

# NAMA Facility

## NAMA Support Project Outline

### 7<sup>th</sup> Call

To the Members of the NAMA Facility Board  
 NAMA Facility - Technical Support Unit (TSU)  
 E: [contact@nama-facility.org](mailto:contact@nama-facility.org)

<b>Country:</b>	Sierra Leone
<b>Project Title:</b>	Revolving Concessional Loan Fund for Improved Cook Stoves in Sierra Leone
<b>Applicant:</b>	United Nations Development Programme

The following documents and annexes are enclosed:

	General and Specific Information on the NAMA Support Project
	Annex 1: Endorsement letters
	Annex 2: Logframe
	Annex 3: Applicant / Applicant Support Partner
	Annex 4a: Detailed Project Preparation (DPP) concept Annex 4b: Detailed Budget DPP
	Annex 5: Business model and financial model (please provide as MS Excel or similar)
	Annex 6: GHG mitigation calculation (please provide as MS Excel or similar)

**Instructions:**

- *Please delete the italic text passages after filling in the form. This will also reduce the number of words.*
- *Please fill in the light blue cells.*
- *Word counts serve as an orientation. Please do not exceed 10,000 words in the overall document excluding annexes.*
- *Please read the General Information Document carefully!*
- *Please provide figures in the following way, i.e. 10,000 or 50.5%. This will help to prevent confusion.*

Version 7<sup>th</sup> Call

Submission Deadline: **1 September 2020, 3:00 pm (CEST)**

All documents must be provided in English language. If necessary, please provide a translation.

Please provide Annex 5 and 6 using MS Excel or a similar spreadsheet programme without hard-coded figures.

## List of abbreviations

*Please complement this list by the abbreviations used by you throughout the document*

DPP	Detailed Preparation Phase
FC	Financial Cooperation
GCF	Green Climate Fund
GHG	Greenhouse gas
GID	General Information Document
M&E	Monitoring and Evaluation
NDC	Nationally Determined Contributions
NF	NAMA Facility
NSO	NAMA Support Organisation
NSP	NAMA Support Project
ODA	Official Development Assistance
TC	Technical Cooperation
ToC	Theory of Change
TSU	Technical Support Unit of the NAMA Facility
VAT	Value Added Tax

*A comprehensive glossary is available in Annex 2 of the General Information Document (GID).*

## 1 General Information on the NAMA Support Project (NSP)

<b>1.1 NSP Data</b>	NSP title	Revolving Loan Fund for Improved Cook Stoves in Sierra Leone		
	Country of implementation	Sierra Leone		
	Sector focus (tick one box)	<input type="checkbox"/> Agriculture <input type="checkbox"/> Forestry <input type="checkbox"/> Land use <input type="checkbox"/> Transport	<input checked="" type="checkbox"/> Energy efficiency <input type="checkbox"/> Renewable energy <input type="checkbox"/> Waste/Waste water <input type="checkbox"/> Other	
	Duration of NSP implementation	60 months		
	Duration of Detailed Preparation (DPP)	15 months		
	NSP funding volume requested from the NAMA Facility	Preparation (DPP):	EUR 313,496 (requested NAMA Facility grant, see Annex 4b; do not include other funding sources)	
		Implementation:	<b>EUR 7,338,062</b>	
		<b>Total:</b>	<b>EUR 7,651,588</b>	
	Data sharing	Do you agree that information provided in this Outline is shared with selected other funding programmes such as the GCF if this NSP is not selected for support by the NAMA Facility? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
	Publication	Are you willing to have your submission (country, sector) listed on the NAMA Facility website? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Emission reduction credits	NAMA Facility funding is used directly for greenhouse gas mitigation and/or carbon sinks, which will contribute to generating emission allowances, emission credits, or any other type of CO <sub>2</sub> compensation certificates: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, will the credits be permanently cancelled in an approved register? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Resubmission	Is your application a resubmission from previous Calls of the NAMA Facility? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
<b>1.2 What is the NSP about?</b> In one sentence	Supports Sierra Leone to achieve accelerated implementation of improved cook stoves through a technically and financially strengthened private sector.			
<b>1.3 What will have changed at the end of the NSP?</b> In one sentence	The NSP will transform the energy market of Sierra Leone and increase the competitiveness of the private sector through enhanced access to concessional financing.			
<b>1.4 National Ministry 1</b>	Name of responsible national ministry	Ministry of Environment		
	Department	Department of Policy, Planning, Research and M&E		

