PROGRAMME DOCUMENT (AMENDMENT 1)

ACCESS TO CLEAN ENERGY FOR THE POOR THROUGH MICROFINANCE (CLEANSTART)

Geographical Coverage: Global

Programme Goal: Contribute to the achievement of Sustainable Development Goals (SDGs) on affordable and clean energy (SDG 7), poverty and hunger (SDG 1 and 2), health (SDG 3), education (SDG 4), gender (SDG 5), and climate action (SDG 13).

Programme Outcome: By end of programme, increased sustainable access to clean and affordable energy by more than 2.5 million people (low-income households and micro-entrepreneurs) through inclusive finance.

Programme Outputs:

1. **Finance for Clean Energy** to strengthen capabilities of 18 FSPs in 6 countries to provide finance for clean energy to low-income households and micro-entrepreneurs;
2. **Technical Assistance for Clean Energy** to remove barriers and support institutions to the successful deployment of those technologies and services for which the selected FSPs will provide financing;
3. **Global Knowledge and Learning** to enhance understanding and awareness globally of the potential for financing to scale-up access to clean energy and make available the tools and knowledge needed to scale-up access to clean energy beyond the project; and
4. **Advocacy and Partnerships** to create an enabling policy and business environment to expand finance for clean energy.

Brief Description

The purpose of CleanStart is **to improve energy access and contribute to the reduction of carbon emissions. This is done by assisting poor households and micro-entrepreneurs to obtain access to sustainable low-cost, clean energy through financing.** It is envisioned that CleanStart will create a replicable business model for wider scale up across other developing countries by adopting an integrated approach to addressing demand and supply-side barriers. The estimated cost of CleanStart is USD 26.1 million over nine years.

Programme Duration: 9 years

Start/end dates*: Jan 2012-Dec 2020

** Includes the Project Initiation Plan (PIP) duration which commenced in January 2012*

Agreed by United Nations Capital Development Fund

Signature: Judith Karl

Judith Karl, Executive Secretary

Date: 26 Oct 2016

Total estimated budget*:	**US$26,193,525**
1. Funded Budget:	**US$ 15,154.722**
• UNCDF	US$ 1,000,000
• Other	
○ Sida**	US$ 9,999,664
○ Norad	US$ 3,658,153
○ Liechtenstein	US$ 107,924
○ Austria	US$ 389,611
2. Unfunded budget:	**US$ 11,038,803**

** Includes the Project Initiation Plan (PIP) duration which commenced in January 2012*

***For more details please see RRF*

Acronyms

AA	Administrative Agent
BoP	Base of the Pyramid
DIM	Direct Implementation
DESCO	Distributed Energy Service Company
EDI	Energy Development Index
FIPA	Financial Inclusion Practice Area
FSP	Financial Service Provider
GEF	Global Environment Facility
GHG	Greenhouse Gas
GOGLA	Global Off-Grid Lighting Association
GCF	Green Climate Fund
IC	Investment Committee
IEA	International Energy Agency
kWe	kilowatt (electric power)
Kwh	kilowatt hour
LDC	Least Developed Country
LED	Light Emitting Diode
LPG	Liquefied Petroleum Gas
SDG	Sustainable Development Goals
FSP	Financial service provider
MFP	Multifunctional Platform
MIC	Middle Income Country
NAMA	Nationally Appropriate Mitigation Actions
NGO	Non-Governmental Organisation
O&M	Operations and Maintenance
ODA	Official Development Assistance
PAR	Portfolio at Risk
PAYG	Pay-as-you-go
PBA	Performance-based Agreement
PIU	Programme Implementation Unit
PoA	Programme of Activities
PPOP	Programme and Operations Policies and Procedures
PV	Photovoltaic
RFP	Request for Proposal
RTA	Regional Technical Advisor
SBAA	Standard Basic Assistance Agreement
SHS	Solar Home System
SMART	Specific, Measurable, Achievable, Relevant, Time-bound
TA	Technical Assistance
ToT	Training of Trainers
UN EAF	UN Energy Access Facility
UNCDF	UN Capital Development Fund
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
WHO	World Health Organisation

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1. Executive Summary

Energy is central to nearly every major challenge and opportunity the world faces today. Whether it is jobs, security, climate change, food production or poverty, sustainable energy for all is essential for strengthening economies, protecting ecosystems and achieving equity. In recognition of the importance of energy for sustainable economic development, UN Secretary-General Ban Ki-moon has launched a new global initiative, *Sustainable Energy for All*. This initiative calls for private sector and national commitments and attract global attention to the importance of energy for development and poverty alleviation. The goal is to meet three objectives by 2030:

1. ensuring universal access to modern energy services;
2. doubling the rate of improvement in energy efficiency; and
3. doubling the share of renewable energy in the global energy mix

The United Nations General Assembly has designated 2012 as the **International Year of Sustainable Energy for All**.

In an effort to help achieve these objectives, the UN Capital Development Fund (UNCDF) will invest USD 26.1 million[1] over 9 years (2012-2020)[2] to establish and operate a global programme to **create finance opportunities for a clean energy future for low-income people.** The programme will be called **CleanStart** for short to describe clean pathways for poor people to move out of energy poverty and to jump-start their permanent access to modern energy through access to sustainable financial services, supported by an enabling policy environment and energy value chain that responds to their needs. The programme aims to support at least 2.5 million people to move out of energy poverty by 2020.

One out of every five people (1.6 billion) on Earth lives without access to electricity and the opportunities it provides for working, learning, or operating a business. Twice as many – nearly 3 billion people – use wood, coal, charcoal, or animal waste to cook their meals and heat their homes, exposing themselves and their families to smoke and fumes that damage their health and kill nearly 2 million people a year.[3] Developing countries in Asia and Africa account for the vast bulk of these populations (more than 95%). Energy poverty is a serious obstacle to achievement of the Sustainable Development Goals (SDG), given that people living on less than USD 2-a-day spend a large proportion of their annual income (some 15%-30%) on meeting the cost of energy. Women and girls are particularly affected by the lack of reliable and affordable modern energy due to their traditional roles, household responsibilities and social and political status.[4]

Addressing the enormous energy challenge faced by the developing world requires a series of more integrated and significant investments. Investment of $48 billion per year will be needed to provide universal energy access by 2030. This is more than five times the level of investment in 2009 to expand energy access ($9.1 billion) but represents only 3 percent of total global energy investment. Only $4-5 billion per year of that total is needed for clean cooking facilities.[5] In a context in which the international outlook for ODA is dim, it is increasingly evident that **fostering market-based solutions and mobilizing the private and financial sectors will be critical to achieve progress in energy access, particularly in terms of 'clean' energy.**

Many poor people in rural areas lack modern energy because the grids simply do not reach them. In urban and peri-urban areas, the issue of connecting poor people residing in illegal settlements remains the single biggest inhibitor to enabling access to energy to the poor. These challenges and the failure of governments and markets to address them have seen the growth of decentralized energy solutions based mostly on fossil fuel such as diesel-fuelled micro-grids and liquefied petroleum gas. This interest has generated important technological innovations, creating new possibilities and opportunities for poor families to access clean energy through off-grid and grid-

[1] Total estimated budget includes both programme costs and indirect support costs
[2] Includes the Project Initiation Plan (PIP) duration which commenced in January 2012
[3] Vision Statement by Ban Ki-moon Secretary-General of the United Nations, Nov 2011
[4] Gender and Energy for Sustainable Development: A Toolkit and Resource Guide, UNDP, 2004
[5] Vision Statement by Ban Ki-moon Secretary-General of the United Nations, Nov 2011

complementary clean energy solutions. The total Base of the Pyramid (BoP) household energy market in Africa and Asia alone is estimated to be approximately USD 380 billion[6].

However in both urban and rural areas, the upfront costs of equipment and recharging and refilling are obstacles to uptake by the poor, leading to underdeveloped markets and weak supply chains. In countries with growing infrastructure for clean energy systems and services, efforts to expand the provision of clean energy at the village or township level now depend less on the technology and more on improved financing models to make energy accessible and affordable to low-income consumers, backed by a policy environment and energy value chain that is focused on reaching the poor.

Appropriate financing arrangements – combined with quality assurance measures and technical advisory services tailor-made to the type of technology demanded by the profile of the customer to be targeted – are therefore key to overcoming this market failure. In countries with mature microfinance markets, financial service providers (FSP)[7] are well placed to supply such financial products provided certain business model assumptions are validated.

FSPs are by virtue focused on expanding outreach to the poor, and therefore have unrivalled knowledge of, relationships with and access to low-income people. Clean energy has the potential to improve the quality of a financial institution's existing loan portfolios as well as to create a new, higher-return "star" segment of the market. Carbon finance markets [8] – particularly via programmatic approaches (such as Programmes of Activities) – represent a potential additional incentive for financial institutions (and their clients) to engage with clean technologies, since they could facilitate considerable emission reductions (and in turn generate revenue from carbon credits) by bundling hundreds, thousands and even millions of individual, similar activities that by themselves have in the past been too small to incur the often costly carbon credit certification processes.

However, even with such incentives many FSPs may be reluctant to enter the clean energy market or test a new business model due to lack of familiarity with the technologies involved and perceived risk.

The purpose of CleanStart is **to improve energy access and contribute to the reduction of carbon emissions. This is done by assisting poor households and micro-entrepreneurs to obtain access to sustainable low-cost, clean energy supplies through financing.** It is envisioned that CleanStart will create a replicable business model for wider scale up across other developing countries by adopting an integrated approach to addressing the following demand and supply-side barriers.

- **Information/knowledge barriers (demand-side),** lack of awareness and education of end-users on the specific clean energy applications
- **Institutional barriers (supply-side),** lack of market-enabling ecosystems such as national policies for clean energy access, e.g., financial and other incentives for suppliers
- **Technical barriers (supply-side),** low quality products and domestic operations and maintenance (O&M) capacity**• Financial barriers (both demand and supply-side),** this is the primary goal of CleanStart, i.e. to remove financial barrier to clean energy access via partnerships with FSPs and leveraging market-based funding mechanisms.

Clean energy: In the context of CleanStart, clean energy includes renewable energy solutions, low-GHG emitting fossil fuels (e.g. LPG), and traditional fossil fuels that, through the use of improved technologies and practices produce less CO_2 emissions (e.g. improved cook stoves).

[6] "The Next 4 Billion: Market Size and Business Strategy at the Base of the Pyramid", World Resources Institute, 2007.
[7] In the context of CleanStart, Financial Service Providers include financial institutions, distributed energy service companies (DESCOs) and other providers that provide wholesale or retail financing for clean energy.
[8] The global carbon credit market effectively collapsed by the end of 2012, yielding less than USD2 per metric ton, limiting its potential as a revenue stream.

The CleanStart programme will be delivered through **4 outputs**:

1. Finance for Clean Energy: to expand the end-user finance available to poor people to meet their energy needs on a sustainable basis. This will initially involve building the capabilities of 18 FSPs across 6 countries by providing risk capital grants and / or concessional loans for clean energy financing. The risk capital grants will cover the up-front cost of market entry for FSPs, while concessional loans will provide liquidity for clean energy loans and working capital, where necessary. The remaining liquidity required for energy financing will be leveraged through a combination of FSPs' own equity and credit lines from commercial banks and other available wholesale funds and investors. Alternatively, CleanStart may assist with setting up a guarantee mechanism or credit enhancement scheme to facilitate targeted liquidity for FSPs (for energy lending). It will further seek partnerships with additional organizations that can provide credit guarantees or follow-up financing of different kinds.

2. Technical Assistance for Clean Energy: to remove energy supply-chain barriers that in effect fail to match energy supply with latent demand for energy technologies and services. The overall approach will be to move away from a dominant technology-focused approach to a more technology-neutral and client-need focused approach. In practice, this will mean rigorous diagnostic to identify client need and demand, assessment of capability of the energy supply-chain to respond to identified demand, and deploying technical assistance to ensure that the energy supply chain most effectively responds to client need, including at the end-user knowledge level through substantial end-user awareness of the benefits of new fuels and technologies provide and of how to use them; at the energy company/supplier level to improve understanding of demand and adaptation of energy technologies and services to the needs of low-income clients; at the energy support service level through improved quality assurance and capability to effectively and reliably install and maintain technologies and services; and at the end-user finance level through improving FSPs' understanding of client energy and financing needs and developing appropriate energy financing to end-users. The nature and intensity of the technical assistance will differ depending on the development stage of partners and the business idea.

3. Knowledge and Learning: to improve knowledge, skills and learning in the field of financing for clean energy on a global scale. This will involve two different strategies. Firstly, through research grants and communication to expand the knowledge available on best practices and tools to design and manage energy financing effectively. Secondly, where appropriate, through partnerships with internationally recognized microfinance training institutions and national microfinance associations with the aim of building a critical mass of trained microfinance professionals in energy lending.

4. Advocacy and Partnerships: to bring greater coherence and focus to efforts of key actors in creating enabling policy and business environments for FSPs and their partners to expand the scale of their operations. As noted in a recent UN Internal Panel on Climate Change special report on renewable energy, the number of people without access to modern energy services is expected to remain unchanged unless relevant domestic policies are implemented, which may be supported or complemented by international assistance as appropriate.

This output will involve collaboration with and targeted advice to three different sets of players. Firstly, with institutions or bodies supporting the development of energy policy and regulatory regimes, as well as energy value chains; secondly with commercial banks and wholesale financing institutions that refinance microfinance portfolios and invest in and lend to energy companies and service providers; and lastly new market-based funding mechanisms such as carbon finance brokers and the Green Climate Fund (GCF).

CleanStart will also establish and convene on an annual basis a *Global Clean Energy Finance Partnership Forum* which will be a voluntary forum comprised of international funding agencies, investors, clean energy technology companies, and leading implementers of end-user finance for low-income people and micro-entrepreneurs.

CleanStart has, since 2015, sharpened its approach to achieving these outputs (which is described in more detail in section 3.4) and involves a broader definition of Financial Service Providers as well as an investments driven approach, with an aim to better achieve outreach and client focus, as well as financing sustainability of enterprises.

The estimated cost of CleanStart is USD 26.1 million[9] over nine years. USD 1 million of this would come from UNCDF, USD 9.99 million from SIDA, USD 3.65 million from Norad, USD 0.107 million from Liechtenstein and USD 0.389 million from Austria -- enabling other development partners to co-invest an additional USD 11.04 million to cover the full cost of the programme.

Approximately USD 7.7 million would be disbursed as **pre-investment advisory assistance and risk capital grants for FSPs** and as **concessional loans**. T**echnical assistance for clean energy** will be USD 7.6 million. Support to **knowledge and learning** will cost USD 2.4 million and **advocacy and partnerships** will be USD 2.2 million. **Global programme implementation** will be USD 6.2 million.

The pilot countries to be selected demonstrate key characteristics that provide the most favourable environment for clean energy financing through FSPs, namely countries that combine a mature microfinance market with a developed clean energy infrastructure. Provisional candidate countries include ***Bangladesh, Cambodia, Nepal, Philippines, Ethiopia, Kenya, Malawi, Mali, Tanzania and Uganda.***

Long-term vision

The key outputs of this first phase of CleanStart (2012-2020) – outlined in this document – are pivotal to achieve the programme's long term vision: to dramatically scale up energy financing for the poor, without subsidies, beyond the initial six LDCs and also other developing countries with high levels of energy poverty. This would be built on:

- financing business models which CleanStart will have tested and validated;
- a critical mass of technical and managerial capabilities available well beyond the initial six countries;
- all clean technologies commercialized meeting a requisite level of technical assurance and minimum standards ;
- specific understanding of the linkages and potential for additional revenue streams such as market-based carbon financing to be leveraged into the business models developed;
- a large and growing body of knowledge of good practices and tools (built on lessons learned and empirical data) needed to expand reach and effectiveness;
- a group of major funders and investors of energy access and financial inclusion that are more aware of how their actions can best support poor people's access to energy on a sustainable basis;

It is expected that, demonstrated values for FSPs such as improved viability of core financial products and higher rate of revenue; a more enabling policy and business environment in support of clean energy financing; and improved productivity and ability to repay microfinance loans as the poor break out of energy poverty, will ensure the sustainability of development results beyond the life of the programme.

