

Simplified Approval Process Concept Note

Project/Programme Title:	Decarbonization of industry and climate resilient development in Ghana
Country(ies):	Ghana
National Designated Authority(ies) (NDA):	Dr. Alhassan Iddrisu, Director of Economic Strategy and Research Division, Ministry of Finance
Accredited Entity(ies) (AE):	United National Industrial Development Organization
Date of first submission:	<u>[2022-10-11] [V.01]</u>
Date of current submission:	<u>[2022-10-11] [V.01]</u>
Version:	01



Eligibility for SAP is determined by the review of the concept note and the ESS screening.

A. Project / Programme Summary (max. 1 page)					
A.1. Project or programme	<input checked="" type="checkbox"/> Project <input type="checkbox"/> Programme	A.2. Public or private sector	<input type="checkbox"/> Public sector <input checked="" type="checkbox"/> Private sector	A.3 RFP	Not applicable
A.4. Indicate the result areas for the project/programme	<p>Check the applicable GCF result area(s) that the proposed project/programme targets. Indicate for each checked result area(s) the estimated percentage of GCF budget devoted to it. The summed up percentage should be equal to 100%.</p> <p>Mitigation: Reduced emissions from:</p> <input checked="" type="checkbox"/> Energy access and power generation: <u>20</u> % <input type="checkbox"/> Low emission transport: <u>Enter number</u> % <input checked="" type="checkbox"/> Buildings, cities and industries and appliances: <u>40</u> % <input type="checkbox"/> Forestry and land use: <u>Enter number</u> % <p>Adaptation: Increased resilience of:</p> <input type="checkbox"/> Most vulnerable people and communities: <u>Enter number</u> % <input checked="" type="checkbox"/> Health and well-being, and food and water security: <u>40</u> % <input type="checkbox"/> Infrastructure and built environment: <u>Enter number</u> % <input type="checkbox"/> Ecosystem and ecosystem services: <u>Enter number</u> %				
A.5. Impact potential	A.5.1. Estimated mitigation impact (tCO2eq over project lifespan)		<u>332,684</u> tCO2eq		
	A.5.2. Estimated adaptation impact (number of direct beneficiaries)		<u>265,000</u> direct beneficiaries		
	A.5.3. Estimated adaptation impact (number of indirect beneficiaries)		<u>1,000,000</u> indirect beneficiaries		
	A.5.4. Estimated adaptation impact (% of total population)		<u>100</u> % of the country's total population		
A.6. Financing information					
A.6.1. Indicative GCF funding requested (max 10M)	Amount: <u>8,000,000</u> Currency: USD Financial Instrument: Grants				
A.6.2. Indicative co-financing	Amount: <u>5.0 million</u> Currency: USD Financial Instrument: Senior Loans Amount: <u>1.5 million</u> Currency: USD Financial Instrument: Grants Amount: <u>1.5 million</u> Currency: USD Financial Instrument: In-kind				
A.6.3. Indicative total project cost (GCF + co-finance)	Amount: <u>16,000,000</u> Currency: USD				
A.7. Implementation period:	5 years	A.7.2. Total project/ programme lifespan	25 years		
A.8. Is funding from the Project Preparation Facility needed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	A.9. Is the Environmental and Social Safeguards Category C or I-3?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
A.10. Provide rationale for the ESS categorization (max 100 words)	<p>The risk categorization for the project has been found to be Category 'C'. The proposed activities are meant to have minimal to no adverse social/environmental impacts and have been screened in line with the GCF Guidelines for the Environmental and Social Screening of Activities. Nevertheless, the project will fully mainstream ESS considerations into the selection criteria of subprojects to ensure that the selected projects do not have any adverse social or environmental impacts. The enterprises engaged in the project will receive training on awareness regarding overall environmental and social impact potential of identified low-cost/no-cost energy saving solutions.</p>				

A.11. Has the CN been shared with the NDA?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A.12. Confidentiality¹	<input checked="" type="checkbox"/> Confidential <input type="checkbox"/> Not confidential
A.13. Executing Entity information	<p><i>Brief summary of the executing entity including implementation arrangements.</i></p> <p>UNIDO, the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability, will be the Executing Entity for the project. UNIDO will be responsible for the execution of grant-based activities across the project's three components. In addition, Ecobank Ghana, a Direct Access Entity to the GCF, will be the Co-Executing Entity alongside UNIDO to lend to sub-project which will also be supported by co-financing partner like the Africa Go Green (AGG) Fund. UNIDO will also coordinate with implementing partners such as the Energy Commission and the Ghana National Cleaner Production Center (GNCPC) to provide policy support, technical assistance and capacity building on industry decarbonisation and climate resilience.</p>		
A.14. Project/Programme rationale, objectives and approach of programme/project (max 100 words)	<p><i>Brief summary of the problem statement and climate rationale, objective and selected implementation approach, including the executing entity(ies) and other implementing partners, including who will be implementing the measures to manage the environmental and social risks.</i></p> <p>Ghana heavily relies on fossil fuels for its national power generation and seeks to promote energy efficiency and renewable energy in its industrial sector in order to reduce its greenhouse gas (GHG) emissions. To achieve its climate targets and reduce climate risks, the country, in its revised NDC, has set to implement 19 policy actions that will generate absolute GHG emissions reduction of 64 MtCO_{2e} by 2030 while aiming at better management of climate-induced health risks. This proposal builds on existing GCF Readiness work and aims to support the decarbonization of Ghana industry while reducing climate-induced health risks in industrial sector. The approach taken is deployment of de-risking measures and financial support to bankable projects, technical support and development of climate proofing investment frameworks for banks. UNIDO, as Executing Entity, will be responsible for overall implementation and management of the project activities including the measures to manage the environmental and social risks, in cooperation with Ecobank.</p>		

B. Project / Programme information

B.1. Context and Baseline (500 words)

Climate mitigation context:

Despite sufficient installed electricity generation capacity and a burgeoning renewables sector, power generation in Ghana is characterised by two dominant technologies, hydropower (37.0%) and thermal (62.7%)² which are, respectively, vulnerable to climate change due to increasing variability in rainfall patterns, and pose a climate risk due to the emissions profile of fossil fuels. Ghana has more installed capacity than its peak demand, but transmission and distribution challenges make the grid unreliable. This has led to strong reliance on diesel-powered back-up generators among businesses and households. Increasing the share of decentralized renewable energy and ensuring efficient use of available energy and resources will be crucial to avoid locking the country into a carbon intensive pathway, and will contribute to reaching Ghana's goal of reducing its GHG emissions by 64 MtCO_{2e} by 2030. With industry representing 42.98%³ of Ghana's electricity demand, enhancing decentralized renewable energy at industrial level and resource efficiency practices and technologies is expected to significantly reduce the country's emissions profile specifically when targeting the energy intensive industries such as steel manufacturing, cement, textiles, and agribusinesses.

Ghana's existing energy efficiency policies focus on residential and commercial appliance and buildings sectors, while industrial energy efficiency (IEE) remains underdeveloped. The industrial sector lacks the required secondary legislation, tools, and capacity to effectively reduce energy consumption and associated emissions, yet in its latest NDC, Ghana will seek to promote energy efficiency not only in homes, but also in industry and commerce.

Many Ghanaian industries opt to implement the cheapest energy use solutions, regardless of their climate and environmental impacts. Industrial Energy Efficiency and Renewable energy projects beyond being cost intensive require initial development capital to assess their bankability. These expenses are never reflowed to developers in the event of projects not being financially viable or not generating an attractive upside. Enterprises have limited capacity to produce bankable EE proposals,

¹ Concept notes (or sections of) not marked as confidential may be published in accordance with the Information Disclosure Policy ([Decision B.12/35](#)) and the Review of the Initial Proposal Approval Process ([Decision B.17/18](#)).

² [Ghana National Employment Policy](#) (2014), ILO

³ [Energy Outlook for Ghana](#) (2021), Energy Commission

³ [Energy Supply and Demand Outlook for Ghana](#) (2020), Energy Commission

meet financial compliance requirements and/or pass financial risk assessments. The lack of readily accessible private finance poses a barrier to investment in EE and RE in the country.