	Postal Address	Ministry of Environment, 4th Floor, Professional Building, Ministry of Work and Public Assets, New England, Freetown
	Contact Person	<b>Edward Bundu</b>
	Telephone	+232 76 749024
	Email	<a href="mailto:edward.bendu55@gmail.com">edward.bendu55@gmail.com</a>
	Website	-
	Letter of Support	<i>Please provide a letter of support for the NSP in Annex 1.</i> <input checked="" type="checkbox"/> Official endorsement letter attached
<b>1.5 National Ministry 2</b>	Name of responsible national ministry	<i>Ministry of Energy</i>
	Department	Energy Directorate
	Postal Address	3 & 3A Pademba Road, Freetown
	Contact Person	<b>Mustapha Sannoh, Head of Rural Energy</b>
	Telephone	+232 76 649785
	Email	<a href="mailto:Mustaphasannoh1@gmail.com">Mustaphasannoh1@gmail.com</a> ; <a href="mailto:cgrant@pmlsl.com">cgrant@pmlsl.com</a>
	Website	
	Letter of Support	<i>Please provide a letter of support for the NSP in Annex 1.</i> <input checked="" type="checkbox"/> Official endorsement letter attached
<b>1.6 Applicant / Applicant Support Partner</b>  Further information in Annex 3  [Institution proposed as contracting partner for the Detailed Preparation Phase - DPP]	Name of institution	<i>United Nations Development Programme</i>
	Type of institution	Multilateral Organization
	Legal form	Other Intergovernmental Organisation
	Non-profit status	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	Department	
	Postal Address	Fourah Bay Close, Main Motor Road, Wilberforce, Freetown
	Country	Sierra Leone
	Contact Person	Name: <i>Samuel Doe, Resident Representative (RR), UNDP Sierra Leone</i>  E-mail: <a href="mailto:samuel.doe@undp.org">samuel.doe@undp.org</a> with copies to <a href="mailto:rokya.dieng@undp.org">rokya.dieng@undp.org</a> and <a href="mailto:tanzila.sankoh@undp.org">tanzila.sankoh@undp.org</a>
	Telephone	+232 79 961450
	Website	<a href="https://www.sl.undp.org/">https://www.sl.undp.org/</a>
	Role in the project	<ul style="list-style-type: none"> <li>Act as the primary contact for the NAMA Facility;</li> <li>Act as the NSO during the DPP and the implementation phase of the NSP (responsible and accountable for the correct use of funds and services, the financial and administrative management of the NSP, for monitoring of the NSP and reporting to the TSU)</li> </ul>
<b>1.7 Main Implementing Partners</b>  [National/local institutions taking a lead in the preparation and implementation of the NSP. Extend list as appropriate.]	<b>Name of organisation</b>	<i>United Nations Capital Development Fund</i>
	Type of institution	Multilateral Organization
	Country	USA
	Contact person	Name: <i>Anders Berlin, Director- Least Developed Countries Investment Platform (LDCIP) at UNCDF</i> E-mail: <a href="mailto:anders.berlin@uncdf.org">anders.berlin@uncdf.org</a>
	Website	<a href="https://www.uncdf.org/least-developed-countries-investment-platform">https://www.uncdf.org/least-developed-countries-investment-platform</a>
	Role of Partner in NSP	<ul style="list-style-type: none"> <li>Act as member of the Project Board and technical working group</li> </ul>

		<ul style="list-style-type: none"> <li>• Act as the manager of the financial mechanisms</li> <li>• Provide technical assistance on financial aspects</li> </ul>
	Commitment	<input type="checkbox"/> Official support letter attached The participation of UNCDF will be confirmed within the first 3 months of the DPP
	<b>Name of organisation</b>	Clean Cooking Alliance Sierra Leone
	Type of institution	<i>NGO</i>
	Country	Sierra Leone
	Contact	Name: Hannah Max-MaCarthy – President E-mail: <a href="mailto:info@ccasl.org">info@ccasl.org</a>
	Website	
	Role of Partner in NSP	<a href="http://www.ccasl.org">www.ccasl.org</a>
	Commitment	<input type="checkbox"/> Official support letter attached
<b>1.8 NAMA Support Organisation (NSO)</b>  [Institution proposed as contracting partner for the Implementation Phase of the NSP – indicate if available]	<b>Name of organisation</b>	<i>United Nations Development Programme</i>
	Type of institution	<i>Multilateral Organization</i>
	Country	Sierra Leone
	Website	<a href="http://www.undp.org">www.undp.org</a>
	Contact	Name: <i>Tanzila Sankoh</i> E-mail: <a href="mailto:samuel.doe@undp.org">samuel.doe@undp.org</a> with copies to <a href="mailto:rokya.dieng@undp.org">rokya.dieng@undp.org</a> and <a href="mailto:tanzila.sankoh@undp.org">tanzila.sankoh@undp.org</a>