[9] Total estimated budget includes both programme costs and indirect support costs

2. Situational Analysis

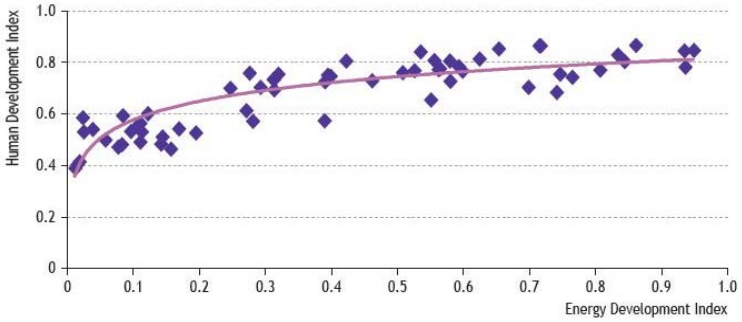
2.1 The Persistence of Energy Poverty

Energy is at the heart of every challenge and opportunity the world faces today. The rate of electrification and use of traditional fuels for cooking are two of the most commonly used indicators to assess the reach and the lack of access to modern energy ('energy poverty'). By these benchmarks, only 1.6 billion people or a little over a quarter of the world's population does not have access to modern energy services[10] such as electricity in their homes. Additionally, more than 2.4 billion people rely on traditional biomass to serve their energy needs for cooking, heating and other household thermal needs. This dependence on traditional fuels is likely to remain a reality given its present level of use[11]. However, it is not so much their use that is problematic but the current manner in which they are being utilized that is unsustainable. The use of inefficient combustion technologies result in not only the production of indoor smoke pollution which has significant health impacts but also mean that fuel wood resources are also unnecessarily wasted.

According to the International Energy Agency (IEA) the outlook for the coming decades is bleak. Based on current investment plans and approaches to expanding energy access, the number of people without electricity will decline by only 200 million to 1.4 billion people in 2030 compared to 2000, while the numbers of people relying on traditional biomass is set to rise from 2.4 billion people in 2000 to 2.8 billion people in 2030. Most of these people who will continue to suffer the effects of energy poverty will live in South Asia and Sub-Saharan Africa[12].

Lack of access to modern energy services is amongst the chief reasons why many people of developing countries have not been able to break the vicious circle of poverty. It is also one of major limitations to achieving the Sustainable Development Goals (SDGs) as unequal access to modern energy is closely correlated with wider inequalities in opportunities for human development. ,It is clear that the widespread lack of access to modern energy services among the poorest acts as a severe impediment to progress in meeting most of the SDGs. Women and girls are particularly affected by the lack of reliable and affordable modern energy due to their traditional roles, household responsibilities and social and political status.[13] It is evident that unequal access to modern energy closely correlates with wider inequality in human development (Figure 1).

Figure 1. Comparison of Human Development Index to Energy Development Index[14]



[10] 'Modern energy services' are defined as including (a) electricity; (b) modern fuels to meet cooking needs (electricity, liquid fuels including LPG, natural gas, kerosene, ethanol and biofuels, but excluding traditional biomass such as firewood, charcoal, dung, crop residues and coal); and (c) mechanical power for productive, non-industrial applications such as water pumping and small-scale agro-processing (UNDP, 2009b).

[11] Use of traditional biomass resources for household needs such as cooking and heating reaches over 95% in some countries.

[12] IEA World Energy Outlook, 2010

[13] Gender and Energy for Sustainable Development: A Toolkit and Resource Guide, UNDP, 2004

[14] OECD./IEA World Energy Outlook 2010, Figure 8.17, 265. The Energy Development Index (EDI) has been developed by the IEA as an indicator that tracks progress in a country's or region's transition to the use of modern fuels. This serves as a measure for energy poverty and helps to better understand the role that energy plays in human development.

Smoke from kerosene and biomass combustion has direct impacts on health (SDG 3). The 570 million households that continue to depend on traditional biomass for their energy needs are exposed to high levels of indoor air pollution that leads to higher mortality (some 35% more than for electrified houses) and morbidity. Smoke from inefficient stoves in poorly ventilated homes kills 1.6 million people each year, the majority of whom are women and children younger than five years.[15] By 2030, household air pollution from biomass use in inefficient stoves is still likely to cause over 1.5 million premature deaths every year (over 4,000 per day).[16] In addition to the health burden, fuel collection can impose a serious time burden on women and children (SDG 5). Women spend 4-6 hours a day collecting firewood. Many children, especially girls, do not attend primary schools because they have to carry wood and water to meet family subsistence needs. Furthermore, illumination is essential for studying after dusk and teachers have been found to prefer rural areas with electricity at home and at schools.

Furthermore, the chronic lack of access to cleaner and more sustainable energy supplies has major implications for economic growth by restraining the productive capacity of micro-entrepreneurs and rural supply chains (SDG 1). In a study of rural electrification in the Philippines, the total benefit of providing domestic electricity to a typical, non-electrified Filipino household was found to be US$81–US$150 per month, mainly from time saved collecting fuel and improved productivity of home businesses[17]. Moreover, many traditional energy sources are inefficient and result in higher CO_2 emissions than either grid electricity or modern, off-grid alternatives (SDG 7). Increasing demand for fuel wood leads to deforestation, causing further impacts on CO_2 emission and absorption.

Efforts by governments of developing nations in the last four decades, to increase access to modern energy tended to focus on rural electrification programmes. However, these programmes typically involve extending the grid incrementally, moving from large demand centres to smaller ones, reaching towns and settlements in order of increasing capital costs. The farther an area is from the existing grid, the more dispersed and the poorer its population, the greater the technical and economic difficulties faced by energy supply utilities that have to operate on financial sustainability principles in order to remain viable. Therefore, large numbers of poor people in rural areas still remain without access to electricity. Furthermore, the unsuitability of electricity for cooking and heating in developing countries (particularly in rural areas) means that this approach does not address the energy need which most affects people's lives, in particular those of women and girls[18]. In urban and peri-urban areas the issue of connecting poor people residing in illegal settlements remains the single biggest inhibitor to enabling access to energy to the poor.

2.2 The Potential of Decentralized Clean Energy

The failure of governments to achieve significant rates of rural electrification in many countries has seen the growth of mostly fossil fuel based off-grid energy solutions such as diesel fuelled micro grids and LPG. Unregulated micro-grids based on diesel are a common phenomenon where entrepreneurs with a power generator provide service to a local community. A relatively small investment in a US$250 Honda generator set (of around 0.5 kWe) enables recharging services to be provided at fairly low costs. In some countries a Chinese-made, 0.65 kWe gasoline generator can be bought for less than US$50. This low barrier to entry has enabled a highly competitive industry to develop. However, concerns over energy security, oil price volatility and climate change are driving efforts to find energy solutions based on clean energy sources.

[15] WHO, 2005

[16] IEA, UNDP and UNIDO, 2010. Comparatively, 1.8 million people died of AIDS-related illnesses worldwide in 2010 (WHO website accessed on 30 May 2012)

[17] "Financing Options for Renewable Energy", UNDP, 2008

[18] "Towards an 'Energy Plus' Approach for the Poor", UNDP, 2012

Off-grid Renewable Energy Solutions

This interest has generated important technological innovations, creating new possibilities and opportunities for poor families to access clean energy. They include the following:

- High-efficiency white light-emitting diodes (LED) and practical low-power lighting units incorporating them;
- Small-scale solar (PV) units for low-cost, small-scale electricity production;
- Micro hydroelectric installations and wind turbines;
- Standardized design and construction of biogas units for households;
- Cleaner, high-efficiency biomass cook stoves;
- Upgrades of traditional water mills for grinding and milling grain; and,
- Treadle pumps, which harnesses human power in an effective way for high-value uses.

Grid-Complementary Solutions

Beyond these grid-substituting technologies, there is also growing interest in grid-complementary solutions whereby unconnected households have access to applications that require the use of the electricity and gas grids for recharging or refilling energy applications. This is particularly the case in urban areas where grids are present but poor households are unconnected because of legal settlement issues among other things. Energy service companies offer powerful batteries, sometimes at a price and sometimes for free, and charge a recharging fee to customers to enable them to continue to power lights, TVs, water heaters, fans and other household and retail applications. Similar services are offered by gas companies through, for example, LPG gas canisters. (Annex 2 presents an overview of the many options available for clean energy and renewable/fossil-fuel hybrid systems, together with associated economic and social applications.)

With increasing production scale and ongoing technical development, clean energy equipment has become more available and with better performance and operating life. The same is true of the components needed for clean energy systems, such as inverters, charge controllers and voltage regulators, as well as efficient end-use equipment such as LED lighting fixtures. Clean energy systems are also becoming progressively less expensive both in absolute terms and also relative to most popular fossil-fuel alternatives[19].

Solutions using Pay As You Go (PAYG)[20] have also dramatically changed possibilities for consumer financing since 2013. New business models have developed in East Africa and India that use mobile payments and related platforms to expand their financing options for consumers. Often these are led by Distributed Energy Service Companies (DESCOs). As a disruptive business model in the energy access sector, these business models offer tremendous new opportunities for financing and outreach expansion.

[19] World Bank, 2005

[20] PAYG "allows the end-user to pay for various technologies in affordable instalments and incorporates a technology-enabled mechanism to disable the system if a payment is overdue." Source: Off-Grid Solar Market Trends Report 2016, Lighting Global and Bloomberg New Energy Finance in partnership with Global Off-Grid Lighting Association

2.3 Benefits of Low-Cost Clean Energy

Benefits to the poor

Low-income households and micro-enterprises can gain four key benefits from adopting clean energy systems: 1) reductions in energy expenses, 2) increases in net incomes from income generating activities and micro-enterprises, 3) reductions in overall household expenses particularly expenses related to health, and 4) savings in time and effort.

The following are some illustrative examples of the benefits of using clean energy:

- The introduction of Solar Home Systems (SHSs) in Bangladesh and Nepal led to reductions in expenditure on kerosene and dry cells by 30 percent and 50 percent respectively.
- In Sikkim, a state in northeast India, over 150 cardamom growers have increased the value of their produce by drying it using biomass gasifiers. Cardamom dried in this way conserves its natural colour, contains 35 percent more oil, and does not smell burned, as does cardamom dried using the traditional method. It fetches prices 10–20 percent higher in local trading centres. The technology makes the working atmosphere healthier, and the more efficient combustion of fuel wood brings savings of 50–60 percent. Low-cost gasifiers similar to those used in Sikkim can be used for other produce such as tobacco, ginger and cashews. Efficient lighting also extends working hours by allowing shops and businesses to stay open beyond daylight hours.
- According to a WHO study in 2006, if 50% of the population cooking with solid fuels in 2005 switch to cooking on an improved stove by 2015, this will generate USD 65 million in health care savings.
- Around 80 percent of the expenditure on energy services by poor people is on fuel for cooking. Studies show that the majority of the developing world's poor spend 20 percent or more of their monthly income to obtain wood and charcoal. There is ample evidence that the introduction of technologies such as biogas and improved cook stoves brings about significant reductions in workload in the collection and processing of fuel wood, as well as in cooking, and saves time. These benefits are particularly relevant for women and girls given they are most often primary providers and users of traditional fuels in developing countries. The extent of time saved in fuel wood collection is in the 40-50 percent range, and can amount to as much as 4 to 8 hours per day. Time saved in cooking seems to be the highest reported benefit from improved stoves. Cooking time is saved because of factors such as the ability to use two pots at the same time and to raise the cooking temperature quickly, as well as greater heat efficiency among other factors.
- A benefit that is widely perceived of the use of electric lighting at home is increased study and reading hours for children; there is also anecdotal evidence of improved school enrolment. In fact, in many areas, this is a frequently reported benefit of electrification. Among rural households in Nicaragua, 72 percent of children living in a household with electricity attend school, compared to 50 percent of those living in a household without electricity. Studies have also found improved school performance by children in Fiji and Solomon Islands, and Bangladesh.[21] All the case studies (that provided improved lighting through microhydropower or through SHSs) carried out for this study reported that children were able to put in an additional 1-1.2 hours of study at home, once light was available.

[21] Sauturaga 2004; Barkat et al. 2002

Developing Effective Approaches for Scaling Up Renewable Energy Service Delivery at a Local Level

UNDP helps to strengthen institutional capacity to deliver modern energy services at the local level. Successful local energy projects are documented and then can be scaled up and replicated elsewhere – a process encouraged through regional exchange of 'good practices'. These examples reflect a commitment to mobilizing knowledge globally and applying it locally.

More than 1,600 multifunctional platforms (MFPs) have been installed in Burkina Faso, Ghana, Guinea, Mali, Niger, Senegal and Uganda, benefitting some 2.4 million people with access to mechanical power for agro-processing from simple diesel or biodiesel engines. The introduction of MFPs, with UNDP support, saved women two to four hours a day on domestic drudgery such as collecting water and fuel and grinding and milling staple foods. On average, each woman's annual income increased by $45.

In Nepal, a micro hydro power programme supplied electricity to 250,000 people in off-grid rural communities. The cost of developing national and local capacities to manage the rural decentralized energy system added up to more than half the total programme cost, yet created conditions crucial for scaling up.

Fuel-efficient smokeless stoves in 55 poor villages on the edge of a forest reserve in Pakistan reduced tree-cutting and improved indoor air quality in a project that has constructed nearly 12,000 stoves, in a project with initial support from GEF Small Grants Programme and scaled up by UNDP/GEF and other partners. Families now buy 50 percent less wood than before, resulting in saved income and reduced health risks.

Through a pilot scheme that is part of a UNDP/GEF project in Lesotho, a total of more than 1,500 solar home systems have been installed in three mountainous districts far from the grid with low load density. As a result of awareness building campaign on the benefits of PV, the number of solar home systems installed nationwide has increased by almost 2,500 units.

Source: UNDP

Potential for Reduction in Carbon Emissions

Adoption of clean energy by the poor can contribute significantly to reducing CO_2 emissions. A traditional cook-stove, for example, emits about a tonne more CO_2 per year than a more energy efficient cook-stove. On a global scale, this translates to the avoidable emission of almost 500 million tonnes of CO_2 every year and this is expected to increase close to 600 million tonnes by 2030. Similarly, a typical household using eight litres of kerosene per month – the preferred source of lighting for the vast majority of people without access to modern energy supply – produces about 0.24 tonnes of CO_2 every year, while the introduction of a small package of solar home system and end-use equipments to power about 6 hours of light, a DC fan, and charge mobile phones emits approximately 0.005 tonnes CO_2 per year. On a global scale, this translates to potential reductions of 75 million tonnes of CO_2 emissions per year. Africa alone has the potential to generate emission reductions of over 600,000 tonnes of CO_2 per year by implementing small scale PV projects in isolated areas.

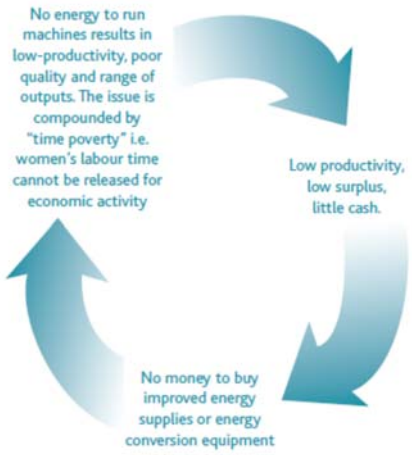
3. Programme Strategy

3.1 The Need for End-User Finance

Energy poverty is a serious obstacle to achievement of the Sustainable Development Goals, given that people living on less than USD 2-a-day spend a large proportion of their annual income (some 15%-30%) on meeting the cost of energy. **While clean energy sources clearly provide development benefits to the poor, there are numerous barriers to scaling-up access to clean energy**. These include informational, institutional, technical, regulatory and financial barriers (see Annex 3 for a list of common key barriers). **Prime among them is the high up-front cost for consumers and the lack of end-user finance schemes tailored to poor consumers.** Access to sustainable sources of clean, reliable and affordable energy relates not only to physical infrastructure (e.g. electricity grids), but also to energy affordability, reliability and commercial viability. In practical terms, this means delivering energy services to households and businesses that are in line with consumers' ability to pay.