Climate adaptation context

Ghana is vulnerable to climate change. Events such as droughts and floods that increase climate-induced health risks are on the rise. Indeed, the country is recording an increase in incidences of water, air and food borne diseases accompany flooding, drought, heat waves, and dry winds⁴. For instance the increase of urban flooding is attributed the incidence of malaria and cholera, while heat waves are an exacerbating factor for the incidence of cerebro-spinal meningitis. In fact, severe flooding has led to several recent cholera outbreaks, with nearly 15,000 cases reported across 8 regions in Ghana. These climate-induced health risks are likely to increase in the short term due to increasing temperatures and flooding⁵. Also, rising temperatures along with water scarcity are an increasing concern for Ghana. Under a high emissions scenario, heat-related death in the elderly are projected to increase to 70 deaths per 100,000 by 2080 compared to the estimated baseline of approximately 2 deaths per 100,000 annually between 1961 and 1990⁶.

Moreover, according to the WHO, labour productivity will decline significantly under a high emissions scenario - around 25% of annual daily work hours is projected to be lost by workers in some sectors, including industrial. With the ILO 2019 Report - Working on a Warmer Planet, the impact of heat stress on labour productivity will affect Ghana the most in the African region, with losses projected as much as 12% in a conservative scenario (1.5°C increase) and 21% in a less ambitious mitigation scenario (2.7°C increase) between 1995–2085⁷. An outdoor construction or agricultural worker would lose 11% of their working hours on average by 2025 due to the heat stress under both scenarios, and lose 12-21% by 2085 according to the scenarios. Likewise, the industry sector projection more than doubles from 5.6% to 12.4% losses. With the industry sector contributing significantly to Ghana's GDP at 25% (ILO Ghana National Employment Policy 2014) and the highest level of labour productivity, the predicted rise and intensity of temperature and humidity levels in tropical-climate Ghana driven by climate change aggravates the impacts of excessive work-related heat exposure on varied workplace environments and industries. Indeed, the Ghana's National Climate Change Policy (NCCP) is designed to address 10 critical issues of climate change in the country, including the one related to climate change induced health risks as a national priority⁸. In addition, Ghana's updated NDCs put emphasis on such health risks in the industry sectors as "Manage climate-induced health risks" is one of the nationally determined contribution policy actions. Nevertheless, to date the industrial sector in Ghana does not adopt any action/management plans to address the issue. Therefore industries are not equipped with appropriate systems to detect and manage climate-induced health risks.

The project will support Ghana's adaptation needs in a number of ways aligning with the country's National Adaptation Plan Framework⁹. The establishment of a national database and the development of frameworks and capacity to prepare and respond, through of climate-resilient health management taking into consideration vulnerable groups¹⁰ will allow local industry to be better positioned to address the climate change challenges. The estimated number of direct beneficiaries is 265,000 people and 800,000 indirect beneficiaries. In addition, integration of climate change adaptation technologies to support water management and enhance resource efficiency will further support Ghana's adaptation needs and reduce health risks.

Two priority areas of note in the Ghana National Adaptation Plan Framework detailing the designing a coherent approach to fund mobilization for effective climate change adaptation and developing innovative approaches for engaging the private sector. Currently, the climate change adaptation strategy could be addressed through private sector engagement via minimizing climate impacts to business delivery and markets and creating markets in technologies and services that are beneficial to adaptation.

However, there is currently limited private sector involvement in climate change resilience efforts. The following gaps have been identified which will be addressed by this project: i) limited understanding and capacity of local private sector actors to mainstream climate resilience into their operations. There is a need for 1) industry in the target sectors to climate proof their business operations and projects and 2) banks, insurance companies who are financing infrastructure projects, to incorporate climate risk assessment into their operations, which would have the positive effect of them understanding and financing resilience measures of industry.

Supported by GCF funding, UNIDO and the NDA are already supporting the Government of Ghana in an Industrial Energy Efficiency Readiness grants, and supporting key stakeholders such as the Ministry of Energy, the Energy Commission, and

⁴ [National Climate Change Adaptation Strategy](#) (2012), UNEP/UNDP

⁵ [Ghana Climate Risk Profile](#) (2021), World Bank

⁶ [Climate and Health Country Profile – Ghana](#) (2015), WHO

⁷ [Working on a warmer planet: The impact of heat stress on labour productivity and decent work](#) (2019), ILO

⁸ [Ghana National Climate Change Policy](#) (2013), Ministry of Environment Science, Technology and Innovation

⁹ [Ghana's National Adaptation Plan Framework](#) (2018), Environmental Protection Agency

¹⁰ The definition of "vulnerable groups": people who are more limited than others to take advantage of the project's benefits or excluded to participate fully in consultation process, according to the [GCF Gender Policy](#) (2019), GCF

the Ministry of Finance. The proposed project builds on this existing work and UNIDO's other projects on circular economy and sustainable agribusiness in the country and aims to strengthen climate impacts through industrial decarbonisation and resilience to climate-induced health risks.

B.2. Project / Programme description (1000 words)

Describe the expected set of components and activities to address the above barriers identified that will lead to the expected outcomes.

Please explain why this project or programme is ready for scaling up and has the potential for transformation. Has it been piloted in the country or region? Are the proposed interventions well documented for their costs and benefits?

To address the barriers identified above, the project supports the decarbonisation and climate proofing of Ghana's industry through three components: (1) Reducing climate-induced health risks in the industrial sector; (2) Technical assistance for decarbonizing industrial energy systems and improved energy efficiency and (3) De-risking energy efficiency and renewable energy investments in the industrial sector. In order to transform the current industry, specifically steel, cement, textiles, and agribusiness, in Ghana from an energy consuming sector to one based on decarbonized practices, it is necessary to:

- (i) develop the regulatory framework for low emissions and climate resilient industries, MRV system and capacity of industries; and
- ii) improve the investment environment in Ghana for decarbonisation technology projects.

Component 1 and 2 will address the first element by strengthening institutional systems for reducing climate-induced health risks while furthering the decarbonizing objective of industrial energy systems by development of frameworks and capacity-building through mapping and understanding the beneficiary needs in Component 1, the reflective benefit on Component 2 aids in inclusive industry. Component 3 will focus on de-risking investment in climate-proofed EE and RE projects in the industrial sector through generating a pipeline of bankable projects which will be candidates for financing by local and international financial institutions. This project will strengthen Ghana's capacity to potentially scale up industrial decarbonization as it has been piloted in the country through UNIDO's previous work "Ghana Industrial Energy Efficiency Readiness" grants supporting the formulation of government action plan, development of initial pipeline and capacity building of financial institutions.

Component 1: Reducing climate-induced health risks in the industrial sector

This component will address the climate change induced health risks within the target industries through promotion of climate-resilient health management practices action plans taking into consideration vulnerable groups for climate-induced health risks. It includes database establishment of climate-induced health risks with their mitigation measures for the industrial sector. Under this component UNIDO will work with the GNCPC hosted by the Environmental Protection Agency of the Ministry of Environment, Science Technology and Innovation (MESTI), to improve health and safety performance within industry sector. In addition, the project will promote broad participation of national and sub-national government stakeholders and long-term capacity-building arrangements by engaging local academic institutions and training centres to ensure the country ownership and sustainability of the project.

Output 1.1: Measures reducing exposure to climate change induced health risks adopted to benefit 260,000 beneficiaries (80,000 female)

Activity 1.1.1: Establish a national database of climate-induced health risks in construction and agricultural sectors and in other industrial sectors like production lines with their mitigation measures for the industrial sector through identifying relevant data to be collected, data sources, targeted industries, and creating hazard mapping.

Activity 1.1.2: Develop an action plan on climate-induced health risks construction and agricultural sectors and in other industrial sectors to incorporate it in the national policies under development.

Activity 1.1.3: Identify targeted industrial sub-sectors for integration of climate-resilient health management (risk assessment, identification of mitigation measures, health information systems, etc.).

Activity 1.1.4: Support with awareness raising and capacity building of informing industries on risks, as well as local and international best practices, and of implementing climate-resilient health management practices.