## 2.1 Barrier analysis

[~ 500 words, present analysis as text or in bullet points]

Challenges accessing affordable finance, and as a result, insufficient supply and willingness to pay for improved cookstoves, means the whole market is underdeveloped and not reaching its potential of having a huge impact on communities in Sierra Leone, and contributing to the achievement of the country's NDC and Vision 2035. **Central barriers, preventing adoption of Improved Cook Stoves in Sierra Leone:**

### 1. Financial barriers:

- Cost of capital in Sierra Leone. At the current prime lending rate of around 18% there is little interest from private sector in investigating opportunities and considering investments at scale;
- Insufficient access for companies involved in cook stove market to affordable and suitable financing for reasons such as: financiers are not familiar with the business; insufficient collateral; and not enough credit history;
- Banks are not familiar with improved cook stoves businesses and there is lack of willingness of banks to provide targeted credit lines for improved cooking technologies.
- Upfront costs for investment into improved cookstoves, which most consumers – including institutional user – are not able to pay, despite a short payback period;

### 2. Capacity and knowledge barriers:

- Lack of awareness of stove manufacturers about sales strategies, after sales services etc;
- In rural regions of the country, there is still lack of awareness among potential beneficiaries of the existence of improved cookstoves and available suppliers of improved stoves.

### 3. Technological barriers:

- Improved cook stoves are currently present only to a limited extent in the Sierra Leone market due to the lack of demand and limited awareness about the benefits;
- Lack of trust in the technical benefits and potential of improved cooking technologies, and proposed business models;
- There are a limited number of manufacturers of improved cook stoves operating in Sierra Leone.

### Former projects and government schemes the NSP builds upon

- The Energy Efficient Production and Utilisation of Charcoal (EEPUC)<sup>1</sup> project was implemented in Sierra Leone between 2016 and 2020. The project largely focused on strengthening the institutional and enabling environment for private sector-led cookstove production and disbursement to take place within. It led to the development of an updated national energy policy and a new bioenergy policy as well as the establishment the Cookstove and Charcoal Development Centre (CCDC). The CCDC has modern testing facilities which will test and certify charcoal stoves in the country and have been successful in training targeted private sector participants in efficient charcoal stove manufacturing techniques and retailing. However, the requested project extension for large-scale implementation was not approved by the GEF and large-scale deployment of cook stoves could not be initiated. The NSP would build on the results of the EEPUC and strengthen the CCDC by complementing testing with the actual roll-out of improved cookstoves at scale.
- Promoting Renewable Energy Services for Social Development (PRESSD) (2014-2018): Installation and operation of 3 solar mini-grids in Segbwema, Panguma and Gbinti, installation of SHS for approx. 100 charging centres, 20 energy hubs for Agricultural Business Centres, 20 clinics, 12 schools, 12 financial service associations. Equipment and training for 3 Energy Laboratories in cooperation with Polytechnics. Sales of Pico PV products through local retailers. Partners: European Union, Welthungerhilfe, Cooperazione Internazionale, Energy for Opportunity, Oxfam.

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<sup>1</sup> The Energy Efficient Production and Utilisation of Charcoal through Innovative Technologies

[https://www.sl.undp.org/content/sierraleone/en/home/operations/projects/environment\\_and\\_energy/energyefficientproduction.html](https://www.sl.undp.org/content/sierraleone/en/home/operations/projects/environment_and_energy/energyefficientproduction.html)



## 2.2 Project rationale

Further information in Annex 2

[~ 600 words]

### **1. Starting situation and rationale**

Access to clean cooking solutions in Sierra Leone is very limited. Around 80% of the population still uses traditional biomass for cooking, often in an unsustainable manner and on inefficient stoves. Smoke from cooking on these stoves contributes to health problems, especially for women and children. Inefficient stoves are often unsafe and uncomfortable to use. Cooking fuel expenses keep on rising and the unsustainable use of wood fuel supply chains cause environmental degradation and deforestation.