Large numbers of people suffer from a "vicious cycle" of energy poverty where they are energy poor because they do not have the means to buy improved energy services, even when they have access to them. Furthermore, even people who can afford improved energy supplies still may not be able to afford the capital cost of household conversion that makes the energy useful (for example, a stove, radio, light bulb or motor). Increased access to cash is crucial because improved energy services at the household level frequently necessitate switching to an energy technology that costs money from one that does not. In addition, there is frequently a net increase in household expenditures because people make more use of the improved energy services.

Figure 2: The vicious cycle of energy poverty[22]



End-user Finance Models

There is evidence that the continued growth in clean energy markets, which were initially based on sales to people living above the poverty line in urban or peri-urban areas[23], is constrained by a **lack of appropriate end-user finance to reach new market segments.** End-user financing takes many different forms but four basic models can be recognised: 1) dealer cash-sales, 2) consumer credit through commercial banks, 3) consumer credit through micro-finance institutions and the 4) fee-for-service model where the equipment remains the property of the service provider. Annex 4 provides descriptions of each model with examples.

[22] UNIDO 2005
[23] UNDP, 2008

By volume of sales, the dominant model is the supplier model based primarily on cash sales and consumer credit model through commercial banks. However, cash sales without credit facilities present a barrier to adoption by the poor, while supplier-credits provided by energy-service-companies have inherent limits because they tend not to have specific lending or leasing expertise that financial institutions have, and also because providing supplier-credit is a significant drain on costly working capital for the energy-service-companies.

Similarly, while financing solutions through conventional banks can play a critical role in supporting the commercialisation of household clean energy technologies, they are unlikely to be the main drivers of providing end-user finance to low-income consumers because of conservative banking practices, the high transaction costs of delivering financial services to distant dispersed communities and the very small margins on micro-loans. Traditional commercial banks may however have an important role in providing secure credit-lines to organisations whose traditions, mission and systems pose fewer barriers to lending to low-income people – namely financial service providers.

Given the inherent scale-limits of models based on cash-sales, growth is constrained by limits on the availability of credit, by specific features of existing credit products that are more tailored towards the needs of mostly high-middle income consumers and by the transaction costs faced by energy-service-companies and traditional banks in delivering both the systems and the finance to low-income consumers living mostly in rural areas. **Appropriate financing arrangements are thus critical to overcoming this market failure.** Several projects introduced in relatively poor developing countries succeeded scaling up of decentralised clean energy solutions such as solar home systems, household biogas units and community based micro-hydro power through a combination of technology promotion, technical assistance and financial support. In almost all cases, public investments are used to provide a partial subsidy, to enforce standards and to leverage quality control. The private sector provides the technology often under warranty, as well as repair and maintenance services, while appropriately structured end-user-financing by FSPs, NGOs or banks enable poor consumers to purchase clean energy systems or services. Clients typically use loans to pay 50-100 percent of the cost of the systems and in some cases bear the cost of repair and maintenance. These first generation projects began with household biogas in Nepal and solar home systems in Nepal and Sri Lanka, and now Bangladesh, Kenya, Lesotho, Botswana and Tanzania, and have been shown to be sufficiently robust to be effective in other countries as well.

In countries with maturing micro-finance markets, in particular in LDCs, financial service providers (FSPs) are well placed to supply finance schemes tailored to the needs of poor consumers (see Annex 5 for comparative advantages of FSPs). FSPs are by virtue focused on expanding outreach to the poor, and therefore have unrivalled knowledge of, relationships with and access to low-income people. They have extensive branch networks on the ground, and an inherent knowledge about the communities in which they operate and most of all how poor clients manage finances. In return, clean energy has the potential to improve the quality of FSP's existing loan portfolios as well as to create a new, higher-return "star" segment of the market. The total Base of the Pyramid (BoP) household energy market in Africa and Asia alone is estimated to be approximately USD 380 billion[24]. Carbon credit markets represent a potential additional income stream for FSP's taking up this opportunity. Nevertheless FSP's may be reluctant to enter this market due to lack of familiarity and perceived high risk (Annex 6). Increasingly, this gap is also filled by DESCOs offering payment solutions through PAYG, thereby growing the range of financing for the end-user or customer (through lease financing, fee for service or pre-paid credit solutions, etc.).

[24] "The Next 4 Billion: Market Size and Business Strategy at the Base of the Pyramid", World Resources Institute, 2007.

3.2 The Value of Clean Energy Products to FSPs

Value proposition for FSPs

Typically in mature microfinance markets clients will have gone through several loan cycles. Most clients continue taking basic micro-loans for a range of mostly consumption purposes, financing repayments from several livelihood sources they are already engaged in. Others graduate from general-purpose micro-loans to slightly higher loans for home-based income generation, while a smaller number from these go on to much larger loans for off-homestead micro-enterprises. Most continue to increase their levels of debt or at least become eligible for larger loans as they establish repayment track-records and as they gain confidence in the growth of their income generation activities and micro-enterprises.

The growing challenge for FSPs in such mature microfinance markets is not liquidity to finance loan portfolios but the limits on the growth of their lending portfolio within their existing client base as local markets or the size of borrow-families can no longer sustain continued growth in client enterprises and incomes. It is not unusual to see higher default or withdrawal rates in areas where FSPs have made several cycles of loans. The traditional strategy for FSPs has been to open new branches and induct new borrowers to their programmes. Apart from the direct and organisational costs of new branch expansion, this leads to increased competition between FSP creating pressure to take on ever more risky loans.

In simple terms, FSPs in mature microfinance markets are beginning to face, to various degrees, the problems of too much liquidity chasing too few investment opportunities among existing clients, and also too much liquidity chasing too few new clients as a result of growing competition (although the problem of competition is more evident in only a few very mature microfinance markets such as in Bangladesh). In these mature microfinance markets, clean energy financing offers FSPs the potential to improve the viability and prospects of FSPs' core loans and savings services, and add a new product-line in high-growth and lucrative market segment. The advantages of this strategy is that large-scale active client network can be used to deliver the product without additional cost increases and loan officers can use existing credit history of active clients to assess and manage credit risk. Also, FSPs can mitigate the risk of over-indebting clients by carefully pricing and designing loan products and terms in line with clients' current expenditure patterns. This increases client ability to repay energy loans in addition to realising longer term savings and benefits from migrating to clean energy (refer to Annex 7 for potential financing models through FSPs). Furthermore, FSPs can access a completely new revenue stream by selling carbon credits through the voluntary carbon market.

a. Greater viability and improved prospects for FSPs' core loans and savings services

The ability of clean energy technologies to either reduce household outgoings or to increase incomes presents a potential breakthrough solution for FSPs struggling with declining yields from their existing loan and client portfolios. Not only do the expenditure savings reduce the pressures of default as borrowers improve their net income balance, but such savings can also make a potentially unviable enterprise into something more viable or enable FSPs to market new savings products to help 'mop-up' the expenditure savings of low-income clean energy users. Clean energy systems and services, through reducing the overall financial outflows among users, can at the very least help to maintain FSP portfolio quality and can even help the portfolio to grow further among 'saturated' client groups.

b. Addition of a new product-line in high-growth market segment

The general purpose micro-loans segment tends to be the 'cash-cow' for most FSPs. FSPs can and do make millions of small loans on wafer-thin margins, which generate the bulk of their revenue. The income generation and micro-enterprise loan segments tend to be smaller defined by the entrepreneurial abilities of borrowers and by the markets for their products and services. FSPs make fewer loans but at higher margins and these tend to deliver greater revenue per dollar of money lent. In marketing parlance, these may be described as 'star' segments.

Some FSPs are either introducing niche loan products for enterprises or farmers producing for the export market, or they are adding donor-funded non-financial services that are helping to grow the size of some of their enterprise

loan segments (e.g. BRAC's dairy programme supporting the growth of their livestock lending segment). Increasingly, the clean energy sector is seen as having this type of potential.

Clean energy financing presents a strong value proposition to FSPs in terms of adding a new product line with significant latent demand and high growth potential over the next 10-15 years. The total Base of the Pyramid (BoP) household energy market in Africa and Asia alone is estimated to be approximately USD 380 billion[25]. Such financing is also attractive in that by and large it can be delivered at reasonable costs by piggy-backing on existing lending services, although some upfront investment is necessary for the costs of research, product development and negotiation of agreements with energy systems suppliers and service providers.

c. Carbon Markets: A potential Revenue Stream

Carbon financing is a potential revenue stream to support micro-level clean energy projects and can assist the project proponent (often an energy service provider) to access other types of financing. In some programs, such as the distribution of energy efficient lamps or efficient cooking stoves, the revenue received from the sale of generated emission reductions may be the only source of revenues generated by the activity. In programs where renewable energy is generated and sold to end-users, carbon revenues increase the activity's internal rate of return and serve as a catalyst for attracting investors. It also provides a natural incentive for suppliers to monitor the quality of the technology chosen for lending. With support from UNDP, companies such as Manna Energy Limited (see example below) have used carbon finance as a means to fund small-scale water treatment and energy systems for dozens of rural communities in Rwanda.

Using carbon finance to fund energy-based clean water solutions for the poor – Manna Energy Limited and UNDP

In June 2011, Manna Energy Limited and the UNDP SDG Carbon Facility announced the registration of the world's first United Nations Clean Development Mechanism (CDM) carbon program for water treatment. The United Nations Framework Convention on Climate Change (UNFCCC) validated and registered Manna's Rwanda Natural Energy Project, enabling the deployment of community scale water treatment systems for thousands of the country's rural residents.

Manna Energy Ltd. has installed solar-powered surface water treatment systems in several rural communities in Rwanda, serving schools, hospitals and the public. Local residents now have a close-at-hand source of reliable, clean water, which will improve health outcomes and school attendance. The systems avoid burning non-renewable firewood to boil water, qualifying the Rwanda project for issuance of carbon credits. While the project treats all the water consumed in the service region, the carbon credits generated are tied to actual wood fuel use reduction by the fraction of residents that currently boil some of their drinking water.

The Millennium Development Goals Carbon Facility at the United Nations Development Programme (UNDP) provided technical assistance to Manna for the Rwanda Natural Energy Project since early in its inception. The Swedish Energy Agency (SEA) has committed to the purchase of Manna's carbon credits for this project, helping Sweden comply with its Kyoto Treaty obligations. SEA also provided critical technical and investment assistance for the project. The project also received a generous grant from Global Water Challenge during the initial phase of the project helped Manna employ Rwandan engineers and technicians, working in several communities across Rwanda.

"A core component of Manna's commitment to Rwanda is ensuring the economic sustainability of the project by its continued use and performance," says Manna Executive Vice President Evan Thomas. "Revenue generated by the carbon credits will be reinvested in the project, helping make it sustainable for at least a decade, providing time to build local capacity and further community adoption."

Source: http://www.SDGcarbonfacility.org/resources/news.html

[25] "The Next 4 Billion: Market Size and Business Strategy at the Base of the Pyramid", World Resources Institute, 2007.

Programmes of Activities (PoAs) are an especially relevant carbon finance tool for small-scale clean energy systems since they facilitate large scale emission reductions by bundling hundreds, thousands and even millions of individual, similar activities that by themselves are too small to apply the often costly carbon credit certification processes. Programmes of Activities are a recent facility under the Clean Development Mechanism of the Kyoto Protocol, the world's main carbon credit scheme. Other schemes such as the Voluntary Carbon Standard and the Gold Standard have adopted comparable facilities that allow for bundling of emission reduction projects of which location and characteristics are still unknown at the moment the programme is launched. Programmes of Activities are able to bring sustainable development to people and places that have hardly benefited from carbon finance before, particularly rural communities and poor households. Programmatic climate mitigation projects feature high on the agenda of international climate negotiations and are likely to continue to attract support, even as the Kyoto Protocol's first commitment period draws to an end.

By way of example, prices for voluntary emission reductions vary from $1 to $10 per tons depending on contracts. Assuming a conservative estimate of $5 per ton and very conservative emission reductions of 0.5 tons per client, Table 1 projects a potential income stream that can be generated across a range of clients.

Table 1: Potential revenue stream across numbers of customers

Number of clients	Annual carbon revenue
1,000	$2,500
10,000	$25,000
25,000	$62,500
50,000	$125,000
100,000	$250,000
1,000,000	$2,500,000

While these annual revenues are small compared with revenue from financial services, carbon revenues are renewable for periods up to 20 years in certain cases. A typical home PV system avoiding 0.5 tons of CO_2 per year has an operating life of 10–15 years. Assuming that the loan takes 3 years to repay and an FSP has sold 1,000 systems, the carbon trade could generate additional revenue of $250,000–$375,000 over the life of the home PV system, though this will depend on the number of partners involved and the nature of the contracts.

Although PoA and other types of carbon finance schemes can be powerful tools to leverage carbon finance for small-scale energy applications, they require specialized knowledge of carbon finance rules and regulations and are often complicated to structure and manage, especially vis-a-vis relationships with FSPs and commercial banks. Efforts to fill knowledge gaps are needed, as are support and incentives for those actors and agencies able to help FSPs form collaborative partnerships to explore their full potential.

Recently, the market for carbon financing suffered dramatic declines in prices, limiting this as a revenue stream.

3.3 Going beyond Financial Barriers

While cost is an important factor, experience proves that well-designed financing schemes alone will not be enough to ensure adoption of clean energy systems to the desired and required scale. A number studies show that complementary informational, institutional, regulatory, and behavioral instruments will be required to remove non-economic hurdles[26] (refer to Annex 8 for examples of non-financial barriers). A UNDP review of 17 initiatives on energy access for the poor in the Asia-Pacific region concluded that those that were able to achieve a significant expansion benefitted from a **strong commitment from their national governments** – a commitment reflected in policy documents and supported by budgetary allocations[27]. Additionally, recent survey of investors[28] found that the most powerful incentive mechanism for renewable energy deployment in developing countries was the establishment of clear national targets for renewable energy.

Besides the existence of clear national targets, the experience of the first generation of market driven projects for energy access highlights the **importance of raising awareness, developing the skills and closely involving prospective customers.** In a review of mini-hydropower development in Nepal it was concluded that spreading social awareness, promoting community ownership, molding efficacious regulations, minimizing corruption, addressing poverty and improving institutional capacity were as critical to increasing hydropower potential of Nepal as was ensuring proper design and technology selection. In particular, where projects have been successful this has often been because local women have been involved in the design of the technology, education and technical training as well as the dissemination process.[29] This is due to the fact that women in developing countries are often primary providers and users of energy at the household level, and the enterprises they engage in also tend to be energy-intensive. They are also a source of valuable insights on local conditions and available resources.

Quality control will also play an equally critical role in the adoption of clean energy devices by communities. Sub-standard performance will cause a general decline in demand for clean energy systems and correspondingly discourage financing institutions from entering the clean energy market due to the higher risk of loan defaults. Hence it is imperative that technological risks are reduced by establishing some standards and regulating the quality of the devices that are used in projects. For example, supplier buy-back or maintenance guarantees for large systems (e.g. efficient stoves for institutions) can also reduce the risk of technological failure.

For the most effective impact, energy access projects should adopt an **integrated sector-wide approach**, which would include strengthening of conducive policies, institutional capacity development, private sector support, entrepreneurial skills development, productive uses of energy for income generation and the facilitation of access to finance and markets. Such an integrated approach will lead to improved household living standards while increasing the capacity to pay for energy and other services. To maximize acceptance of energy solutions, energy projects should recognise the differences between men and women in the way they use energy, their perceptions toward benefits of using improved energy solutions, financing needs and the likely impact of adoption. Poverty reduction impacts can be maximized only when such measures are built into the energy access programs.

