 04 of the programme intends to develop capacity across a diverse set of stakeholders operating in the RMG sector in relevant topics which will help address any technical barriers impeding growth of energy efficiency equipment in the sector. In case of EEs, capacity for apprising, monitoring and evaluating energy efficient projects is envisaged – this will help the EEs tap into the energy efficiency market thereby increasing fund flows to the segment. The trainings of unit owners, their facility managers and workers on operational aspects and commercial benefits of energy efficient equipment, will help reduce risk perception towards the concept. The programme also intends to develop capacity of policy makers, which will ensure that policies supporting use of energy efficient equipment adopted by Bangladesh, thereby stimulating the market. Market interface events are also planned which will interested RMG units connect with equipment suppliers and get their queries resolved by them - thereby giving the RMG units a first-hand understanding of the benefits.

D. EXPECTED PERFORMANCE AGAINST INVESTMENT CRITERIA

This section refers to the performance of the project/programme against the investment criteria as set out in the GCF's Initial Investment Framework.

D.1. Impact potential (max. 500 words, approximately 1 page)

Describe the potential of the project/programme to contribute to the achievement of the Fund's objectives and result areas. As applicable, describe the envisaged project/programme impact for mitigation and/or adaptation. Provide the impact for mitigation by elaborating on how the project/programme contributes to low-emission sustainable development pathways. Provide the impact for adaptation by elaborating on how the project/programme contributes to increased climate-resilient sustainable development. Calculations should be provided as an annex. This should be consistent with section E.2 reporting GCF's core indicators.

Designed as per GCF's guideline, the programme aims to achieve the objectives of the fund which is to catalyze a flow of climate finance to invest in low-emission and climate-resilient development, driving a paradigm shift in the global response to climate change. It envisages national implementation of the said targets and so, it's a large-scale project with an integrated approach to meet national climate commitments[57], energy targets [58] and streamline industrial development with human development. It will support entrepreneurs and business establishments in the textile and RMG sectors, two of the largest industries of the country, with financial and market resources to avail investment opportunities for energy saving technology upgrades. Consequently, the programme has a substantial impact potential in both the textile and RMG sector of Bangladesh.

IMPACT POTENTIAL IN THE TEXTILE SECTOR-

Energy Saving Potential:

The textile industry is one of the major energy intensive industries in Bangladesh with total industrial demand of 1,701 TOE/year which amount to 17% of total energy demand. As per the feasibility analysis, the manufacturing and operational processes in this sector are energy inefficient due to the use of second-hand machineries to save costs and thus has lot of potential for implementing new energy efficient equipment or retrofitting the existing machineries with energy efficient technologies. Because of energy efficiency implementations under the programme in the textile sector, the total energy saving in the sector is estimated to be 6,547 GWh.

Emission Reduction Potential:

The programme is expected to result in direct emission reductions of 4.00 million tCO2, by facilitating and scaling-up investment in energy efficiency improvements for a number of textile facilities. Energy efficiency improvement projects include both equipment and technology measures in the selected textile factories. The estimated potential for GHG emission reduction in textile factories depending on baseline fuel, is 0.2 million tCO2e/year or 4.00 million tCO2 cumulatively over the 20-year investment life-cycle. Emission reductions are calculated based on avoided quantity of fuel consumption by multiplying baseline energy use by relevant GHG emission factor and lifetime of the investment (which is 20 years in this case).

Emission reduction potential per million USD of investment (Cost per tCO2eq):

The expected programme cost for Textile sector is USD 133 million of which, USD 100 million will be funded through GCF, USD 33.00 million from IDCOL in the form of loan. There will be leverage financing of $33.00 million in the form of equity investment from end borrowers. Besides, there is a GCF grant for Technical Assistance (TA) to support associated activities. A multidimensional programme as this, needs to be robust enough to resist national market reflexes. The financial feasibilities show that the estimated cost per tCO2eq

[57] Bangladesh's INDC and BCCSAP
[58] EE&C Master Plan 2030

(a/c) is USD 34.33/ tCO2e and the estimated GCF cost per tCO2eq removed (b/c) is approx. USD 25.81/ tCO2e.

IMPACT POTENTIAL IN THE RMG SECTOR-

The programme aims to achieve the fund's objective and result areas by contributing shift to low-emission sustainable development pathways. The contribution is achieved by providing target market i.e. RMG sector of Bangladesh, access to concessional line of financing for undertaking energy efficiency measures which will result emissions savings as well as provide market participants (RMG units, banks, policy makers) with appropriate technical support required for stimulating the energy efficiency market in Bangladesh, as well as to support implementation of energy efficiency initiatives. Implementation of the programme will also help Bangladesh meet national climate commitments[59], energy targets[60], contributing to nation's overall efforts related to climate change. Since the programme aims the RMG sector, a major contributor to Bangladesh economy (sector contributes to 11% of nation's GDP and employs nearly 4 million people) it will help streamline industrial development with human development.

Energy Saving Potential:

The garments industry is the most energy intensive industrial sub-sector of Bangladesh with total demand of 2,107 kTOE/year i.e. 15% of total demand of industrial sector. As per situation analysis conducted in feasibility studies, energy consuming processes in the sector employ old equipment and exhibit potential to for replacement with equipment which lead to efficient use of energy through incorporation of new technologies. Apart from capital intensive measures, there are system inefficiencies caused due to leakages which can be reduced by undertaking low-cost or no-cost measures. Based on the assessment, an average inefficient unit exhibits an energy savings potential of 873 GWh/year and considering the potential number of units that can be targeted by the project cost (i.e. USD 250 million), the total energy savings is estimated to be 17,468 GWh throughout programme lifetime (21 years).

Emission Reduction Potential:
The programme is expected to result in direct emission reductions of 0.527 million TCO_2e/year by facilitating implementation of energy efficiency measures in RMG units. Energy efficiency improvement projects include both equipment and technology measures in the selected textile factories. Considering the program lifetime i.e. 21 years, total savings of 10.54 million TCO_2e can be achieved. Emission reductions are calculated based on avoided quantity of fuel consumption by multiplying baseline energy use by relevant GHG emission factor and duration in consideration (21 years in case of program lifetime).

Emission reduction potential per million USD of investment (Cost per tCO2eq):

The expected project cost is USD 200 million, off which USD 150 million will be funded by GCF through concessional loans and USD 50 million through co-financing. With the co-financing component, USD 50 million will be contributed by LFIs by way of loans and leverage financing of USD 50 million will be contributed by RMG units through equity participation. In addition, there is a GCF grant of USD 2.30 million for Technical Assistance (TA) for implementation support and development of energy efficiency market in Bangladesh. The investment from the programme perspective as well as GCF perspective is evaluated by term cost per TCO_2e, calculated based on the emission savings estimated. If the programme lifetime is considered, cost per TCO_2e for programme value and GCF's contribution are USD 19.20/TCO_2e and USD 14.45/TCO_2e respectively.

[59] Bangladesh's INDC and BCCSAP
[60] EE&C Master Plan 2030

Leakage emissions from resale of equipment

Detail leakage calculation has been described in Annexure 11.

D.2. Paradigm shift potential (max. 500 words, approximately 1 page)

Describe the degree to which the proposed activity can catalyze impact beyond a one-off project or programme investment. Describe the following, if applicable:

- *Potential for scaling up and replication*
- *Potential for knowledge sharing and learning*
- *Contribution to the creation of an enabling environment*
- *Contribution to the regulatory framework and policies*
- *Overall contribution to climate-resilient development pathways consistent with relevant national climate change adaptation strategies and plans*

The programme enables larger flows of finance for energy efficiency investment and shifting the established paradigm and pathways the investments must be made. The paradigm shift potential for the proposed programme lies in the programme's focus on the private sector as the driving force for investment and implementation of EE retrofits, as opposed to current models which only focus on large industries.

PARADIGM SHIFT POTENTIAL FOR TEXTILE SECTOR

Potential for scaling up and replication

The potential to scale-up the project is great and has been well-incorporated into the project design through the establishment of an efficient financial mechanism and monitoring framework to encourage investments and ease access to finance for textile factories besides enabling further investment decisions.

Its replicability within Bangladesh and abroad is high. A transformational programme as this will invite more textile factories to participate in EE adoption and up gradation, and energy efficiency itself and enable climate mitigation through scaling up of an established market base developed as a project outcome. Neighboring countries like Indonesia, Vietnam, and Cambodia with strong textile industrial sector and similar barriers and risks to EE investments and may benefit by learning from successful projects in Bangladesh which is a high-volume supply market.

Potential for knowledge and learning

The programme will contribute to knowledge creation and sharing by all market players. The two workshops have sensitized the textile fraternity on availability of fund and knowledge sharing.

The programme has a strong component of communication and knowledge sharing through consultations,, capacity building process of key implementing partners of the program (i.e., IDCOL and the textile industries) and a strong dissemination strategy around these standard tools and business model. In addition, the monitoring activities during implementation of the programme will provide information and early lessons from good practices to be further replicated in later implementation stages of the programme allowing exchange of knowledge and learnings.

Contribution to the creation of an enabling environment

The programme will enable market-based environment through policy, finance, technical / capacity de-risking and barrier removal. There will be deep penetration of energy saving technologies, equipment and appliances in the textile industries. The program enables to create a self-reliant ecosystem for both end users and suppliers of energy saving technologies. Helping to build scale and volumes for energy saving technology suppliers, the program will bring down the costs of these technologies and make them attractive even at commercial financing rates.

Contribution to the regulatory framework and policies

The program will contribute to the country-wide policies/programs to bring down the sectorial emissions and the cost of energy saving technologies and systemically promote investment in low-emission or climate-resilient development.

Overall contribution to climate-resilient development pathways consistent with relevant national climate change mitigation/adaptation strategies and plans

As per the commitments of GoB[61], programme will mainstream climate-resilient development pathways into policies and regulatory frameworks and decision-making processes at national, regional and local levels, including private-sector decision-making through this programme will contribute in emission reduction by promoting energy efficiency and establishing self-sufficient markets. The investments enabled through this program will lead climate resilient development.

PARADIGM SHIFT POTENTIAL FOR RMG SECTOR

The programme exhibits substantial potential to affect a paradigm shift in the application of energy efficiency measure for RMG sector in Bangladesh and catalyse impact beyond a one-off project or programme investment.

- **Potential for scaling up and replication:** The model adopted by the programme will help establish the bankability of energy efficiency initiatives and help create a number of demonstration projects which will help overcome the market apprehensions regarding energy efficiency which is leading lower uptake of such technologies. The two-pronged approach of providing concessional financing and providing technical support for implementation, will help address the barriers preventing growth of energy efficiency markets for RMG sector. With industries sector in Bangladesh having substantial savings potential, this approach exhibits potential for replication within the country to achieve further emission savings in future.
- **Potential for knowledge sharing and learning:** As per the programme design, TA consultants will provide implementation support to RMG units and MRV support to Executing Entities (EEs)/ LFIs for the project duration. In conclusion of the term, TA consultants will prepare documents which summarize the key issues faced by the two stakeholder groups along with the implemented solutions. This will provide future project proponents with access to learnings from previous projects and accordingly, these learnings can be incorporated to the project design to ensure better implementation and benefits realization.

- **Contribution to the creation of an enabling environment:** The TA component will help develop the energy efficiency market in Bangladesh for RMG sectors. Overall, the programme, through its TA and concessional loan components, aims to overcome the financial and technical barriers which are preventing uptake of energy efficiency measures. Technology fairs are planned in the program design to create an interface with the end users i.e. RMG units and the energy efficient equipment manufacturers/suppliers. The increased uptake through the programme is expected to create scale required for improved access to energy efficient equipment, in terms of availability and lower costs.

- **Contribution to the regulatory framework and policies:** Under the TA component, capacity building of policy makers of Bangladesh in fields related to energy efficiency in industrial sphere is planned. This is expected the policy makers with insights on the potential contribution energy efficiency can have on

[61] Bangladesh's INDC and BCCSAP

Bangladesh's economy along with the steps taken globally to develop enabling policies and regulations to promote energy efficiency. Such capacity building activities along with the demonstration effect of the programme is expected to increase market consciousness regarding importance of energy efficiency and accordingly, contribute to future steps in developing enabling policies and regulations.

- **Overall contribution to climate-resilient development pathways consistent with relevant national climate change mitigation strategies and plans:** The programme aims to contribute to the NDC targets of Bangladesh to reduce GHG emissions in the power, industry and transport sectors by 15% below 'business-as-usual' GHG emissions by 2030 through support is received from developed countries. The programme will also contribute to the targets of reducing energy consumption for industrial sector as given in the Energy Efficiency and Conservation Master Plan up to 2030. Hence, the progamme is making positive contribution to the national climate change mitigation strategies and plans.

D.3. Sustainable development (max. 500 words, approximately 1 page)

Describe the wider benefits and priorities of the project/programme in relation to the Sustainable Development Goals and provide an estimation of the impact potential in terms of:

- *Environmental co-benefits*
- *Social co-benefits including health impacts*
- *Economic co-benefits*
- *Gender-sensitive development impact*

The objective is to utilize an integrated suite of interventions to systematically de-carbonize the textile and RMG sector factories to realize both energy and financial savings, without compromising sustainability and sectorial growth/development. Delivering a large-scale retrofit initiative through this programme will have large and important development benefits whose impacts will increase over time as energy prices rise. Further, the availability of domestically produced gas is also severely constrained which will necessitate more textile units to depend on grid for electricity needs. The changing energy scenario will stress the government to revise fuel prices due to import costs and manage the existing supplies. The proposed programme will:

- Share the load of the government by reducing the energy consumption on the demand side
- Support energy conservation targets of the Government.

Further, the proposed programme will address the gender related concerns in the textile and RMG sector and promote gender equality. Based on gender assessment it is evident that gender-based discriminations in terms of wages, overtime, promotion, skill development, healthcare facilities and occupational health and safety are some of the burning issues in the textile and RMG sector in Bangladesh. The progamme will try to address these issues through its Gender Action Plan and ensure that women feel safe, equal and encouraged to hold their position in the sector for longer period. Moreover, the programme also intends to promote leadership capacity among the female workers for enhanced sustainability of the sector and overall development.

SUSTAINABLE DEVELOPMENT IN THE TEXTILE SECTOR

Environmental co-benefits

There are direct and indirect benefits to the environment through the proposed programme.

- Most importantly, the installation and operation of EE equipment will lead to GHG emission reduction contributing significantly to climate change mitigation.

- Contribution to improved air quality due to reduced emissions as a macro-impact
- Use of EE effluent treatment plants (ETPs), preventing discharge of untreated water into streams and saving energy while on 24x7 running status
- Reduction in wastes of product, water, hazardous materials, raw materials use and effective reutilization of waste heat

Social co-benefits including health impacts

EE technologies and equipment will result in direct benefits on the society i.e. worker community and the communities residing near the textile factories. Industrial growth and development will lead to better skills and wages thereby up scaling the social status of the textile dependent households.

- Streamlining of local and sectorial economies through increased hiring of local labor, creation of green jobs
- Capacity building and skill training through training modules proposed in the programme to encourage social inclusion
- Improved worker safety and health (resulting in reduced lost work) from user friendly technology upgrades, upgraded operational practices, decreased noise and improved air quality

Economic co-benefits

The economic benefits from the programme will influence almost all the relevant stakeholders. There's a great potential to economically benefit from the concessions provided under this programme, and the consequent energy saving.

- Major economic savings due to reduced spending on energy and, as a result, reduction of energy poverty among textile factories.
- Improved production and capacity utilization and reduced production costs (operations and maintenance, raw materials), which leads to enhanced productivity and competitiveness
- Potential to enable increased investments for energy saving technologies enabling positive externalities in the form of expanded and enhanced job markets, job creation and poverty alleviation increased energy security etc.
- Potential for utilities to improve their supply-side efficiency due to reduced energy demand from textile sector and increased demand side energy affordability of textile factories.

Gender-sensitive development impact

As per the Fund's standards, it's mandatory to encourage and ensure women's participation all through the programme lifetime and beyond.

- Improved access of women to investments and to information about textile sector energy efficiency
- Broader participation of women in opportunities for skill training, business and financial independence.
- Reducing manually operated machinery through deployment of easily operable by women
- Raised awareness of gender equity through implementation of the programme's Gender Action Plan
- Increased efficiency would also facilitate flexible working shift for women

Deployment of EE equipment will increase production efficiency and call for job creation and suitably designed work shifts for women

SUSTAINABLE DEVELOPMENT IN THE RMG SECTOR

- ***Environmental co-benefits:***
  - Iinstallation and operation of energy efficient equipment will lead to GHG emission reduction contributing significantly to climate change mitigation.
  - Due to reduction in emissions, improved air quality is envisaged as a macro-impact
  - Resource efficiency resulting from effective reutilization of waste heat, reduction in wastes of product, water, hazardous materials, raw materials use will lead to lower environmental degradation caused due to resource extraction.
- ***Social co-benefits including health impacts***
  - Streamlining of local and sectorial economies through increased hiring of local labor, creation of green jobs
  - Capacity building and skill training through training modules proposed in the programme to encourage social inclusion
  - Improved worker safety and health (resulting in reduced lost work) from user friendly technology upgrades, upgraded operational practices, decreased noise and improved air quality
- ***Economic co-benefits***
  - Increased profitability of RMG units by reduction of fuel costs leading to positive economic contribution
  - Creation of new jobs among equipment suppliers, operations and maintenance technicians due to market development of energy efficiency equipment
  - Positive impact on financial conditions of RMG units, potentially leading to reinvestment in capacity expansion that can help create new jobs within the sector.
- ***Gender-sensitive development impact***
  - Increased entrepreneurship and leadership in RMG sector.
  - Reduced gender gap in terms of wages and thus encourage women to continue their job for longer periods.
  - Creating enabling environment for women by providing them medical facilities, childcare facilities, WASH and special provisions for pregnant women so that women do not have to leave their job due to health or family related issues.
  - Broader participation of women in opportunities for skill training, business and financial independence
  - Increased awareness of gender equity through implementation of the programme's Gender Action Plan
  - Develop a gender sensitive grievance redressal mechanism for better functioning and monitoring of the proposed interventions.
  - Thus, the gender action plan will address the issues mentioned in the section 5 in the gender assessment and enhance gender equality in the

  RMG units, enhanced probability of capacity expansion, leading to a gender-sensitive sustainable development.