Enabling a private sector driven approach to scaling up the improved cook stove value chain – from production to the end-user – will have a series of compounding impacts on Sierra Leone and its people. This NSP has the potential to generate positive contributions to many of the Sustainable Development Goals (SDGs) as well as Sierra Leone’s NDC and its national development plan - Vision 2035.

The concessional loans will enable cook stove manufacturers to grow their businesses and produce more cook stoves: creating jobs. During the DPP, we will assess the opportunity to also engage existing energy ESCOs in the NSP. These ESCOs might be interested to add cook stoves to their service offer. This would further expand the use of the revolving concessional loan fund to other beneficiaries. The creation of jobs in this value chain and through the stimulation of this cook stove market will have positive multiplier effects throughout these local and regional economies in Sierra Leone, contributing to the green recovery from COVID-19. The deployment of cook stoves in households, industrial and institutional settings will displace the use of fuel wood for combustion. This will reduce instances of deforestation, reducing the related GHG emissions significantly and reducing the detrimental impacts on biodiversity and the provision of ecosystem services the forests provide. The improved cookstoves will create healthier working and living environments for the end-users, through the reduction of smoke produced. These health benefits deliver large savings in terms of productivity and reduced health costs to the country as a whole, especially in the light of the COVID-19 crisis when health systems are stretched, and the virus will likely be more acute for those with underlying health or respiratory conditions. For these reasons, among many others, this sort of project – involving many different actors throughout the value chain – can deliver significant impact across a variety of metrics.

Regarding the enabling environment for such a project to take place; the Energy Efficient Production and Utilisation of Charcoal (EEPUC) project addressed one of the major environmental and sustainable energy problems in Sierra Leone; that of unsustainable exploitation of forests. The EEPUC project was a response to this environmental problem - that is contributing to climate change and having a detrimental impact on biodiversity and ecosystem services - by focusing on outcomes that address regulatory, institutional, technical, environmental and social barriers.

The project has now ended and has succeeded in strengthening the enabling policy and technical environment for private sector driven production and deployment of cook stoves.

This NSP proposes to provide a much-needed market catalyst and address challenges around access to finance preventing existence of an improved cook stove market in Sierra Leone. Through the concessional loans provided by UNCDF to local and regional banks, the banks can issue low-cost and affordable finance de-risk investments into cook stove production and supply. This will provide the necessary financial incentives needed to create a market for improved cook stoves in Sierra Leone.

### **2. The project’s objectives**

**The goal of the NSP is to enable cook stove manufactures to access affordable finance and de-risk their investments into the production and deployment of improved cook stoves in Sierra Leone.** The proposed project is five years long and will create a concessional revolving

loan facility that enable local and regional companies to access low-cost debt, enabling them to invest in the production and sale of cook stoves.

The NSP has two main components designed at overcoming the (1) financial, (2) capacity and knowledge and (3) technological barriers identified above:

**A. Providing finance to local and regional companies active in the production and manufacturing of cook stoves, working to buy, sell and distribute the improved cook stoves.**

Access to finance will allow companies to scale-up their operations and create new jobs. Through UNCDF's provision of finance, local banks will provide concessional loans to manufacturers. This will enable the companies to purchase and install improved cook stoves. Such loans are essential, as the companies don't have direct access to commercial finance at reasonable terms. This access to finance is critical to incentivise businesses to invest in scaling up their activities in improved cook stoves market.

**B. Targeted technical assistance will address the capacity and knowledge barriers through:**

(1) Massive awareness raising to ensure wide-spread knowledge of the benefits and available opportunities of improved cook stoves amongst target users.

(2) Strengthen the capacity of companies to produce and sell improved cook stoves.

(3) Technical assistance in coordination with the CCDC will ensure the quality of the improved cook stoves being produced, sold and distributed, including improved manufacturing process of improved cook stoves for industrial purposes.

**3. Scope of the NSP**

By the end of the five-year project, the NSP will have:

- 1) supported at least 20 improved cook stove suppliers through the provision of low-cost debt funding, allowing them to expand their commercial activities.
- 2) provide **capacity building on efficient cook stoves to over 80 attendees** (including management, engineers, operators, and financiers) and up to 20 manufacturers of improved cook stoves.
- 3) expanded the number of **active improved cook stove manufacturers** active in the field of ESCOs from 0 to 10.
- 4) Delivered significant GHG emission reductions of approximately 5.5 million tCO<sub>2e</sub> (direct GHG ERs of investments supported by the NSP over five years, lifetime savings).
- 5) Catalyse approximately **EUR 784,000 in investments** in improved cook stoves by market participants and businesses in Sierra Leone.