[26] Glemarec Y., "Financing Off-Grid Sustainable Energy Access for the Poor", Energy Policy, Elsevier, UK (2012)

[27] Source: TOWARDS AN 'ENERGY PLUS' APPROACH FOR THE POOR:A review of good practices and lessons learned from Asia and the Pacific UNDP, 2011

[28] Financing renewable energy in developing countries: A study and survey by UNEP Finance Initiative on the views, experiences and policy needs of energy financiers

[29] The Gender – Energy – Poverty Nexus: Finding the energy to address gender concerns in development, Clancy, Joy S. and Skutsch, Margaret and Batchelor, Simon (2002)

3.4 Programme Description

UNCDF has developed a programme methodology – CleanStart – with the purpose of increasing access of poor households and micro-entrepreneurs to sustainable, low-cost clean energy supplies through inclusive finance. This is expected to contribute to SDGs on affordable and clean energy, poverty and hunger, education, gender, health, and climate change action.

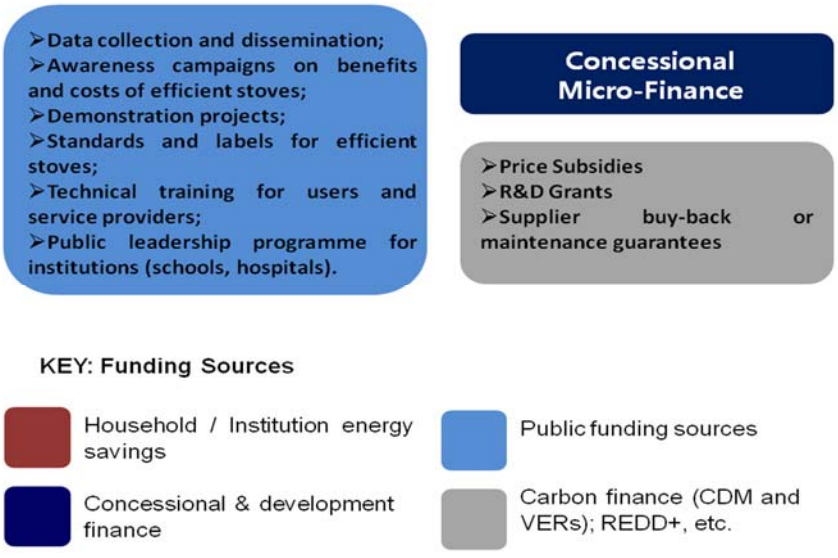
CleanStart consists of **four outputs**:

1. **Finance for Clean Energy** to strengthen capabilities of 18 FSPs in 6 countries to provide finance for clean energy to low-income households and micro-entrepreneurs;
2. **Technical Assistance for Clean Energy** to remove barriers and support institutions to the successful deployment of those technologies and services for which the selected FSPs will provide microfinance;
3. **Global Knowledge and Learning** to enhance understanding and awareness globally of the potential for financing to scale-up access to clean energy and make available the tools and knowledge needed to scale-up access to clean energy beyond the project; and
4. **Advocacy and Partnership** to create an enabling policy and business environment to expand financing for clean energy

The operational design of the programme ensures close integration and mutual reinforcement between the various outputs. The direct financing model for FSPs (as described in Output 1) will operate in the context of a broader policy and financing scheme that combines and sequences different sorts of funds and revenue streams based on the specific challenges facing a particular technology option. Using as an example the case of energy efficient (EE) cook stoves, Figure 3 below illustrates a possible mix of public policies and funding sources to overcome specific barriers identified with the uptake of energy efficient stoves, using finance as the cornerstone policy to remove the barrier posed by high upfront costs for households/institutions.

The key insight that energy poverty and energy inequality are important obstacles to achievement of the SDGs will inform all aspects of programme implementation. In particular, CleanStart will seek opportunities for mutual cooperation and synergy with the major development partners, including UN agencies, for localisation of SDGs which will run concurrently in many of the same target areas.

Figure 3: Selecting an Optimum Policy and Financing Mix for Efficient Fuel Stoves



CleanStart, in 2015, adopted a more flexible definition of Financial Service Providers, to reflect new market realities as well as its own institutional capacity. This was the result of an internal review process carried out by a high-level Sustainable Energy for All initiative (SE4ALL) advisor which culminated in a July 2015 recommendation report entitled: *Access to Clean Energy for the Poor Through Finance: CleanStart Strategy Re-Positioning,* with the following as key implications:

1) Financial Service Providers were to now include a range of institutions, including microfinance institutions (MFIs), banks, leasing companies and other financial institutions, but also distributed energy service companies (DESCOs) and other providers that provide wholesale or retail financing for clean energy. Notable among this group would be DESCOs offering PAYG solutions.

2) The platform to be used to engage partners would be that of a challenge fund approach, where partners are selected based on the strengths and innovation of their business plans submitted, with some technical assistance (TA) and guidance from CleanStart in the process. Capacity building requirements are herewith increasingly the responsibility of partners themselves and are incorporated in their business plans. The platform was developed by UNCDF's Shaping Inclusive Finance Transformations (SHIFT) programme in the Association of South East Asian Nations (ASEAN) region and was seen as very compatible with CleanStart's objectives.

3) CleanStart through the above, would take a more investment-driven approach, while maintaining links to developing other aspects of the energy eco-system at both the mezzo and macro levels (but not necessarily leading these efforts).

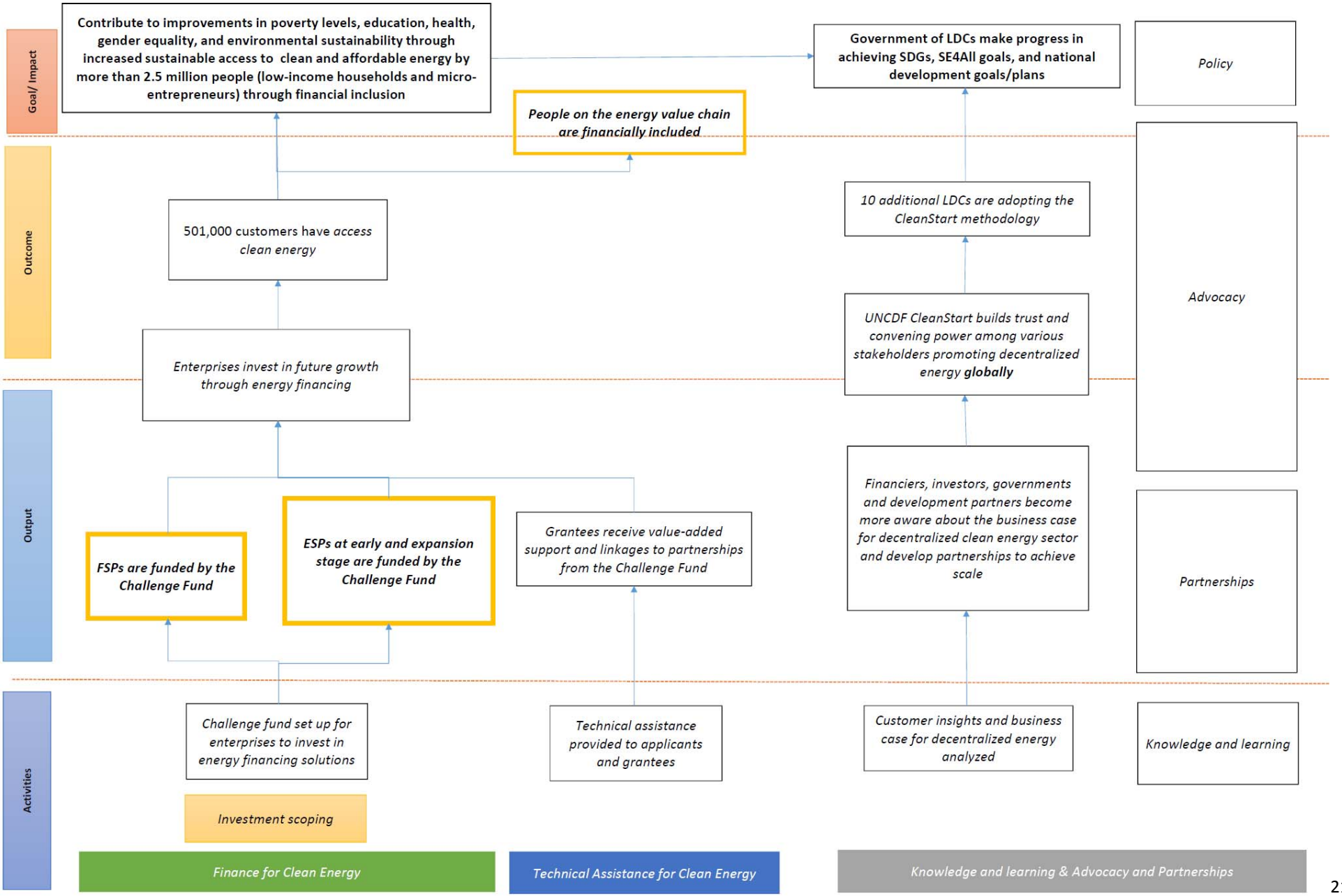
4) CleanStart would support partners in finding further follow-on financing from public or commercial investors in the form of equity, debt or related instruments (such as guarantees). This links well with the challenge fund approach, as it finds, develops and de-risks a pipeline of projects for other investors.

5) CleanStart would focus more of its research on understanding the demand-side of energy access markets, through research on the customer journey, client surveys and analyzing big data on energy access. These would in turn be used for policy and advocacy work.

These latest developments are reflected in the **figure 4** below in the updated the Theory of Change, which was approved through the Investment Committee and the Programme now follows, **while still abiding by its four output areas that it committed to as part of the design in the beginning of the programme**. It has also served to strengthen opportunities for collaboration with other UNCDF programmes including SHIFT, Mobile Money for the Poor (MM4P), Making Access Possible (MAP) and Local Climate Adaptive Living (LoCAL) Facility programmes. Finally, this also fits well with UNCDF's current strengthening of its full mandate, including non-grant instruments, as well as plans to set up an LDC Investment Platform.

This could also contribute to CleanStart eventually involving itself in other Green Economy areas (such as the WASH sector), as well as play a role in UNCDF's emerging Digital Financial Service "Plus" (DFS+) area of work.

Figure 4. Updated Theory of Change



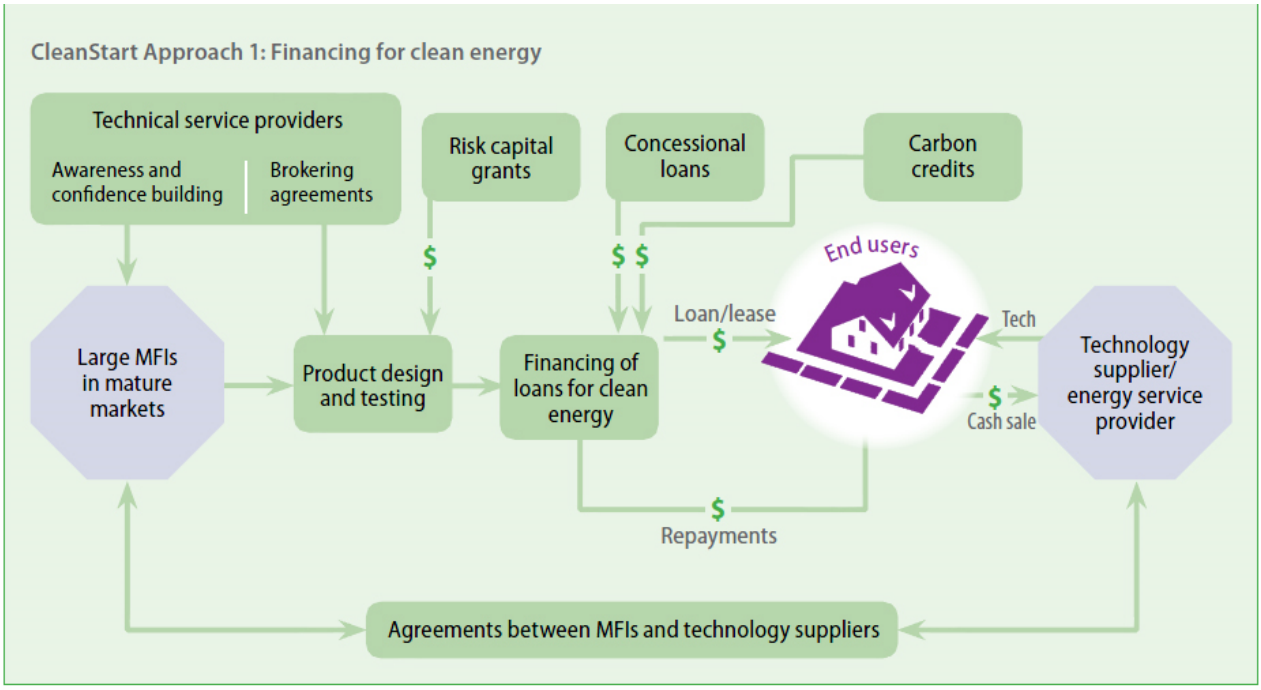
Output 1: Finance for Clean Energy

The Finance for Clean Energy output aims to expand the end-user finance available to poor people to meet their energy needs on a sustainable basis. It will provide targeted assistance to selected financial service providers in countries where conditions are judged most favourable for the achievement of programme purpose. The selected FSPs will be assisted to take advantage of the major opportunities and to mitigate risks associated with scaling up end-user finance for decentralised clean energy systems and services. Approximately 501,000 loans are expected to be disbursed by partner FSPs by end of programme.

To enable this to happen, CleanStart will strengthen the capabilities of FSPs through:

- Pre-investment advisory assistance to gain awareness and confidence based on existing international experience and to develop outline business plans;
- Risk-capital grants to a selected number of high-performing FSPs to broker partnerships with other actors in the energy value chain, and cover the up-front cost of introducing a new product line;
- Concessional loans to provide or facilitate access to initial liquidity to finance clean energy lending programmes before FSPss deploy their own equity or existing lines of credit to scale-up the lending programme.

Figure 4.1: CleanStart Business Model Example



Output 1.1: Pre-Investment Advisory Assistance

A. Request for Proposal

A Request for Proposal (RFP) will invite interested and eligible FSPs to submit business proposals outlining their strategy for introducing clean energy financing. Selected FSPs will be invited to participate in a structured course or meeting of awareness and confidence building on a no-commitment basis and assisted to develop outline business plans which will later be reviewed for grant funding.

B. Building Awareness and Confidence

Selected FSPs will be initially invited to send staff to participate in a structured course or meeting of awareness raising and confidence building. This course and associated events will be designed to demystify clean energy lending and to expose FSPs to the potential value of clean energy finance for clients and FSPs. This may involve extended field-visits to see how FSPs are currently delivering end-user finance, in-class orientation to provide a wider overview of technologies and different methodologies and models available in other countries, and discussion-spaces to enable participants to openly and critically think through issues among a group of peers, international experts and FSP practitioners who have a significant track record of clean energy financing. The course will be structured around a series of public events to which senior staff of the FSP will be invited and in which the course participants will play active roles as presenters and facilitators. Awareness and confidence building can also take the form of information sessions at the proposal development stage to guide companies on the critical elements that business plans should contain.

C. Technical assistance to develop business plans

FSP staff participating in the Awareness and Confidence Building activities will be advised on how to prepare an outline business plan to develop and roll out finance for clean energy products. These business plans should be endorsed by the senior management of the FSP, and will become the basis of a formal application for risk-capital grant. CleanStart will consider partnering with FSPs, including refinancing institutions that provide access to a large number of smaller institutions with good rural outreach. This strategy will enable institutional diversity, wide outreach and testing of different lending models.

Output 1.2: Risk-Capital Grants for Market Entry

Given the early stage in the development of clean energy financing, the quite significant upfront investment costs including costs of mid-course corrections often act as significant barriers to the introduction of end-user finance through FSPs. This is supported by the experience of first generation clean energy projects in developing countries, which found that subsidies to start-up costs were one of the most important contributing factors for the rapid adoption and scale-up of clean energy finance by FSPs, not just MFIs but also other financial institutions and clean energy companies.

Risk-capital grants will cover the upfront costs of market research, product development and roll-out, upgrading systems, product marketing, and staff training, among others. By definition, the risk-capital grant subsidy would be for a limited duration until the FSPs reach a critical mass needed for product and process standardisation to scale up, which is estimated to be a maximum of 3 years. Quality of the business plans will not be the only criterion for selection. Due diligence of institutional capacity will be applied alongside assessment of the business plans in the final selection.