D.4. Needs of recipient (max. 500 words, approximately 1 page)

Describe the scale and intensity of vulnerability of the country and beneficiary groups and elaborate how the project/programme addresses the issue (e.g. the level of exposure to climate risks for beneficiary country and groups, overall income level, etc.). Describe how the project/programme addresses the following needs:

- *Vulnerability of the country and/or specific vulnerable groups, including gender aspects (for adaptation only)*
- *Economic and social development level of the country and the affected population*

- *Absence of alternative sources of financing (e.g. fiscal or balance of payments gap that prevents government from addressing the needs of the country; and lack of depth and history in the local capital market)*
- *Need for strengthening institutions and implementation capacity*

Bangladesh is one of the most adversely affected countries in terms of climate change. The topography is flat, and majority of the landmass lies within 10 meters above mean sea level. The geographic location at the convergence of the three great rivers – the Ganges, Brahmaputra and Meghna – and near the Eastern Himalayas. All land types except highlands are exposed to monsoon flooding for part or whole of the year[62]. Floodplains located in the north-western, central, south-central and north-eastern regions are subject to regular flooding at different frequency and intensity while the coastal plain is subject to cyclones and storm surges, salinity intrusion and coastal inundation. Pleistocene terrace land is characterized by moisture stress while flash flood is common in the hilly areas and the piedmont plains in the northeast and north-western parts of the country. Such Climate events are disrupting the socio-economic growth and stability of the country. Moreover, Bangladesh is becoming increasingly vulnerable for air pollution, sea level rise, high tide and river flood by cyclone potentially caused by GHG emissions from rising fossil fuel consumption.

This is despite the total GHG emissions in the country being less than 0.35% of the global emissions. The country's fossil emissions since 2000 have grown by 6.8%[63] Without a collective ambition to limit GHG emissions internationally, the impact of climate change to Bangladesh could be catastrophic resulting in annual loss of 2% of GDP by 2050 and 9.4% of GDP by 2100. The country is listed on the top 10 most affected countries of the world in the Climate Risk Index for 2017[64].

The proposed programme directly contributes to the collective global action under UN Paris Climate framework to help limit GHG emissions and mitigate climate change impacts in the country. Being a developing country, Bangladesh is also in the list of LDCs by GCF and hence a focus area for the fund.

Also in the current energy supply scenario, the public sector investments in Bangladesh is focused more on supply side interventions in order to ramp up the generation capacity and bridge supply gaps. This limits the budgetary resources available with the government to drive public sector investments for demand side interventions, especially towards energy saving technologies. In this scenario, boosting private sector investments is critical to keep investment cycle going in important markets such as industry, buildings and household appliances. However, one of the major barriers for driving private sector investments for energy efficient technology upgrades is the limited availability of attractive financing availability. Financing barriers such as weak capital market, high cost of lending, high investment costs as well as off-taker credit quality and complex approval process all limit the availability of financing for energy efficiency initiatives, In this scenario, supporting businesses with attractive financing products and mechanisms for energy saving technology upgrades could go a long way in getting the attention of corporate top management and overcoming this important market barrier.

For Textile and RMG manufacturers, available means of financing is bank loans or equity contribution. Under the current market scenario Textile and RMG units have to lend at a rate of 9-15% based on the credit worthiness and credit history of unit. While the bank-lending has grown over 15% since 2016[65], credit risk in the sector continues to be high. It has been observed that credit risk in banking sector will continue to be elevated [66] owing to loan-restructuring practices, historically weak credit-risk-management practices, concentrated loan books, exposure to single large borrowers, and government-directed pressure on state-owned banks' lending decisions. The inherent high level of risk of lending explains the high lending rates, as

[62] Bangladesh NAPA (https://unfccc.int/resource/docs/napa/ban01.pdf) 2005; updated 2009
[63] https://www.worldometers.info/co2-emissions/bangladesh-co2-emissions/
[64] German watch (https://www.germanwatch.org/sites/germanwatch.org/files/Global%20Climate%20Risk%20Index%202019_2.pdf)
[65] Source: Bangladesh Systemic Risk Dashboard (Bangladesh Bank, December 2018)
[66] Source: Banking sector developments in Bangladesh (IHS Markit, 2018)

compared to nearest competitors in RMG export market. Current efforts to stabilize banks by recapitalization by Government of Bangladesh is expected to continue leading to expectations that high interest rates will continue to prevail. Such high interest rates negatively affect credit influx into the sector at a time when profitability in strained due to high input costs caused by inflation and increased labour wages and due stagnated market prices in customer markets in USA and EU.

Besides the financing barriers, energy efficiency uptake also technical challenges such as lack of awareness and understanding of the long term benefits by consumers, perceived underperformance risks in energy savings, focus of short term benefits and equipment availability all of which also hamper the growth of energy efficiency products. These can be mitigated to some extent by demand side awareness and capacity building. Based on discussion with stakeholders, it was established that there is limited capacity in banks to assess bankability of energy efficiency projects as well as continued MRV of such projects to assess whether project objectives are realized. There are also technical knowledge gaps in RMG units regarding implementation of energy efficient measures. Also, policies and regulations supporting proliferation of energy efficiency in industries sector should be enhanced to ensure market barriers are removed. Accordingly, capacity building of policy makers on global best practices on energy efficiency policy development is essential to provide guidance on developing similar policies/regulations for Bangladesh.

D.5. Country ownership (max. 500 words, approximately 1 page)

Please describe how the beneficiary country takes ownership of and implements the funded project/programme. Describe the following:

- *Existing national climate strategy*
- *Existing GCF country programme*
- *Alignment with existing policies such as NDCs, NAMAs, and NAPs*
- *Capacity of Accredited Entities or Executing Entities to deliver*
- *Role of National Designated Authority*
- *Engagement with civil society organizations and other relevant stakeholders, including indigenous peoples, women and other vulnerable groups*

The programme directly contributes to the country's ambitions and goals under the UN Paris Climate framework. Moreover, the program is consistent with the country's national strategy (Energy Efficiency Master Plan) to provide 'Energy Efficiency Finance Program' to boost the investments in energy efficiency products with low interest loans as one of the key financial incentives. Furthermore, the program also contributes to the GoB target to achieve 10% of energy consumption reduction in the industry sector by 2030 and 20% improved energy intensity by 2030.

Bangladesh's NDC identified three key emitting sectors, amongst which power sector accounts for 33% of total emission, transportation 26% and industrial sector 41%. Taking this into consideration, improving industrial energy efficiency, expanding renewable energy and modernising transport infrastructure have been identified as the three key mitigation interventions. This has been embedded in our Five-Year Planning process that is central to the development of Bangladesh. NDC has set the target to reduce 15% GHG emission below Business As Usual (BAU) emission level by 2030.

To arrange necessary funding for low emission development, the Economic Relations Division of the Ministry of Finance, also the NDA of GCF in Bangladesh developed a Country Programme in 2018 with support from GCF. The screening process of NDA filtered the most strategically important climate change projects/programme that should be funded under GCF. The Country Program includes a robust pipeline of projects and programs which will be submitted to GCF for its financial support. IDCOL as a Direct Access

Entity of Bangladesh is now working on developing funding proposals for a couple of these projects. The proposed programme is also listed in the Country Programme.

For IDCOL's and LFI's capacity to execute the proposed programme please refer to section B.4. The NDA advisory committee conducted a due diligence of the proposed programme and IDCOL as an executing entity prior to issuing NOL.

This proposal has been developed in consultation with civil society groups and other relevant stakeholders and would continue to seek their future engagement in accordance with the GCF's environmental and social safeguards and stakeholder consultation guidelines. The proposal also places decision-making responsibility with in-country financial institutions and uses domestic systems to ensure accountability.

D.6. Efficiency and effectiveness (max. 500 words, approximately 1 page)

Describe how the financial structure is adequate and reasonable in order to achieve the proposal's objectives, including addressing existing bottlenecks and/or barriers, and providing the minimum concessionality to ensure the project is viable without crowding out private and other public investments. Refer to section B.5 on the justification of GCF funding requested as necessary.

FOR TEXTILE SECTOR

The programme's results chain is an approach to market transformation for energy efficiency. This approach is based on the fact that, due to the high upfront capital intensity of energy efficient investments in the textile sector, access to large quantities of low-cost financing is critical to cost-effectively drive energy efficiency in the textile sector.

By conducting payment simulations for a few types of equipment in B.3, the proposed financial structure was deemed to be adequate and reasonable to achieve programme's objective:

- The purchase of an energy efficient spinning machine which is ~25% more expensive compared with a conventional type will require a 5.53% interest rate loan (considering 8 year loan tenure and 1 year grace period) for the total payment to become par with that of a conventional one. Similarly, a 27% more expensive once-through boiler requires 5.28% interest rate (considering 8 year loan tenure and 1 year grace period) to be even with the conventional type in terms of the total payment amount.

- On the other hand, in order to overcome the barrier of longer payback period, the loan tenor was increased to 10 years, with 2 years grace period. With such, the purchase of an energy efficient spinning machine will require a 6.67% interest rate loan (considering 10-year loan tenure and 2 year grace period) for the total payment to become par with that of a conventional one. Similarly, once-through boiler will require 6.4 % interest rate (considering 10-year loan tenure and 2 year grace period) to be even with the conventional type in terms of the total payment amount.

The above analysis clearly demonstrates that to ensure the feasibility of the subproject, concessional lending is required from GCF to IDCOL to enable IDCOL to extend loan at the low interest to the end borrower. IDCOL is currently implementing JICA's Energy Efficiency and Conservation Promotion Financing Project (EECPF) which has been so far the most successful EE credit line in Bangladesh. Thus, for the proposed programme IDCOL is using EECPF project as the benchmark for the end user financing package.

Besides just comparing the market value of the traditional and EE equipment, further analysis in terms of assessing the NPV of operational cost of both types of machineries were done to determine the right interest rate that will provide appropriate IRR for the end users. Please refer to Table 12.

The table 12 below compares the NPV of additional investments required for installing the energy efficient spinning and boiler machines the proposed GCF credit line vis-a-vis regular equipment under the standard commercial financing:

Table 12: NPV & IRR comparison of commercial finance, JICA EECPF project and proposed programme

Machine Type	Δ investment NPV if GCF loan is availed (i=5%,tenor-10yrs, moratorium-2 yr) compared to commercial loan is (i=11.5%,tenor 8 yrs, moratorium-1 yr)	Δ investment NPV if GCF loan is availed (i=6 %,tenor-10yrs, moratorium-2 yr) compared to commercial loan (i=11.5%,tenor 8 yrs, moratorium-1 yr)
Spinning machine	BDT 4,81,998	(BDT 29,986)
Boiler	BDT 1,87,760	(BDT 17,823)

The above table clearly indicates that only an interest rate in the range of 5%-6% for the GCF credit line would make the additional investment in EE equipment feasible for the borrowers. Thus, crowding out of private investors will not occur at this rate and at the same time the financial structure will be viable to the end users. The Δ investment in the above table signifies the overall savings that a borrower will accrue when an energy efficient equipment is installed viz-a-viz a conventional equipment. Even though the costs of EE equipment are on higher side than that of a conventional machine, the savings in terms of operating cost over a lifetime and a tenure of 8-10 years, outweigh the higher cost of EE equipment. The life of machine is considered to be 15 years in both the cases. It is assumed that the spinning machine runs on electricity and an incremental electricity tariff of 2% is considered for calculating the operating. The EE equipment for each machine type shall have a minimum efficiency of 10% over conventional machine,

With the current JICA EE&CPF credit line, there are some challenges faced such as (a) it focusses on varied sectors and hence, cannot cater the complete demand of any one of the sectors. Thus, sector approach proposed in this programme will help to cater the huge demand and potential of energy efficiency in the textile sector and will percolate deep inside the sector. (b) The second issue with JICA EE&CPF involves the limitations in ticket size of one project (maximum BDT 1 billion) which further minimized the reach of this project across industrial sector. Thus, in the proposed programme the project ceiling has been extended to BDT 2 billion. (c) The last point is that, this project has a limited list of EE interventions that may be financed under this project. These limitations do not help the project to percolate deep inside any sector with an approach to bring the entire sector to world standards norms and energy intensity standards. Hence keeping this in mind the proposed programme is designed to accommodate all kind of textile equipment having a minimum efficiency level of 10%.

FOR RMG SECTOR

High upfront capital investment and high interest rates of borrowing has been informed by stakeholders as a key barrier from implementing energy efficient technologies, even if the technologies exhibit a high

expected rate of return. The program intends to address this barrier through concessional financing and supplement it with market development activities which would help stimulate market demand, increase availability of energy equipment and develop capacities of market players.

The level of concessionality which will stimulate market for energy efficiency has been determined by simulating loan payment scenarios (considering 8-year loan tenure and 2-year grace period) for 2 sample equipment:

- Conventional vs Energy Efficient boiler: The energy efficient gas boiler is around 25% more expensive than a conventional gas boiler and will require a 5.15% interest rate to have the same repayment amount as that of a conventional gas boiler being financed by loans at market rate i.e. 11%. Considering a 10% premium on repayment, the interest rate becomes 7.55%.
- Conventional vs energy efficient stenter: Similarly, a 23% more expensive energy efficient stenter requires 5.35% interest rate to have the same repayment amount as a conventional stenter with financing at market rates. 10% premium makes the interest rate 7.85%.

Accordingly, a loan payment simulation has been conducted to compare the rate of interest at which an energy efficient equipment will have the same repayment as a loan taken at market rate for a comparable conventional equipment, all other terms of the loan remaining the same (viz. loan tenor and moratorium/grace period). The simulation has been conducted for two sample equipment viz. gas fired boiler and stenter machines as given below.

It is assumed that since energy efficient equipment gives an additional benefit of monetary savings through energy conservation, users i.e. unit owners can be inclined to pay a small premium to acquire the energy efficient variant. This would also help financial institutions give some margin to accommodate any operational costs. The results from the simulation is given below:

Table 13: Price simulation for Energy Efficient Gas Boiler

Parameter	Unit	Commercial Finance for conventional equipment	Commercial finance for energy efficient equipment	Concessional finance for energy efficient equipment	
				At par	10% Premium
Price	USD	57,600	72,000	72,000	72,000
Interest Rate	%	11%	11%	5.15%	7.55%
Tenure Period	yrs.	10	10	10	10
Grace Period	yr.	2	2	2	2
Total Payment	USD	**89,543**	**111,929**	**89,661**	**98,527**

Table 14: Price simulation for energy efficient stenter

Parameter	Unit	Commercial Finance for conventional equipment	Commercial finance for energy efficient equipment	Concessional finance for energy efficient equipment	
				At par	10% Premium
Price	USD	64,800	80,000	80,000	80,000
Interest Rate	%	11%	11%	5.35%	7.85%
Tenure Period	yrs.	10	10	10	10
Grace Period	yr.	2	2	2	2
Total Payment	USD	**100,736**	**124,365**	**100,428**	**110,736**

Considering a wider range of equipment, a range of interest between 5.0%-7.5% should be ideal market prices of loan instruments to generate interest in unit owners for energy efficient equipment.

Hence, a minimum concessional financing at ~5.0-7.5% would be required to make energy efficient equipment attractive to unit owners. Given the additional benefit of using energy efficient equipment is monetary savings (in the form of energy savings), it is expected that unit owners will be more inclined to buy an energy efficient variant over a non-energy efficient one, even with a 10% premium on repayment, thereby creating a demand push for efficient variants. This would, however, require extensive awareness building among unit owners on the business case for energy efficiency as well as increasing access of energy efficient equipment.

The financial structure for the program includes 04 local financial institutions, which will act as EE for the program. However, during programme implementation new LFIs may be selected based on the selection criteria described in B4, notably IDCOL may also be an EE if required. For now the shortlisted 04 LFIs .These banks have proven experience of operating in RMG financing market as well as offering green financing instruments. They have established project due diligence procedures aligned with the statutory requirement of Bangladesh. The presence of these institutions in the financial structure will help in taking the concessional loan to a greater number of RMG units, given existing customer base of the banks as well as increase efficiency in disbursement and monitoring given the alignment of the bank in operating green financing instruments.

The co-financing provided by the banks will help in infusing private sector financing in the sector and with the success of the program, it is expected more financial institutions (both public and private sector) will increase participation in the sector.

Apart from the issues discussed above, a number of stakeholders were consulted during program design, which has highlighted need for capacity building in apprising, implementing, monitoring and evaluating energy efficiency projects as well as improve market interface between equipment suppliers and RMG units. These non-financial barriers, which are also critical to the success of the program, have also been addressed through activities proposed in Component 2.

Please describe the efficiency and effectiveness of the proposed project/programme, taking into account the total financing and mitigation/ adaptation impact the project/programme aims to achieve, and explain how this compares to an appropriate benchmark.

Please specify the expected economic rate of return based on a comparison of the scenarios with and without the project/programme.

Please specify the expected financial rate of return with and without the Fund's support to illustrate the need for GCF funding to illustrate overall cost effectiveness.

FOR TEXTILE SECTOR

As mentioned above, this programme envisages the creation of concessional fund with USD 133 million, including USD 100 million senior loan from GCF and USD 33 million from IDCOL. IDCOL, an Accredited Entity with GCF, will make available the GCF funds in the form of loans to the end borrowers, who are in this case the private textile manufacturing companies. Using this fund, the projected IRR estimated to be achieved is 7.0 %. The implementation of these energy efficiency measures equivalent envisages annual GHG reductions estimated at 0.2 million tCO2 and 4.00 million tCO2 equivalent over the lifetime of the project (20 years) which if included in the economic benefit would lead to an EIRR of 23.00%. The payback period for various equipment varies between 4-13 years. In addition to these economic and financial benefits, the project will also lead to other intangible social and gender impacts such as better community living standards, providing safe and better working environment leading to higher gender balance in workforce and skill up gradation for workers.

FOR RMG SECTOR

The proposed programme envisages to infuse USD 200 million in financing energy equipment in RMG units. This will include USD 150 million of concessional loans from GCF and USD 50 million from EEs i.e. LFIs/IDCOL in the form of loans. The loans will be provided by LFIs/IDCOL to the end borrowers at a rate substantially lower than prevailing market rates (~11%). Using this fund, the projected IRR is 5.00%. The program will lead to annual GHG emissions of 0.527 MtCO2 and savings of 10.54 MtCO2 across the program lifetime. Considering the economic benefit of the emission savings, the program returns an EIRR of 44.5%. In addition to these economic and financial benefits, the project will also lead to other intangible social and gender impacts such as better community living standards, providing safe and better working environment leading to higher gender balance in workforce and skill up gradation for workers. It will also lead to higher operating profit for units, a part of which is expected to get reinvested in capacity expansion, leading to job creation. The increased demand for energy efficient equipment will also lead to creation of green jobs.

Please explain how best available technologies and practices have been considered and applied. If applicable, specify the innovations/modifications/adjustments that are made based on industry best practices.

FOR TEXTILE SECTOR

Sector wide best practices can be broken down into the process improvement, metering water conservation, fuel efficiency and reduction in electricity consumption. These measures represent the best practices for resource efficiency and a cost effectiveness perspective in the textile processes.