**4. Target groups**

The following target groups will benefit from the NSP:

- Up to 20 private sector companies involved in the supply of improved cook stoves through the availability of low-cost debt funding by the revolving concessional loan fund.
- Rural households getting access to improved cook stoves.
- Industrial facilities increasing the use of improved cook stoves.
- The financial sector, especially local financial institutions directly from the additional new financing instruments developed and the project pipeline preparation during the NSP.

**2.3 Project concept incl. business model, financial support mechanism, and capacity building**

Further information in Annex 2 and 5

[~ 3000 words]

***i. Proposed technology***

The NSP will focus on enabling private companies to scale up the production, supply and deployment of high quality and improved cook stoves in Sierra Leone.

The CCDC can play an important role in the testing and certification of charcoal stoves in the country and can also provide training for targeted private sector participants in efficient charcoal stove manufacturing techniques and retailing, which they have done before.

The NSP aims to provide **finance to local companies active in the production, sale and implementation of improved cook stoves**. Through UNCDF’s provision of finance, local banks will provide concessional loans to cook stove manufacturers. This would enable the companies to produce and install improved cook stoves at scale. Such loans will be essential, as the companies don’t have direct access to finance at reasonable terms.

Indicative costs of stoves			
	Domestic cookstove	Institutional Stoves	Industrial Stoves
Current cost of stove/Kiln (average), USD	7	35	100
Total cost of new stove/Kiln (estimated), USD	12	400	1,000
Cost of current stove/Kiln as a percentage of total cost of new stove	58%	9%	10%

Source: World Bank ProDoc PIMS 4904, EEPUC

As part of the EEPUC project, a report on the “Development of Public-Private Initiatives for the Improved and More Efficient Production of Charcoal and the Scaling up of Improved Cookstove Production” was released in early 2020. The report suggested that institutions such as schools, hospitals, hostels or prisons tend to have relatively high operational budgets which allow them to buy charcoal. However, due to limited funds and procurement rules the cookstoves that are bought by these organisations are often the lowest priced and inefficient. Through the revolving concessional loan fund, companies will be able to offer improved stoves at lower costs and through the monetary savings as a result of reduced charcoal consumption, institutions will be able to repay the investment costs.

In order to be eligible for funding through the revolving concessional loan fund, eligibility criteria will be set. These will include both financial and technical minimum requirements. These criteria will be defined in the DPP and can – for example – include the following requirements for institutional stoves:

- Cookstove body: fixed, built-in watertight masonry structure with an appropriate platform for the cook(s) to operate the stove, fitted with a chimney for fulltime removal of exhaust gases / smoke from kitchen
- Rocket elbow combustion chamber
- Thermal insulation material with minimum thickness of 6 centimetres
- Minimum cooking capacity: 50 people
- Capacity/volume: minimum 20 litres, recommended 100-120 litres
- Minimum efficiency 40%
- 5-7 years lifetime

- Only CCDC certified stoves meeting national standards are eligible

The terms of the loan to be given need to be consistent with the warranty provided by the manufacturers. If payback period is 3 years, the warranty should cover the same period.

***ii. Business models and financing options***

The business model for the improved cook stoves will be driven by the company in each case and will be determined by:

- the type of technology requested by clients
- the type of clients served by the technology (households, institutional clients, industrial clients)
- the ability to pay (the creditworthiness of their customers)

The financial support mechanism is a revolving concessional loan fund to facilitate the investment into improved cook stoves. The NAMA Facility grant will enable the creation of a revolving concessional loan fund, which will then give out loans at lower than market interest rates to cook stove manufacturers. It is envisaged that the revolving concessional loan fund will be operated by UNCDF and funds will be disbursed through local banks identified during the DPP. These banks will then provide loans directly to cook stove manufacturers, producing, selling and installing improved cook stoves. The loans given will allow the companies to enhance production processes of cook stoves and offer repayment terms that are affordable for their customers. Companies taking out loans will repay these based on the business model they are operating with and which will be standardized as menu of options during the DPP. Repayments will come from revenues generated through the sales of improved cook stoves.