Key indicators of institutional capacity for financial institutions will include but not limited to:

- Numbers of borrowers (minimum of 50,000 clients for FSPs in Asia and minimum 10,000 clients for FSPs in Africa).
- Portfolio at risk (less than 5%).
- Volume of loans outstanding.

Risk-capital grants will be disbursed against an agreed work plan and SMART[30] results to be achieved over a period of up to 3 years. The amount of each grant will vary but it is anticipated that the average amount will be around US$ 250,000 per FSP. Up to three FSPs will be identified in each country, totaling to 18 FSPs. Therefore the total provision for this facility is US$ 4.5 million. However, the recent pivot of the CleanStart programme may change this amount (as described in the early part of section 3.4).

All grantees are strongly encouraged to endorse the Client Protection Principles of the Smart Campaign[31]. Pursuant to the FIPA standard Performance-Based Agreement (PBAs), all FSP grantees will report annually to UNCDF on their client protection activities (Annex 9). This will ensure, at a minimum, that grantees avoid over-indebtedness of poor clients. Furthermore, UNCDF adopts a standard requirement of women making up 50% of the clients of partner FSPs by the end of the support period

CleanStart will explore the possibility of providing additional **risk capital grants for innovation** to test and develop new business models. These can potentially include carbon finance; expansion to new technologies or project areas; loans for productive end-use or household utilities; or loans for local energy retailers or manufacturers. A strategic decision will be made based on the outcome of initial awareness and relationship building activities between FSPs and key actors.

Output 1.3: Concessional loans

While the risk-capital grants are intended to cover the cost of market entry, concessional loans are intended as initial capitalisation of the clean energy financing facilities or scale-up financing after proof of concept. This is considered necessary because the lines of credit ordinarily available to MFIs – including wholesale finance from banks and donors – may not be available for use in the clean energy segment. In part this arises from the fact that clean energy lending is viewed as raising the level of risk-exposure on MFI's lending capital. It is expected that results will demonstrate that clean energy loans are not inherently more risky than other traditional microfinance loans, particularly if the clients for clean energy financing are the same as traditional MFI clients[32]. As MFIs build their clean energy lending portfolio they will improve their understanding of the size of the credit-risk, the probability of the risk materialising, and they will structure the risk within the pricing of their clean energy loan product so that the subsidy can be eliminated after the term of the guarantee. Therefore, the need for external financing to capitalise the clean energy facilities should decrease with time. On the other hand, PAYG companies that are in effect pre-financing the energy hardware have an ever-increasing need for capital as they expand.

Concessional loans will make available liquidity for loans, where necessary. Assuming 501,000 loans of average US$ 100 each, the total liquidity required is around US$ 50 million. The initial estimate of the size of the concessional loan is US$ 2 million, although funding by other investors is seen as equally or even more desirable. The remaining

[30] specific, measurable, achievable, relevant and time -bound

[31] The purpose of the Campaign, which is housed at the Center for Financial Inclusion, and the Principles is to ensure that providers of financial services to low-income populations take concrete steps to protect their clients from potentially harmful financial products and ensure that they are treated fairly.

[32] The PAYG business model is actually enabling unbanked customers to invest in clean energy

will be financed from FSPs' own equity (recycled monthly installments), other available wholesale funds or investors.

Alternatively, UNCDF may assist counterparts or partners in setting up a guarantee mechanism or credit enhancement scheme to facilitate targeted liquidity for FSPs (for energy lending). It will further seek partnerships with additional organizations that can provide credit guarantees or follow-up financing of different kinds.

Output 2: Technical Assistance for Clean Energy

The Technical Assistance for Clean Energy output aims to remove barriers and support institutions to the sustainable deployment of technologies and services for which the selected FSPs will provide finance. It will move away from a technology-driven supply approach to become more technology-neutral and client demand-oriented. In practice, this will mean rigorous diagnostic to identify client need and demand and deploying technical assistance to remove supply chain barriers that in effect fail to match supply with latent demand.

The programme will support inputs necessary to expose financial institutions to the potential for cooperation with suppliers of clean energy systems and services, as well as assist in **brokering cooperation agreements**. Participating financial institutions will be provided with technical assistance to **develop clean energy financing products in partnership with suppliers of clean energy**. **Quality assurance guidelines** will be developed for each clean energy technology product offered on a lending basis[33]. Experience and collected lessons learned from UNDP/GEF small-scale energy projects have shown that both for modern energy services and fuel solutions, **substantial awarenessand technical capacity** – both of the benefits new fuels and technologies provide and of how to use them – is essential to ensure successful uptake.

CleanStart will also, from the outset of the partnership with FSPs, use results milestones to ensure partners have a strategy in place to overcome energy value chain bottlenecks through business model innovations and new partnerships. Moreover, CleanStart can provide complementary technical assistance in the form of:

- Mentoring and/or troubleshooting implementation bottlenecks
- Introductions to groups of people/organizations outside the applicants' usual remit
- Organizing/sponsoring training and knowledge sharing events on specific topics
- Relationship development with funders (e.g. investors, banks);

These can be supported through Output 2, as well as Output 3 on Knowledge and Learning and 4 on Advocacy and Partnerships.
High acceptance of new energy solutions and financing options also depend on understanding gender-specific energy needs and likely impact of adoption. Furthermore, the utility of financing mechanisms is maximized when both the participating FSPs and their clients are fully capacitated to understand both the financial and technical risks of the assets to be secured or financed.

Specific technical assistance platforms and services for clean energy stakeholders, including end-users, financial institutions and distributed energy service providers, will be customized depending on the state of the market in the pilot country. Technical assistance activities will be done in parallel with and in close integration with activities under Output 1.

Where it exists and deemed essential, CleanStart will explore opportunities to partner with a central coordinating body in the programme country that promotes access to renewable and efficient energy to support the following (see Section 6 for details):

[33] By encouraging partners to finance products that are tested (e.g. fuel efficiency) and, where possible, certified

- Ensure smart subsidies for the energy value chain disbursed by complementary energy programmes reach programme areas;
- Ensure FSPs partner with pre-qualified suppliers that follow quality-standard guidelines;
- Monitor installations and maintenance;
- Test technologies selected for lending and establish standards;
- Ensure partner FSPs and suppliers have access to local governance structures for energy service delivery;
- Facilitate relationship-building and information-sharing between FSPs and other actors in the energy value chain;

Output 2.1 Technical assistance to participating FSPs and key stakeholders in the energy value chain

A. Market research

FSPs will be assisted to conduct market research to establish a good understanding of energy needs and resource availability in FSP operating areas, as well as current energy expenditures, client willingness and ability to pay for clean energy. It will also help to identify technology options and providers that can address the demand for energy services, and to design appropriate financial products based on a sound understanding of client needs, especially the distinct energy and financing needs of women and likely impacts of adoption.

B. Brokering partnerships between financial institutions and energy suppliers

The programme will support inputs necessary to expose financial institutions to the potential for cooperation with suppliers of clean energy systems and services, as well as assist in brokering risk-sharing agreements. This will include both upfront technical assistance to participating financial institutions and technology providers in the choice of technologies to be commercialized and the most appropriate business model for a given customer base.

Brokering partnerships may involve a range of operational activities including scoping the possibilities, technology expos, energising and enthusing respective market communities, making the case to potential partners, early relationship building, managing expectations, helping to develop an initial outline for collaboration, and helping partners to reach agreement. Financial institutions should be encouraged to explore partnerships with a range of technology suppliers.

C. Financial product development and roll-out

Participating financial institutions will be provided with technical assistance to develop appropriate clean energy financing products for end-users in partnership with suppliers of clean energy. Financial institutions will also be assisted to understand the fundamental features and profiles of the energy assets and services for which they will provide finance and develop the most appropriate mix and type of energy lending products for end-users. Technical assistance will involve the following:

- designing and pilot testing lending product;
- collecting feedback on pilot test and fine-tuning the product;
- managing delinquencies in energy portfolio;
- developing staff capacity (e.g. product marketing, credit assessment, technology);
- developing results-based staff incentives; and
- rolling-out product on a wider scale

D. Strengthening energy supply chain

Participating energy suppliers will be incentivized, and where appropriate, assisted to address gaps in the supply chain of technologies or services chosen for financing. This will include improving understanding about client needs and adapting technologies and services accordingly, as well as conducting financial viability assessments for technologies/services to be deployed. Furthermore, the programme will support suppliers to strengthen quality assurance and capability to market and reliably finance, deliver, install and maintain technologies and services. Quality assurance guidelines will be developed for each clean energy technology product offered on a financing basis in line with the type and specification of hardware to be deployed in particular built environments.[34] Selected partners will be also=assisted to develop business plans to help mobilize investments.

The precise design, functioning and technical assistance package to address operations and maintenance (O&M) services will be rolled into specific design of country interventions and business plans of partners. Broadly, the approach to O&M will be guided by the need to ensure following:

- Reduce the cost of future O&M via local capacity development, standardization, guidance and training to users.
- Institutional and financial provisions are in place to cover O&M via community-based organizations, mandatory O&M requirements for suppliers, and whatever is most appropriate for technology/locality

E. End-user awareness

To ensure up-take, the programme will assist partner FSPs and suppliers as well as key local actors such as community mobilisers, NGOs and industry networks to raise substantial client awareness of the benefits new fuels and technologies provide and financing opportunities. It will also involve acquainting end-users with how to use and maintain the energy assets purchased, as well as service provider obligations.

Output 2.2 Technical assistance to develop innovative business models

CleanStart will support participating FSPs to develop new forms of energy lending or to develop other financial products to meet the need for other forms of financial services as a result of greater savings generated from the use of clean energy systems and services. This will include carbon finance, expanding to new technologies or new programme areas, developing loan products for productive end-use or household utilities, developing enterprise loans for local energy retailers or manufacturers.

Output 3: Global Knowledge and Learning

The Global Knowledge and Learning output will contribute to improved understanding and awareness within target countries and internationally of the potential for microfinance to stimulate adoption of sustainable clean energy finance, as well as the knowledge and skills needed to adopt clean energy finance with lending portfolios. Output 1 and 2 of CleanStart will support FSPs and other stakeholders at all levels to gain confidence and learn from the results of CleanStart and beyond, leading indirectly to scaling-up end-user financing globally. This is both practically and strategically important for the development of a market for end-user finance for clean energy systems and services, particularly given the embryonic stage of this market.

[34] By encouraging partners to finance products that are tested (e.g. fuel efficiency) and, where possible, certified

Output 3.1: Increase in Knowledge and Skills

An improved and more comprehensive body of knowledge about the demand for and supply of end-user financing is needed to enable reliable investment decisions to be made by relevant stakeholders, including FSPs, clean energy companies, carbon traders, communities and households, financiers and Governments.

A. Grants for research into practice

CleanStart will provide grants for research into practice in response to identified knowledge gaps among stakeholders. It will be driven by the need to improve practices of key stakeholders, including governments and donors. The research will therefore focus on three areas:

- Financial products: focusing on providing insights on product characteristics across varying contexts and client profile, approach to market research and product development, and effective product management.

- Delivery systems and partnerships: focusing on alternative arrangements for delivering and servicing clients with both financial services and energy services, factors for success of partnership between FSPs, energy companies and carbon brokers, approach to managing partnerships.

- Business processes: focusing on good practice in managing business processes in respect of clean energy financing and in terms of FSPs' overall portfolio of products and services.

B. Grants for research into impact

The impact of finance to clean energy under Output 1 will be studied through carefully designed and independently conducted research in each country. Impact research will take into account the performance of the clean energy technology, its impact on the expenditures and livelihoods of poor households and, more broadly, its contribution to SDG progress, the financial sustainability of the model from the point of view of the FSPs and the impact on carbon emissions. The research will therefore focus on three areas:

- Client value, impact and demand for clean energy finance: focusing on assessing the potential benefits and the impact of clean energy and end-user financing on reducing poverty and on fulfilling energy needs and wants of low-income people and micro-entrepreneurs. This may involve research to improve understanding of the needs and preferences of potential customers, or to understand and quantify current energy expenditures among customers and their willingness and ability to pay for modern clean energy systems. These will include gender-specific analysis to understand the different energy needs and financing requirements between women and men, and how the adoption of new technologies or fuels affects women and men differently as well as gender relations. Research may also include efforts to quantify the impact on climate change of existing energy practices in comparison to the impact resulting from a shift to clean energy systems and services.

- Institutional value and supply of clean energy finance: focusing on assessing the potential benefits and the impact of clean energy and end-user financing for key supply-side actors such as FSPs, energy companies and carbon finance players. This may involve research to improve understanding of the voluntary carbon market, good practices in stimulating demand, the emergence of innovative partnership models, and deeper understanding of why certain solutions work and do not work for clients and providers.

- Impact of policy and regulation: focusing on the extent to which national policies and regulations encourage, or impede, adoption of clean energy technologies by the poor, supported by microfinance; policy measures that can encourage and facilitate access to carbon market financing for clean energy; integration of clean energy into the policy dialogue on SDGs.

All research will be documented in a standardised format and key findings and data will be made available on the CleanStart website. Participating FSPs will agree to provide necessary data and collaboration for case studies and briefs that will be produced as part of the programme knowledge management agenda. The exact scope and structure of such studies will be determined after programme start-up. Research will include gender-specific analysis where relevant.

Output 3.2: Training curricula on clean energy financing and training grants

Technical assistance will be provided to develop training curriculum and material for training FSP personnel. 'Master Trainers' will also be trained through a training of trainers (ToT) programme. CleanStart will also negotiate agreements with national microfinance associations and internationally recognised microfinance training programmes such as Boulder, Yale, and the Frankfurt School of Management to integrate the clean energy finance curriculum as part of their broader microfinance training offering. Grants to fund scholarships may also be provided as part of the overall negotiated package with internationally recognised microfinance training programmes. Training curriculum and materials will be made available as a public good.

The training will draw on lessons learned from existing energy access projects in CleanStart countries and beyond to ensure that the finance professionals targeted for training have context-specific information on applicable technologies, quality control measures and the latest information on successful business models that have already been piloted in their country(s) of operation. The curriculum will also include guidance on market research, and strategies for developing demand-based products by involving prospective clients throughout the technology design, delivery and financing stages.

Output 3.3: Communication of Knowledge

Outputs from different research activities will be consolidated and documented in a series of publications and widely disseminated to the microfinance, clean energy and carbon trading industries, policy makers and to other important stakeholders.
Communication of knowledge activities will include at a minimum:

- A CleanStart website which will make the knowledge products of the programme freely available and which will aim to become a global repository of knowledge on clean energy end-user finance and a platform for discussion, dialogue and learning among practitioners.
- Publications to disseminate knowledge products from the programme, including training products and research outputs.
- Events to promote dialogue on microfinance for clean energy including support to workshops, conferences and other types of forum.

The CleanStart knowledge management strategy will be aligned with UNCDF Financial Inclusion Practice Area's Five Pillars of Knowledge Management based on the 5 Ps: People, Processes, Products, Platforms and Partnerships (Annex 10).

Output 4: Advocacy and Partnerships

The Advocacy and Partnerships output aims to support efforts of national and international actors to create an enabling policy and business environment and build links with related sectors. The challenge for scaling up low-income people's access to clean energy systems and services is daunting. End-user finance only deals with one aspect of this challenge and only in certain countries that have the business environment for FSPs to massively

expand end-user finance. A number of broader and gender-sensitive interventions are needed to create a more enabling environment for the programme success. Therefore in addition to its role in providing direct financial and technical support to finance for clean energy initiatives, CleanStart will also implement advocacy activities to bring greater coherence and focus to efforts of key actors in creating enabling policy and business environments for FSPs and partners to expand the scale of their operations. This will involve:

a. Collaboration with governments and donors that are working on energy policy and regulatory regimes, as well as expanding finance and capacity development support for energy value chains;

b. Collaboration with wholesale funders, including national and international commercial banks and wholesale financing institutions that refinance microfinance portfolios;

c. Collaboration with carbon brokers that are working on energy projects and trading on the major voluntary and compulsory carbon markets.

d. Global Clean Energy Finance Partnership Forum which will be serve as a platform for dialogue and alliances with various stakeholders.