Table 15: Current best practices for energy efficiency in Textile sector

Type	Detail
Energy Management and	- Policies and standard operating procedures for energy management

process improvement	- Development of skills and knowledge management for awareness - Information systems for monitoring and reporting - Improve planning and investment - Marketing and communications for encouraging other units/firms - Process automation to control dyeing and printing processes - Improve machine utilization, particularly for the most energy-intensive machines - Benchmark energy and water use and set concrete reduction targets
Metering	- To enable factory management to closely track resource and energy consumption for specific processes and to identify those resource intensive processes where efforts to improve efficiency should be focused
Water conservation is energy conservation	- Water leak detection, preventive maintenance, improved cleaning - Improving boiler efficiency - Improve efficiency of steam systems and maintain steam traps - Insulation of equipment and tanks - Heat recovery and reuse: Reuse cooling water, Reuse condensate, Reuse process water
Efficient use of Fuels	Fuel savings from above mentioned water conservation and reuse by: a) Improving the operation and efficiency of the boiler b) Increasing efficiency in the use of steam in the production process to reduce the quantity of steam the boiler must generate.
Reduction in Electricity consumption	- Optimization of compressed air systems: fixing leaks in the air system and checking and optimizing pressure - Electricity savings from improved boiler efficiency - Electricity savings from heat recovery

The above-mentioned practices are easy-to-implement and low-cost that come with multiple co-benefits. Besides energy efficiency, these would bring in resource efficiency, environmental benefits, cost effectiveness and increase in productivity of textile units. These can be taken up as capacity building part of the TA programme.

FOR RMG SECTOR

Garment production is an organized activity consisting of sequential processes such as laying, marking, cutting, stitching, checking, finishing, pressing and packaging. Based on best practices in each process interventions were suggested to the stakeholders. These measures represent the best practices for resource efficiency and a cost effectiveness perspective in the garment manufacturing processes.

Table 16: Current best practices for energy efficiency in RMG sector

Type	Detail
	- Installation of VFD on major motors

Energy Management and Conservation	- Optimization of compressed air system - Installation of auto oxygen control in boilers - Installation of energy conservation turbine
Fuel Reduction	- Improving boiler efficiency - Improve efficiency of steam systems and maintain steam traps - Insulation of equipment and tanks - Heat recovery and reuse: Reuse cooling water, Reuse condensate, Reuse process water - Increasing efficiency in the use of steam in the production process to reduce the quantity of steam the boiler must generate.
Reduction in Electricity consumption	- Optimization of compressed air systems: fixing leaks in the air system and checking and optimizing pressure - Electricity savings from improved Lighting system - Electricity savings from use of clutch motors - Installation of IE3 motors - Installation of energy efficient screw compressors

The above-mentioned energy conservation measures are easy-to-implement and low-cost that come with multiple co-benefits. Besides energy efficiency, these would bring in resource efficiency, environmental benefits, cost effectiveness and increase in productivity of RMG units. These can be taken up as capacity building part of the TA programme.

E. LOGICAL FRAMEWORK

This section refers to the project/programme's logical framework in accordance with the GCF's Performance Measurement Frameworks under the Results Management Framework to which the project/programme contributes as a whole, including in respect of any co-financing.

E.1. Paradigm shift objectives

Please select the appropriated expected result. For cross-cutting proposals, tick both.

☒ Shift to low-emission sustainable development pathways

☐ Increased climate resilient sustainable development

E.2. Core indicator targets (RMG & Textile combined)

E.2.1. Expected tonnes of carbon dioxide equivalent (t CO_2 eq) to be reduced or avoided (mitigation and cross-cutting only)	Annual	0.727 million t CO_2 eq
	Lifetime	14.53 million t CO_2 eq
E.2.2. Estimated cost per t CO_2 eq, defined as total investment cost / expected lifetime emission reductions (mitigation and cross-cutting only)	(a) Total programme financing	340.50 million USD
	(b) Requested GCF amount	256.48 million USD
	(c) Expected lifetime emission reductions	14.53 million t CO_2 eq
	(d) Estimated cost per t CO_2eq (d = a / c)	*23.43 USD / t CO_2eq*
	(e) Estimated GCF cost per t CO_2eq removed (e = b / c)	*17.65 USD / t CO_2eq*
E.2.3. Expected volume of finance to be leveraged by the proposed project/programme as a result of the Fund's financing, disaggregated by public and private sources (mitigation and cross-cutting only)	(f) Total finance leveraged	167.02 million USD
	(g) Public source co-financed	0.02 million USD
	(h) Private source finance leveraged	167.00 million USD
	(i) Total Leverage ratio (i = f / b)	
	(j) Public source co-financing ratio (j = g / b)	0.0000780
	(k) Private source leverage ratio (k = h / b)	0.65
E.2.4. Expected total number of direct and indirect beneficiaries, (disaggregated by sex)	Direct	Click here to enter text. Click here to enter text.% of female
	Indirect	Click here to enter text. Click here to enter text.% of female
	For a multi-country proposal, indicate the aggregate amount here and provide the data per country in annex 17.	
E.2.5. Number of beneficiaries relative to total population (disaggregated by sex)	Direct	Click here to enter text. (Expressed as %) of country(ies)
	Indirect	Click here to enter text. (Expressed as %) of country(ies)
	For a multi-country proposal, leave blank and provide the data per country in annex 17.	

E.3. Fund-level impacts

Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term[67] (After Year 06)	Final[68] (After Year 12)	
M3.0 Reduced emissions from buildings, cities, industries and appliances	M3.1 Tonnes of carbon dioxide equivalent (t CO2 eq) reduced or avoided - buildings, cities, industries, and appliances	1. Annual report on energy savings from end borrowers & reflected in dashboard and its respective GHG emission savings. 2. Yearly Energy Audits and technical support to the LFIs on MRV during TA implementation period (please refer to Activity 2.4.3, 4.4.1 & 4.4.2). 3. After the end of TA implementation period, IDCOL and LFIs will continue to monitor and collect data from the borrowers. As per the loan agreement the end borrower for EE loan sub-project (proponent) should submit energy efficiency data formats provided in Annex 11 (to IDCOL and LFIs) on yearly basis.	0 tCO_2e	1.07 million tCO_2e	6.66 million tCO_2e	1. Improved results in energy savings and avoidance of GHG emissions 2. Key assumptions used in calculating the ex-ante GHG impact is described in section D.1 3. Programme lifetime: 20 years.[69] 4. Machine lifetime: 15 years 5. Mid-term target is defined as cumulative GHG savings expected to be achieved by mid-term point; by this time GCF loan amount and IDCOL's & LFI's co-financing amount will be disbursed to borrowers. Since disbursements will start from Year 02 (from

[67] Midterm point defined as 6 (six) years after Programme start (FAA Effective Date)
[68] Final point defined as 12 (twelve) years after Programme start (FAA Effective Date)

[69] The subprojects under the programme has a lifetime of 10 years. IDCOL and LFIs will re-invest the reflows from the programme till Year 10, which will be fully recovered by Year 20, hence the programme lifetime is 20 years.

		4. Furthermore, the end borrower for EE loan sub-project (Proponent) should submit data and information required during inspection and energy audit to IDCOL and GCF.				FAA effective date) the maximum operational year of sub-project/s will be no more than 05 years. 6. Actual values of cumulative GHG savings achieved is will be reported annually. 7. As per GCF approved methodology the average annual GHG emission reduced is 0.73 MtCO2. Subsequently with a machine lifetime of 15 years and programme lifetime of 20 years the lifetime GHG emission reduction is 14.53 MtCO2.

E.4 Fund-level outcomes

Expected Outcomes	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (After Year 06)[70]	Final (After Year 12)[71]	
M7.0 Lower energy intensity of buildings, cities, industries and appliances	*M7.1 Energy intensity/improved efficiency of buildings, cities, industries and appliances as a result of Fund support*	1. Annual report on energy savings from end borrowers & reflected in dashboard	Baseline for textile industry-0 GWh	Textile industry-2618 GWh	Textile industry-5,237 GWh	1.Rebound effect due to lower energy intensity is limited 2. Energy saving data reported to GCF will be disaggregated

[70] Midterm point defined as 6 (six) years after Programme start (FAA Effective Date)
[71] Final point defined as 12 (twelve) years after Programme start (FAA Effective Date)

		2. Yearly Energy Audits during TA implementation period. 3. After the end of TA implementation period, IDCOL and LFIs will continue to monitor and collect data from the borrowers. As per the loan agreement the end borrower for EE loan sub-project (proponent) should submit energy efficiency data formats provided in Annex 11 (to IDCOL and LFIs) on yearly basis. 4. Furthermore, the end borrower for EE loan sub-project (Proponent) should submit data and information required during inspection and energy audit to IDCOL and GCF.	Baseline for RMG industry- 0 GWh Cumulative baseline - 0 GWh	RMG industry- 2988 GWh Cumulative- 5,608 GWh	RMG industry- 9,773 GWh Cumulative- 15,011 GWh	industry wise. Annual energy saving per industry (i.e. textile & RMG) will be presented along with programme cumulative number. 3. Key assumptions in calculating the ex-ante energy savings impact is described in section D.1 4. Mid-term target is defined as cumulative energy savings expected to be achieved by mid-term point; by this time GCF loan amount and IDCOL's & LFI's co-financing amount will be disbursed to borrowers. Since disbursements will start from Year 02 (from FAA effective date) the maximum operational year of sub-project/s will be no more than 05 years. 5. As per GCF approved methodology the average annual energy saving is 1,310 GWh Subsequently with a machine lifetime of 15 years and programme lifetime of 21

						years the lifetime energy saving is 24.015 GWh
M5.0 Strengthened institutional and regulatory systems	*M5.1 Institutional and regulatory systems that improve incentives for low-emission planning and development and their effective implementation*	-Report on gap identification -Policy, strategy or plan developed - Number of Government officials trained under Output 5.2 verified using attendance list. - Effectiveness of the GoB capacity development activities verified using training feedback forms, outputs of facilitation techniques used and interacting activities performed.	0 systems	Development & operationalization of new effective national policy, strategist plan (for example. Energy labeling for efficiency)	Policy implementation to increase private investment in EE	1. Presently there is an opportunity create enabling policies/ regulations to prompt uptake of energy efficienct equipment in the industrial sector. By identifying the policy gaps a concrete action plan will be developed. However, top of the mind recommendation of SREDA is to strengthen the EE labelling program. 2. The EE&C Master Plan, mentions about promoting EE Labeling program which will be targeted at large energy consuming entities and equipment in the industrial, residential and commercial sectors. 3. Expected plans to be included in the policy: (a) Accreditation of laboratories for energy efficiency measurement tests (c) evaluate energy manager/auditor licensing system

						(d) increase participation of manufacturers in the EE labeling program. 4. An indicator-based assessment framework having a transparent underlying theory on how policies would impact on the selected indicator and what other factors may also have an influence. This will be developed under Activity 5.1.4.

E.5.Project/programme performance indicators

Expected Results	Indicator	Means of Verification (MoV)	Baseline	Target		Assumptions
				Mid-term (After Year 06)	Final (After Year 12)	
Financing for Energy Saving Equipment & Technology for Textile & RMG sector	Amount of loan fund approved during the targeted project timeline	Approval letters form IDCOL/LFIs & acceptance by the end borrowers	0	Textile: USD 133 million RMG: USD 200 million	Textile: USD 164.93 million RMG: USD 251.56 million	1. Amount considering expected market demand in the Textile & RMG EE sector. 2. Given access to appropriate finance, textile & RMG factories will invest in high climate impact technologies. 3. To maximize the impact of the programme fund the principal payment received

						from GCF loan, on-lent to the end borrowers will be re-invested till Year 10 (starting from FAA effectiveness).
	EE equipment & technology has been successfully installed in the factory	Factory Visit report by IDCOL/LFIs	0	43 factories	55 factories	1. Considering that all the regulatory & other external requirements of the projects have been completed smoothly. 2. Disbursements under the programme will start from Year 02 (since FAA effectiveness), by Year 06 GCF loan amount and EE's co-financing amount will be fully disbursed to the end borrowers so the number of factories installing EE equipment will be higher fort the first 6-7 years of the programme.
	Sector-level baseline, operational manual, list of renowned EE equipment and financing roadmap & time	Acceptance letters from IDCOL/LFIs for adopting operation manual, sector-level baseline, list	0	Adoption and functioning of operation manual, whistle blower policy &	Adoption and functioning of operation manual, whistle blower	1.GCF will approve the procurement process and the prepared documents by 2nd quarter of Year 02 2. A baseline by 2nd quarter of Year 02

Sustainable financing strategy developed for large scale adoption of EE equipment in textile & RMG sector.	based action plan both textile & RMG programs are developed	of renowned EE equipment, financing road map & time based action plan under the programme		baseline information	policy & baseline information	to be developed by consolidating data based on classification of Textile & RMG units (scale and type of products) and data collection through energy audit of sample plants 3. All the required factory visits for baseline are completed within stipulated time
	Regulatory & institutional framework at the national level strengthened to overcome the operational constraints related to implementing EE&C in the country	1.Report on policy gap identification 2.Policy, strategy or plan developed 3. An indicator-based assessment framework having a transparent underlying theory on how policies would impact on the selected indicator and what other factors may also have an influence. This will be developed under Activity 5.1.4. 4. Number of Government officials trained under Output 5.2 verified using attendance list.	0	1.Development & operationalization of new effective national policy & strategic plan 2. Organize 03 ToTs of the government officials 3. Organize 10 training session for the policy makers and relevant government official by the trained trainers. 4. Organizing 02 workshops to disseminate outcome of the programme to policy makers and	1.Development & operationalization of new effective national policy & strategic plan 2. Organize 03 ToTs of the government officials 3. Organize 10 training session for the policy makers and relevant government official by the trained trainers. 4. Organizing 02 workshops to disseminate outcome of the	1. The EE&C Master Plan, mentions about promoting EE Labeling program which will be targeted at large energy consuming entities and equipment in the industrial, residential and commercial sectors. 2. Expected plans to be included in the policy: (a) Accreditation of laboratories for energy efficiency measurement tests (c) evaluate energy manager/auditor licensing system (d) increase participation of manufacturers in the EE labeling program.

		5. Effectiveness of the GoB capacity development activities verified using training feedback forms, outputs of facilitation techniques used and interacting activities performed.		EE practitioners and also the learning from implementing energy efficiency in textile and garments sector (financing scenario, business case and economic benefits, women involvement and role of government for long-term sustainability) to ensure institutional capitalization of knowledge.	programme to policy makers and EE practitioners and also the learning from implementing energy efficiency in textile and garments sector (financing scenario, business case and economic benefits, women involvement and role of government for long-term sustainability) to ensure institutional capitalization of knowledge.	
	Programme Launching event arranged for both Textile & RMG program	Attendance list ensuring key stakeholders attended	0	Covering entire key stakeholders of the country related to textile & RMG sector.	Covering entire key stakeholders of the country related to textile & RMG sector.	1.Covering entire key stakeholders of the country related to textile & RMG sector. Trade bodies like BTMA, BGMEA, BKMEA .etc. are expected to be on board. 2.Programme Launching event for the for potential borrowers, local & foreign suppliers, O&M service providers, Trade

						Bodies, Fashion Brands and other key private and public sector stakeholders to create awareness on the new GCF credit line
Market awareness on importance of EE equipment in textile & RMG sector strengthened	Develop effective communication materials for information dissemination (brochure, flyer, pamphlet, etc) and advocacy campaign for Textile	-Number of communication materials developed -Quick survey to solicit information recipient's feedback and check their reactions and comprehension.	0	Minimum 70% of the target audience reached as per the action plan	Minimum 70% of the target audience reached as per the action plan	Communication materials will be developed and will focus the information need of various stakeholders.
	Technology fair with participation of technology suppliers and representation of Textile/RMG units organized	Attendance list ensuring key stakeholders attended Feedback survey of key technology suppliers and representatives of Textile/RMG	0	-Minimum 70% of the target participants should be satisfied	- Minimum 70% of the target participants should be satisfied	1. One international technology fair will be arranged for both textile & RMG industries 2. Technology fair with participation of 30 different technology suppliers and representation of 60 different Textile/RMG units organized.
Institutional capacity building at IDCOL/LFIs and at end borrowers level	Improved capacity/skills of stakeholders, end borrowers, IDCOL & LFIs ensured to better cater to EE financing	Training feedback forms, outputs of facilitation techniques used and interacting activities performed	0	-Minimum 80% of the target audience should be satisfied - Minimum 80% of the target audience should be able to	-Minimum 80% of the target audience should be satisfied - Minimum 80% of the target audience should be able to	The training sessions will be arranged by the consultant and the participants will be selected by LFIs/IDCOL.

				articulate the message delivered.	articulate the message delivered.	