Component 2: Technical assistance for decarbonizing industrial energy systems and improved energy efficiency in the industrial sector

The second component aims to improve the regulatory environment for low emission and climate resilient investments in Ghana with a focus on Industrial Energy Efficiency (IEE), decentralized Renewable Energy (RE) for industries and institutional capacity building for adaptation. It is composed of institutional support and technical trainings on EE, RE and climate resilience measures. These activities will be built upon the UNIDO's previous GCF project "Ghana Industrial Energy Efficiency readiness" through which a government action plan on IEE has been developed and IEE training programs were provided to local industries. The output 2.1 will support governmental institutions to develop institutional framework for implementation of the action plan while the output 2.2 aims to develop and implement a targeted capacity development and human capacity support programme based on the findings of capacity gaps analysis and institutional needs assessment conducted through the readiness grants. It also aims to institutionalize capacity building programmes through training of trainers, training curricula development and support for mobilization of fund and local educational partners like universities and training centers so that the training activities will be more accessible for industries and replicated after the completion of the project. For the gender perspective, at least 30% of local professionals who receive capacity building will be women. In addition, as the availability of high-quality data sets would be essential for policy makers to fine tune regulatory framework planning, the project will also develop a Monitoring, Review and Verification (MRV) system and enhance data collection framework for industrial sector GHG emissions in close collaboration with the Energy Commission, the technical regulator of Ghana's energy industries, as well as for data on population (workforce) benefiting by the implemented climate resilient measures.

Output 2.1: A revised IEE framework is put in place including its MRV structure

Activity 2.1.1: Based on the IEE roadmap developed through UNIDO's previous GCF project (Ghana industrial energy efficiency readiness), promote mapping and revision of industrial energy regulatory framework to identify criteria and minimum energy consumption thresholds to select targeted industries in alignment with country policy (industry surveys, consultations including industrial groups and legislator, compilation of draft IEE framework including energy management systems, resource efficiency and optimization).

Activity 2.1.2: Establish a National Working Group (NWG) for information gathering. Discuss enforcement modalities and coordination arrangements at (sub-)national level for the effective implementation of the proposed regulatory framework.

Activity 2.1.3: Support with awareness raising and capacity building of implementing institutions including subnational stakeholders to adhere to the proposed regulatory framework.

Activity 2.1.4: Design a clear methodology for monitoring, review & verification of industrial sector GHG emissions (MRV framework) in line with IPCC guidelines and climate vulnerability data. This includes identifying activity data to be collected, data sources, estimation methods, targeted industries, emissions scope, data collection protocol and templates.

Activity 2.1.5: Set-up a suitable institutional arrangement for inter-agency/inter-ministerial data sharing and reporting mechanism; Formalize such arrangement clarifying the roles and responsibilities of relevant ministries and agencies. Test MRV framework on a sample of targeted industries, make appropriate enhancements to the methodology, guidelines & templates; and develop a plan to roll-out data-reporting scheme to the wider targeted industry group.

Output 2.2: 100 SME beneficiaries mainstreaming climate resilience measures into their business operation

Activity 2.2.1: Based on UNIDO experience prepare a training programme on effective implementation of climate change resilience measures in industries to suit Ghanaian context

Activity 2.2.2: NWG meetings to approve the selection criteria and enrollment process for the programme participants: (1) targeted industries; (2) local energy service providers & RE professionals; and (3) banks and insurance companies

Activity 2.2.3: Train a gender-balanced group of at least 100 SMEs and local energy service providers in climate change resilience measures. The training includes mainstreaming of climate change risk assessments into business operations to minimize climate impacts to business delivery and markets.

Activity 2.2.4: Provide training for banks and insurance companies on climate risk assessment of (energy) infrastructure projects and inclusion of climate risk scenarios in project and portfolio evaluation.

Activity 2.2.5: Support local training institutes and industry supporting institutions with integrating training programme on renewable energy, resource efficiency system and climate resilient measures design and implementation in their plans and training curricular, including training of trainers.

Component 3: De-risking decarbonisation and climate resilience investments in the industrial sector

Outcome 3 aims to improve the investment climate in Ghana and to facilitate replicable decarbonization projects which include climate proofing measures. This component will particularly focus on investment de-risking measures such as implementation of energy audits and development of bankable investment proposals that will be a catalyst for the change of investment flows for decarbonization projects and market behavior leading to attract more private investment.

Output 3.1: 20,000 MWh of energy saved annually in Ghana's industry sector through energy efficiency measures deployed in 50 companies

Activity 3.1.1: Identify targeted industrial energy intensive sub-sectors for integration of decarbonization technologies. Convene national stakeholder consultation meetings to develop and agree on selection criteria for EE projects for each target sub-sector to be further developed into bankable investment proposals for commercial lending. The selection criteria of IEE lending would include: (1) electricity consumption (at least 4,000 MWh per year); and (2) IEE measures which will lead to a minimum 10% energy savings. In addition, lendings should consider environmental and social (ES) impacts of potential EE projects and include gender responsive aspects; preference to companies led by women or sub-projects that improve working conditions for women, or exclude any proposal that may have adverse ES impacts.

Activity 3.1.2: De-risk investment on decarbonisation and climate-proofing projects through support of 50 companies with the implementation of energy saving potential audits, climate change risk assessment, and investment support for 50 companies, including development of bankable investment proposals for commercial lending. The selection criteria of the investments will include integration of climate resilience measures.

Activity 3.1.3: Support the provision of loans from Africa Go Green fund and Ecobank Ghana to selected companies for implementing low-carbon technology projects integrating climate resilience measures.

Output 3.2: 5 MW of renewable energy system installed in Ghana's industry sector for own consumption through assisting 50 companies in de-risking the deployment of RE for own consumption and 8,541 MWh of renewable energy generated annually

Activity 3.2.1: Identify targeted industrial energy intensive sub-sectors for integration of decarbonization technologies. Convene national stakeholder consultation meetings to develop and agree on selection criteria for RE projects for each target sub-sector to be further developed into bankable investment proposals for commercial lending. The selection criteria of RE lending would include: (1) rooftop solar potential of 100 kW; (2) sufficiently strong balance sheet to back a captive power generation with either an ESCO or through own investment; and (3) climate change risks are taken into consideration in the project design. In addition, lendings will consider environmental and social (ES) impacts of potential RE projects and include gender responsive aspects; preference to companies led by women or sub-projects that improve working conditions for women, or exclude any proposal that may have adverse ES impacts.

Activity 3.2.2: De-risk investment on decarbonisation projects through support of 50 companies with the implementation of energy needs audits and RE investment support, including development of bankable investment proposals for commercial lending.

Activity 3.2.3: Support the provision of loans from Africa Go Green fund and Ecobank Ghana to selected companies for implementing low-carbon technology projects.

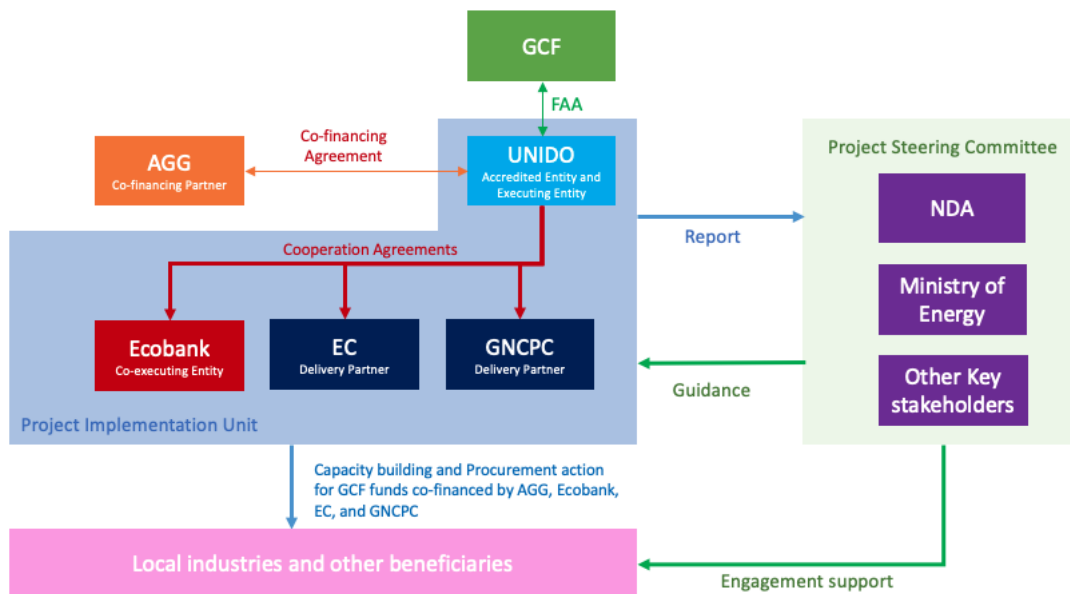
Describe in what way the Accredited Entity(ies) is well placed to undertake the planned activities and what the implementation arrangements with the executing entity(ies) and implementing partners will be.