A. Collaboration with governments and donor programmes

CleanStart will provide, where necessary, limited direct funding to partially cover the additional costs involved in orientating existing energy programmes to support the efforts of financial service providers in lending to poor people, particularly women who will make up half of the end clients.

Central Coordinating Body for Clean Energy

Where it exists and deemed essential, CleanStart will explore opportunities to partner with a central coordinating body that promotes access to renewable and efficient forms of energy so that lessons generated from on-the-ground work and engagement with grassroots stakeholders including FSPs, suppliers and end-users inform and instigate targeted policy and regulatory changes at the national level. This partnership can also contribute to effective coordination among various donor-supported energy programmes in the country.

UNDP/GEF

Where possible, CleanStart will build on existing upstream policy support and reform initiatives that UNDP is engaged with in many countries – often as part of GEF projects. UNDP/GEF already has existing or planned projects in many potential CleanStart countries supporting reforms to create an enabling environment for provision of off-grid energy solutions. For low-income countries, this includes (a) national plans to accelerate the deployment and provision of modern energy services, particularly via off-grid master plans and energy access road maps; (b) incorporation of these plans, if based on low-GHG emissions technologies, into their NAMAs/LCGPs; (c) re-orienting regulatory policy frameworks, including tariff structures and market regimes, to stimulate business innovation and private sector participation, particularly for servicing poor communities; (d) improvement in the design and careful targeting of energy subsidies; (e) further investment in the capabilities of public utilities; and (f) a phased introduction of low-GHG emitting technologies, as well as energy efficiency measures wherever feasible.

Beyond policy advocacy, it is clear that CleanStart's approach has strong synergies with UNDP/GEF's current portfolio and pipeline of energy projects, many of which involve a "barrier removal" component and market transformation approach. Where possible and if appropriate, CleanStart can leverage GEF projects by linking an end-user finance component with UNDP/GEF projects.

B. Collaboration with wholesale funders

CleanStart will facilitate linkages with wholesale funds available in the country as well as internationally. UNCDF's relationship with major investors such as ADB, KfW, FMO and Triodos and with its expertise in and special mandate for managing key financial instruments from local currency lending to guarantees, will contribute to activities and partnerships with commercial banks and wholesale financing institutions that refinance financial portfolios and invest in and lend to energy service companies. Strategic agreements are under discussion with KfW and FMO to

ensure that all financial providers under the CleanStart programme becomes eligible for refinancing from these institutions. Other agreements will be sought and finalised with initiatives such as Energy Plus and SIDS Dock as CleanStart is implemented in the various countries.

C. Collaboration with carbon brokers

Carbon financing not only provides a potential revenue stream for FSPs and energy companies, but also provides a natural incentive for suppliers to monitor the quality of the technology chosen for lending. Efforts to fill knowledge gaps are needed, as are support and incentives for those actors and agencies able to help FSPs form collaborative partnerships to explore their full potential. CleanStart will invite carbon aggregators specialised in micro-level clean energy projects raise awareness about carbon financing and facilitate partnerships.

D. Global Clean Energy Finance Partnership Forum

CleanStart will establish and convene on an annual basis a *Global Clean Energy Finance Partnership Forum* which will be a voluntary forum comprised of international funding agencies, investors, clean energy technology companies, and leading implementers of end-user finance for low-income people and micro-entrepreneurs. The Forum will serve as a platform for dialogue and alliances with various stakeholders. Wherever possible, CleanStart will work with existing groups of other similar initiatives to avoid duplication and to make most of existing mechanisms such as the UN's *Global Campaign for Sustainable Energy for All*[35].

E. Collaboration with other industry stakeholders

CleanStart will support and collaborate with industry associations that support decentralized energy access, where relevant, such as the Global Alliance for Clean Cooking or the Global Off-Grid Lighting Association (GOGLA). Other forms of partnership it will actively seek include ones with other public or non-profit entities, such as SNV Netherlands Development Organisation[36], which complements UNCDF in terms of technical know-how on energy solutions as well as valuable experience with results-based finance (initially to be tested through a results-based financing partnership for improved cook-stoves in Nepal). Another example is PAMIGA, a microfinance network, with innovative financing models for energy access which has recently set up with PAMIGA Finance S.A. investment fund, which could offer UNCDF valuable support as its sets up its own LDC Investment Platform. Collaboration is also taking place with the Consultative Group to Assist the Poor (CGAP) as well as IFC/World Bank, and the MIX Market on industry indicators and performance measures. These may result in strategic partnership arrangements, where CleanStart leverages partnerships in terms of outreach, technological know-how, industry standards and performance indicators, advocacy and finance.

Leverage potential

Through this approach, CleanStart aims to leverage resources that are already available and realize the full potential of these resources by providing practical and sustainable approaches to end-user finance. Table 2 below describes the additional resources CleanStart will seek to leverage by collaborating with other actors or programmes in FSP refinancing, energy value chain development, and carbon financing.

[35] The Secretary-General's Advisory Group on Energy and Climate Change, set up in 2009, has recommended two "bold but achievable" targets for 2030 – universal access to modern energy sources and a 40 per cent increase in energy efficiency. In response, the UN will launch a **Global Campaign for Sustainable Energy for All** that streamlines advocacy and action at both international and national levels. UN-Energy, an inter-agency group of more than 20 UN agencies, will lead the campaign in partnership with the UN Foundation.

[36] Stichting Nederlandse Vrijwilligers

Table 2. Leverage[37] potential of CleanStart

Additional Resources	Assumptions	Leverage Potential (USD)
FSP refinancing	· Assuming 600,000 loans of average $100 each, total liquidity required is around $60 million	30 - 40 million
Support to clean energy value chain	· Additional resources for developing pro-poor energy value chains will be leveraged through cooperation with UNDP/GEF projects. The average ratio between co-financing to GEF resources is approximately 4:1. · Technical advisory support to developing clean energy value chains under CleanStart is estimated to be US $6 million. · Additional resources will be leveraged through collaborations with other actors under Output 4	18 - 25 million
Revenues from carbon financing	· Based on a conservative estimate, one energy loan client can reduce 0.5 tonnes of carbon emissions. The price of voluntary emissions reductions vary between $1-$10 depending on contracts and carbon revenues are renewable every year. Assuming $5 per tonne and an operating life span of 5 years, US $7.5 million can potentially be leveraged (less of an opportunity in recent years).	7.5 - 10 million
Total leverage potential		**55.5 - 75 million**

37 Leverage is defined as resources that does not come through the CleanStart programme but that the programme helps shape in support of its beneficiaries

3.5 Stakeholders, Target Groups and Ultimate Beneficiaries

Stakeholders	**End-users**	▪ communities, low-income households, micro-entrepreneurs
	Micro-level	▪ financial service providers; ▪ private sector, specifically clean energy suppliers;
	Meso-level	▪ wholesale financing institutions; ▪ microfinance training institutes; ▪ providers of business support services; ▪ industry associations; ▪ market research institutions; ▪ technology research institutions; ▪ carbon finance brokers;
	Macro-level	▪ central and local government; ▪ national government agencies; ▪ development partners, including donor and UN agencies;
Target groups		▪ financial service providers; ▪ low-income households and micro-entrepreneurs
Ultimate beneficiaries		▪ low-income households and micro-entrepreneurs, particularly women who will make up half of the end clients

3.6 Sustainability of results

The programme approach includes a strong advocacy component to influence the enabling national policies and the business environment. It is expected that by the end of this programme, (i) a regulatory environment based on policy makers who are more knowledgeable and able to respond to FSP (ii) a stronger financial sector infrastructure offering products and services based on tried and tested financial products for energy services, as well as delivery systems and partnerships that both meet the financial service needs of poor households and micro-entrepreneurs (iii) FSPs that are capable of generating sufficient income to sustain and grow their services, with additional funding mechanisms to support new FSP market leaders will occur.

Additionally, the programme makes a strong value proposition to FSPs with the introduction of a new product in a high growth market as clean energy adoption increases, and an additional potential revenue stream from carbon markets. This will enable selected FSPs to further sustain and grow their services.

Through access to end-user finance, low-income households and micro-entrepreneurs will break out of the vicious cycle of energy poverty, increasing their productivities and ability to repay microfinance loans resulting in higher rates of return for FSPs.

3.7 Cross-cutting Issues

Gender

The energy-poverty nexus has distinct gender characteristics. Of the approximately 1.3 billion people living in poverty, it is estimated that 70% are women, many of whom live in female-headed households in rural areas. Despite most women's limited access to decision-making within the household and community - thereby limiting their ability to influence processes and resource allocation on many issues including energy - the proposed programme is expected to have direct and positive impact on women's livelihoods.

Access to modern energy services improves women's health, saves time and energy, and furthermore reduces consumption poverty thereby empowering women to participate more fully in development. Analysis of the benefits of biogas in Nepal shows a reduction in the workload of women and girls of 3 hours per day per household, annual savings of kerosene of 25 liters per household and annual savings of fuelwood, agricultural waste and dung of 3 tons per household. Studies show women in electrified households are involved more in home-based activities for income-generation.

There are different ways that decentralized clean energy can be seen as contributing to women's practical, productive and strategic needs. Energy should be seen not just as adding an efficiency element in development, but also an indirect means for enhancing gender equity. The table below shows select possibilities for improving the position of women through energy.

Table 3: Possibilities for improving the position of women through energy[38]

Energy Form	Women's needs		
	Practical	**Productive**	**Strategic**
Electricity	- pumping water: reducing need to haul and carry - mills for grinding - lighting improves working conditions at home	- extended work hours for income-generating activities - refrigeration for food production and sale - power for specialised enterprises such as hairdressing and internet cafes	- makes streets safer: allowing participation in other activities (e.g. evening classes and women's group meetings) - access to information through radio, TV and internet
Improved biomass (supply and conversion technology)	- improved health through better stoves - less time and effort in gathering and carrying firewood	- more time for productive activities - lower cost of process heat for income generating activities	- preservation of natural forests in community forestry management frameworks
Mechanical	- milling and grinding - transport and porting of water and crops	-increases variety of enterprises	- access to commercial and social/political opportunities

This Programme will ensure equal participation of both female and male in all activities by the standard UNCDF requirement of women making up 50% of the clients. This is crucial in delivering technology and financing options that is demand-based and has high acceptance and utility among end-users. These targets will be reflected in all performance based grant agreements with FSPs. Gender disaggregated data will be collected through various sources including market research, research outputs and FSP quarterly reports.

[38] Clancy, J. and Skutsch, M. 'The Gender Energy Poverty Nexus, Finding the energy to address gender concerns in development', DFID Project CNTR998521

Client Protection

Enhanced access to finance should bring benefits, and not harm, to clients. FSPs can take a number of measures to maximise the benefits of energy financing and mitigate the risk of over-indebting clients. This includes careful designing and pricing of energy loans so that repayments are in line with what clients have been paying to use traditional energy. This is to ensure clients not only have the willingness, but also ability to pay for energy loans. FSPs should also provide clear, sufficient and timely information about the terms and conditions of the financing product to ensure clients make an informed financial decision. To prevent over-indebtedness, FSPs also need to have in place internal systems to closely monitor the quality of the energy portfolio. Moreover, FSPs and energy providers should educate prospective clients about the benefits and risks of purchasing the energy asset and establish client feedback/complaint mechanisms that are accessible and responsive.

Given the importance of responsible finance, all grantees are strongly encouraged to endorse the Client Protection Principles of the Smart Campaign[39]. By endorsing the principles, FSPs commit to incorporate the principles in the FSP policies and practices, and to monitor their implementation. Pursuant to the FIPA standard Performance-Based Agreement (PBAs), all FSP grantees will report annually to CleanStart on their client protection activities (Annex 9).

4. Geographical Coverage

While CleanStart is global in scope, most of the outputs will be delivered through six countries over the life of the programme. Also, while the Global Knowledge and Learning output will have a genuinely global reach in that its products will be available as a public good for all, it will primarily rely on the growing body of knowledge and learning from the six countries to produce its knowledge and learning products. Understanding and embedding the programme within the country context will be essential.

Given the infancy in the end-user finance sector and the scale of the end-user finance gap, it is essential that the limited investment for CleanStart is used to generate a critical body of practice, experience, knowledge and skill needed to leverage significantly greater investment, wide scale adoption, adaptation and replication of the models and practices globally. CleanStart will therefore strategically choose countries that present the most enabling environments for the programme's success.

The lessons from the first generation projects and key insights from discussions with FSPs suggest that the countries with **relatively the most developed microfinance and energy markets** provide the best environment for CleanStart. The value addition of CleanStart would be to help in removing the barriers for FSPs to introduce and scale-up end-user finance for low-income people and micro-entrepreneurs.

[39] The purpose of the Campaign, which is housed at the Center for Financial Inclusion, and the Principles is to ensure that providers of financial services to low-income populations take concrete steps to protect their clients from potentially harmful financial products and ensure that they are treated fairly.

Maturity of the microfinance market

Eight key indicators have been identified to come to judgements about the **maturity if the microfinance market.** Detailed information has been collected from the MIX Market for the assessment (see Annex 14 for detailed assessment). The eight indicators are as follows:

1. Institutional diversity
2. Financial service providers in country
3. Client outreach
4. Profitability of industry
5. Portfolio quality
6. Infrastructure support for Industry
7. Availability of funds to expand lending activities
8. Lending product diversification

The initial assessment was restricted to LDCs given UNCDF's LDC mandate, which produced a list of most promising LDC countries (see Annex 15 for the full list of countries ranked in order). Notwithstanding UNCDF's LDC mandate, it is important to recognise that the microfinance sector in some of the above LDCs has still to reach full commercial scale and the industry is still evolving. This evolution process poses various challenges, which might adversely affect the introduction of new lending product on a larger scale. To limit the risk, the assessment was extended to non-LDCs. The **Philippines** in Asia and **Kenya** in Africa were identified as important non-LDCs with mature microfinance markets that can provide important lessons on clean energy financing. Additionally, countries such as **Tanzania** where there is a critical mass of activity around clean energy technology and services for the low-income segment, present another opportunity to maximize the potential for CleanStart and for learning.

The following countries therefore present an initial list of countries that may be eligible for CleanStart:

1. Bangladesh
2. Cambodia
3. Nepal
4. The Philippines
5. Ethiopia
6. Kenya
7. Malawi
8. Mali
9. Uganda
10. Tanzania

Maturity of the energy market

To determine the **maturity of the energy market**, CleanStart will rely on 'the scale of GEF funding available' as a proxy indicator (given the absence of a database comparable to the MIX Market for clean energy). This will help to further narrow down the ten provisional candidate countries. Additionally, a set of criteria for country selection will be pre-defined and applied flexibly, including:

- Sustainable Energy for All accelerator country
- Existence of other significant bilateral and multilateral energy initiatives that have the potential to crowd in additional investments
- UNCDF presence (inclusive finance project and/or country office)
- UNDP presence (UNDP/GEF and/or country office)

CleanStart will then finalize the six pilot countries through the following process:

1. **Country assessment:** A country assessment is conducted to finalize the country selection, engage with stakeholders and develop a country-specific implementation strategy (business plan). A scoping of the microfinance and energy sectors is conducted at the end-user (energy needs), micro (FSPs and suppliers), meso (support structures) and macro (policy and regulatory) levels. It will also study existing quality standards and technology options, state of the clean energy value chain and gaps, and conditions in the local microfinance market. Where possible, CleanStart will also refer to scoping assessments already completed for relevant programmes or initiatives, including UNDP/GEF projects.
2. **Peer review:** A country-specific implementation strategy (business plan) is developed based on assessment findings. It is reviewed both internally and externally among a team of technical advisors in UNCDF and external expert(s) to ensure the strategy is feasible and scalable. UNDP/GEF will be invited to this process.
3. **Endorsement:** The business plan is submitted to the global Investment Committee as well as the relevant Ministry for endorsement.

5. Strengths and Capabilities of UNCDF

The programme will build on UNCDF's internal strengths and comparative advantages in the area of inclusive finance.