E.6. Activities (Component 01&2, EE&C in Textile Sector)

Activity	Description	Sub-activities	Deliverables
Financing for Energy Saving Equipment & Technology for Textile sector			
Activity 1.1.1 Disbursement of USD 133.00 million credit line for EE equipment in textile sector	• IDCOL will extend USD 133 million amount of loans to textile borrowers for purchasing EE equipment over a tenor of 10 years with maximum 03 years of grace period. From the USD 133 million, GCF loan contribution will be USD 100 million while the rest USD 33 million will be co-financed by IDCOL as the Executing Entity. IDCOL will revolve the loan over 10 years.	1.1.1.1 Prepare financing strategy 1.1.1.2 Develop strong project pipeline & mapping 1.1.1.3 Approach large number of prospective textile borrowers 1.1.1.4 Selection of end borrowers 1.1.1.5 Approval and disbursement of USD 133 million against USD 33 million equity	Loans of USD 133.00 million extended to implementing entities
Sustainable financing strategy developed for large scale adoption of EE equipment in textile sector.			
Activity 2.1.1: Devise a financing roadmap and time-based action plan	The financing roadmap will be a comprehensive document that will list the tasks for achieving programme's objectives.	2.1.1.1 Prepare financing strategy via primary and	1. IDCOL and GCF approved financing roadmap 2. Time-based action plan

	Each action will be clearly described so as to avoid confusion later on. Every action will have set timeline, designated resources and a detail implementation plan. The action plan will a strategic document for IDCOL in order to ensure concrete steps needed to attain programme goals are undertaken (usually covering the coming year), a timetable for each task, a description of who will do what and a follow-up process.	secondary data collection. 2.1.1.2 Prepare a detail action plan keeping in mind the targets set in the programme	
Activity 2.1.2: Develop operations manual for the program.	• An operations manual will be developed to ensure stakeholders can reliably and efficiently carry out their tasks with consistent results as per GCF policies & guidelines. It will reduce human error and inform everyone precisely what they need to do, who they are responsible to and who they are responsible for. • A documented operations manual will aid in making EE projects more scalable. When there will be documented procedures for reference, it will be much easier to implement the same procedures on a larger scale or at other locations/ sector.	2.1.2.1 Study GCF policies and guidelines that are applicable under the programme. 2.1.2.2 Study market best practices for similar programme. 2.1.2.3 Develop operations manual for the program	IDCOL and GCF approved Operational Manual for the programme.
Activity 2.1.3: Develop whistle blower policy for the program.	A whistle blower policy will be prepared for the programme as per the guidelines of GCF and Bangladesh Bank to maintain transparency. This policy will be	2.1.3.1 Analyze GCF policies and guidelines that are applicable under the programme.	IDCOL and GCF approved Operation Manual for the programme.

	applicable only for Textile sector EE financing as a separate whistle blower policy will be prepared under RMG TA component.	2.1.3.2 Study market best practices for similar programme. 2.1.3.3 Develop whistleblower policy based on best practices.	
Activity 2.1.4: Classification of Textile units based on scale and type of products and data collection through energy audit of sample plants	There are various sizes of textile factories in the country. Generally they can be widely categorized into three segments i.e large, medium and small. Each categories have different energy consuming pattern. Therefore segregation of factories based on their production capacity will be done primarily. And then the baseline scenario of each category will be identified separately in the sector-level baseline. This is important to understand appropriate energy saving scope of the industry. Rather than an individual factory baseline prior to every loan application is to ensure (i) Loan application process does not get elongated; (ii) Baseline numbers reflect accurate conditions and are not influenced by owners to depict a conducive scenario for loan application; (iii) Cost burden does not fall on borrower completely.	- 2.1.4.1 Sample textile units for the baseline study to be divided into large, medium and small-scale plant, based on its production data and predetermined criteria that gives proper representation of the textile industry.	1 nos. report on Textile unit classification
Activity 2.1.5: Consolidation of data	Baseline for the programme for the selected indicators in the logframe will be	2.1.5.1 In Year 01 (since FAA effectiveness) energy audits to be conducted in	1 nos. document containing data sheets (which includes baseline information)

and developing sector-level baseline	developed under this activity. A sector wide study, undertaking several variables with a definitive methodology (described in the operations manual) will be conducted at the beginning of the programme. This data will be used for 5 years and later a second baseline study will be conducted. (please refer to activity 2.1.8) The main reason for proposing a consolidated baseline rather than an individual factory baseline prior to every loan application is to ensure (i) Loan application process does not get elongated; (ii) Baseline numbers reflect accurate conditions and are not influenced by owners to depict a conducive scenario for loan application; (iii) Cost burden does not fall on borrower completely.	multiple plants ensuring adequate representation from each category (large, medium & small) and each type of product (viz. knitwear, woven, non-woven). For each category and type of product, audits will help establish production processes, equipment involved in each process and specific energy consumption (SEC) for each process. Based on the representative numbers and total population figures, the baseline energy consumption will be prepared for Textile sector 2.1.5.2 Consolidate data from energy audit 2.1.5.3 Identify appropriate assumptions to ensure realistic extrapolation of audit results 2.1.5.4 Undertake extrapolation of audit results	
Activity 2.1.6: Interact with stakeholders/market players to prepare a list of equipment already implemented in Bangladesh and having proven energy savings results. List will be integrated with knowledge platform and	Establishing a real-time database of energy efficient machineries related to both the sectors that has strong track record. By track record it is meant those EE equipment that are widely accepted and used in Bangladesh markets as energy efficient	2.1.6.1 Consultant to conduct textile sector EE equipment's market study based on primary and secondary data 2.1.6.2 Consultant to develop list of renowned & reliable EE equipment that can be financed to the textile sector borrowers.	1 nos. document containing equipment list

disseminated through other means to ensure adequate public outreach	machineries and also those which has been financed under other DFIs/ donor organization in the country.	2.1. 6.3 The EE equipment list developed is to be made widely accessible through online knowledge platform developed under Activity 2.4.6.	
Activity 2.1.7: Revision of baseline by conducting energy audit and data consolidation	Subsequent to activity 2.1.6 the proposed activity is the second baseline study that is to be conducted by the end of 5th year. The main reason for proposing a consolidated baseline rather than an individual factory baseline prior to every loan application is to ensure (i) Loan application process does not get elongated; (ii) Baseline numbers reflect accurate conditions and are not influenced by owners to depict a conducive scenario for loan application; (iii) Cost burden does not fall on borrower completely.	2.1.7.1 In year 06 (since FAA effectiveness) energy audits to be conducted in multiple plants ensuring adequate representation from each category (large, medium & small) and each type of product (viz. knitwear, woven, non-woven). For each category and type of product, audits will help establish production processes, equipment involved in each process and specific energy consumption (SEC) for each process. Based on the representative numbers and total population figures, the baseline energy consumption will be revised for the Textile sector 2.1.7.2 Consolidate data from energy audit 2.1.7.3 Identify appropriate assumptions to ensure realistic extrapolation of audit results 2.1.7.4 Undertake extrapolation of audit results	1 nos. report on revised energy baseline for sector
Activity 2.1.8: Develop technically-robust, bankable EE project pipeline	This will be an ongoing activity for 6 years. Consultant/consulting firm will be responsible to promote the	2.1.8.1 Approach large number of prospective textile borrowers. 2.1.8.2 Develop strong project pipeline & mapping	Technically-robust, bankable EE project pipeline for textile sector.

	programme in the textile sector and develop a strong relationship with prospective clients/borrowers. Activities 2.2.1 to 2.2.4 will be some of the key platforms to connect with the borrowers and sensitize them on EE. This pipeline will be very important to ensure smooth implementation of the programme within the specified time.		
Market awareness on importance of EE equipment in textile sector strengthened			
Activity 2.2.1: Organizing programme launching event	A grand opening of the programme through a social event that will be intended to introduce the new concessional credit line and its unique features dedicated to promote EE in Textile Sector. And also to introduce the relevant public and private sector stakeholders to a new business modality using EE equipment.	2.2.1.1 An event organizing firm will be hired through a competitive bidding process. The procurement process will be facilitated by the consultant/consulting firm. Or IDCOL can also arrange it at own arrangement 2.2.1.2 The participants (local & foreign) will be selected by IDCOL 2.2.1.3 Photographs, attendance list, post-event report, media publication of the programme launching event will be shared with GCF.	1 nos. program launch event
Activity 2.2.2: Organizing awareness raising workshops	This activity focuses on developing the market for the programme by reaching out to the relevant private sector stakeholders through awareness raising workshops. The workshops will	2.2.2.1 Case studies and workshop presentation materials to be developed by consultant/consulting firms with support from IDCOL. 2.2.2.2 The participants (local &	Awareness raising workshops

	disseminate to stakeholders on broad policy framework and incentive mechanisms for energy efficiency in textiles, business case and economic benefits, women involvement in energy efficient textile operations (Covering entire key stakeholders of the country related to textile sector. Trade bodies like BTMA, BGMEA .etc. are expected to be on board). With interactive approaches, participants will be able to acquire new knowledge, share their experiences and develop new practices together related to adopting EE equipment in the textile sector.	foreign) will be selected by IDCOL 2.2.2.3 On board NDA for country ownership. 2.2.2.4 Interactive sessions with the participants to understand the effectiveness of the workshop. (group work, individual/group presentation, open floor discussion, Q&A sessions with experts, feedback forms etc.) 2.2.2.5 Photographs, attendance list, post-event report, media publication of the programme launching event will be shared with GCF.	
Activity 2.2.3: Preparing various information/communication materials	Written and visual communication materials to be developed in the form of brochures/flyers/pamphlets and other related information documents for dissemination activities and for effective marketing of the programme.	2.2.3.1Consultant/consulting firm will develop written and visual communication materials for marketing of the programme amongst both the public and private sector stakeholders. 2.2.3.2Consultant/consulting firm as well as IDCOL to ensure access to communication materials for the key stakeholders. 2.2.3.3 IDCOL to measure the effectiveness of the communication materials through survey.	Brochures, flyers, pamphlets, press release, website, and other communication materials.
Activity 2.2.4: Develop and launch advocacy campaign on energy	Advocacy campaign via workshops, animations, video clips, brochures, etc will be the starting point	2.2.4.1 Develop campaign materials to raise awareness in the	• Campaign materials (brochure, pamphlet, video clips, case studies on best practices, round table

efficiency & conservation.	for implementation of Component 05. This campaign will be focused on improving/reforming the current policy design and institutional framework regarding adoption of EE equipment in the textile sector and ensure its effective implementation.	public and private sector. 2.2.4.2Learning dissemination document and share success stories	discussion, press release, etc) • Quick survey reports to solicit information recipient's feedback and check their reactions and comprehension regarding the campaign materials.
Capacity developed at the institutional levels for faster adoption of EE technology			
Activity 2.3.1: Capacity needs assessment of IDCOL and potential borrowers.	Perform capacity needs assessment to map the current and desired level of capacity for IDCOL staff and potential borrowers.	2.3.1.1 Consultants will develop need assessment report mapping IDCOL's strengths and weaknesses to implement the programme	A report stating the institutional gaps of IDCOL to implement the programme, ways of overcoming its and the required resources.
Activity 2.3.2: Conduct capacity building workshops and training sessions for IDCOL, stakeholders and end users who are the applicants for the loan on the tools and requirements to be fulfilled for successfully securing the loan	Capacity building and training, including support for the development of necessary financial instruments, risk management tools, procedures and the creation of an adequate knowledge base to evaluate and extend EE loans	2.3.2.1 Consultant will develop training manuals in close consultation with IDCOL and sectorial experts. 2.3.2.2 Consultant along with IDCOL will identify potential participants for the trainings. 2.3.2.3 Consultant will conduct the training via experts. 2.3.2.4 Training reports will be developed identifying the effectiveness of the training and the satisfaction of the attendees	• Training modules • Attendee list • Post-training/workshop reports • Attendee feedback forms • Photographs of the training
Standards and mechanisms for adequate monitoring, reporting and verification of energy savings and GHG emissions developed			
Activity 2.4.1: Updating the parameters and requirements for	• As per the Bali Action Plan to ensure the programme is implemented in "measurable,	2.4.1.1 All relevant quantitative and qualitative information	MRV framework, including energy audit and post retrofit performance evaluation for the textile factories

establishing MRV framework	reportable and verifiable" manner a framework will be developed. • The MRV framework will enhance transparency of the tracking of GHG emission levels, climate finance flows received or the impact of mitigation actions proposed under the programme. • MRV framework will also facilitate sharing information and lessons learnt and allow assessing whether set targets have been achieved under the programme with relevant stakeholders, especially the GoB. • MRV framework will also strengthen trust of climate finance donors and other investors for replication of EE&C projects.	to be identified and verified. 2.4.1.2 Detail methodology on how to measure qualitative and quantitative indicators should be developed. 2.4.1.3 Perform energy audit and post retrofit performance evaluation for the textile factories (establishing as-is baseline and EE investment-based evaluation KPIs) 2.4.1.4 Plan the monitoring process 2.4.1.5 Ensure institutions, entities, arrangements and systems involved in domestic MRV 2.4.1.6 Update information in the framework.	
Activity 2.4.2: Updating parameters and develop the monitoring framework for environment and gender evaluation	• Gender-sensitive monitoring and evaluation is important to reveal whether the programme addresses the different priorities and needs of women and men, to assess if it has an impact on gender relations, and to determine the gender aspects that need to be integrated into monitoring and evaluation systems. • Monitoring is fundamental to environmental impact assessment (EIA) both to assess	2.4.2.1 All relevant quantitative and qualitative information to be identified and verified. 2.4.2.2 Determine indicators 2.4.2.3 Detail methodology on how to measure qualitative and quantitative indicators should be developed. 2.4.2.4 Plan the monitoring process 2.4.2.5 Ensure institutions, entities, arrangements and	Monitoring framework for environment and gender evaluation under the programme

	adherence to standards of the programme and to support management options. The use of indicators will assure that the key variables associated with significant environmental impacts are addressed as per proposed ESMF and improves communication and reporting processes.	systems involved in monitoring framework. 2.4.2.6 Update information in the framework.	
Activity 2.4.3: Yearly energy, financial and environmental audits	To report achievements against the set targets in the annual progress report to GCF, yearly energy, financial and environmental audits will be conducted to monitor and track the progress against the indicators.	2.4.3.1 Subcontracting of audit firms for independent evaluation if required. 2.4.3.2 Conduct audits in selected locations and prepare audit reports.	Audit reports
Activity 2.4.4: Revising and applying guidelines and monitoring methodologies for textile factories	• Revise guidelines and monitoring frameworks after scheduled review. • A pragmatic model for assessing whether guidelines and monitoring framework need to be updated will be identified in the operational manual.	2.4.4.1 Schedule review of the guidelines and monitoring frameworks 2.4.4.2 Perform literature searches 2.4.4.3 Model for assessing whether a guideline or monitoring framework needs updating must be determined in the operations manual 2.4.4.4 Drafted guidelines and monitoring frameworks to be shared with GCF for review and comments.	Draft revised guidelines and monitoring frameworks to be shared with GCF. The revised documents will be adopted under the programme after GCF and IDCOL Board approval

Activity 2.4.5: Develop an interactive MIS dashboard/database	To ensure organized collection of data that will be stored and easily accessed electronically from a computer system an interactive MIS dashboard/database will be developed. This activity will be conducted by the consultants under TA. The consultant/consulting firm will be responsible for development, operation, maintenance & handover of a MIS system for knowledge management, business networking, query management, loan application process and automating M&E process. This MIS will be accessible to key public and private sector stakeholders.	2.4.5.1 Gather business requirements 2.4.5.2 Create IT architecture 2.4.5.3 Platform development, testing & deployment 2.4.5.4 Maintenance till 5th year 2.4.5.5 Knowledge transfer to AE through trainings, guidebooks etc 2.4.5.6 Handover to AE	1 operational MIS/digital platform with functioning modules
Activity 2.4.6: Revision of applicable environmental and social policies of IDCOL and gender specific actions, if required	• Revise guidelines, policies and action plans after scheduled review. • A pragmatic model for assessing whether guidelines and monitoring framework need to be updated will be identified in the operational manual.	2.4.6.1 Schedule review of the documents 2.4.6.2 Perform literature searches 2.4.6.3 Model for assessing whether documents needs updating must be determined in the operations manual 2.4.6.4 Drafted documents to be shared with GCF for review and comments.	Draft revised documents to be shared with GCF. The revised documents will be adopted under the programme after GCF and IDCOL Board's approval

Activity 2.4.7: Review/audit of environmental and social safeguard compliances	Monitor borrowers' compliance to environmental and social safeguard compliances as per the lending agreement.	2.4.7.1 Subcontracting of audit firms for independent evaluation if required. 2.4.7.2 Design audit as per guidelines of programme's ESMF 2.4.7.3Conduct audit	Audit report of borrowers' environmental and social safeguard compliances
Advisory support to the Textile Borrowers to shorten appraisal timeline			
Activity 2.5.1: Guiding and supporting borrower's for faster disbursement	Prepare guidance documents with step-by-step explanation of process for (a) IDCOL's project appraisal/due diligence (b) Development of check list on list of supporting documents and guides on where and how they can be available. (c) This will be accompanied with a vendor list to provide a ready reference for sourcing equipment and seeking quotation. This activity will be performed by the consultants/consulting firms procured under the TA. The consultants/consulting firms will interface with the customers to make the credit application process user-friendly.	2.5.1.1 Guidance documents 2.5.1.2 Face to face guidance services 2.5.1.3Compile probable list of vendors and integrate with document	Guidance document for borrowers containing all relevant information
Engagement with global clothing brands to increase EE adoption in textile sectors			
Activity 2.6.1 Round table discussions with global brands to align textile units to the brands' sustainability targets	Through round table discussion this activity aims to strengthen participation of global fashion brands in the programme to ensure wider penetration of the	2.6.1.1 Select participants in discussion with fashion brands, trade bodies and SREDA. 2.6.1.2 Organize 01 round table discussion	• Post event report • Attendance list • Photographs/Video • Press brief • Presentation materials

	programme activities in the textile sector. By partnering with the global fashion brands the programme will strengthen and promote EE adoption in the textile sector by establishing a healthy business environment, training the workers, improving social compliance status and building relationships among the manufacturers, exporters and importers, with the goal of increasing Bangladesh's export market.	between fashion brands, textile factories & policy makers	
Activity 2.6.2 Stakeholder consultation in collaboration with global brands	IDCOL in collaboration with the global brands will organize stakeholder consultation meetings to identify ways in which textile units can be encouraged to improve on the social and gender inclusion in workforce ratio to increase the co-benefits impacts under the programme.	2.6.2.1 Identify the participants 2.6.2.2 Organize stakeholder consultation meetings	• Meeting minutes • Attendance list • Photograph • Presentation materials
Activities (Component 03&04, EE&C in RMG Sector)			
Activity	**Description**	**Sub-activities**	**Deliverables**
Financing for Energy Saving Equipment & Technology for RMG sector			
Activity 3.1.1 Disbursement of USD 200.00 million credit line for EE equipment in textile sector	• IDCOL through the EEs (LFIs) will extend USD 200 million amount of loans to RMG borrowers for purchasing EE equipment over a tenor of 10 years with maximum 03 years of grace period. From the USD 200 million, GCF loan contribution will be USD 150 million while the rest	3.1.1.1 Prepare financing strategy 3.1.1.2 Develop strong project pipeline & mapping 3.1.1.3 Approach large number of prospective RMG borrowers 3.1.1.4 Selection of end borrowers 3.1.1.5 Approval and disbursement of USD	Loans of USD 200 million extended to implementing entities