At the end of the support of the NAMA Facility, there will be a revolving concessional loan fund which still has the capital provided by the NAMA Facility. As costs of the operation of the revolving concessional loan fund will be covered through a low interest rate, the fund will be completely revolving and will continue the financing of improved cook stoves and can expand activities to other sectors such as green technologies (Solar Home Systems, mini-grids, etc.).

The most appropriate business model chosen by each company will also be informed by lessons learnt from various activities in Sierra Leone. The most common options are expected to be

- Instalment sale: Sale paid over fixed period in fixed instalments
- Lease to Own: As per the above, but with ownership of the unit going to the client when fully paid up

***iii. Financial support mechanisms***

The financial support mechanism will involve providing finance directly to the companies involved in the production, sale and implementation of improved cook stoves. Eligible companies will be pre-qualified during the DPP.

The revolving concessional loan fund will be operated by UNCDF and funds will be disbursed through local banks identified during the DPP. The revolving loan fund proposed by this NSP is the sole financial mechanism that will be used to stimulate activity in the improved stove market in Sierra Leone, the core aspects to the revolving fund are:

- Concessional debt from UNCDF, potentially issued in partnership with/ through local and/ or regional banks. The financial mechanism projects that the revolving loan fund will have issued EUR 7,061,465 of loans by the end of the five-year NSP. However, the fund will still be capitalised beyond the NSP with the potential for further lending arrangements for other technologies such as Solar Home Systems,

solar PV based micro- and mini-grids, or for the repair and/ or replacement of the previously installed stoves.

- Required down-payment from business borrowers of 10% of total loan requested. This gives a loan to value ratio of 90% and ensures the fund has some sort of collateral. It also means the NSP is able to leverage approximately EUR 784,000 of finance from market participants in Sierra Leone's private sector; stimulating market activity, job creation and demonstrated business models for improved stoves.

The revolving loan fund will require EUR 5,159,958 adequately achieve its goal of disbursing EUR 7,061,465 of loans over the five-year NSP. This funding is designed to absorb a number of costs and risks that could materialise throughout the NSP's implementation phase.

- Firstly, it can absorb an anticipated credit default rate of 10%. This equates to an expected loss of 10% of all funds disbursed by the revolving fund. This is in line with other improved stove projects in sub-Saharan Africa, similar to this one. These losses are factored into the financial mechanism and will be absorbed by the revolving fund. The local and regional banks, if involved, will not be exposed to the credit default risk.
- The fund will also absorb expected loan fees of 5%. Again, this 5% rate will be applied to the total funds disbursed by the facility and will cover all the costs incurred by the local and/or regional banks / the organisations responsible for operating the facility.
- Finally, a 2% risk mitigation buffer was applied to the fund, to ensure the fund is capitalised throughout the project's lifetime.
- Other risks will be mitigated through the accompanying technical assistance package, such as awareness raising with consumers and capacity building with the manufacturers and ESCOs, in coordination with the CCDC.

#### *iv. Technical assistance activities*

Technical assistance will be provided throughout the implementation of the NSP and will target three key areas:

- **Massive awareness raising** to ensure wide-spread knowledge of the benefits and available opportunities of improved cook stoves amongst targeted users.
- **Capacity Development** will strengthen the capacity of companies to improve the manufacturing process of improved cook stoves, including for industrial purposes and to better explain and sell their services. As well as producers and manufactures, who will purchase, distribute and deploy the cook stoves.
- **Trainings** for cook stove manufacturers will include technical components, e.g. cook stove construction, making sure the stoves can achieve a technical lifetime of at least 5 years (up to 10 years for industrial stoves) and that there is enough capacity to produce a large number of stoves. This work will be done in coordination with the CCDC who will be involved with the quality assurance of the cook stoves and their verification.

## 2.4 Embedding

[~ 700 words]

Sierra Leone's **Vision 2035** (Agenda for Prosperity) sets the target of Sierra Leone aspiring to be an inclusive, green, middle-income country by 2035. In relation to the NAMA, the Vision 2035 aims at a modern and well-developed infrastructure with reliable energy supplies and private sector-led growth. In more detail, Vision 2035 wants to push the use of solar technologies by rolling out the Barefoot College Solar Strategy to all districts, so that remote areas likely to be off the national grid will have access to affordable and sustainable energy. Furthermore, the Government will investigate opportunities to use off-grid solar power services, and promote the creation of markets for solar technologies through the private sector (such as solar photovoltaic, solar water heating, solar lanterns, solar refrigerators, solar cooking and solar water pumps).