UNIDO will be Accredited Entity (AE) and Executing Entity (EE) while Ecobank Ghana will be EE alongside the UNIDO for this project. UNIDO, the AE, is well placed to undertake the project management based activities because UNIDO has executed a preparatory project "Ghana Industrial Energy Efficiency Readiness" through which UNIDO paved the way for the industry decarbonisation project while consolidating the relationship with local stakeholders like NDA, Ministry of Energy, Energy Commission and energy intensive industries. Likewise, Ecobank Ghana, the Direct Access Entity to GCF, is suitable to undertake loan-based activities given that the Bank has implemented various activities related to climate change in the energy access and generation, renewable energy, transport, infrastructure, and food and water security sectors in the country.

The project will establish a Project Steering Committee (PSC) as the main governing body for the project, which is mandated to provide overall guidance for the project, as shown in the Figure below. The Committee will meet twice a year and members will consist of department heads/directors from Ministry of Energy, Energy Commission, Ministry of Industry and Trade, Ministry of Environment, the representatives from the local industries, and UNIDO.

The diagram below shows the implementation arrangement of the project. In this project, UNIDO will sign cooperation agreements with Ecobank as an Executing Entity on Component 3, and EC and GNCPC as implementing partners.

Implementation arrangement diagram



Legend GNCPC: Ghana National Cleaner Production Center EC: Energy Commission AGG: Africa Go Green Fund

Please provide a brief overview of the key financial and operational risks and any mitigation measures identified.

- **Currency risk:** Many Ghanaian companies prefer borrowing in USD to benefit from lower and more predictable interest rates although they generate almost all their revenues in local currency. The project will provide loans to companies in US Dollar (USD) or Ghanaian Cedi (GHS). Savings on EE measures or RE deployment will be translated in GHS, which induces currency risks in the event of high volatility. These risks will however be mitigated through due diligence when developing a bankable pipeline for investments.
- **Insufficiently developed supply chain:** Weak supply of EE equipment in the local market could impair the overall performance of the project and undermine trust in energy saving investments. Careful preparation of design and technical specifications, as well as selection of EE vendors to mitigate the risk during implementation.
- **Lack of operations and maintenance (O&M) services:** There is little experience in the market for long term O&M services especially for EE projects. To ensure that EE equipment vendors can provide customers with quality O&M services over the long run, the target of capacity building in the proposed project will include O&M service providers.
- **Safety risk:** Safety risks during construction might occur, especially for the deployment of RE installations. To mitigate the safety risks (e.g. exposure to electric shocks), the project foresees a number of trainings on the proper and safe installation of RE equipment following UNIDO methodologies.

Please explain how the M&E will be conducted as part of the project or programme (routine and concurrent monitoring, interim and final evaluations, and annual reports)

A Project Implementation Unit (PIU), headed by a UNIDO HQ-based Project Manager will be established for the steering and managerial supervision of the project, including the overall financial management, recruitment and procurement of goods and services. The primary responsibility for day-to-day project monitoring and implementation rests with the PIU. A National Project Coordinator (NPC) will be recruited in Ghana as part of PIU for this purpose. The PIU will inform the Project Steering Committee (PSC) and the UNIDO Field Office of any delays or difficulties during implementation, so that the appropriate support and corrective measures can be adopted. The PIU will ensure that project monitoring and evaluation run according to an agreed schedule, and in line with UNIDO and GCF requirements. The PIU will also ensure that all project staff maintain a high level of transparency, responsibility and accountability in monitoring and reporting project results. The Monitoring and Evaluation (M&E) specialist, under the PIU, will be responsible for the overall coordination of the M&E of the project. The

M&E specialist is responsible for reporting project's performance based on monitoring framework as well as compiling Annual Progress reports.

B.3.Expected performance against the GCF investment criteria (500 words)¹¹

Please describe and provide an estimate of the expected impacts aligned with the GCF investment criteria: impact potential, paradigm shift, sustainable development, needs of recipients, country ownership, and efficiency and effectiveness.

Impact potential

(1) Mitigation

The project will achieve a total emissions reduction of 332,000 tCO₂e_q over its lifetime(detailed calculation is provided below). On top of this impact, the following results, aligned with GCF integrated result management framework will be achieved:

- **Indicator 1.1** Annual Energy savings: the proposed project is expected to reduce electricity consumption by 10% of 50 target companies through EE measures, estimating around 20,000 MWh in total.
- **Indicator 1.3** Installed Renewable Energy Capacity: the project will install solar rooftop PV in target 50 industries with a total capacity of 5 MW.
- **Indicator 1.4** Renewable Energy Generated: the above solar rooftop PV will generate 8,541 MWh/year.

(2) Adaptation

The planned activities will also contribute to increasing climate resilience of beneficiaries through improving information systems for climate-induced health risks and deploying an action plan that aims at minimizing climate induced health risks in the industrial sector, a concern which comes as a top adaptation priority in Ghana's updated NDC¹². The action plan will include the reduction of air pollutants (NO_x, PM_{2.5}, SO₂, carbon monoxide) in the industrial sector including steel, and cement industries¹³. Moreover, the following results, aligned with GCF integrated result management framework will be achieved:

- **Indicator 2.5**
 - Supporting 100 SME beneficiaries in mainstreaming climate change risk assessments into business operations will help them to minimize climate impacts to business delivery and markets. Thus the project will serve 100 local industries of an average 50 employees¹⁴, and expect the total number of 5,000 direct beneficiaries who will benefit from their company's adoption of strengthened climate change resilience.
 - Given that there are around 2.6 million workers¹⁵ in the industry sector and assuming that at least 10% of them will be benefited from measures reducing exposure to climate change induced health risks adopted, 260,000 workers will benefit through establishment of a national database of climate-induced health risks as well as integration of climate-resilient health management. Ultimately, the project will significantly enhance the quality and timeliness of climate and climate-induced health risks related information available to decision-makers and the dissemination of such information to the population of around 0.8 million people (indirect beneficiaries) who household members of direct beneficiaries (the average heads per household is four¹⁶).
- **Indicator 3.1** Reduce in expected losses of economic assets due to the impact of extreme climate-related disasters in the geographic area of the GCF intervention: Through the support of investment projects on RE/EE including climate resilience measures, physical assets will be climate proofed to the effects of climate change while reducing GHG emissions.

Paradigm shift

Industrial energy efficiency has strong potential for further scaling up and replication in the region which provides a paradigm shift potential beyond the boundaries of the Project. Indeed Ghana belongs to the West African Power Pool (WAAP) which mission is to coordinate power exchange among ECOWAS Member states. IEE measures and best practices in Ghana therefore not only bear a replication potential in the region, but also provide an opportunity for learning and best practice dissemination for energy efficiency beyond the project's boundaries. The Project aims to address major bottlenecks in opening up a sustainable market for industrial energy efficiency that is supported by the local policy makers, industry and financial sector. Through a combination of interventions including targeted policy enhancement, development of data collection framework, MRV for industrial sector GHG emissions, technical assistance and capacity building of industry, financing, government stakeholders in industry decarbonization are expected to learn from experience and to become active market players that scale up industry decarbonization with little need for support after the Project is closed (see the theory of change below).