	USD 50 million will be co-financed by Executing Entities. IDCOL will revolve the loan over 10 years. EEs/ LFIs will re-invest the principal amount received on the GCF contribution which will to additional to GCF proceeds	200 million against USD 50 million equity	
Preparatory activities & Baselining energy consumption of garments sector			
Activity 4.1.1: Devise operation manual for the program	Develop manual elucidating stakeholders involved in the program, activities to be undertaken, roles and responsibilities etc.	4.1.1.1 Understand program design 4.1.1.2 Identify stakeholders and role in program 4.1.1.3 Create program manual aligned with specified timelines	1 no. operational manual
Activity 4.1.2 Develop whistle blower policy for the program	Develop policy to ensure stakeholders can flag fraudulent activities or activities which deviate from stipulations set in program manual	4.1.2.1 Understand requirements for whistle-blowing 4.1.2.2 Develop policy laying out procedure for recording and assessing any complaint and safeguarding the whistle-blower	1 nos. whistle blower policy document
Activity 4.1.3 Organizing programme launching event,	Programme launch event, to introduce the new concessional credit line and it unique features dedicated to promote energy efficiency in RMG Sector	4.1.3.1 Identifying invitees and sending out invites 4.1.3.2 Other logistics to organize event 4.1.3.3 Conduct event	1 nos. program launch event
Activity 4.1.4: Classification of RMG units	Classify RMG units in Bangladesh based on scale and type of products to aid base lining process	4.1.4.1 Conduct energy audit of sample plants 4.1.4.2 Assess audit results to develop segments of RMG units based on scale	1 nos. report on RMG unit classification

		of operations and type of products	
Activity 4.1.5: Consolidation of data and developing sector-level baseline	Data consolidation and develop baseline of energy consumption for RMG units in Bangladesh in the Year 1 to aid future assessment of sector-level impact of program	4.1.5.1 Consolidate data from energy audit 4.1.5.2 Identify appropriate assumptions to ensure realistic extrapolation of audit results 4.1.5.3 Undertake extrapolation of audit results	1 nos. document containing data sheets (which includes baseline information)
Activity 4.1.6: Prepare a list of renowned EE equipment with proven track records	Interact with stakeholders/market players to prepare a list of equipment already implemented in Bangladesh and having proven energy savings results in the RMG sector. List will be integrated with knowledge platform and disseminated through other means to ensure adequate public outreach	4.1.6.1 Identify relevant stakeholders 4.1.6.2 Undertake discussion to identify energy equipment in use in Bangladesh and has evidence of energy savings 4.1.6.3 Gather evidences of energy savings for each equipment	1 nos. document containing equipment list
Activity 4.1.7: Revision of baseline	Revise baseline derived in previously based on energy audits of plants and estimate actual change in energy consumption due to program	4.1.7.1 Conduct fresh set of energy audits 4.1.7.2 Analyse data as per methodology established for previous baseline study 4.1.7.3 Derive revised results of baseline	1 nos. report on revised energy baseline for sector
Capacity building of Local Financial Institutions (LFIs)			
Activity 4.2.1 Capacity building of LFIs (corporate office)	• Conduct capacity building trainings/workshops to develop capacity of corporate/head office level officials to effectively conduct banking due diligence of loan applications for implementation of energy efficient technologies.	4.2.1.1 Identify training needs by interacting with sample within target group 4.2.1.2 Develop capacity building material to address needs 4.2.1.3 Identify participants for workshop	02 combined capacity building trainings/workshops with participants of 40-60 for each training/workshop from LFIs. Participants will include 10-15 corporate/head office members selected from each LFI

	Participants will be corporate/head office level officials (02 combined capacity building trainings/workshops with participants of 40-60 for each training/workshop from LFIs. Participants will include 10-15 corporate/head office members selected from each LFI)	4.2.1.4 Organize workshop for dissemination of capacity building material 4.2.1.5 Feedback forms taken from participants and interactive discussion stimulated between trainer and trainee	
Activity 4.2.2: Capacity building of LFIs (branch level executives)	Conduct capacity building trainings/workshops to develop technical capacity of banking officials at branch/field level to efficiently monitor implementation of energy efficient technologies over the duration of repayment of loan amount. (02 combined capacity building trainings/workshops with participants of 60-80 for each training/workshop. Participants will include 15-20 branch/field level officials selected by each LFI)	4.2.2.1 Identify training needs by interacting with sample within target group 4.2.2.2 Develop capacity building material to address needs 4.2.2.3 Identify participants for workshop 4.2.2.4 Organize training for dissemination of capacity building material 4.2.2.5 Feedback forms taken from participants and interactive discussion stimulated between trainer and trainee	02 combined capacity building trainings/workshops with participants of 60-80 for each training/workshop. Participants will include 15-20 branch/field level officials selected by each LFI.
Capacity building of RMG units to enable implementation of energy efficient technologies			
Activity 4.3.1 Awareness building workshops on EE&C	Conduct workshop to establish and disseminate business case of energy efficiency among RMG unit owners/top officials to help generate interest in owners in energy efficiency concept. (02 workshops at national level with participants of 60-80. These relevant participants will be	4.3.1.1 Identify training needs by interacting with sample within target group 4.3.1.2 Develop capacity building material to address needs 4.3.1.3 Identify participants for workshop 4.3.1.4 Organize training for dissemination of capacity building material	02 workshops at national level with participants of 60-80. These relevant participants will be selected by IDCOL upon consultation with LFIs.

	selected by IDCOL upon consultation with LFIs).	4.3.1.5 Feedback forms taken from participants and interactive discussion stimulated between trainer and trainee	
Activity 4.3.2: Building capacity for technical skills of facility/utility managers	Impart training to facility/utility managers on the technical requirements for implementing energy efficiency projects as well as necessary steps (i.e. equipment working condition, energy supply stability etc.) to be undertaken during operations to ensure theoretical energy savings are realized.(02 combined trainings at with participants of 40-60 within TA implementation period of 05 years. These relevant participants will be selected by IDCOL upon consultation with LFIs)	4.3.2.1 Identify training needs by interacting with sample within target group 4.3.2.2 Develop capacity building material to address needs 4.3.2.3 Identify participants for workshop 4.3.2.4 Organize training for dissemination of capacity building material 4.3.2.5 Feedback forms taken from participants and interactive discussion stimulated between trainer and trainee	02 combined trainings with participants of 40-60 within TA implementation period of 05 years.
Activity 4.3.3: Increase awareness and develop capacity of factory workers	Develop awareness of workers on importance of energy efficiency and impart knowledge key skills required to implement energy efficient equipment in the RMG factory. (This will be done through inclusion of energy efficiency & other gender-social relate issues in regular trainings of the factory workers. Each LFI will ensure such inclusion in 05 sub-projects during TA period of 05 years. Apart from it, each LFI will also arrange at least 01 safety training for respective end borrowers within TA period of 05 years.	4.3.3.1 Identify training needs by interacting with sample within target group 4.3.3.2 Develop capacity building material to address needs 4.3.3.3 Identify participants for workshop 4.3.3.4 Organize training for dissemination of capacity building material 4.3.3.5 Feedback forms taken from participants and interactive discussion stimulated between trainer and trainee	Each LFI will ensure such inclusion in 05 sub-projects during TA period of 05 years. Apart from it, each LFI will also arrange at least 01 safety training for respective end borrowers within TA period of 05 years

Provide on-demand technical support to participating banks on monitoring, reporting and verification (MRV) of energy efficiency projects			
Activity 4.4.1: MRV support provided to 4 LFIs	Enhance capacity of LFIs in undertaking MRV to assess the benefits realized from the project. This will be achieved in the form of technical trainings, resolve queries on request, handholding support	4.4.1.1 Receipt of request for MRV support 4.4.1.2 Resolution of queries by consultation with sector energy efficiency expert	4 LFIs to be supported in MRV through trainings and handholding in real-life scenarios
Activity 4.4.2: Develop standard solutions document based on experience of commonly issues encountered in previous activity	Identify most commonly faced issues of banks in MRV and develop standard solution document addressing those issues to provide banks with troubleshooting guide and help them conduct MRV after tenure of TA consultant expires	4.4.2.1 Consolidate all queries resolved in previous activity 4.4.2.2 Prepare document listing query and resolutions	1 document containing standard solutions to MRV issues commonly faced by banks
Provide assistance to RMG units in loan application process			
Activity 4.5.1 Conduct rapid diagnostic study to understand key requirements for loan application support	Conducting rapid diagnostic study of key areas related to loan application process for which RMG units require handholding as well as nature of support required. This would involve conducting focused interviews with RMG units to understand the key issues they face in the loan application process for any conventional corporate loan instrument. Subsequently, identify kind of assistance RMG units require as well as provide recommendations LFIs on possible ways to simplify loan application process for RMG units.	4.5.1.1 Discussion with sample RMG units to understand key issues in loan application 4.5.1.2 Discussion with banks to understand constraints leading to issues for applicant 4.5.1.3 Identify methods of resolving issues and provide recommendations	1 nos. report which gives areas which require improvement and recommendations on the change in the application process required to increase participation by RMG units.

Activity 4.5.2 Develop FAQs, manuals, check-lists, filled-up templates to elucidate loan application process	Prepare guidance documents and filled up templates of loan application forms along with step-by-step explanation of process of loan application along with development of check list on list of supporting documents and guides on where and how they can be available. This will be accompanied with a vendor list to provide a ready reference for sourcing equipment and seeking quotation.	4.5.2.1 Based on recommendations prepare loan application templates and step-by-step guide 4.5.2.2 Compile probable list of vendors and integrate with document	1 consolidated document containing all relevant information
Activity 4.5.3 Respond to queries related to loan application process	Respond to queries of RMG units related to loan application process. The responses and queries will be consolidated to a troubleshooting guide to provide ready reference to any borrower after tenure of TA consultant ends.	4.5.3.1 Compile all queries of RMG units 4.5.3.2 Develop troubleshooting guide based on resolution provided for queries	1 consolidated document containing all relevant information
Provide on-demand technical support for implementation to RMG units which have secured GCF funding under this programme			
Activity 4.6.1: Implementation support provided to RMG units on request	Resolve queries and provide technical support to borrowers to ensure effective implementation of energy efficiency intervention	4.6.1.1 Compile requests from RMG units 4.6.1.2 Identify activities required for resolution 4.6.1.3 Handhold RMG units in implementing recommendations	No. of RMG units with queries resolved
Activity 4.6.2: Develop standard solution documents	Identify most commonly faced issues of borrowers in implementation and develop standard solution document i.e. troubleshooting manual based on experience of common issues encountered in previous activity addressing those issues. The responses and queries will be consolidated to a troubleshooting guide to	4.6.2.1 Compile all queries of RMG units 4.6.2.2 Develop troubleshooting guide based on resolution provided for queries	1 consolidated document containing all relevant information

	provide ready reference to any borrower after tenure of TA consultant ends		
Technology fair to create market awareness and develop access to energy efficient technology			
Activity 4.7.1: Organize technology fair	In order to create market awareness and develop access to energy efficient technology, IDCOL along with the LFIs will organize technology fair to create interface between international manufacturers/suppliers of energy efficient equipment and Textile/RMG unit owners to stimulate market development for energy efficiency in the sector. The fair will be organized in Year 03 (since FAA effectiveness) with participation of minimum 30 different technology suppliers and representation from 60 different Textile/RMG units	4.7.1.1 Identify invitee list for event and send invite 4.7.1.2 Ensure interaction between unit owners, technology OEMs etc.	1 nos. combined technology fair for RMG and Textiles sector
Development of relevant policies, strategies & plans addressing energy efficiency			
5.1.1: Review of existing national policies, strategies & plans regarding Energy Efficiency	• The Sustainable & Renewable Energy Development Authority (SREDA) was established by Bangladesh Parliament in May 2012 as a national nodal organization for promoting demand-side energy efficiency and conservation in the country. • IDCOL will be working with SREDA on this component to identify the areas of national policies, strategies and plan	5.1.1.1 Develop ToR for the consultant/ consulting firm jointly with SREDA 5.1.1.2 IDCOL will conduct the procurement of the consultant/ consulting firm in discussion with SREDA 5.1.1.3 The consultant at this stage will be engaged in data collection, both from primary and secondary sources and will be analysing the findings against set criteria, which will be preliminary	Stock taking report on existing national policies, strategies & plans regarding Energy Efficiency

	that can be further strengthened. Initially there will be a stock taking of the information from both primary and secondary sources, which will be analyzed on the basis of the GoB's target, available resources and international best practices.	determined in discussion with IDCOL and SREDA	
5.1.2 Identify any policy gap & develop mechanism to address such gaps	Subsequent to Activity 5.1.1 the consultant/consulting firm will – • Identify the gaps in policy implementation. • Identify the barriers t that is restricting the performance of the existing polices to reach the country set EE&C targets. • Identify the areas of improvements that can be achieved under the programme. (at par with allocated budget and activity timeline)	5.1.2.1 Consultant/ consulting firm will develop a methodology for conducting the policy implementation gap study. 5.1.2.2 Consultant/ consulting firm will develop a draft report based on primary & secondary data 5.1.2.3 Consultant/ consulting firm will finalise the report in consultation with IDCOL & SREDA	• A comprehensive report on policy gaps (design or implementation) and institutional gaps, along with possible mitigation strategies. Discussion papers
5.1.3 Development of relevant policies, strategies & plans	Based on the finding from the report produced in activity 5.1.1 and 5.1.2, relevant policies, strategies and plans to strengthen the country's EE&C implementation capacity	5.1.3.1 IDCOL and SREDA will conduct at least two stakeholder consultation meeting/workshops where the findings of the study conducted in activity 5.1.1. & 5.1.2 will be presented and through stakeholder discussion possible mitigation action plan will be finalised.	• Workshop report where the discussion paper will be presented. • Draft policies strategies and plans developed • Further consultation with the stakeholders (At this stage it is necessary to seek help from stakeholders to fine tune the wording, clarify meaning and make adjustments to the policy before it is finalized.) • Pictures/ Videos of the event • Attendees list

5.1.4 Implementation of the policies, strategies & plans developed under Activity 5.1.3	When the stakeholders of the policy development process are satisfied that all issues and concerns about the policy have been aired and dealt with, it is time to finalize the policy. The final policy document needs to be formally adopted by the GoB with an appropriate record entered in to the minutes. Following formal adoption of the policy it should be communicated far and wide throughout the organizations and stakeholders.	5.1.4.1 Consultant will prepare the upgraded policy document as per the outcomes of activity 5.1.3. 5.1.4.2 Relevant institutions of GoB will adopt the policy document. 5.1.4.3 Policy implementation to be monitored by SREDA. 5.1.4.4 Wide media coverage is to be ensured. Required communication documents will be developed for creating awareness among public & private stakeholders.	• Policy documents with strategies and action plans. • Minutes of the event where GOB adopts the policy. • Media coverage.
Capacity development & Market awareness on importance of EE equipment strengthened			
Activity 5.2.1 Assessment of detail capacity development requirement at policy level	As per the policy document prepared, an institutional capacity assessment will be carried out to understand the policy adoption & implementation capacity of the involved institutions.	5.2.1.1 Analysis report developed on capacity need assessment of SREDA for short, medium and long term implementation of EE&C projects. 5.2.1.2Consultant/consulting firm will collect both primary and secondary data.	Institutional capacity assessment report
Activity 5.2.2: Develop training manuals	Following formal adoption of the policy, training sessions may need to be conducted to ensure that organization personnel are fully informed and able to implement the policy. If the policy is not well communicated it may fail. Hence a training manual will be developed	5.2.2.1 Audience will be identified as per the assessment conducted under activity 5.2.1 5.2.2.2 Training tools will be finalised 5.2.2.3 Training materials will be developed	Training manual/s developed

	based on the world best practices focusing on performance measurement, EE standards & labelling and financial support mechanism for implementation of energy efficiency projects (prospective business model with feasible payback and IRR). The training manual will ensure consistency in presentation of content. It may also ensure that all training information on skills, processes, and other information necessary to perform tasks is together in one place. This will be important for institutionalizing the expected outcome of component 5.	5.2.2.4 Assess the training materials through demo training and collect feedback	
Activity 5.2.3: Organize 03 training of the trainers (ToT) for Government officials	Due to rotation, GoB officials often get transferred to the other departments or ministries hence it is important to develop pool of trainers who can continue the training or knowledge dissemination activities beyond programme's implementation timeline, so that new batch of officials can continue the implementation of EE&C projects.	5.2.3.1 Select participants for ToT (they are often senior government officials) 5.2.3.2 Conduct at least 03 training sessions for the trainers	Post event report on ToT Attendees list Photographs /videos
Activity 5.2.4: Organize 10 training session for the policy makers and relevant government official by the trained trainers	The trainers will now conduct training for the officer who will be responsible for monitoring and implementing EE&C policies.	5.2.4.1 Select participants 5.2.4.2 Conduct training 5.2.4.3 Collect feedback and have an interactive session	• Post training report • Attendees list • Photographs /videos
Activity 5.2.5: Organizing 02 dissemination	Programme results will be presented in national conferences where participants from	5.2.5.1 Dissemination workshops will be	• Report on dissemination workshop. • Attendees list

workshops on programme outcomes	government, professional associations, trade bodies, local community groups and other key stakeholders will be present for effective replication in other sectors. Through wide dissemination of programme outcomes to policy makers and EE practitioners and also the learning from implementing energy efficiency in textile and garments sector (financing scenario, business case and economic benefits, women involvement and role of government for long-term sustainability) the activity will ensure institutional capitalization of knowledge.	arranged in collaboration with SREDA	• Photographs /videos
Activity 5.2.6: Develop tools for mass awareness on EE&C	The main objective of this activity is to achieve mass awareness for energy efficiency through disseminating tools like media coverage, bill board. etc. Required communication materials on the importance of EE&C in the country will also be further developed. Information on the programme success will also be widely shared for awareness and replication through increased demand.	5.2.6.1 ToR for a consultant/consulting firm to be prepared. 5.2.6.2 Procurement to be conducted by IDCOL with support from SREDA. SREDA 5.2.6.3Communication materials to be developed targeting both public and sector stakeholders	• Communication materials

E.7. Monitoring, reporting and evaluation arrangements (max. 500 words, approximately 1 page)

Arrangements for monitoring, reporting and evaluation for component 01 & 02 (EE&C in Textile sector):

Monitoring:

- IDCOL has a proven track record of highly efficient, effective monitoring and supervision of the previously led and current internationally funded country-wide program. This has been made possible because of the programme specific MRE plans devised and implemented by IDCOL suited to the needs of each programme.
- As IDCOL will act both as AE & EE for the program, separate units of IDCOL will play different roles. Business Unit of IDCOL will be responsible for both the execution of TA support & concessional funding to the end borrower. As the AE, "GCF unit" of IDCOL will be responsible for administrating & managing the fund as well as supervision, evaluation and reporting. Monitoring will be ensured for each sub-project, to be financed under this program, in different project phases through multiple engagements:

Stage	Responsibility	Monitoring action
Sub-project approval stage	Business unit of IDCOL	Select eligible borrowers suitable for GCF financing & assess project viability under regular process
	Credit Risk Management (CRM)	Ensure due diligence of borrowers and compliance with existing lending policy of IDCOL & other GCF facility criteria
	Management/ Board of IDCOL	Approve funding proposals as per IDCOL's vision & mission ensuring viability, integrity, governance, sustainability and other related aspects.
Sub-project disbursement phase	Business unit, Legal unit, Credit Administration Department (CAD)	Ensure disbursement of GCF fund in line with FAA
Sub-project implementation stage	Business unit	Regularly monitor the project through timely progress report from end borrowers and visiting the project premise to ensure smooth operation for anticipated mitigation impact at the project end

Reporting & evaluation mechanism:

- As per GCF's mandate for a participatory MRE, there will be frequent reporting from the EE to the AE and the AE to the Fund as pre-determined intervals. As the EE, while the Business unit of IDCOL will conduct their investment activity as usual as the EE, the GCF unit of IDCOL which is a dedicated wing other than the business unit will supervise & monitor generation of supporting/documents for reporting & verification of different components under the log frame.