UN Capital Development Fund (UNCDF)

Over the past two decades, UNCDF has been extending financial services through financial service providers in Africa and Asia, reaching 3.5 million clients globally in 2010 and targeting 6 million by 2013. UNCDF has extensive experience in managing transparent grant funds, building the capacity of FSPs and supporting governments in developing the appropriate policy and regulations for an enabling environment. UNCDF ranked first in the 2011 "SmartAid for Microfinance Index[40]" for overall donor effectiveness in the microfinance sector. The assessment recognized that UNCDF has a history of supporting the next generation of sustainable financial service providers that focus on poor and low-income people. UNCDF will use its special mandate as the only UN agency to provide risk capital to the private sector and deploy its accumulated knowledge, experience, networks and presence in financial markets across 25 least-developed countries in sub-Saharan Africa and Asia-Pacific to effectively implement the CleanStart programme. UNCDF strengths in thematic programmes have been demonstrated already in several successful global and regional initiatives including MicroLead, YouthStart, and The Pacific Financial Inclusion Programme (PFIP). Refer to Annex 17 for overview of FIPA programmes.

Key strengths of UNCDF include:

- **Strategy for building inclusive financial sectors consistent with good practices:** Developed with the participation of a broad range of staff, UNCDF's strategy is user-friendly and lays out the agency's approach to promote inclusive financial sectors.
- **Responsiveness to evaluations and reviews:** The refinement and evolution of UNCDF's strategy over the years demonstrates an exceptional willingness and proven ability to change based on feedback.
- **Strong technical staff with mandate to review and approve all microfinance programmes:** The UNCDF Operations Manual unequivocally states that the advice of financial specialists is binding for all UNCDF programming related to inclusive finance.
- **Size and experience of focal point matches portfolio:** UNCDF enjoys an enviable staff-to-portfolio ratio with its 10-person strong in-house focal point. Placing experienced focal point specialists in the field is consistent with UNCDF's strategy.
- **Policy and tools for mandatory performance monitoring and transparency in place:** The requirement for regular (mostly quarterly) reporting is highlighted in the strategy and UNCDF Operations Manual.
- **Flexible grant funding aligned with strategy:** UNCDF's primary instrument, grant funding, is well suited to its risk-taking approach and focus on retail institutions in LDCs. In many cases for the Inclusive Finance Practice Area, UNCDF works through direct implementation rather than national implementation through government, which is appropriate for market-based solutions CleanStart seeks to foster. The ability to reassign funds among programmes in the Inclusive Finance Practice Area reduces potential disbursement pressure.

[40] The SmartAid for Microfinance Index measures and rates the way microfinance funders work. Heads of 29 major development institutions endorsed CGAP's development of the Index.

United Nations Development Programme (UNDP)

CleanStart will leverage comparative strengths of strategic partners given the importance of taking an integrated approach to scale up energy microfinance. One such partner is UNDP/GEF which has on the ground presence and comparative advantages in providing technical assistance and capacity building to energy stakeholders.

Over the last 20 years, UNDP has built up a very extensive portfolio of energy projects and programmes, and has acquired a wealth of experience and expertise in supporting countries to use, expand and shift towards sustainable energy for development. Since 1992, UNDP has brokered more than 200 large (US$1 million or more) and 2,500 small energy projects with a combined value of more than $750 million and have additionally mobilized US$3.25 billion in co-financing.

In providing its assistance, UNDP has promoted the use and transfer of a wide range of clean and renewable energy technologies (wind, solar, hydro, biogas, biomass, geothermal); has worked across a range of scales, from individual household and village up to national, regional and global; and has promoted the use of many instruments, sources of funds and tools (government budgets, ODA, Global Environmental Facility (GEF), philanthropic and non-traditional donors, market-based instruments, financial mechanisms such as feed-in tariffs, carbon finance, and microfinance). Many of the projects UNDP has implemented in the energy sector have involved the design and establishment of financial mechanisms.

The overall portfolio of UNDP energy-related projects and programmes has more than doubled in a decade to some US$ 2.5 billion, including funds from its own regular resources, governments, GEF, GEF Small Grants Programme, bilateral donors and other partners in the private sector and civil society.

Programmes that focus on off-grid energy solutions for poor people occupy a central part of the UNDP energy portfolio. More than 1,500 off-grid decentralized energy initiatives in over 100 developing countries have reached at least one million beneficiaries a year. Between 2001 and 2007, some 7 million people benefitted directly through UNDP support for expanding access to modern energy services for the poor. The potential to scale up is built into each initiative, as is the flexibility to apply the most appropriate approach for each situation.

UNDP, together with UNEP and UNIDO, announced the UN Energy Access Facility (UN-EAF) at the time of the MDG Summit in September 2010. UN-EAF is a Multi-Donor Trust Fund (MDTF) designed to deliver as One UN and is an integral part of the MDG Breakthrough Strategy. It has also become an official part of the Secretary-General's Advisory Group on Energy and Climate Change (AGECC) follow up actions. UNDP will lead national level engagements as part of the Sustainable Development for All initiative. (Refer to Annex 18 for a summary of UNDP's energy portfolio)

6. Resources and Results Framework[41]

Table 4: Resources and Results Framework (Summary of Outputs)

Goal	Contribute to the achievement of Sustainable Development Goals (SDGs) on affordable and clean energy (SDG 7), poverty and hunger (SDG 1 and 2), health (SDG 3), education (SDG 4), gender (SDG 5), and climate change action (SDG 13) *(*Refer to Programme Monitoring Framework (PMF) for baselines and targets)*									
Outcome (Purpose)	By end of programme, increased sustainable access to clean and affordable energy by more than 2.5 million people (low-income households and micro-entrepreneurs) through inclusive finance									
Programme Outputs	**Indicative activities for each output**	**Resource Allocation and Indicative Timeframe (USD)**								**Total USD**
		2012 (Y1) (Expenditure)	**2013 (Y2) (Expenditure)**	**2014 (Y3) (Expenditure)**	**2015 (Y4) (Expenditure)**	**2016 (Y5) (Estimate)**	**2017 (Y6)**	**2018 (Y7)**	**2019 (Y8)**	**2020 (Y9)**	
Output 1: Finance for Clean Energy to strengthen capabilities of 18 FSPs to provide finance for clean energy to low-income households and micro-entrepreneurs		110,486	349,215	370,680	465,547	467,319	1,414,481	1,709,166	1,768,102	1,001,924	7,656,920
Output 2: Technical Assistance for Clean Energy to remove barriers and support institutions to the successful deployment and commercialization of those technologies and services for which the selected FSPs will provide financing		27,596	172,914	50,124	918,066	706,331	1,385,342	1,673,955	1,731,678	981,284	7,647,290
Output 3: Global Knowledge and Learning to enhance understanding and awareness globally of the potential for finance to scale-up access to clean energy		57,109	144,566	175,797	256,630	471,357	326,460	394,472	408,075	231,242	2,465,708
Output 4: Advocacy and Partnerships to create an enabling policy and business environment to expand finance for clean energy		39,353	343,846	161,545	361,262	236,421	260,578	314,865	325,722	184,576	2,228,168

[41] Includes the Project Initiation Plan (PIP) duration which commenced in January 2012

Output 5: Effective global programme implementation		415,475	466,836	433,268	651,687	489,094	897,379	**1,084,333**	**1,121,724**	**635,643**	**6,195,439**
Total Programme and Indirect Support Cost (A+B)		**650,019**	**1,477,377**	**1,191,414**	**2,653,192**	**2,370,522**	**4,284,240**	**5,176,791**	**5,355,301**	**3,043,669**	**26,193,525**
Total Programme Cost(A)		-		-	-	-	-	-	-	-	-
Indirect Support Cost(B)*	7-8% of commitment and unfunded amount, excluding UNCDF core	**166,647**	**111,569**	**4,439**	**431,925**	**1,794**	**214,888**	**389,790**	**412,424**	**226,773**	**1,960,249**
Total Commitment	**Commitment**	**650,019**	**1,477,377**	**1,191,414**	**2,653,192**	**2,370,522**	**2,573,806**	**1,890,300**	**1,310,558**	**1,037,534**	**15,154,722**
-	*UNCDF*	*95,584*	-	-	-		*200,000*	*304,416*	*200,000*	*200,000*	*1,000,000*
-	*SIDA*	*434,472*	*221,028*	-	*1,143,387*	*2,270,570*	*1,398,143*	-	-	-	*5,467,600*
	*SIDA Uganda(Renewable Energy Challenge Fund)****	-	-	-	-	*22,425*	*975,663*	*1,585,884*	*1,110,558*	*837,534*	*4,532,064*
-	*Norad*	*92,690*	*1,256,349*	*773,624*	*1,498,848*	*36,642*	-	-	-	-	*3,658,153*
	Liechtenstein		-	*55,482*	*10,927*	*40,885*	-	-	-	-	*107,924*
-	*Austria*	*27.273*	-	*362,308*	*30*	-		-	-		*389,611 **
Unfunded		-	-	-	-	-	**1,710,434**	**3,286,491**	**4,004,743**	**1,997,135**	**11,038,803**

* In 2015 the method of charging GMS changed from 'off the top' to 'as you go'. In 2016 only donor resources were used which were received in previous years, therefore no GMS is mentioned for 2016. Also, the percentage charged for GMS changed from 7% to 8% in 2014.
** Rounding-off error included here. Austria contributed USD 389,610.39.
*** Financial resources from SIDA for CleanStart Uganda are based on the UN exchange rate of 15 October 2016. The authoritative budget is in Swedish Krona.

A more detailed RRF will soon be presented to and approved by the CleanStart Investment Committee

7. Management and Coordination Arrangements

7.1 Management and Implementation Arrangements

A. Implementation Modality

Direct implementation (DIM) will be the implementation modality for this programme. UNCDF will programme the funds and manage the activities specified in the Resources and Result Framework (RRF) in line with its established rules and regulations. The administration of this Programme shall be governed by UNCDF's policies, rules and regulations, including the UNDP Programme and Operations Policies and Procedures (PoPP) and UNCDF's Operations Manual.

B. Investment Committee (IC)

The Investment Commitee (IC) will oversee the implementation of the programme, including deciding on all capital grants or loans to institutions. It will comprise of senior managers from UNCDF Financial Inclusion Practice Area (FIPA), technical members such as the UNDP Environment and Energy Group, funding members and stakeholders that can represent the interests of senior beneficiaries such as relevant Ministries from pilot countries, practitioners in a relevant field or their associations. Donors funding CleanStart would be invited to the IC to provide their feedback on proposals, and would be given regular reporting on the advancement of the project. The IC will also seek advice from the *Global Clean Energy Finance Partnership Forum* consisting of key players in microfinance, energy and carbon markets.

C. Programme Implementation Unit (PIU)

CleanStart will be managed globally by UNCDF through a Programme Implementation Unit (PIU) based in the UNCDF Asia-Pacific Regional Office in Bangkok, Thailand. The PIU will be headed by a Programme Manager, with primary supervision by the UNCDF Senior Regional Technical Advisor based in Thailand (who in turn reports to the FIPA Director). Where possible, the Programme Manager will work closely with the Regional Technical Advisors (RTA) and Chief Technical Advisors (CTA) based in the three regions in which UNCDF operates (Asia-Pacific, Southern and Eastern Africa, Western and Central Africa) in managing the programme. The Senior Advisors in Dakar and Addis Ababa will dedicate 10% of their time to this programme for this purpose. This cost has been budgeted. The Programme Manager will be supported by three staffs 1) Programme and Knowledge Management Analyst 2) Energy Expert 3) ProgrammeAssociate.

In relation to capital grants and loans, the Programme Manager will be responsible for coordinating the RFP, vetting FSP proposals, conducting due diligence and presenting applications to the Investment Committee (IC). In each programme country, UNCDF will seek the endorsement of the government before disbursing grants to FSPs through a letter of endorsement.

7.2 Roles and responsibilities

Investment Committee (IC)

The IC is responsible for (Refer to Annex 19 for draft Terms of Reference):

- setting CleanStart's strategies and priorities;
- approving annual work plans and revisions and deviations from tolerance levels defined by the IC;
- reviewing and approving the selection of pilot countries and business plans;
- appraising and approving capital grants and loans to partners;
- monitoring and evaluating CleanStart's performance; and
- delegating some of these responsibilities to the Programme Manager.

Programme Implementation Unit (PIU)

The PIU consists of four full time dedicated staff (Refer to Annex 20 for draft Terms of Reference):

- Programme Manager (P4)
- Programme and Knowledge Management Analyst (P2)
- Energy Expert (P3, indicative)
- Programme Associate (G6)

The PIU will be responsible for:

- **Programme implementation and management**
  - Manage and monitor delivery of programme objectives and outputs to ensure it is on time and on budget;
  - Prepare and implement annual work plans;
  - Prepare and submit **bi-annual reports** and **annual progress reports** ;
- **Proposal of pilot countries and development of country business plans**
  - Submit candidate countries for IC approval
  - Conduct country assessment and draft business plan for IC approval
- **Selection, award and management of grants and loans**
  - Manage the RFP and selection process, including reviewing proposals, short-listing, conducting due diligence and presenting recommended proposals to the IC;
  - Prepare and manage performance-based agreements with FSPs and FSP-led consortiums;
  - Monitor performance of FSPs that have been awarded grants and/or loans;
- **Ensuring relevant Ministry of selected programme country is aware and endorses providing funding to organizations that reside or operate in the country**
- **Selection, award and management of technical assistance**
  - Develop detailed strategies for technical assistance;
  - Prepare, negotiate and manage framework contracts with International and National Technical Assistance Providers (TA Providers);
  - Manage International and National TA Providers;
- **Management of knowledge and learning**
  - Develop detailed strategies for knowledge and learning;
  - Design and coordinate research, including ensuring that a common methodology is used for the impact studies;
  - Publish research funded by CleanStart;
  - Manage the CleanStart website;
- **Secretariat to the Global Clean Energy Finance Partnership Forum**

United Nations Capital Development Fund (UNCDF)

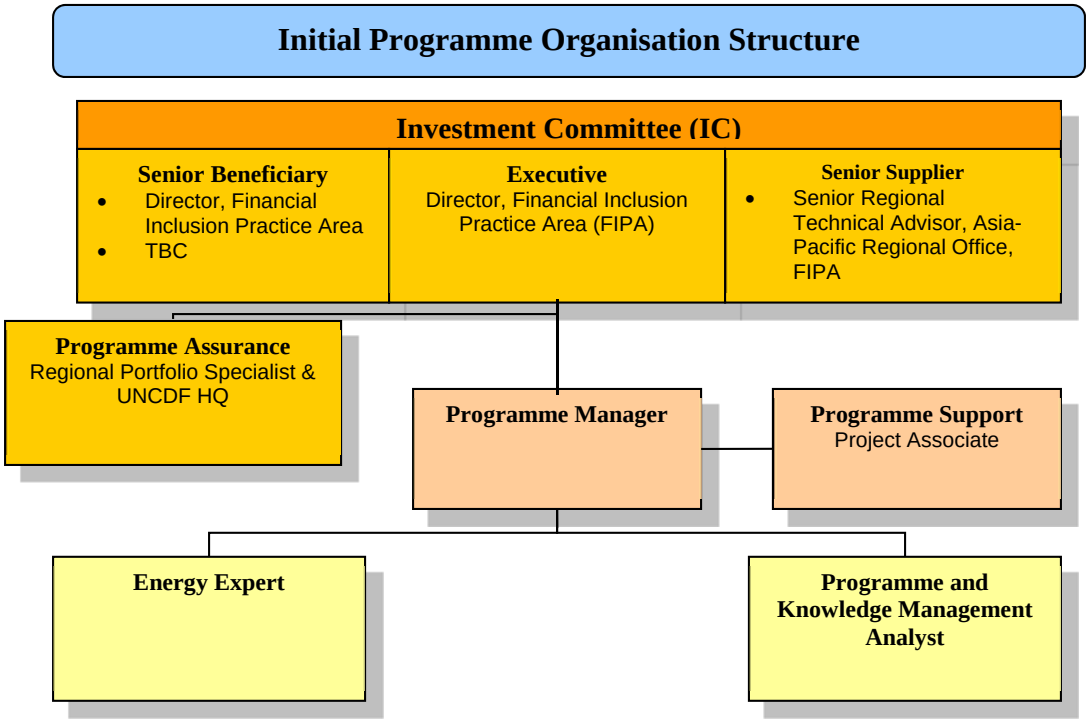
UNCDF will be responsible for:

Global and Regional

- Making an initial capital contribution of US$ 1,000,000 and raising additional funding to allow a gradual roll-out of programme countries, including US$ 25.1 million to cover the costs of the full programme and catalysing approximately an addition of US$ 50 million in the form of liquidity support for FSPs directly;
- Managing programme funds;
- Overall programme oversight and quality assurance;
- Overall technical oversight and quality assurance;
- Monitoring and evaluation

Country

- administrative support (e.g. procurement, logistics, management of missions)
- offer knowledge of country context (important particularly at the design stage of CleanStart in a particular country).
- access to relevant ministries and key stakeholders both in microfinance and other socio-economic sectors, as well as to regional authorities (important particularly at the design and inception stage of CleanStart in a particular country).
- Linking projects vertically to the "policy sphere" thus influencing relevant national regulatory, financial and policy instruments
- Technical backstopping of project implementation teams
- Quarterly monitoring of interventions.
- Troubleshooting where appropriate.