¹¹ [Ghana's National Adaptation Plan Framework](#) (2018), Environmental Protection Agency

¹² [Ghana Nationally Determined Contribution under the Paris Agreement 2020-2030](#) (2021), Environmental Protection Agency

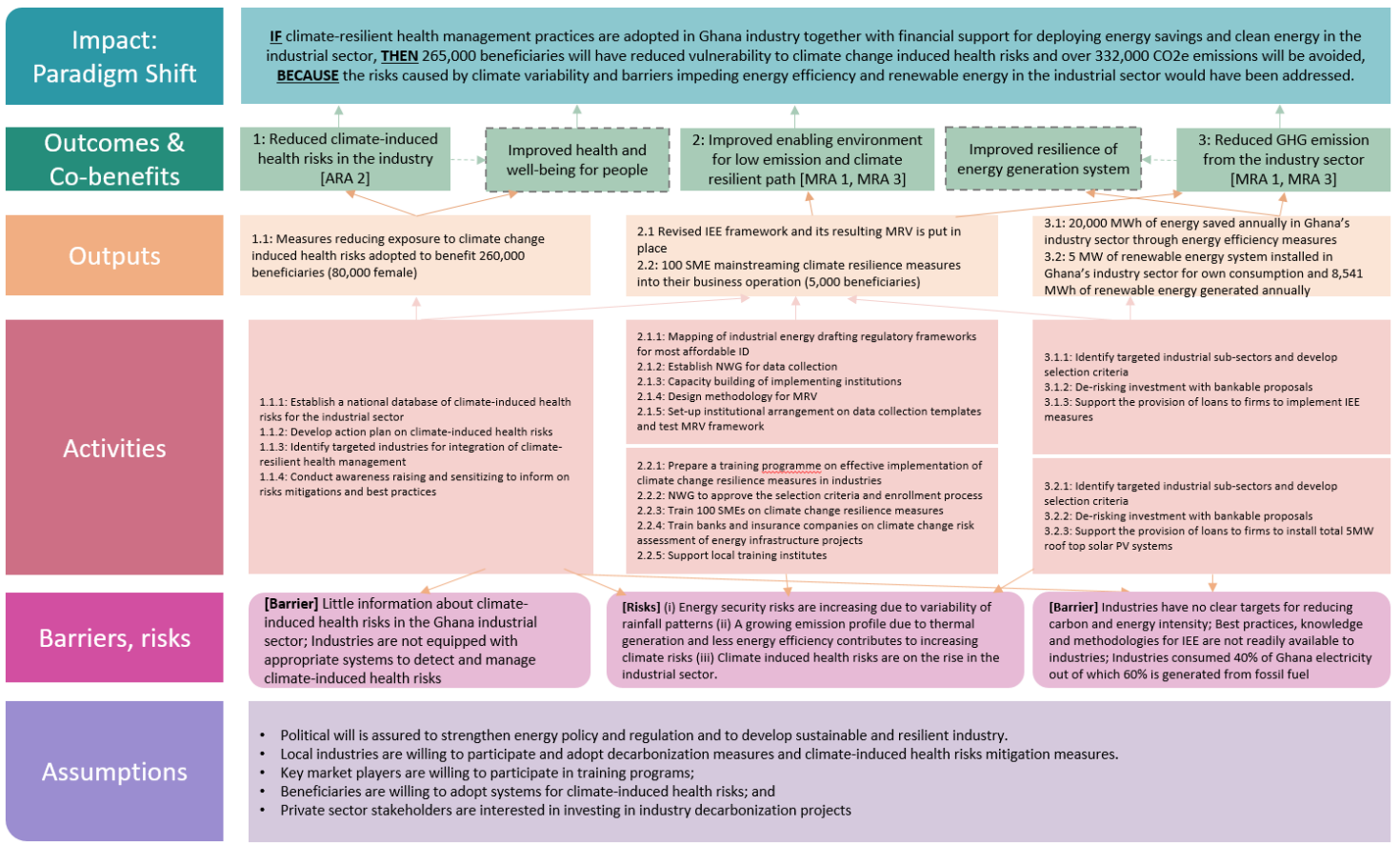
¹³ [Health and Pollution Action Plan](#) (2019), UNIDO

¹⁴ [Micro and small scale enterprises development in Ghana](#) (2014), M. Oppong et al., European Journal of Accounting Auditing and Finance Research

¹⁵ [Key Indicators of the Labour Market](#) (2020), ILO; [National Employment Report](#) (2015), Ghana Statistical Service; and [Ghana Labour Market Profile](#) (2020), Danish Trade Union Development Agency

¹⁶ Ghana Living Standards Survey (2019), Ghana Statistical Service

Theory of Change



Sustainable development

The project will generate wider benefits including environmental and economic co-benefits and gender-sensitive development impact:

(1) Economic benefits: Decarbonization demonstration sub-projects will improve beneficiary industries balance-sheet while enhancing participating financial institution confidence for investing in such projects. This will help kick-start private-led investment in Energy Efficiency across the country. Industries that will adopt a decarbonized pathway with the adoption of renewable energy and implementation of energy efficiency measures will be able to reduce their energy costs in production processes and therefore realise financial gains. In addition, the introduction of efficient cooling systems will reduce refrigeration costs, which will improve the balance sheet of targeted industries.

(2) Social benefits: Through the deployment of 5 MW of RE systems, new jobs will be created along the supply chains. Support to decarbonization strategies in the industries including support for reduction of health risks will enable the beneficiaries to participate more actively in productive activities and increase their revenue and living conditions as well as social status.

(3) Environmental benefits: Decarbonization of the industries (IEE, RE for industrial process & green storage solutions, and resource efficiency & cleaner production) will contribute to avoiding emissions from alternative polluting electricity generation sources. The project will also establish a national database of climate induced health risks in the industrial sector and conduct various awareness and sensitizing activities which will further aim at achieving environmental benefits at the targeted industries.

(4) Gender sensitive development impacts: Equal participation of men and women, both at managerial and technical levels, will be a guiding principle of the project across all stages of implementation.

Needs of recipients

Policymakers, local professionals and industries, and financial institutions are the main recipients of the project. Policymakers have limited awareness of the potential benefits of industrial decarbonization and will be supported in implement best practices to strengthen the regulatory framework. Overall institutional capacity must also be strengthened in order to ensure effective

enforcement of the strengthened regulatory framework. Developing a MRV system and enhanced data collection framework will enable policymakers to pinpoint areas requiring more detailed regulatory planning and improve their ability to evaluate the effect of policy changes. Currently many Ghanaian enterprises measure energy data manually, making data collection and demonstrating the case for industrialization difficult. Enhanced data collection frameworks will enable data-based decision making both at the enterprise and government level.

Local industrial professionals have limited technical capacity to implement industrial energy efficiency measures and train others. At least 50 industrial enterprises will be supported in establishing ISO 50001/EnMS and the implementation of low cost/no cost measures, and trainers will be trained to ensure capacity building programmes are institutionalised.

Moreover, according to the climate hazard projections made by WHO and UNFCCC, the number of days with very heavy precipitation (20 mm or more) could increase by about 4 days on average from 1990 to 2100, increasing the risk of floods in Ghana¹⁷. On top of that, if global mean temperature rises 4 degrees, about 25% of annual daily work hours is projected to be lost by workers carrying out heavy labour cement and steel factories. There is therefore urgent needs for awareness raising activities to reduce climate induced health risks in targeted industries especially cement and steel.

To address the above challenges, massive investment from both private and public sectors is required, but Ghana is struggling with its shallow financial market where local banks are not ready yet to invest on industrial EE. Indeed enterprises and financial institutions have limited capacity to produce and assess bankable industrial decarbonization proposals, meet financial compliance requirements, and conduct financial risk assessments. Financial institutions also have limited familiarity of the particular risks involved in decarbonization projects and prefer to provide short-term loans. In this context, the project will be attracting investors such as AGG and Ecobank to address these needs in EE markets.

Country ownership

Increasing the energy efficiency and decarbonization in Ghana's industrial sector aimed by this project can mitigate climate change through reduction of GHG emissions and achieve national development goal. In fact, Ghana's emission reduction goal is to unconditionally lower its GHG emissions by 15 percent relative to a business-as-usual scenario emission of 73.95 MtCO₂eq. by 2030. To do that, the Nationally Determined Contributions (NDC) states that Ghana committed to a doubling of energy efficiency improvement within industrial facilities by 20% by 2030¹⁸. In addition, the 2010 National Energy Policy highlights energy efficiency as a strategy to achieve emissions mitigation outcomes in the energy sector¹⁹.