- GCF Unit of IDCOL will periodically report to GCF on the energy usage & tCO2 reduction for each of its sub-project by compiling the data received from different sub-projects (by IDCOL business unit/third party M&E consultant through a common dashboard/online portal). Periodic energy savings reporting will contain actual savings from ongoing sub-projects. In case sub-project loan is adjured, an estimate for energy savings will be calculated for the remaining life of the equipment. In order to set the baseline & energy saving potential through energy efficient equipment & technology, IDCOL will engage consultant/ energy auditor under TA component which will be used as reference at the time of each proposal approval. The textile borrowers will install energy measurement equipment at the factory premise to identify energy usage/savings for the equipment/technology financed under this specific GCF program & will report periodically to IDCOL/ third party M&E consultant.. The expected mitigation outcome will be verified through 1) Energy savings and 2) Increased production output by using EE equipment & technology.
- The reporting and evaluation tools of the programme will be designed and facilitated by a technical assistance consultant under the TA activity as per the followings:

Reporting tool	**Reporting line**	**From date of consultant engagement**
All relevant reporting formats for: ▪ Energy savings & tCO2 reduction ▪ Gender balance and empowerment report (as per Gender Action Plan) ▪ All other relevant reporting formats	From end borrower to IDCOL	As per "Implementation Timetable"
	From IDCOL to GCF	
Detail methodology and format for interim & final evaluation/verification	From IDCOL to GCF	

- The mid-term & final evaluation of the program will be carried out by Independent Evaluator for reporting to GCF.
- Proper execution of the TA component, for which grant of USD 3.05 million has been requested, will be assessed under the Interim evaluation after the end of year 06.

<u>Arrangements for monitoring, reporting and evaluation for component 03 & 04 (EE&C in RMG sector):</u>

Monitoring:

- IDCOL will play the role as an Accredited Entity (AE) & Local Financial Institutions (LFIs)/IDCOL will be the Executing Entity (EE).
- LFIs will have direct relationship with their respective end borrowers i.e. the RMG unit. The monitoring action at LFIs level will be as follows:

Stage	Responsibility	Monitoring action
Sub-project approval stage	Business unit of respective LFI	Select eligible borrowers suitable for GCF financing & assess project viability under regular process
	Credit Risk Management (CRM) of respective LFI	Ensure due diligence of borrowers and compliance with existing lending policy of LFI

	Approving Authority of respective LFI (Board/Credit Committee/Management)	Approve funding proposals as per LFI's vision & mission ensuring viability, integrity, governance, sustainability and other related aspects.
Sub-project disbursement phase	Credit Administration Department (CAD) of respective LFI	Ensure disbursement of GCF fund in line with regulatory requirement, Banks own policy and FAA
Sub-project implementation stage	Business unit of respective LFI	Regularly monitor the project through timely progress report from end borrowers and visiting the project premise to ensure smooth operation for anticipated mitigation impact at the project end

- IDCOL has a proven track record of highly efficient, effective monitoring and supervision of the previously led and current internationally funded country-wide program. This has been made possible because of the programme specific MRE plans devised and implemented by IDCOL suited to the needs of each programme.
- As the AE, IDCOL will be responsible for administrating & managing the fund as well as supervision, evaluation and reporting. LFIs will have to approach IDCOL for approving their each sub-project. IDCOL will assess the eligibility of each sub-project (i.e. project of one RMG Units) as per the terms & conditions of the approved GCF program. The pre-specific format will be used to check the eligibility (format will be developed during Operation manual development stage).

Reporting & evaluation mechanism:

- As per GCF's mandate for a participatory MRE, there will be frequent reporting from the EE to the AE and the AE to the Fund as pre-determined intervals. End borrowers will report to Executing Entity i.e. LFIs and LFIs will then report to Accredited Entity i.e. IDCOL. IDCOL will supervise & monitor generation of supporting/documents for reporting & verification of different components under the log frame.
- IDCOL will periodically report to GCF on the energy usage & tCO2 reduction for each of sub-project by compiling the data received from different sub-projects (by LFIs/third party M&E consultant through a common dashboard/online portal). Periodic energy savings reporting will contain actual savings from ongoing sub-projects. In case sub-project loan is adjured, an estimate for energy savings will be calculated for the remaining life of the equipment. The baseline & energy saving potential of energy efficient equipment & technology will be ascertained by the borrower with the help of consultant/ energy auditor. The appointment of the consultant/ energy auditor may co-financed under the TA. The End Borrowers will install energy measurement equipment at the factory premise to identify energy usage/savings for the equipment/technology financed under this specific GCF program & will report periodically to LFIs/ third party M&E consultant. The expected mitigation outcome will be verified through 1) Energy savings and 2) Increased production output by using EE equipment & technology
- The mid-term & final evaluation of the program will be carried out by Independent Evaluator for reporting to GCF.
- Proper execution of the TA component, for which grant of USD 2.30 million has been requested, will be assessed under the Interim evaluation after the end of 06 years.
- Following milestones/reports will be ensured under this program as per AMA & project design: Same as for component 1& 2 mentioned above

F. RISK ASSESSMENT AND MANAGEMENT

F.1. Risk factors and mitigations measures (max. 3 pages)

FOR COMPONENT 01 & 02 (EE&C IN TEXTILE SECTOR):

The main type of risk is technical & operation risks associated with project & less social & environment risks. Based on the above assessment, the maximum risk category is Low-Moderate and, therefore, the risk category for the overall project is **Moderate**. A summary of the risk is as follows:

Risk Factor	Category	Probability	Impact
1. Demand risk and market risk in the textile sector which may slow down investment	Credit	Low	Medium
2. Political risks associated with changing attitude towards support & priority for EE in Textile		Low	Low
3. Financial risks from Credit and Currency fluctuations	Forex	Medium	High
4. Social unrest affecting BAU scenario	Technical & Operational	Low	Low
5. Delays in project implementation due to time consuming process of review and clearance as well on ground operationalization.		Low	Low
6. Potential technological risks like equipment failure & supply chain failure		Low	Medium
7. Safety risks to equipment and employees.		Low	Medium
8. lack of awareness and knowledge about the benefits of energy efficiency	Other	Low	Medium
9. Social risks like exclusion of social groups and indigenous communities from project benefits		Low	Low
10. Gender risks regarding non-access to project benefits		Low	Medium
11. Environment risks caused due to inadequate disposal of waste generated from textile process		Medium	Low
12. Health Risks occurring from the processes in textile units		Low	Low

Selected Risk Factor 1		
Category	Probability	Impact
CreditCredit	LowLow	MediumMedium
Description		
Demand risk and market risk in the textile sector which may slow down manufacturing, marketing and profit making and fail to attract investment		
Mitigation Measure(s)		
While chances of demand and market risks are low given the potent role of Bangladesh's textile sector in National and international clothing sector. IDCOL will take mitigation measures such as collateral loans for distributing loans to end consumers and also ensure hypothecation of energy efficient equipment finance if required.		

Selected Risk Factor 2		
Category	Probability	Impact
CreditCredit	LowLow	LowLow
Description		

Political risks associated with changes in directives that may modify their support and priority for energy efficiency in the sector.
Mitigation Measure(s)
Energy efficient measures makes business sense for end consumers as they achieve great savings over project life time, especially with concessional lending being proposed which mitigated this political risk. Moreover, in an energy deficient country like Bangladesh, significant climate goals to be achieved, government is very keen on promoting EE foreseeable future.

Selected Risk Factor 3

Category	Probability	Impact
ForexForex	MediumMedium	Select
Description		
Significant foreign exchange risk at the time of repayment of GCF fund in future as borrowing from GCF will be in foreign currency (USD) and re-lending to the end user in local currency (BDT).		
Mitigation Measure(s)		
GCF will provide USD loan to IDCOL & then IDCOL will re-lend it to end borrowers in local currency i.e. BDT. Considering the trend of 2.94% yearly devaluation rate of BDT against USD for the last few years due to a number of macro-economic factors, the repayment of foreign currency loan (USD) to GCF in the future may wipe out the concessional benefits of this program. If end borrowers have to bear the currency fluctuation cost then sub-projects financed under this program will not be viable anymore. The absence of long-term hedging market for BDT is another barrier for such currency fluctuation management. This risk will be addressed by partly lending in USD to the borrowers thereby reducing their BDT exposure and also, having currency risk fluctuation premium as part of BDT interest rate. As Executing Entity for Component 1, IDCOL will bear the FX risk.		

Selected Risk Factor 4

Category	Probability	Impact
Technical and operationalTechnical and operational	LowLow	LowLow
Description		
Social unrest caused due to external factors leading to disruption in the BAU scenario for textile sector		
Mitigation Measure(s)		
Social instability caused from external influences can be mitigated through involvement and healthy relations with the NGOs, social welfare groups and associations working together for worker's development and welfare. Compliance with the programme's ESS will foster a healthy social relationship, ensure social participation and empowerment and reduce the discrimination amongst the associated community. The end borrowers of the fund will have the sole responsibility of mitigating this risk.		

Selected Risk Factor 5

Category	Probability	Impact
Technical and operationalTechnical and operational	LowLow	LowLow
Description		

Delays in project implementation due to time consuming process of project review and clearance as well on ground operationalization.
Mitigation Measure(s)
IDCOL has a streamlined project approval process to reduce any delays in approval. To reduce the time consumed in installation, the supplier of the equipment will be considered responsible for installation. Furthermore, clear specifications of funding terms including documentation required for the project being eligible for this project will be communicated in a timely manner. Delay in project implementation by the end borrowers will be monitored by IDCOL as per this program monitoring framework.
Selected Risk Factor 6

Category	Probability	Impact
Technical and operationalTechnical and operational	LowLow	MediumMedium

Description
Potential technological risks like equipment failure; supply chain failure such as delays or collapse of supply chain for technology or associated equipment; lack of qualified service technicians, etc.
Mitigation Measure(s)
Companies who have past experience of successful operations in Bangladesh as service provider through setting service centers and experienced maintenance staff will be preferred. Also, latest EE equipment can be procured from any of these reputed manufacturer / suppliers at discretion of end user/ customer. Skill development of the manpower for the operation & maintenance of the EE technology will be ensured through trainings and other initiatives.
Selected Risk Factor 7

Category	Probability	Impact
Technical and operationalTechnical and operational	LowLow	MediumMedium

Description
Safety risks like accidents, injuries and incidents of fire and other occupational damages to equipment and employees.
Mitigation Measure(s)
It's mandated to ensure compliance with project ESIA which provides for requisite avoidance, mitigation and compensation measures; National Laws and Policies [72] and register with Accord on Fire and Building Safety in Bangladesh (Accord)/ the Alliance for Bangladesh Worker Safety (Alliance)/ the National Action Plan on Fire Safety and Structural Integrity (NAP) or any other regulatory requirement set by the Government as and when required. Synchronization with these will significantly reduce risks of accidents, injuries and incidents of fire and other occupational damages. Compliance with Regulatory Standards of the Ministry of Labour and Employment & IDCOL EHS policies and guidelines & clear contractual rules covering the need for occupational health and safety technical activities will be monitored.

[72] Environment Conservation Act (ECA) 1995; Environment Conservation Rules (ECR) 1997; Environment Court Act (ECA) 2010

Selected Risk Factor 8		
Category	Probability	Impact
OtherOther	LowLow	MediumMedium
Description		
Risks from lack of awareness and knowledge about the benefits of energy efficiency in textile sector and availability of the financial instrument for the same.		
Mitigation Measure(s)		
Under the technical assistance component of the program, IDCOL will arrange a number of national stakeholder engagement events to raise awareness about EE in textile and availability of a funding in this regard. The knowledge gap will be addressed through development of knowledge products, marketing material, workshops, and outreach programs to reduce and mitigate risks associated with lack of awareness about the existence and function of the financial facility.		
Selected Risk Factor 9		
Category	Probability	Impact
OtherOther	MediumMedium	LowLow
Description		
Social risks like exclusion of social groups and indigenous communities from skill up gradation, trainings, workshops and job opportunities from new equipment and machinery.		
Mitigation Measure(s)		
Compliance with the Social regulatory frameworks in Bangladesh, IDCOL's ESSF, GCF's guidelines and the ESIA would ensure none of the listed social risk to occur at any given time.		
Selected Risk Factor 10		
Category	Probability	Impact
OtherOther	LowLow	MediumMedium
Description		
Gender risks from lack of gender equity in trainings and skill up gradation required for integration of new equipment and machinery.		
Mitigation Measure(s)		
Gender Inclusiveness and equity will be promoted throughout project implementation. The project participants to comply with the National policies like Labour Act and Labour Rules, Women development policy 2011 and GCF's Gender policy to ensure reduction and mitigation of gender risks. Compliance with Gender Action Plan of this program will ensure the participation of women in such capacity building initiatives.		
Selected Risk Factor 11		
Category	Probability	Impact
OtherOther	MediumMedium	LowLow
Description		
Environment risks caused due to inadequate disposal of solid and liquid generated industrial plant modernization processes.		

Mitigation Measure(s)
The ESIA identifies and analyses upstream environmental issues that may affect the project and the sector and suggests mitigation measures for the same. It also consists of an appropriate management plan for implementing, monitoring and reporting of the suggested environmental mitigation and enhancement measures. Pre-identification of environmental risks through ESIA would prepare to reduce the occurrence and intensity of these risks. It essential to comply with the ESIA as it conforms to the national regulations and IDCOL guidelines.

Selected Risk Factor 12		
Category	Probability	Impact
OtherOther	LowLow	LowLow

Description
Health Risks from Respiratory & Dermal contact with hazards causing risk of lung cancer and injury to the bronchial tubes, dust particles, VOCs, heat and chemicals occurring from the processes in textile units

Mitigation Measure(s)
Health risks are low level and have low probability to occur. Separate mitigation will not be required as this risk is already reduced due to the implementation of Energy Efficient equipment that are certified, user and environment friendly as compared to the existing equipment. The end-users will have to ensure that the equipment and its installation is compliant with programme's ESIA and conforms to the national regulations and IDCOL guidelines.

FOR COMPONENT 03 & 04 (EE&C IN RMG SECTOR):

The program is exposed to majorly technical and operational risks, which includes environmental and social risks and the combined rating of impact and probability of the various risks is observed to be mostly Medium. A summary of the risks is given below:

Risk Factor	**Category**	**Probability**	**Impact**
1. Lack of capacity in equipment operation and maintenance (O&M)	Technical & Operational	Medium	Medium
2. Limited market awareness		Medium	High
3. Disposal of inefficient machinery		Medium	Medium
4. Reduced job opportunities for women & other social groups		Medium	Medium
5. Health and safety related issues		Medium	High
6. Credibility of executing entities	Credit	Medium	High
7. Default in re-payment by end borrowers (RMG units):		Medium	High
8. Foreign exchange fluctuation	Forex	Low	High
9. Limited capacity in banks for due diligence of energy efficiency project	Governance	Medium	High
10. Long lead time in loan disbursement		Medium	Medium
11. Reduced demand from client markets	Other	Medium	High
12. Decline in sectoral growth		Low	High
13. Money laundering/Terrorism Financing risk:	ML/FT	Low	High

Accordingly, the overall program has a **Moderate** Risk Level due to greater incidence of Medium-level risk elements.

Selected Risk Factor 1		
Category	Probability	Impact
Technical and operationalTechnical and operational	MediumMedium	MediumMedium
Description		
Lack of capacity in equipment operation and maintenance (O&M): If penetration of advanced EE equipment low, adequately trained personnel for O&M of machine would be low. Also, availability of spares may be low and cost of spares high. Hence, overall cost of O&M would be high increasing skepticism of potential borrower and reducing uptake of EE equipment.		
Mitigation Measure(s)		
Technical Assistance (TA) activity designed to develop capacity within set of RMG units in O&M of energy efficiency equipment. Uptake and continued use of energy efficient equipment in targeted units under the programme will help create real-life demonstration of the benefits as well as prompt other parties to take up similar measures.		
Selected Risk Factor 2		
Category	Probability	Impact
Technical and operationalTechnical and operational	MediumMedium	HighHigh
Description		
Market Awareness: If penetration of advanced EE equipment low, adequately trained personnel for O&M of machine would be low. Also, availability of spares may be low and cost of spares high. Hence, overall cost of O&M would be high increasing skepticism of potential borrower and reducing uptake of EE equipment.		
Mitigation Measure(s)		
As part of TA activity, technology fairs proposed involving RMG unit owners and energy efficient equipment manufacturers, to generate awareness on technical and commercial queries. Also, capacity building sessions are planned as part of TA activities, to provide RMG unit owners, facility managers and workers with information on facets of energy efficiency relevant to their particular category. Additionally, LFIs are expected to pursue independent efforts to push the loan products in the market by improving overall awareness regarding the benefits of energy efficiency		
Selected Risk Factor 3		
Category	Probability	Impact
Technical and operationalTechnical and operational	MediumMedium	MediumMedium
Description		
Reduced job opportunities for women & other social groups: Women currently constitute 80% of work force of RMG units, most of them area employed in sewing area. Depending on the specific type of energy efficient equipment, there might be a need for re-skilling of women workforce. Re-skilling increases risk of reduced job opportunities. This can have an adverse effect on the prospect of women empowerment. Similar risks are applicable for other social groups, most of whom are unskilled to low-skilled.		
Mitigation Measure(s)		

Under TA activity, capacity building activities are planned specifically for women workers which will disseminate relevant information for operating new energy efficient equipment. Under Gender Action Plan, targets for capacity building of women workers is also provided to ensure there is no risk of reduced job opportunities for women. Similar capacity building activities for workers are planned as part of the TA activity

Selected Risk Factor 4

Category	Probability	Impact
Technical and operationalTechnical and operational	MediumMedium	MediumMedium

Description

Issues related to health and safety: Installation of new equipment can lead to increased health related issues due to generation of material harmful to the health of human beings. The deviation in regular operations for the workers due to installation of new equipment might lead to safety related issues.

Mitigation Measure(s)

Under TA activity, capacity building activities are planned for workers group to ensure they are better equipped to handle new energy efficient equipment and there is limited loss of productivity. These activities will help workers to get acquainted to the new equipment and impart knowledge on implication of improper handling on safety

Selected Risk Factor 5

Category	Probability	Impact
Technical and operationalTechnical and operational	MediumMedium	HighHigh

Description

Disposal of inefficient machinery: The program aims to replace existing inefficient equipment with efficient equipment variant. The inefficient variants if discarded, can pose serious environmental issues. With no existing laws related to disposal of discarded equipment in place, proceeding with the replacement process may lead to detrimental environmental

Mitigation Measure(s)

The ESIA identifies and analyses environmental issues arising out of disposal and pollution that may affect the project and the sector. It provides the guidelines under which potentially harmful activities can be undertaken, taking into account the possible mitigation measures. The guidelines are integrated into an appropriate management plan for implementing, monitoring and reporting of the suggested environmental mitigation and enhancement measures. It essential to comply with the ESIA as it conforms to the national regulations and IDCOL guidelines

Selected Risk Factor 6

Category	Probability	Impact
CreditCredit	MediumMedium	HighHigh

Description

Credibility of borrowing entity: The key financial indicators for banking sector in Bangladesh indicates in spite of substantial credit growth, it is plagued with high default rates and banks are not able maintain the minimum capital adequacy norms. In the current scenario, the banking system can be considered be stable with medium level of risk of instability in the short to medium term.