The **NDC** of Sierra Leone states already ongoing GHG mitigation activities of the government, such as expanding clean energy utilization (e.g. solar, mini-hydro power, LPG, biomass stoves etc.). As a long-term target, Sierra Leone intends to present an intensity-based reduction target by 25 to 35 percent compared to 1990, which will be implemented in phases by 2050 (2020-2030, 2030-2050). Strategy #4 of the NDC includes the promotion of energy efficiency, enhanced management and expansion of the energy mix through uptake of renewable energy sources (solar, wind, hydro, biomass) particularly in the rural areas of Sierra Leone.

Improved cooking efficiency will improve the health situation of users, especially women, through reduced smoke inhalation. Less fuel consumption will lead to an increase of the financial situation of households. Less consumption of charcoal will lead to reduced deforestation and degradation of forests, as less charcoal will be needed for cooking.

The NSP will be able to incentivise local and regional businesses to produce, sell and distribute improved cookstoves within a strong institutional setting made possible by the EEPUC project. The valuable work of the project means the CCDC can ensure cookstoves are produced to a sufficient quality, and the energy savings and wood-fuel saving they will generate can support the delivery of the national energy policy and a new bioenergy policy.

The NSP will also complement ongoing initiatives such as the Rural Renewable Energy Project (RREP), which is focusing on the implementation of solar-powered mini-grids.

The NSP is additional as funding for the interventions covered in the NSP is not available in EEPUC and private sector is not ready to implement projects on a commercial basis without the de-risking mechanism implemented in the NSP.

## 3 NSP Ambition

### 3.1 Potential for transformational change

[~ 600 words]

#### **1. Catalytic effect**

By removing existing barriers (via providing tailored financial solutions, technical assistance, putting in place an enabling business environment and awareness raising) the NSP will leverage significant private sector finance by opening up new income streams.

#### **2. Sustainability**

It is expected that the investments will continue after the NSP once market barriers have been removed and a market for improved cook stoves has been developed. The financial mechanisms are aimed at addressing market barriers and will be phased out slowly while continuing offering financing solutions for companies until after the funding is exhausted.

#### **3. Replicability and scalability**

By creating a market for improved cook stoves with private sector participation, the experience gained in providing solutions for improved cook stoves can be used to further expand activities, for example into Solar Home Systems or micro-grids for rural communities focusing on income generating activities.

<p><b>3.2 Financial ambition</b></p> <p>[~ 500 words]</p> <p>Further information in Annex 5</p>	<p>The NSP provides <b>opportunities for investing in GHG mitigation activities</b>, through investing in the production of improved stoves and phase-out conventional stoves. This private sector led approach is essential to ensuring the sustainability of the project and to demonstrating the success of a business model that could be replicated in other countries that have typically faced challenges accessing finance for scaling-up low carbon technologies.</p> <p>The proposed financial support mechanism has been modelled to meet banking and private sector return requirements, which is imperative to make this project attractive to them. This is based on preliminary information which has been gathered so far and will be tested and further developed during DPP.</p> <p>The financial ambition is as follows:</p> <ul style="list-style-type: none"> <li>• EUR 7,338,062 million grant financing from the NAMA Facility will mobilize EUR 784,000 million in private sector investments in improved cook stoves and enable EUR 7,016,465 of affordable loans to be disbursed to businesses in the improved stove market;</li> <li>• Of the EUR 7,338,062, EUR 1.5 million will be used for awareness raising and targeted technical assistance, and EUR 5,159,958 for the financial mechanisms;</li> <li>• The Ministry of Energy will provide in-kind contributions.</li> <li>• Required down-payment from business borrowers of 10% of total loan requested. This gives a loan to value ratio of 90% and ensures the fund has some sort of collateral. It also means the NSP is able to leverage approximately EUR 784,000 of finance from market participants in Sierra Leone’s private sector</li> </ul> <p><u>Financial contribution from the public sector:</u></p> <p>This NSP is designed to empower and stimulate private sector investments and demonstrate the success of a business model that can be operated by cook stove manufacturers. Therefore, besides from the initial grant from NAMA Facility, it doesn’t require funding from other public entities. The Government of Sierra Leone will contribute to the project by providing staff time, office space and equipment. However, they will not make financial contributions to the project, nor does the business model require them to.</p> <p>Another reason for the lack of financial contributions from the public sector is due to a lack of available resources within the Government of Sierra Leone, especially in light of the COVID-19 pandemic. COVID-19 is exerting more pressure on government the budgets and resource availability, especially in heavily affected countries like Sierra Leone. As a result, the Government is likely to need its scarce resources for immediate needs, such as investing in health care systems in light of COVID-19. Overall, the proposed NSP enjoys strong Government support but it is anticipated the Government does not have available financial resources to allocate towards the project.</p> <p><u>Financial contribution from the donors:</u></p> <p>The NSP doesn’t envisage financial contribution from donors other than the NAMA donors.</p>
<p><b>3.3 Mitigation ambition</b></p> <p>All assumptions and calculations are presented in Annex 6</p> <p>[~ 200 words]</p>	<p>The GHG mitigation potential is based on the replacement of old, inefficient stoves with improved cook stoves in three different target groups (households, institutional, industry). The number of stoves installed is based on the assumption of an increase of the penetration rate in the household section by 20% within the 5 years of the NSP. Institutional stoves and industry stoves are also based on the number of households, expecting 1.5% of the HH stove numbers for institutions and 0.125 for industry. Over the 5 years, the following steps of implementation are expected:</p> <p>Year 1: 5%</p>