The following elements ensure that Ghana owns the project:

- The project is considered to be included in the Country Work Programme by NDA
- NDA will issue a letter of endorsement to support the project
- Significant financial resources will be mobilized by national institutions as co-finance for the project (cf. Section C.1.)
- The engagement with NDA and other country stakeholders (e.g. the Ministry of Energy, Energy Commission) have taken place through several consultation meetings.
- Cooperation agreements with local partners

Efficiency and effectiveness

(1) Total project finance for mitigation

Estimated cost per tCO₂ eq, defined as total investment cost / expected lifetime emission reductions:

(a) Total project financing	US\$ 16.00 million
(b) Total project financing for mitigation (60%)	US\$ 9.60 million
(c) Requested GCF amount	US\$ 8.00 million
(d) Requested GCF amount for mitigation (60%)	US\$ 4.80 million
(e) Expected lifetime emissions reductions	332,684 tCO ₂ eq
(f) Estimated total cost per tCO₂eq (f = b / e)	US\$ 28.85 / tCO₂eq
(g) Estimated GCF cost per tCO₂eq removed (g = d / e)	US\$ 14.42 / tCO₂eq

The project targets 50 companies with establishment of ISO 50001/EnMS and ESO leading to yearly total energy saving of:

- EE = 4,000 MWh x 10% energy savings x 50 companies = 20,000 MWh.
- Out of which at minimum 20% would have come from Diesel generation and 80% from the grid.

¹⁷ [Climate health country profile – Ghana](#) (2015), WHO, UNFCCC

¹⁸ [Ghana's intended nationally determined contribution \(INDC\)](#), 2015

¹⁹ [Ghana National Energy Policy](#), 2010

- The Grid emission factor of Ghana from UNFCCC harmonized grid emission factor data set is 0.36 tCO₂eq/MWh and Diesel Emission Factor is 0.8 tCO₂eq/MWh.

Hence the annual GHG emission reduction estimate for the project can be computed as

- ER (IEE) = 20% x 0.8 tCO₂e/MWh + 80% x 20,000 MWh x 0.36 tCO₂e/MWh
- ER (IEE) = 8,960 tCO₂e
- Assuming a 25 year lifespan for the IEE measures undertaken, **ER (IEE) = 224,000 tCO₂e**

In addition, the project will target 50 industries to achieve a cumulated solar rooftop PV capacity of 5 MW as follow:

- Energy Generation = 100 kW x 19.5% (capacity factor²⁰) x 24h x 365 days/year x 50 enterprises = 8,541 MWh/year
- Grid Emission Factor for Ghana for intermittent energy is 0.509 tCO₂eq/MWh
- Yearly Emissions Reduction (ER) = 8,541 MWh x 0.509 tCO₂e/MWh = 4,347.4 tCO₂eq
- Over 25 years lifespan of rooftop solar equipment, thus **ER (RE) = 108,684 tCO₂eq**

ER (IEE) + ER (RE) = 332,684 tCO₂eq

(2) Total project finance for adaptation

(a) Total project financing	US\$ 16.00 million
(b) Total project financing for adaptation (40%)	US\$ 6.40 million
(c) Requested GCF amount	US\$ 8.00 million
(d) Requested GCF amount for adaptation (40%)	US\$ 3.20 million
(e) Expected total number of beneficiaries	265,000
(f) Estimated total cost per beneficiary (f = b / e)	US\$ 24.15 / beneficiary
(g) Estimated GCF cost per beneficiary (g = d / e)	US\$ 12.07 / beneficiary

B.4 Stakeholders consultation and engagement (300 words)

Please describe how engagement among the NDA, AE, EE and/or other relevant stakeholders in the country has taken place so far and what further engagement will be undertaken as the concept is developed into a funding proposal.

UNIDO conducted a number of bilateral meetings with the NDA, the Ministry of Energy, Ecobank Ghana, and other stakeholders such as AGG during the preparation of this concept. The project builds on the work of the Ghana IEE Readiness grants, through which UNIDO has already established productive relationships with the Ministry of Finance, the Ministry of Energy and the Energy Commission. The grants included an extensive stakeholder mapping exercise to ensure relevant stakeholders are engaged. Having identified and consulted with key partners, UNIDO, as the AE, will establish a comprehensive stakeholder engagement plan in coordination with the NDE, the Ministry of Finance, during the funding proposal stage. The engagement plan will build on previous consultation and engagement activities conducted under the IEE readiness grants.

UNIDO will endeavour to establish and maintain a constructive partnership with all relevant stakeholders. For example, a NWG will be established, and several hearings and stakeholder meetings will be carried out to ensure the proposed project is implemented with sufficient participation of and engagement with civil society, including women and children.

Finally, the project includes dedicated activities designed to ensure continuous engagement, alignment and support of key stakeholders, including the activity 2.1.2 and 2.2.2.

C. Indicative financing information (max. 2 pages)

C.1. Financing by components

Please provide an estimate of the total cost per component and disaggregate by source of financing.

Component	Output	Indicative cost (USD)	GCF financing		Co-financing			
			Amount (USD)	Financial Instrument	Type	Amount (USD)	Financial Instrument	Name of Institutions

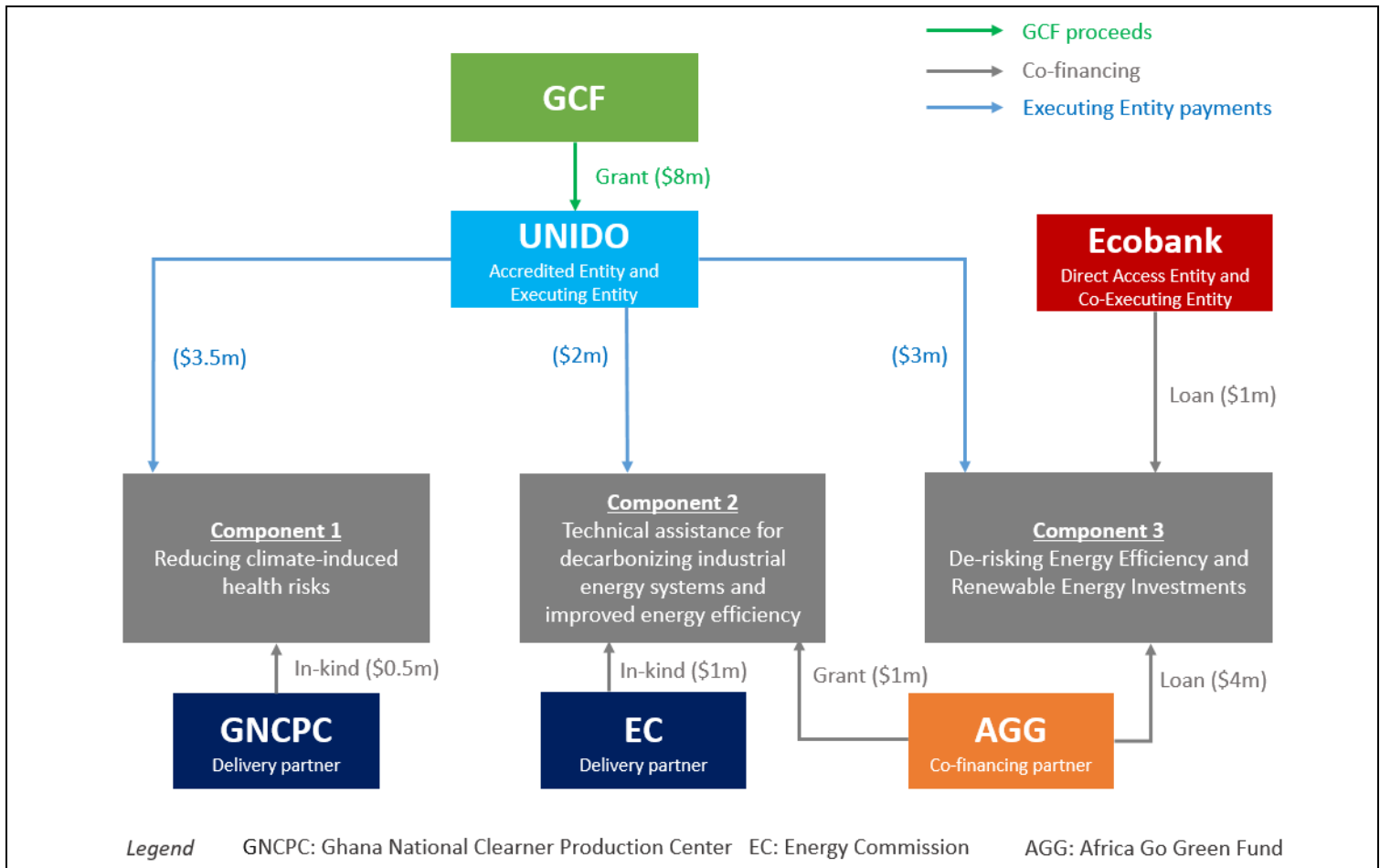
²⁰ [Planning and prospects for renewable power: West Africa](#) (2018), IRENA