Mitigation Measure(s)

As part of the feasibility study, due diligence of the LFIs has been undertaken. This has helped establish the current and future financial strength of the selected banks, ensuring assured repayment to GCF and flow of funds in subsequent tranches.

Selected Risk Factor 7

Category	Probability	Impact
CreditCredit	MediumMedium	HighHigh

Description

Default in re-payment: Even though RMG sector has been witnessing three-year average credit growth of over 15% since 2016[73], credit risk in the sector continues to be high. Furthermore, sector is plagued by long and difficult legal processes to recover loans and continued case of defaults may lead to reduced interest of banks in lending to RMG sector units.

Mitigation Measure(s)

As part of TA activity, templates for verifying energy and cost savings of project in the loan application will be prepared. This coupled with established process to determine financial health of a borrowing entity, will help in mitigation. Also, project design ensures periodic assessment by executing entities and accredited entities to monitor project progress, templates for which have been prepared as part of project preparatory activities.

Selected Risk Factor 8

Category	Probability	Impact
ForexForex	LowLow	HighHigh

Description

Foreign exchange fluctuation: LFIs will be receiving funds from GCF in USD and in case it chooses to extend loans to RMG units in BDT, it would be exposed to Forex rate fluctuation risk. Since repayment from the borrowing units to the LFI would be in BDT and bank would be repaying the amount to GCF in USD, in case of fluctuation in forex rate, banks would have to repay more or less than original amount received.

Mitigation Measure(s)

Since program design leads to lower risk rating, it is recommended to ensure that structure of loan disbursement be continued during program implementation

Selected Risk Factor 9

Category	Probability	Impact
GovernanceGovernance	MediumMedium	HighHigh

Description

Limited capacity in LFIs for due diligence of energy efficiency project: Under current scenario, bank officials have limited technical knowledge about energy efficiency, the requirements for energy efficient equipment, assessment of cost savings realized by installing such equipment and how the savings affects loan repayment. The lack of technical capacity can lead to incorrect assessment of borrowers and hence, increase risk of loan repayment.

Mitigation Measure(s)

TA activity can help identify information gap among the personnel of LFIs and accordingly develop training material to bridge the knowledge gap. The knowledge material can be disseminated through workshops with branch level officials as well as mid management officials. Non-financial standardized documents will be prepared which will help establish the rules for engagement of the borrower and the LFIs. This will help create the necessary framework which can be adopted by the LFIs.

Selected Risk Factor 10

[73] Source: Bangladesh Systemic Risk Dashboard (Bangladesh Bank, December 2018)

Category	Probability	Impact
GovernanceGovernance	MediumMedium	MediumMedium
Description		
Long lead time in loan disbursement: To design an energy efficiency project, an independent energy audit required where entire process may take considerable time, spanning into 7-8 months in worst case scenario. Under such circumstances, the premise under which the loan proposal was prepared might change leading to invalidity of the project and accordingly, potential borrowing entities might be discouraged from pursuing such projects.		
Mitigation Measure(s)		
In order to ensure faster turn-around of the loan proposal, evaluation of the proposal would be conducted by the EEs. As part of the project preparatory activity, the necessary monitoring framework and templates by which accredited entity i.e. IDCOL can comprehensively monitor and evaluate the fund disbursement by LFIs will be developed. Accordingly, development of adequate capacity in LFIs would be undertaken as part of TA activity		
Selected Risk Factor 11		
Category	Probability	Impact
OtherOther	MediumMedium	HighHigh
Description		
Reduced demand from client markets: RMG is an export-oriented industry and change in demand pattern in the target market can affect the sector as a whole. In case of reduced demand, profitability of units would decrease leading to reduced finance availability to fund energy efficiency measures		
Mitigation Measure(s)		
Since the risk arises from external factors which are beyond the scope of action of the stakeholders, tolerating the risk level is the only risk treatment option available		
Selected Risk Factor 12		
Category	Probability	Impact
OtherOther	LowLow	HighHigh
Description		
Decline in sectorial growth: RMG sector is witnessing a period of tepid growth after decades of high growth along with effect of rising costs and stagnant output prices. Maintaining profitability under such scenario will be strained and accordingly, RMG owners can be disincentivized to undertake EE measures		
Mitigation Measure(s)		
Since the risk arises from external factors which are beyond the scope of action of the stakeholders, tolerating the risk level is the only risk treatment option available		
Selected Risk Factor 13		
Category	Probability	Impact
ML/FT	LowLow	HighHigh
Description		
Money laundering/Terrorism Financing risk: Finance disbursed under the program can also be utilized to finance terrorist activities, money laundering or prohibited practices by the banks or the end borrowers. While on one hand the intended objective will not be met, on the other hand the finance would be utilization would be counterproductive. Also, given the fact that it is a concessional line of financing, perceived probability of money laundering can also be high		
Mitigation Measure(s)		

Bangladesh has strong regulatory system to monitor financing issues of the Financial Institutions under the purview of central Bank i.e. Bangladesh Bank. The detail system has been explained in attachment Annex 02_Reply_"Compliance Note".

G. GCF POLICIES AND STANDARDS

G.1. Environmental and social risk assessment (max. 750 words, approximately 1.5 pages)

Provide the environmental and social risk category assigned to the proposal as a result of screening and the rationale for assigning such category. Present also the environmental and social assessment and management instruments developed for the proposal (for example, ESIA, ESMP, ESMF, ESMS, environmental and social audits, etc.). Provide a summary of the main outcomes of these instruments. Present the key environmental and social risks and impacts and the measures on how the project/programme will avoid, minimize and mitigate negative impacts at each stage (e.g. preparation, implementation and operation), in accordance with GCF's ESS standards. If the proposed project or programme involves investments through financial intermediations, describe the due diligence and management plans by the Executing Entities (EEs) and the oversight and supervision arrangements. Describe the capacity of the EEs to implement the ESMP and ESMF and arrangements for compliance monitoring, supervision and reporting. Include a description of the project/programme-level grievance redress mechanism, a summary of the extent of multi-stakeholder consultations undertaken for the project/programme, the plan of the Accredited Entity (AE) and EEs to continue to engage the stakeholders throughout project implementation, and the manner and timing of disclosure of the applicable safeguards reports following the requirements of the GCF Information Disclosure Policy and Environmental and Social Policy.

Describe any potential impacts on indigenous peoples and the measures to address these impacts including the development of an Indigenous Peoples Plan and the process for meaningful consultation leading to free, prior and informed consent, pursuant to the GCF Indigenous Peoples Policy.

Attach the appropriate assessment and management instruments or other applicable studies, depending on the environmental and social risk category as annex 6.

FOR COMPONENT 01 & 02 (EE&C IN TEXTILE SECTOR):

IDCOL has conducted risk screening for the project using the IFC's Performance Standards and World bank's EHS Guidelines, besides national legislation of GoB and evaluate their significance level (i.e. level of risk and probability). The envisaged environmental and social safeguards (ESS) category for this project under consideration is Category B (medium risk category)[74]. The potential risks (refer to Section F) are few; low to medium in magnitude and occurrence and largely reversible using the prescribed mitigation measures and good international industry practices.

Environmental and Social Management Framework

During the PPF activity, an ESMF has been developed by IDCOL to identify potential risks to the environment and social matters from the projects and outline strategies for managing those risks and minimising undesirable environmental and social impacts. The programme's ESMF will:

Provide energy efficient solutions to the textile sector of Bangladesh to reduce energy consumption in the sector and in turn the emissions of greenhouse gases	Encourage the deployment of energy efficient equipment and technology through planning, commitment and continuous improvement	Comply with all applicable laws, regulations and standards for the protection of the environment and society; and
Adopt the best practicable means available to prevent or minimise environmental impact.	Describe all monitoring procedures required to identify impacts on the environment; and	Provide an overview of the obligations of Project staff and contractors regarding environmental obligations

[74] IFC's approach to risk categorization as adopted by GCF

Environmental Audit

An environmental audit was conducted on one of the textile factories to establish the past performance, environmental issues or non-compliances if any. It assessed the entire processing area and the area under which the utility section of unit operates. Environmental and safety issues with respect to liquid effluent, solid waste and emissions, as well as light, sound and ventilation were covered under this audit. Furthermore, the audit included assessment of energy conservation and energy efficiency opportunities at the factory.

Documents to be developed during programme implementation

Site-specific screening check-lists and Environmental and Social Management/ Mitigation Plans (ESMPs), based on the ESMF, will be prepared for each site where construction works will be implemented, publicly consulted and disclosed locally before procurement commences for the civil works.

Key Environmental and Social Risks have been presented in detail with respective and highly specific mitigation measures in Section F. To summarise, the relevant risks and mitigation measures are:

Discrimination/Exclusion of social groups

Social exclusion may happen due to multiple reasons like structural/economic (iniquitous economic conditions, low wages, dual and segregated labour markets, historical oppression (colonialism), discrimination, absence of legal/political recognition, institutional/civic non-acceptance, self-exclusion, etc. These can be managed by complying with social regulatory frameworks in the country, sectorial mandates, IDCOL's ESSF and GCF's guideline for social inclusion.

Gender based discrimination/exclusion

Gender-disaggregated data will be used for monitoring outputs, outcomes and impacts during project implementation to ensure women's participation in employment opportunities in the textile sector. Hence, the gender issues and mitigation is addressed in almost all the programme design documents namely, ESMF, Gender assessment and action plan, Logical Framework (Performance indicators) and the MRE Report.

Occupational safety

Bangladesh Accord was created to enable working in a fearless environment for concerns like fires, building collapses, or other accidents that could be prevented with reasonable health and safety measures. Besides, IDCOL's ESS, GCF's ESMF and the programme ESIA developed specifically for this case, identifies workplace hazards to minimize their risks with appropriate control measures and thereby avoid the financial costs of accidents & occupational ill health.

Waste Disposal

Under Section 12 of the Bangladesh Environment Conservation Act 1995 (ECA 1995) no industrial unit or project can be established or undertaken without obtaining an Environmental Clearance Certificate (ECC) from the DOE. The programme ESIA should be made to ensure compliance with the legislations/ regulations associated to solid waste management and Bangladesh Standards and Guidelines for Sludge Management and other related guidelines.

Health Risks

Health related risks will be minimal as the certified, user friendly energy efficient equipment will reduce exposure to most of the health hazards as they minimise handling of chemicals, heat, dust with automated machines. This will be a low-level risk with least chances of occurrence.

Institutional arrangement

The textile factories (EEs) with the assistance of the Project Management team from IDCOL (AE), will be responsible for ensuring sound environmental performance of the contractor in charge of construction

throughout the project and ensure compliance with the ESMF. IDCOL will supervise and advice on monitoring and reporting under this component.

Multi-stakeholder consultations

Gender balanced scoping and validation consultations were conducted where distinguished guests, key and primary stakeholders from Ministries, associations, trade unions, industries, academicians and development professionals participated to state their insights and discuss several associated issues.

Workshop on 'Importance of energy efficiency in textile sector and its influence on environment, society and gender' on 29th May 2019 in Dhaka.

Dissemination and stakeholder consultation workshop on 'Impact of Energy Efficiency on Environment, Social and Gender in Textile Sector of Bangladesh' on 29th July 2019, Dhaka

The project management team will continue to monitor the programme implementation and timely report the developments as per the MRE schedule, i.e. an annual report on Environmental and Social compliance (as per the ESMF) to monitor the degree of implementation of the ESMF and an annual Gender balance and empowerment report. This will involve stakeholder engagement and knowledge dissemination across various stakeholder groups throughout the implementation.

FOR COMPONENT 03 & 04 (EE&C IN RMG SECTOR):

IDCOL has undertaken risk screening of the project based on the framework provided in IFC's Performance Standards and World bank's EHS Guidelines as well assessed compliance with national legislation of GoB. Based on this assessment, the significance level (i.e. level of risk and probability) of each risk has been determined and subsequently a composite score has been assigned for the risk the project faces. Accordingly, the envisaged environmental and social safeguards (ESS) category for this project is Category B (medium risk category)[75]. As observed, the potential Environmental and Social risks (mentioned in Section F) are limited with low to medium risk rating. Also, these risks can be easily mitigated, by incorporating adequate measures in the program design.

Environmental and Social Management Framework

As part of PPF activity, an ESMF has been developed by IDCOL as the environmental and social assessment and management instrument for the proposed program. The document provides a framework for managing environmental and social risks specific to the projects constituting the proposed program to minimise undesirable environmental and social impacts. The programme's ESMF will aid in project development by executing entities in the following way:

Help identify environmental and social risks specific to their projects	Apprise on E&S regulations of GoB and related guidelines of GCF	Help develop plan to effectively manage identified environmental and social risks
Guidance on ensuring stakeholder participation in developing ESMP	Establish robust grievance redressal mechanism to ensure stakeholder pariticpation during implementation phase	Provide guidance on institutional mechanism required to ensure effective implementation of ESMP

[75] IFC's approach to risk categorization as adopted by GCF

Environmental Audit
In order to understand environmental and social risks at program level, survey was conducted for 20 RMG units and further supplemented by survey of 150 households located around the selected REMG units. Under the survey, existing working conditions, health and safety hazards, social issues within factory premises were assessed along with interviews with unit workers and facility managers. This formed the basis for developing the ESMF.

Documents to be developed during programme implementation
Site-specific screening check-lists and Environmental and Social Management/ Mitigation Plans (ESMPs), based on the ESMF, will be prepared for each project site, publicly consulted and disclosed locally before project implementation.

Management of key environmental and social risks
Key Environmental and Social Risks have been presented in detail along with their respective mitigation measures in Section F. To summarise, the relevant environmental and social risks and mitigation measures are:

1. **Discrimination/Exclusion of social groups**
Probability of social exclusion occurring due to the program is limited since implementation of energy efficient equipment is independent of which social group is involved in O&M. Also, impact is medium since introduction of energy efficiency equipment would lead to minimal disruption since semi-skilled labour, required for operating the equipment, is readily available in Bangladesh. Hence, overall risk arising from this factor is low for the program.

2. **Gender based discrimination/exclusion**
Introduction of energy efficient equipment may require upskilling for female workers in the Garment factories, most of whom are in low-skill functions. Given the risk, capacity building activities are planned specifically for women workers which will disseminate relevant information for operating new energy efficient equipment and risk of reduced job opportunities for women is mitigated.

3. **Occupational safety**
Introduction of new machinery would lead to deviation from existing operations of workers and inappropriate handling may lead to safety related risks. This can not only lead to injury of concerned worker, but also unrest among worker groups or loss of life in the extreme case, causing high to medium levels of loss of productivity. In order to mitigate this risk, capacity building activities are planned for workers group to ensure they get acquainted with new equipment and gain knowledge on implication of improper handling on safety

4. **Waste Disposal**
Lack of regulatory bindings on disposal of inefficient equipment would mean unit owners will adopt the least cost method of disposal, which may not be environment friendly. Accordingly, ESMF provides guidance on safe disposal of all wastes arising from project activities, thereby minimizing environmental damage

5. **Health Risks**
Majority of energy efficient RMG equipment do not contain harmful or hazardous material that can adversely affect workers. Difference in generation of noise between efficient and inefficient equipment is also low. Hence, it is perceived that low health risks will occur as a result of the program

Institutional arrangement
A detailed institutional arrangement is provided where specialist in procurement, social development, financial management, environment etc. will support the project director and the project management unit to ensure compliance with ESMP. In order to ensure Capacity development of End-borrowers in effective monitoring and evaluation, specific capacity building programmes have been proposed as part of the program design. Also, disclosure of ESMP documents as well as periodic compliance monitoring reports is

proposed to be translated to local language and disseminated to all the concerned stakeholders as well as made available to the public, through the website of the End Borrower and any other suitable online public platform.

A Grievance Redressal Mechanism (GRM) has also been developed that allows affected people to voice concerns regarding environmental and social impacts for sub-project activities through a predictable, transparent, and credible process, resulting in outcomes that are seen as fair, effective, and lasting. It provides the institutional structure and grievance resolution process along with insight on GCF's perspective on GRM.

Multi-stakeholder consultations
Gender balanced scoping and validation consultations were conducted where distinguished guests, key and primary stakeholders from Ministries, associations, trade unions, industries, academicians and development professionals participated to state their insights and discuss several associated issues.

Scoping workshop on environmental, social and gender considerations for the program on 4th September 2019 in Dhaka.

Dissemination and stakeholder validation workshop on environmental, social and gender considerations for the program on 23rd October 2019, Dhaka

As part of the program design, stakeholder consultations for a key part of development and ESMP, as well during its implementation. The design also provides scope of stakeholders reaching out to executing entities by establishing a robust grievance redressal mechanism.

G.2. Gender assessment and action plan (max. 500 words, approximately 1 page)

Provide a summary of the gender assessment and project/programme-level gender action plan that is aligned with the objectives of GCF's Gender Policy. Confirm a gender assessment and action plan exists describing the process used to develop both documents. Provide information on the key findings (who is vulnerable and why) and key recommendations (how to address the vulnerability identified) of the gender assessment. Indicate if stakeholder consultations have taken place and describe the key inputs integrated into the action plan, including: how addressing the vulnerability will ensure equal participation and benefits from funds investment; key gender-related results to be expected from the project/programme with targets; implementation arrangements that the AE has put in place to ensure activities are implemented and expected outcomes will be achieved, monitored and evaluated.

Provide the full gender assessment and project-level gender action plan as annex 8.

FOR COMPONENT 01 & 02 (EE&C IN TEXTILE SECTOR):

Gender assessments were done through analysis of various parameters like Socio-economic, Health & Safety, Sanitation and access to basic facilities to understand gender-based vulnerabilities and specific needs. The data from primary (industrial survey, KII, two national level gender balanced stakeholder consultations) and secondary sources (National statistics, progress reports and government published documents) was equated with the international relevant standards and policies for gap analysis.

Key Findings:
The assessments highlighted a number of disparities ranging from gender ratio, wages, job opportunities, education, financial independence, skill and trainings, health, safety, provisioning of basic facilities and most importantly decision making. Women have been observed to be far left behind in terms of job security and

financial independence. Unlike the RMG sector, textile is a male dominated sector with limited/negligible women participation at execution or decision-making level.

Industrial survey under the PPF activity indicate that women workers are paid around 8 to 10% less on average than their male compatriots and have lesser opportunities in the sector. Their participation in trainings for skill upgradation and safety also has been quite low. Surveys show that women are under-privileged due to lack of skills/technical knowledge and experience, attrition due to unplanned pregnancy, selective availability for single day shift, unwillingness to stretch for more hours at work, lack of higher degrees to handle supervisory/decision-making roles.