Year 2: 10%  
 Year 3: 20%  
 Year 4: 30%  
 Year 5: 35%

The stove numbers applied for the calculations can be found at the end of this calculation sheet. Information on efficiency of baseline stoves is taken from the UNDP-GEF EEPUC project, the figures are in line with or higher than the default efficiency in AMS-II.G. Expected efficiencies of improved stoves are based on the UNDP-GEF Project EEPUC, but have been reduced by 25% to be conservative. To accommodate reductions in efficiency and/or reduction in numbers of active stoves due to repair or breakdown, an annual drop-off rate of 5% was considered.

**Summary table from Annex 6:**

	Direct mitigation potential		Indirect mitigation potential	
	NSP Implementation	10 years after NSP end	NSP Implementation	10 years after NSP end
	tCO <sub>2</sub> e/a	tCO <sub>2</sub> e/a	tCO <sub>2</sub> e/a	tCO <sub>2</sub> e/a
Year 1	29,750		0	
Year 2	87,761		0	
Year 3	202,371		0	
Year 4	370,750		0	
Year 5	560,460		0	
Year 6	0	532,437	0	0
Year 7		505,815		0
Year 8		480,524		0
Year 9		456,498		0
Year 10		433,673		0
Year 11		411,989		0
Year 12		391,390		0
Year 13		371,820		0
Year 14		353,229		0
Year 15		335,568		0
Year 16		0		0
<b>Average</b>	<b>250,218</b>	<b>427,294</b>	<b>0</b>	<b>0</b>
<b>Total</b>	<b>1,251,092</b>	<b>4,272,944</b>	<b>0</b>	<b>0</b>
<b>Grand total</b>	<b>5,524,037</b>		<b>0</b>	
<b>Over technology lifetime:</b>				
<b>Average</b>	<b>0</b>	tCO <sub>2</sub> e/a	<b>0</b>	tCO <sub>2</sub> e/a
<b>Total</b>	<b>0</b>	tCO <sub>2</sub> e	<b>0</b>	tCO <sub>2</sub> e

#### 4 Expected Budget and Financing Structure of NSP Implementation Phase (in EUR)

##### Overall cost and financing contributions for the Implementation Phase (Estimate)

*This budget should not include costs for the DPP.*

*Please estimate the financing contributions for the implementation of the overall NSP from the different financing sources. (double click on the table allows working in excel)*



NSP - Implementation	Total cost	NAMA Facility	National budget	Private sector	Other donors	Total finance
1. Financial mechanism(s)						-
1.1 Concessiona debt provided by revolving loan	5,159,958	5,159,958		784,000		5,943,958
2. TA (Expert services / consulting)	1,500,000	1,500,000				1,500,000
3. Other direct and indirect costs (8% GMA, 1% UN Levy, 1% NSP Evaluation)	678,104	678,104				678,104
<b>Total &lt;gross&gt;</b>	<b>7,338,062</b>	<b>7,338,062</b>	<b>-</b>	<b>784,000</b>	<b>-</b>	<b>8,122,062</b>

Please be aware that 1% of the requested NF funding needs to be reserved for the NSP evaluations (mid-term and final evaluation) as part of '3. Other and indirect costs' in the table above.