Reducing climate-induced health risks in the industrial sector	Measures reducing exposure to climate change induced health risks adopted to benefit 250,000 beneficiaries (80,000 female)	4,000,000 Enter amount	3,000,000	Grants	Private Source	500,000	In Kind	Ghana National Cleaner Production Center
					Public Source	500,000	In Kind	UNIDO
Technical assistance for decarbonizing industrial energy systems and improved energy efficiency in the industrial sector	Revised IEE framework is put in place including its MRV structure	2,000,000	1,000,000	Grants	Public Source	1,000,000	In Kind	Energy Commission
	100 SME beneficiaries mainstreaming climate resilience measures into their business operation	2,000,000	1,000,000	Grants	Private Source	1,000,000	Grants	Africa Go Green Fund
De-risking decarbonisation and climate resilience investments in the industrial sector	20,000 MWh of energy saved annually in Ghana's industry sector through energy efficiency measures deployed in 50 companies	4,000,000	1,500,000	Grants	Private Source	2,000,000	Senior loans	Africa Go Green Fund
					Private Source	500,000	Senior loans	Ecobank Ghana
	5 MW of renewable energy system installed in Ghana's industry sector	4,000,000	1,500,000	Grants	Private Source	2,000,000	Senior loans	Africa Go Green Fund
					Private Source	500,000	Senior loans	Ecobank Ghana
Indicative total cost (USD)		16,000,000	8,000,000		8,000,000			

For private sector proposal, provide an overview (diagram) of the proposed financing structure.

Flow of Funds



C.2. Justification of GCF Funding Request (300 words)

Explain why the Project/ Programme requires GCF funding, i.e. explaining why this is not financed by the public and/ or private sector(s) of the country.

*Climate benefits of decoupling industrial processes from carbon intensity in the energy sector
 Incremental costs for decoupling vs impossibility by the market alone to financially support decoupling, given barriers
 Local banks not providing climate finance or supporting transaction advisory for climate finance*

The GCF is considered the most appropriate donor for the proposed project in Ghana given the climate mitigation and adaptation impacts of the project and its co-benefits which are not an investment criteria for local financial institutions. Moreover, there is an impossibility by the market to support the described activities alone, and local banks do not have the willingness to finance early stage energy efficiency projects in the industrial sector, which they do not have track records of financial viability. Recent discoveries of fossil fuel reserves in Ghana are likely to drive the country towards a more carbon intense industrial path. Supporting both long term policies, regulatory frameworks, climate resilient and decarbonization projects that establish a paradigm shift and learning potential for ambitious climate impacts falls within GCF mandate.

- **Climate benefits of decoupling industrial processes from carbon intensity in the energy sector:** The project will generate climate benefits through the decoupling of industrial production and carbon emissions across energy intensive industries. With a total of 1.2 MtCO_{2e}, the Manufacturing Industries and Construction category contributes 1.7% of the national GHG emissions in Ghana. The project will contribute 332,000 tCo_{2eq} of energy-induced emission reductions by replacing fossil fuels like diesel with renewable energy and by reducing energy consumption through energy efficiency measures in the industry, which contributes to Ghana’s national target of a 1.48 MtCO_{2e} GHG emission reduction for “sustainable production in industry” set to be achieved by Ghana through its 2021 Revised Nationally Determined Contributions, thus responding to climate mitigation requirements from the Paris Agreement.
- **Incremental costs for decoupling vs impossibility by the market alone to financially support decoupling, given barriers:** Given the barriers to financing outlined in Section B.1, it would be impossible for the market alone to financially support the decarbonization of industry. In fact, according to the survey conducted by UNIDO in 2021, over 50% of local industries in Ghana have difficulty in obtaining funds for energy efficiency projects.
- **Local banks not providing climate finance or supporting transaction advisory for climate finance:** it is due to a lack of understanding surrounding business models, a preference for short loan tenors, and perceived high investment

ent risk. The de-risking investment with bankable proposals and success cases of decarbonisation project will improve access to finance from local financial institutions.

- **Lack of public finance:** The Government of Ghana provides technical and financial support programmes on renewable energy and energy efficiency to local industries, however such support is not enough to make a paradigm shift due to the government's limited financial capacity and a lack of scale up strategy at national and regional level.

In addition, Ghana's NDC states that an additional 30% emissions reduction is possible beyond its 15% goal on the condition that external support is made available for technology transfer, capacity building and financing. The requested grant will not only accelerate industrial decarbonisation, but simultaneously allow government resources to be redirected to other priorities in terms of climate change mitigation and adaptation.

C.3. Exit Strategy and Sustainability (300 words)

Please explain how the project/programme sustainability will be ensured in the long run and how this will be monitored, after the project/programme is implemented with support from the GCF and other sources.

Outcome 2, on strengthening the regulatory framework on industrial decarbonisation will generate an enabling environment that will provide a sustainable pathway for IEE in Ghana for years to come.

Similarly, capacity building and technical support provided under Outcome 1 and 2 will result in a permanent improvement in the capacity of local industry with regard to climate mitigation and adaptation practices. By supporting local training institutes and industry with integrating training programmes and establishing a professional hub for aggregation of industrial decarbonization projects (in addition to training local professionals directly) UNIDO will build a cluster of strong national experts on industrial decarbonization practices, ensuring that capacity building activities continue beyond the timeframe of the project. Local case studies showcasing successful implementation of EnMS and IEE measures, knowledge products, tools, methodologies and guidelines, will support the case for continued investment in industrial decarbonization.

In addition, Output 2.1, development of a Monitoring, Review and Verification (MRV) system for industrial sector GHG emissions, will develop a local data collection and monitoring framework which will remain in the market after the project is closed. Reliable data on emissions reductions will be crucial to ensuring progress on this front can be monitored and evaluated over time. Suitability and sustainability of the MRV system will be ensured through consultative processes with local stakeholders.

Finally, collaboration with Ecobank as Executing Entity will be an essential contributor to the project sustainability and country ownership. In the project UNIDO will pay a Project Management Fee to Ecobank for running for 3-4 years an industrial EE and RE facility at Ecobank, while they use their own liquidity to lend. In this way, the capacity of Ecobank will be built with track records and data for such lending, and it will provide a paradigm shift in the market. Plus, project activities have been designed to include consultative processes in order to ensure the long-run sustainability of the project where feasible. These include workshops and stakeholder consultations on strengthening the regulatory framework, during MRV framework development, and the delivery of training programmes to industries and local professionals on the development of bankable proposals.

D. Annexes

- ESS screening check list (Annex 1)
- Map indicating the location of the project/programme (as applicable)
- Evaluation Report of previous project (as applicable)

Annex 1: Environmental and Social Screening Checklist²¹

Part A: Risk Factors

Please indicate your answers to the questions below and provide an explanation on the response selected. In cases when the TBD response has been selected please explain briefly why you are not able to determine now and when in the project cycle the question will be addressed.

If the criteria is not applicable to the project you may write N/A in the justification box.