Programme interventions:

The programme encourages gender equality throughout the development and implementation phases i.e. gender balanced consultations, decision making and embedding gender specific benefits during the implementation of the project. Women participation as key stakeholders for project design and development:

Table 17: Percentage of women participation in stakeholder engagement

Stakeholder Engagement	Stakeholder Type	% of women participants
Key Informants Interview (KII)	**Primary Stakeholders**: Ministries, Associations, Multilaterals, Research/Academia and Industry	**27%**
Workshop/Group consultation	**Primary and Secondary stakeholders**: Ministries, Associations, Multilaterals, Research/Academia and Industry	Workshop 1 **23%**
		Workshop 2 **24%**
Industry Survey	**Industry:** Women led, Workers and Community	Women led industries: **35%** factories surveyed have women leaders in capacities of Directors/DGM/CEO
		Executives/workers: **30%**

Gender sensitive vision and objectives have led to specific log-frame indicators to embed gender inclusion in project design. The M&E log frame will measure the performance of the gender-based activities.
Specific activities have been listed in the Gender action plan with strict targets to be achieved as per the given timeline. These programme activities for gender empowerment are:

- Encouragement of women entrepreneur to venture in the textile sector
- Prioritization of existing woman headed manufacturing units
- Reducing the gender wage gap through unbiased employment as per the labour rules and encouragement of similar wages for men and women for similar work type
- Facilitate women participation in the sector through provision of medical facilities, child care and sanitation facilities
- Training and Skill Development for machine use and operating on programming software through development of training modules and periodic trainings and evaluation
- Safety trainings while operating on new machinery/equipment through development of training modules and periodic trainings and evaluation
- Grievance Redressed through formulation of grievance committee and establishment of grievance redressed process

- Formulation of a Gender Balanced Project Committee with women participating in decision-making from IDCOL's programme management team and textile factories

The programme's MRE scheme will measure outputs and track progress of gender specific activities through monitoring and reporting the achievement towards mid-term and final targets for each activity with a specific performance indicator and means of verification. Timely reporting will facilitate evaluation of the performance of gender based programme activities.

FOR COMPONENT 03 & 04 (EE&C IN RMG SECTOR):

The gender assessment was conducted by examining the engagement of men and women in the RMG sector in Bangladesh, labor force participation, access and control to technology and financial resources, as well as power relations. Such analysis enabled to explore into a plethora of factors namely Socio-Economic, Health & Safety, sanitation and access to basic facilities, which in turn facilitated to clearly understand the magnitude of adversities based on gender and the precise requirements necessary to mitigate them.

Primary data was collected through industrial surveys, household surveys, Key Informant Interviews (KIIs), two national level stakeholder consultations etc. The data from secondary sources was gathered through relevant reports, about national policies, guidelines and statistics (environmental, social, gender), documents published by the government which focused upon potential risks identified in the RMG sector, historical studies and research on Energy Efficiency (EE) in Bangladesh's RMG sector. This was compared with the international best practices, considering gender equity to identify and scrutinize into the gap prevalent in terms of gender considerations in the sector.

Key Findings:

The findings derived from the gender assessment emphasized upon the discrepancies prevailing within the RMG sector which essentially includes male-female employment ratio, wage discrimination, employment opportunities, financial independence & inclusion, occupational health & safety, lack of access to skill & trainings and basic facilities, welfare provision, social protection and freedom of association, collective bargaining and social dialogue as well as playing a decision making role at the managerial level.

Women in the labor force have been at the forefront of Bangladesh's recent successful economic growth. They make up most of the workers in the ready-made garment (RMG) sector, the country's flagship export-oriented industry. However, even though the RMG sector has played a tremendous role for women empowerment, there has been discrimination in labour force participation in this sector.

From data collected within factories, 4 out of every 5 production line workers are female, whilst just over 1 in 20 supervisors is a woman. This is mainly due to lack of education, trainings, technical knowledge and social responsibilities of women towards their families. Also, women are engaged more in sewing or as helpers compared to men. Less number of women are seen in RMG units working in cutting, quality control or supervising compared to men.

Numerous surveys (both industrial and household) carried out under the PPF reflect that although gender-based wage discrimination does not exist predominantly in the sector, discrimination exists in areas of equal treatment— women are forced to do overtime more than the men and the cut from the overtime allowance is more for women workers than men. Women workers face severe discrimination with regard to the scope of promotion and their career prospect is limited.

Participation of women is increasing in the Bangladeshi labor market, but socio-cultural norms envisage that women and men's position is not equal. Women tend to be concentrated in certain low-paying, low-skilled sectors in the garment industry, and within it, are often stuck in lower paying occupations such as sewing machine operators and helpers.

Due to stereotypes regarding women's and men's aspirations, preferences and capabilities, employers' perceptions of women's and men's skills and attitudes are affected. Thus, majority of women are not privileged enough to avail considerable access to enhancing their skillset and technical knowledge through training & experience and hence they remain 'unskilled' compared to their male counterparts. In addition, social and work place safety, maternity and pregnancy issues, unwillingness to work long hours/overtime, lack of transport facilities and the care burden all contribute to the fact of significantly limited presence of women engaged in more sophisticated employment positions such as managers/supervisors in the RMG sector.

Programme interventions:

During the course of the proposed programme, gender balance, equity and equality has been promoted all through the development and execution stages. This is inclusive of gender balanced participation in stakeholder consultations, incorporating gender induced benefits & enhancements during the design and implementation of the projects. The following illustrates participation of female stakeholders in various engagements undertaken within project planning and development phase:

Table 18: Percentage of women participation in stakeholder engagement

Stakeholder Engagement	Stakeholder Type	% of women participants
Key Informants Interview (KII)	**Primary Stakeholders**: Ministries, Associations, Multilaterals, Research/Academia and Industry	**25%**
Workshop/Group consultation	**Primary and Secondary stakeholders**: Ministries, Associations, Multilaterals, Research/Academia and Industry	Workshop 1 **15%**
		Workshop 2 **11%**
Industry Survey	**Industry:** Women led, Workers and Community	Women led industries: **0%** factories surveyed have women leaders in capacities of Directors/DGM/CEO
		Executives/workers: **40%**

Coalescing gender responsive perception and goals under the programme will enable to constitute indicators for the logical framework that in turn will establish gender inclusion into the programme design and evaluate their performance based on gender sensitive activities.

The Gender Action Plan (GAP) within this assessment mirrors the logical framework of the project and is an integral part of project/program design. GAPs include clear targets, gender design features and measurable performance indicators to ensure women's participation and benefits. Key aspects of the GAP are incorporated into project/program assurances to encourage buy-in from AEs and other partners. The activities listed within the GAP are as follows:

- Encouragement of women entrepreneur to venture in the garment sector
- Reducing the gender wage gap through unbiased employment as per the "Labour rules (2015)" and Encourage similar wages for men and women for similar work type as per the "National Wage Board"
- Facilitate women participation in the sector through provision of: Medical Facilities, Child care and Sanitation Facilities
- Training and skill development for machine use and operating on programming software through development of training modules and trainings and evaluation
- Safety trainings while operating on new machinery/equipment through development of training modules and periodic trainings and evaluation
- Grievance Redressed through Formulation of a project committee for addressing grievance and Establishing grievance redress process
- Formulation of a project committee with women participating for monitoring of the activities under the program
- Training & skill development of relevant Business Units of LFIs

The programme monitoring, reporting, evaluation & verification procedures will quantify and evaluate outputs and track progress through reporting the results by aligning them with mid-term and final targets for each activity with a specific performance indicator and means of verification. Periodic and prompt reporting in accordance with the designated timeline will enable to actualize evaluation of the performance of gender based project/programme activities.

G.3. Financial management and procurement (max. 500 words, approximately 1 page)

- IDCOL, as a development financial institution under the ownership of Ministry of Finance of Government of Bangladesh, has substantial experience in financing and monitoring industrial development projects and management of funds provided by development organizations like World Bank, ADB, JICA .etc. The projects funded by IDCOL have successfully been accounted and audited as per the international standards, in line with national procedures in financial management.
- Financial management of the program will be guided by IDCOL's own accounting policies & procedures, as well as procedures related to the financial & operational aspects of project management administration. When not acting as an Executing entity, IDCOL, as an AE will comply with the terms & conditions set forth for financial management of GCF proceeds as per the Accreditation Master Agreement (AMA). Again for Component 03, IDCOL in its role as AE will ensure that the executing entities i.e. LFIs/IDCOL will comply with internationally accepted accounting standards for the project related activities at their end.

- The energy efficiency component procured under this program will be the subject matter of the loan financing. Thus the procurement will be carried out by the end borrower for their respective projects as per the business as usual practice. Along with the disbursement request/procurement application, the end borrowers will be submitting the evidences/supporting for implementation of the respective procurement under the programme. These will be screened by IDCOL/LFIs to approve the loan application.
- After the disbursement of GCF fund as per the implementation arrangement in section B4, IDCOL/LFIs will monitor that the proceeds of the funding are efficiently utilized for intended purposes only and in compliance with GCF and GoB. Fund disbursement and repayment will be conducted as per scheduled (annex 14).
- IDCOL has an independent internal audit division, reporting directly to the Board, to add value through an independent appraisal of all IDCOL's financial operations and activities. The result of such appraisal is improved operational efficiency, risk analysis & management and internal control system that will ensure achieving IDCOL's corporate objectives. Moreover, IDCOL's financial statements are audited externally by a qualified, internationally recognized auditing firm, in accordance with international standards of auditing. This firm is competitively selected by IDCOL.
- As per the AMA, the procurement of goods and services for funded activities, whether by the Accredited Entity itself, and Executing Entity or by a third party, shall be done in accordance with the rules, policies and procedures of the Accredited Entity i.e. IDCOL to the extent and scope of its Accreditation. Thus IDCOL will follow its own "Procurement Policy" for the operations of this program. Procurement audit is conducted periodically by the internal audit division to ensure proper compliance with the policy.

G.4. Disclosure of funding proposal

Note: The Information Disclosure Policy (IDP) provides that the GCF will apply a presumption in favour of disclosure for all information and documents relating to the GCF and its funding activities. Under the IDP, project and programme funding proposals will be disclosed on the GCF website, simultaneous with the submission to the Board, subject to the redaction of any information that may not be disclosed pursuant to the IDP. Information provided in confidence is one of the exceptions, but this exception should not be applied broadly to an entire document if the document contains specific, segregable portions that can be disclosed without prejudice or harm.

Indicate below whether or not the funding proposal includes confidential information.

☐ No confidential information: The accredited entity confirms that the funding proposal, including its annexes, may be disclosed in full by the GCF, as no information is being provided in confidence.

☒ With confidential information: The accredited entity declares that the funding proposal, including its annexes, may not be disclosed in full by the GCF, as certain information is being provided in confidence. Accordingly, the accredited entity is providing to the Secretariat the following two copies of the funding proposal, including all annexes:

- ☐ full copy for internal use of the GCF in which the confidential portions are marked accordingly, together with an explanatory note regarding the said portions and the corresponding reason for confidentiality under the accredited entity's disclosure policy, and
- ☐ redacted copy for disclosure on the GCF website.

The funding proposal can only be processed upon receipt of the two copies above, if containing confidential information.

H. ANNEXES

H.1. Mandatory annexes

☒	Annex 1	NDA no-objection letter(s) **: Attached**
☒	Annex 2	Feasibility study - and a market study, if applicable- **Attached**
☒	Annex 3	Economic and/or financial analyses in spreadsheet format- **Attached**
☒	Annex 4	Detailed budget plan – **Attached**
☒	Annex 5	Implementation timetable including key project/programme milestones – **Attached**
☒	Annex 6	E&S document corresponding to the E&S category (A, B or C; or I1, I2 or I3): **(ESS disclosure form provided)** ☐ Environmental and Social Impact Assessment (ESIA) or ☐ Environmental and Social Management Plan (ESMP) or ☐ Environmental and Social Management System (ESMS) ☐ Others (please specify – e.g. Resettlement Action Plan, Resettlement Policy Framework, Indigenous People's Plan, Land Acquisition Plan, etc.) ☒ Environmental and Social Management Framework (ESMF) **Attached**
☒	Annex 7	Summary of consultations and stakeholder engagement plan-**Attached**
☒	Annex 8	Gender assessment and project/programme-level action plan- **Attached**
☒	Annex 9	Legal due diligence (regulation, taxation and insurance)- **Attached**
☒	Annex 10	Procurement plan- **Attached**
☒	Annex 11	Monitoring and evaluation plan- **Attached as part of "Program Indicator, Reporting & Monitoring Framework"**
☒	Annex 12	AE fee request- **Attached**
☐	Annex 13	Co-financing commitment letter, if applicable **(template provided)**
☒	Annex 14	Term sheet including a detailed disbursement schedule and, if applicable, repayment schedule **- Attached**

H.2. Other annexes as applicable

☐	Annex 15	Evidence of internal approval **(template provided)**
☐	Annex 16	Map(s) indicating the location of proposed interventions
☐	Annex 17	Multi-country project/programme information **(template provided)**
☐	Annex 18	Appraisal, due diligence or evaluation report for proposals based on up-scaling or replicating a pilot project
☐	Annex 19	Procedures for controlling procurement by third parties or executing entities undertaking projects financed by the entity
☐	Annex 20	First level AML/CFT (KYC) assessment
☐	Annex 21	Operations manual (Operations and maintenance)
☒	Annex 22	GHG Emission Methodology **Attached**
☒	Annex 23	Risk Assessment Report **Attached**

Annex 24 Environment Audit Report **Attached**

** Please note that a funding proposal will be considered complete only upon receipt of all the applicable supporting documents.*

A Acronyms

Acronym	Full form
ADB	Asian Development Bank
ADR	Advance Deposit Ratio
AE	Accredited Entity
AFD	Agence Francaise De Development
AMA	Accredited Master Agreement
BAU	Business as usual
BB	Bangladesh Bank
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BDBL	Bangladesh Development Bank Limited
BDT	Bangladesh Taka
BERC	Bangladesh Energy Regulatory Commission
BGMEA	Bangladesh Garments Manufacturers and Exporters association
BIFCL	Bangladesh Industrial Finance Company Limited
BIFFL	Bangladesh Infrastructure Finance Fund Limited
BISR	Bangladesh Institute of Social Research
BKMEA	Bangladesh Knit Manufacturers and Exporters association
BTMA	Bangladesh Textile Mills Association
BTMC	Bangladesh Textile Mills Corporation
CAD	Credit Administration Department
CAGR	Compound Annual Growth Rate
CAR	Capital Adequacy Ratio
CCPP	Construction of Combined Cycle Power Plant
CEO	Chief Executive Officer
CLASP	Collaborative Labelling and Appliance Standards Program
CN	Concept Note
CO2	Carbon dioxide
CRM	Credit Risk Management
CSR	Corporate Social Responsibility
DAE	Direct Access Entity
DFI	Development Finance Institution
DFID	Department for International Development
DoE	Department of Environment
DSCR	Debt Service Coverage Ratio
E&S	Environmental and social
ECA	Environment Conservation Act
ECC	Environment Clearance Certificate
ECR	Environment Conservation Rules

Acronym	Full form
EDA	Enhanced Direct Access
EE	Energy Efficient
EE&C	Energy Efficiency and Conservation
EE&CPF	Energy Efficiency and Conservation Promotion Financing
EECPF	Energy Efficiency and Conservation Promotion Financing
EIRR	Economic Internal Rate of Return
EPZs	Export Processing Zones
ERD	Economic Relations Division
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management/ Mitigation Plans
ESMS	Environmental and Social Management System
ESS	Environment and Social Safety
ESSF	Environmental and Social Safety framework
ETP	Effluent Treatment Plant
EY	Ernst & Young
FAA	Funded Activity Agreement
FBCCI	Federation of Bangladesh Chambers of Commerce & Industries
FCBs	Foreign Commercial Banks
FIRR	Financial Internal Rate of Return
FIs	Financial Institutions
FP	Funding Proposal
FSSP	Financial Sector Support Project
FY	Financial year
GCF	Green Climate Fund
GCPF	Bangladesh, Global Climate Partnership Fund
GDP	Gross Domestic Product
GHG	Green House Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoB	Government of Bangladesh
GTSF	Global Trade Supplier Finance
GTF	Green Transformation Fund
GWh	Giga watt hour
ICB	Investment Corporation of Bangladesh
ICCCAD	International Centre for Climate Change and Development
ICS	Improved Cook Stove
IDA	International Development Association
IDCOL	Infrastructure Development Company Limited
IDP	Information Disclosure
IEA	International Energy Agency
IP	Implementation Partner
IEEF	Industrial and Energy Efficiency Finance

Acronym	Full form
IEEFP	Energy Efficiency Finance Programme
IFC	International Finance Corporation
IFI	International financing institution
INDC	Intended Nationally Determined Contribution
IP	Implementing Partner
IRR	Internal Rate of Return
JICA	Japan International Cooperation Agency
KIIs	Key Informant Interviews
KPIs	key Performance Indicators
RFP	Request for Proposal
kWh	Kilowatt Per Hour
L/C	Letter of Credit
LED	Light-emitting Diode
LFI	Local Financial Institutions
LNG	Liquefied Natural Gas
LTFF	Long Term Financing Facility
M&E	Monitoring and evaluation
MIS	Management Information System
MoEF	Ministry of Environment and Forests
MoEFCC	Ministry of Environment, Forest and Climate Change
MoLE	Ministry of Labour and employment
MoPEMR	Ministry of Power Energy and Mineral Resources
MoT	Ministry of Textile
MoU	Memorandum of understanding
MoV	Means of Verification
MoWCA	Ministry of Women and Children Affairs
MRV	Monitoring, Reporting and Verification
MT	Million Tonne
MTOE	Million tonnes of oil equivalent
NAP	National Action Plan
NAPA	National Adaptation Programme of Action
NBFI	Non-Bank Financial Institution
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NIP	New Industrial Policy
NPV	Net Present Value
OE	Original Equipment
PaCT	Partnership for Clean Textile
PC	Power Cell
PCBs	Private Commercial Banks
PFI	Participating Financial Institution
PFI	Power Factor Improvement

Acronym	Full form
PLS	Profit-Loss Sharing
PO	Partner Organizations
PPF	Project Preparation facility
PPP	Public Private Partnership
PSMF	Power System Master Plan
PSMP	Power System Master Plan
PTS	Primary Textile Sector
RE	Renewable Energy
REB	Rural Electricity Board
RMG	Readymade garment
ROA	Return on asset
ROE	Return on equity
SCB	State Commercial Bank
SDBs	Specialized Banks
SDG	Sustainable Development Goals
SHS	Solar Home System
SLL	Shuttle less looms
SMEs	Small and medium enterprises
SOCB	State Owned Commercial Banks
SREDA	Sustainable & Renewable Energy Development Authority
SSL	Shuttle Less Looms
TA	Technical Assistance
TCF	Trillion Cubic Feet
TOE	Tonnes of oil equivalent
MRE	Monitoring, Reporting and Evaluation
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
VFD	Variable Frequency Drive
VSDs	Variable Speed Drives

H