Risk Factors	YES	NO
Will the activities involve associated facilities and require further due diligence of such associated facilities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: The proposed activities, such as the establishment of ISO50001 Energy Management System and the installation of renewable energy (e.g. solar PV) systems, can be implemented within their own project components and will not involve any associated facilities.</i>		
Will the activities involve trans-boundary impacts including those that would require further due diligence and notification to affected states?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer: The proposed activities will be undertaken within a local company level without reliance on/use of shared/transboundary natural resources, such as international waters or a river basin.</i>		
Will the activities adversely affect working conditions and health and safety of workers or potentially employ vulnerable categories of workers including women and children?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer: Since the project will support the establishment of energy system optimization and the installation of solar PV systems and relevant electrical appliances, some occupational health and safety (OHS) potential risks to technical staff may be foreseen, which will be taken into consideration when selecting companies in line with their potential Environmental and Social (ES) risks. As such, appropriate OHS guidelines and trainings on related health and safety measures, based on UNIDO methodologies, will be developed and undertaken to mitigate any such potential risks while taking into account the specificities of vulnerable categories of workers (rural populations, including women). No employment of children is foreseen.</i>		
Will the activities potentially generate hazardous waste and pollutants including pesticides and contaminate lands that would require further studies on management, minimization and control and compliance to the country and applicable international environmental quality standards?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer: The equipment which will be procured for energy efficiency improvement and renewable energy systems will be selected based on an environmental assessment to be conducted to ensure the activities will not generate hazardous waste or pollutants.</i>		
Will the activities involve the construction, maintenance, and rehabilitation of critical infrastructure (like dams, water impoundments, coastal and river bank infrastructure) that would require further technical assessment and safety studies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer: N/A</i>		
Will the proposed activities potentially involve resettlement and dispossession, land acquisition, and economic displacement of persons and communities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer: Land where energy efficiency equipment and renewable energy systems will be installed will be offered by targeted enterprises on a voluntary basis, through an inclusive consultative process with all the relevant stakeholders. Any type of economic or physical displacement will be avoided</i>		
Will the activities be located in or in the vicinity of protected areas and areas of ecological significance including critical habitats, key biodiversity areas and internationally recognized conservation sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer: The targeted project sites for the implementation of energy management systems and installation of renewable energy systems will be selected in consultation with local companies and government institutions, avoiding any sites in or in the vicinity of protected areas and areas of ecological significance. This will be taken into consideration when selecting companies in line with their potential Environmental and Social (ES) risks.</i>		

²¹ In answering this checklist, you may refer to Annex 1: Guidance on Part A ESS Screening of the [“Guidelines for the environmental and social screening of activities proposed under the SAP”](#)

Will the activities affect indigenous peoples that would require further due diligence, free, prior and informed consent (FPIC) and documentation of development plans?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer: The project does not plan to operate in areas populated by indigenous peoples, as such project activities should not affect indigenous peoples populations. This will be ensured and taken into consideration when selecting companies in line with their potential Environmental and Social (ES) risks. The project activities will be planned and implemented through a highly-consultative approach, engaging all relevant stakeholders, including target enterprises, in the planning and inception of the project, in order to avoid any potentially adverse impacts on indigenous peoples.</i>		
Will the activities be located in areas that are considered to have archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values or contains features considered as critical cultural heritage?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer: The project sites will be selected in consultation with local enterprises and government institutions to avoid cultural heritage areas.</i>		

Part B: Specific environmental and social risks and impacts

Assessment and Management of Environmental and Social Risks and Impacts	YES	NO	TBD
Has the E&S risk category of the project been provided in the concept note?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Has the rationale for the categorization of the project been provided in the relevant sections of the concept note?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are there any additional environmental, health and safety requirements under the national laws and regulations and relevant international treaties and agreements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer: The necessary information will be provided in the environmental and social assessment part of the feasibility study to be provided with the funding proposal and in the Environmental and Social Management Framework (ESMF) which will be developed to guide the selection of subprojects.</i>			
Are the identification of risks and impacts based on recent or up-to-date information?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: Identified risks and impacts are based on recent high energy efficient equipment and renewable energy technology and market assessments.</i>			
Labour and Working Conditions	YES	NO	TBD
Will the activities potentially have impacts on the working conditions, particularly the terms of employment, worker's organization, non-discrimination, equal opportunity, child labour, and forced labour of direct, contracted and third-party workers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: The activities (especially Component 2 and 3) will particularly focus on gender empowerment activities, introducing women in Ghana industry as agents of change and entrepreneurs. Women's safe working conditions will be assured through appropriate trainings and workshop.</i>			
Will the activities pose occupational health and safety risks to workers including supply chain workers?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer: The proposed project will assist Ghana industry and key energy market players in the planning and implementation of decarbonization technologies and practices. As such, there could be a potential risk that the working environment could pose health and safety threats to technical staff (e.g. exposure to electric shocks). To mitigate such risks, the project foresees to develop OHS guidelines and to undertake a number of trainings on proper and safe installation of RE equipment. In addition, as with most applications of UNIDO methodologies, the proposed approach is typically associated with an overall improvement in working conditions of a plant and co-benefits such increased operational health and safety are often observed. Potential impacts on working conditions, non-discrimination, child labour and third party workers will be taken into consideration when selecting companies in line with their potential Environmental and Social (ES) risks, as risk levels depend on the type of RE and EE efficiency projects and existing practises in each of the selected 50 local enterprises.</i>			
Resource Efficiency and Pollution Prevention	YES	NO	TBD

Will the activities generate (1) emissions to air; (2) discharges to water; (3) activity-related greenhouse gas (GHG) emissions, (4) noise and vibration; and (5) wastes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Please provide a justification of your answer: This will be taken into consideration when selecting subprojects in line with their potential Environmental and Social (ES) risks.</i>			
Will the activities utilize significant amount of natural resources including water and energy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: The project activities will indeed promote the efficient use of natural resources, including water and energy, through technical assistance and training. Thus there will be no significant use of resources. This will be taken into consideration when selecting subprojects in line with their potential Environmental and Social (ES) risks.</i>			
Will there be a need to develop detailed measures to reduce pollution and promote sustainable use of resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: Measures to reduce pollution and promote the sustainable use of resources will be studied in the pre-feasibility study to be provided with the funding proposal. This will also be taken into consideration when selecting subprojects in line with their potential Environmental and Social (ES) risks.</i>			
Community Health, Safety, and Security	YES	NO	TBD
Will the activities potentially generate risks and impacts to the health and safety of the affected communities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: The project offers several in-person trainings and installation of renewable energy equipment such as solar panels which could have physical contacts between individuals. Therefore there is a potential risk of the surge of COVID-19 cases in the country. To mitigate this risk, UNIDO will stand in close coordination with the relevant health institutions, mainly following Standard Operating Procedures (SOPs) of the government and WHO to continuously assess the risk and feasible mitigation measures in the target area. Plus, UNIDO would replace some in-person trainings with online trainings if needed. This risk will also be taken into consideration when selecting subprojects in line with their potential Environmental and Social (ES) risks.</i>			
Will there be a need for an emergency preparedness and response plan that also outlines how the affected communities will be assisted in times of emergency?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: N/A</i>			
Will there be risks posed by the security arrangements and potential conflicts at the project site to the workers and affected community?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: N/A</i>			
Land Acquisition and Involuntary Resettlement	YES	NO	TBD
Will the activities likely involve land acquisition and/or physical or economic displacement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: During feasibility study, consultation meetings and workshops will be organized with local enterprises to determine land on which high efficient equipment and renewable energy systems will be installed and it will be ensured that land is offered by targeted enterprises through voluntary manner without involuntary physical or economic displacement. This will be taken into consideration when selecting subprojects in line with their potential Environmental and Social (ES) risks.</i>			
Biodiversity Conservation and Sustainable Management of Living Natural Resources	YES	NO	TBD
Will the activities potentially introduce invasive alien species of flora and fauna affecting the biodiversity of the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: N/A</i>			
Will the activities have potential impacts on or be dependent on ecosystem services including production of living natural resources (eg. agriculture, livestock, fisheries, forestry)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: N/A</i>			
Indigenous Peoples	YES	NO	TBD
Will the activities potentially have any indirect impacts on indigenous peoples, ethnic minorities, or vulnerable and marginalized groups?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<i>Please provide a justification of your answer: N/A</i>			
Cultural Heritage	Yes	NO	TBD
Will the activities restrict access to the cultural heritage sites and properties?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: N/A</i>			
Will there be a need to prepare a chance-find procedure in case of the discovery of cultural heritage assets?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: N/A</i>			
Stakeholder engagement and grievance	Yes	NO	TBD
Will the activities include a continuing stakeholder engagement process and a grievance redress mechanism and integrated into the management/implementation plans?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Please provide a justification of your answer: Targeted local enterprises and government institutions will be engaged from the planning and inception phase of the project.</i>			

Part C: Sign Off

Sign-off: *Specify the name and designation of the person responsible for the environmental and social screening and any other approvals as may be required in the accredited entity's own management system.*

Ganna Onysko, Environmental and Social Safeguards Compliance Officer