7.3 Other Collaborating Partners

United Nations Development Programme (UNDP)
UNDP/GEF and UNCDF share a common vision and complementary objectives in the area of clean energy access. Through its signature programme on clean energy, UNDP/GEF aims at "improving the energy access, use and supply through the promotion of distributed clean energy systems….providing clean fuel for heating and cooking, promoting greater efficiency and the productive use of energy". Besides shared vision and complementary objectives, both the CleanStart project and UNDP/GEF supported projects will have in common shared countries in which the projects will be implemented, offering significant potential to leverage impact through cooperation. This partnership is defined in a Letter of Agreement (LoA) between UNCDF and UNDP/GEF. UNCDF will invite UNDP-GEF for its cooperation in the following areas:

a. Technical inputs to validate CleanStart country strategies.
b. Technical inputs in the design and implementation of CleanStart projects at the country level, particularly in respect of advice on clean energy value-chains and technologies.
c. Linking individual projects horizontally to exchange knowledge, lessons and potential for policy work.
d. Leveraging synergies with current and future UNDP-GEF energy projects, where relevant.

UNCDF will work closely with UNDP/GEF to agree specific activities for country-level cooperation during the preparation and finalization of CleanStart country strategies and business-plans.

Central Coordinating Body for Clean Energy
Where it exists and deemed essential, CleanStart will explore opportunities to partner with a central coordinating body in the programme country that promotes access to renewable and efficient energy. This partnership could potentially support **brokering partnerships, access to pre-qualified suppliers, quality assurance and oversight, financing, policy and/or advocacy and coordination and monitoring**. This can include support to:

- Delivering smart subsidies for the energy value chain disbursed by complementary energy programmes reach programme areas;
- Ensuring FSPs partner with pre-qualified suppliers that follow quality-standard guidelines;
- Monitoring installations and maintenance;
- Testing technologies selected for lending are tested and establishing standards;
- Ensuring partner FSPs and suppliers have access to energy service delivery structures at the local level;
- Facilitating relationship-building and information-sharing between FSPs and suppliers;
- Securing long-term financing for FSPs to scale-up energy lending;
- Supporting innovation such as carbon financing;
- Advising CleanStart on relevant policies and regulations;
- Reflecting lessons from CleanStart in policy formulation and advocating the programme in various forums;
- Coordinating efforts of various energy programmes including CleanStart

Technical Assistance Providers (TA Providers)
Technical assistance will be provided by the PIU and a network of pre-qualified International Technical Assistance Providers (TA Providers) and National Technical Assistance Providers. Where local expertise is not available, National TA Providers in each of the programme countries will undergo a process of training and certification. Overtime, the national network of certified technical assistance providers are expected to organically evolve to support not only FSPs under the CleanStart programme, but also meet demand for services from other FSPs, donors, investors and government.

The PIU will establish a roster of international technical assistance providers through framework agreements that will include specific deliverables, including the identification, training and certification of national technical service providers that can increasingly take on the roles and responsibilities for the provision of technical services to FSPs and energy companies with the international TA Providers gradually moving into the role of technical backstopping and provision of technical support in areas not available at the national level.

The roles of the Technical Assistance Providers will be to assist FSPs, energy suppliers, partners and PIU to:

- Carry out country assessments;
- Implement awareness and confidence-building activities;
- Develop business plans for CleanStart grant funding;
- Conduct market research;
- Broker partnerships between FSPs and energy suppliers, including finalising risk-sharing agreements;
- Select technologies or services for financing;
- Develop and roll-out financial products;
- Develop training course on clean energy microfinance and train Master Trainers;
- Assist FSP, energy suppliers and partners to develop proposals for Innovation Grants;
- Organise an "expo" event for FSP and clean energy suppliers;
- Provide technical support and backstopping to FSP implementing CleanStart activities;
- Act as resource centre for information on CleanStart and on finance for clean energy within the country;
- Act as an interlocutor between the PIU and key stakeholders in each country for policy and advocacy in the programme countries.

Global Clean Energy Finance Partnership Forum

The IC will seek advice from the *Global Clean Energy Finance Partnership Forum* consisting of key players in international funding agencies, investors, clean energy technology companies, and leading implementers of end-user finance for low-income people and micro-entrepreneurs.

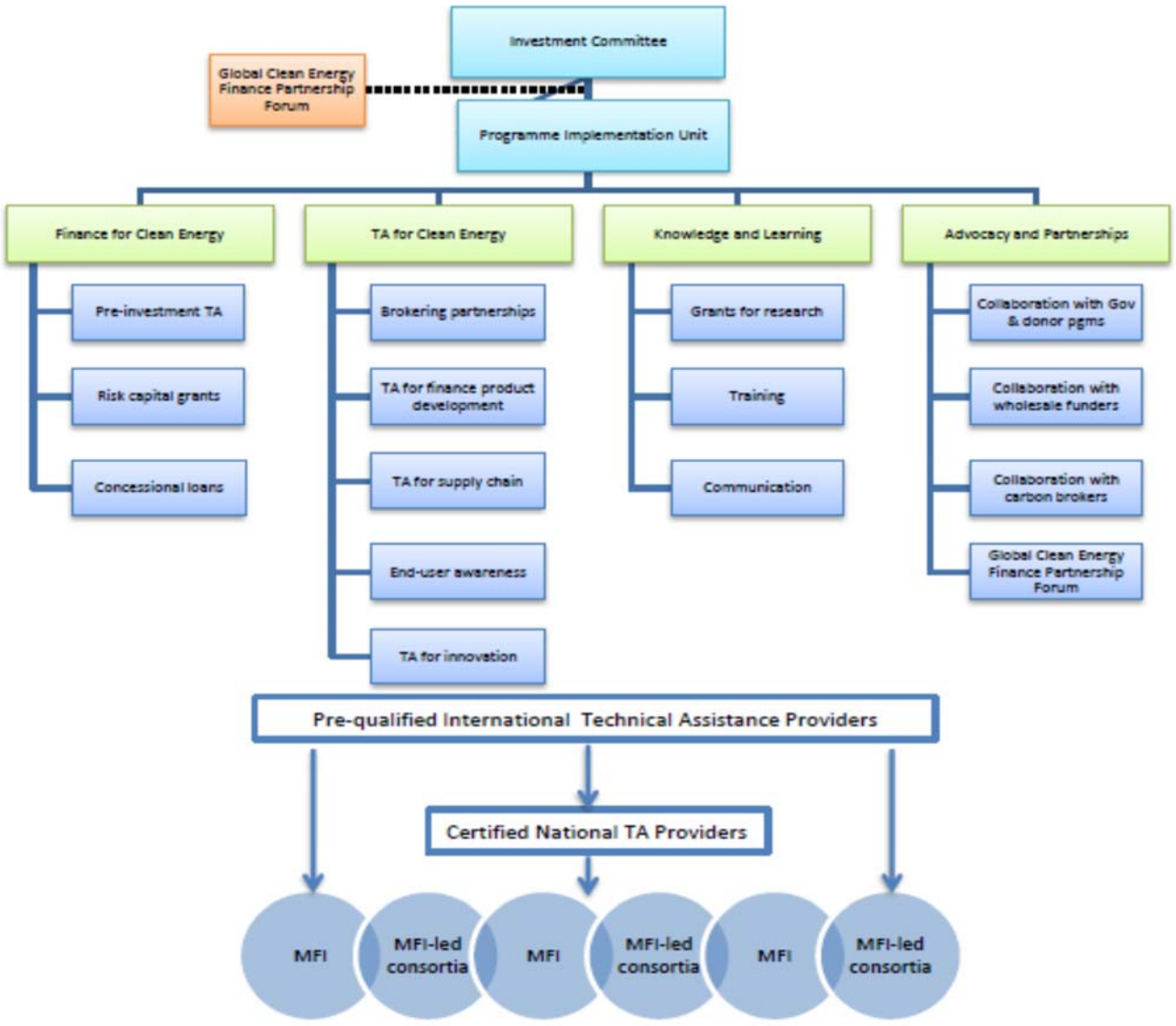
The role of the Forum will be to:

- Share plans, ideas, connections and strike deals.
- Champion end-user financing for clean energy supplies

National governments of selected countries

CleanStart will seek endorsement of the country business plan from the relevant Ministry to initiate implementation of activities in country. The endorsement will be sought in the form of a "no-objection" letter. Government buy-in will facilitate the project's ability to encourage policy changes in favor of developing clean energy supplies and access to appropriate and sustainable energy finance in particular.

Figure 5: Programme Implementation Arrangements



7.4 Implementation Plan[42]

The programme will be implemented through 4 phases over a 9-year period.

- Phase I (Y1-2): **Programme Initiation** across 3 countries in Asia and Africa, providing support to 9 FSPs. Key activities include selection of FSP partners, brokering partnerships between FSPs and with energy suppliers, testing of the grants facilities, provision of technical assistance and adjustments to the programme design as necessary. Detailed analytical work will be carried out to refine programme design and document good practices through country assessments, market research, research into practice and baseline studies. Furthermore, the Programme Implementation Unit (PIU) will be established to ensure the human resources and instruments needed to deliver the programme are in place.
- Phase II (Y3-Y4): **Programme Roll-out** across 3 new countries including start-up and grant support to 9 additional FSPs in the additional countries. It will also be a period where more established partners implement innovations. Also during this phase a significant amount of knowledge products will be generated through research and a mid-term evaluation will be conducted to assess programme performance. Also, arrangements for sustainability of the programme will be put into place with a critical mass of FSP staff trained in clean energy financing as well as local technical partners certified as CleanStart partners.
- Phase III (Y5-Y8): **Programme Consolidation and Global Scale-up** includes activities to consolidate the programmes in the six countries, as well as secure follow-up investments for successful partners. At the same time CleanStart will prepare proposals for global scaling up, possibly including replication of CleanStart activities beyond the initial six countries through a follow-on programme.
- Phase IV (Y9): **Programme Phase-out** in the six countries. This will include orderly phase-out of support in the six programme countries together with activities to consolidate learning and ensure sustained impact of the knowledge generated by CleanStart.

Key activity milestones of the implementation plan include:

1. **Assessment:** country assessment, country business plan, Government endorsement
2. **Inception (pre-investment TA):** awareness and confidence building, FSP business plan, partner selection (performance-based agreement)
3. **Grants:** Risk capital grants
4. **Partnerships:** strategic market research, technology expo, risk-sharing agreement
5. **Technical Assistance for Finance & Supply Chain**
6. **Innovation**

8. Visibility and Outreach

To the extent possible, CleanStart will acknowledge the important role played by collaborating partners and donor agencies in supporting this important initiative, while ensuring such branding and attribution remains in compliance with UNCDF branding standards and requirements.

[42] Includes the Project Initiation Plan (PIP) duration which commenced in January 2012

9. Fund Management Arrangements

9.1 Management of Contributions

The Programme will be initially financed through UNCDF USD 1 million, SIDA USD 9.99 million (based on UN Exchange rates for October 2016), Norad USD 3.65 million, Austria USD 389,000 and Liechtenstein USD 107,000. There is a funding gap of just over USD 11 million which will need to be mobilized incrementally during the initial years of the programme as CleanStart rolls-out in selected countries. UNCDF and will work to mobilize additional resources from bilateral donor agencies, multilateral organizations as well as private foundations.

When new sources of funds are committed to the programme in line with the programme document, an amendment will be made as follows:

a. An updated cover page, reflecting the latest amount of funded resources to the programme by donor;
b. An updated Results and Resources Framework, indicating the additional resources committed to the programme;
c. A description of the incremental results that will be achieved with the additional resources to the programme;

A formal change in the design of the programme will require a formal programme document revision and appraisal committee meeting.

9.2 Management of Disbursements

In response to Request for Proposals (RFPs), three FSPs will be selected to receive risk capital grants and concessional loans in each country or 18 FSPs overall. A thorough due diligence, including reference and data checks and on-site visits to the FSPs under consideration, will be made to verify the FSP's management and operational abilities to perform according to the anticipated agreement. For more recent RFP's the challenge fund mechanism and tools are used to achieve the same, with a more robust process.

After clearing the due diligence process, representatives from both parties (UNCDF and FSP) will sign a Performance-based Agreement (PBA), which will include initial process milestones (clean energy product developed and piloted), key performance targets (outreach, percent female, number of products developed and rolled out, etc.), as well as minimum standards (endorsement and implementation of client protection principles).

Funds will be released in tranches over the grant period by UNCDF, based on the FSP's meeting targets and disbursement conditions in the PBAs. In addition, PBAs will ensure that FSPs set aside sufficient resources to ensure internal monitoring of the results of the grant. In this way, UNCDF will be able to hold grantees accountable to results and to minimize investments in grantees who do not manage to yield success results with initial grant funds. Risk capital grants will be transferred to selected FSPs through wire transfers to their bank accounts, only after representatives of all parties have agreed to the nature of the collaboration and the use of the grant funds.

10. Monitoring, Evaluation and Reporting

10.1 Monitoring

The Programme Monitoring Framework (Table 8) presents the indicators including targets to be used when monitoring and evaluating this programme. Where possible, activities will include gender-specific analysis and adopt a participatory approach to take into consideration gender-specific needs and impact. This will help generate gender-disaggregated data, and over time, inform how the programme strategy can better accomodate gender dimensions to energy access.

Regular monitoring of the Programme will be conducted through various methods and tools, including:

- monitoring and technical backstopping visits by the Programme Implementation Unit (PIU), Regional Technical Advisors and field partners;
- quarterly reporting by partner FSPs in accordance to PBA, including gender-disaggregated data and implementation of client protection principles;
- annual audited annual financial statements submitted by partner FSPs;
- partner FSPs' data posted on the MIX market;
- bi-annual and annual progress reports by the PIU used to ensure accountability to external partners;
- evaluations;
- research outputs

It is expected that the combination of data available from monitoring and reporting plus research outputs preparation and dissemination will help advance the clean energy microfinance and provide a demonstration effect to other FSPs globally. Policy level results will be monitored partly through the information gathered through the appropriate Ministries of national Governments. These will be supplemented by commissioned evaluation and research conducted by independent consultants.

10.2 Reporting

FSP Reporting

FSPs receiving assistance under CleanStart will be required to submit quarterly progress reports to the Programme Implementation Unit on performance against standard indicators and targets as set in the Performance Based Agreement (PBA). Annually, FSPs will also provide audited annual financial statements. FSPs may continually post their data on the CleanStart website and MIX[43] market.

Programme Progress Reporting

The Programme Implementation Unit (PIU) will prepare and submit **bi-annual reports** and **annual progress reports** of the joint programme to ensure accountability to external partners, including donors, national partners and the Investment Committee. Specifically, the reports will include information on progress toward intended outputs, plans of activities, financial status and projection and lessons learnt.

Corporate Reporting

The corporate-level UNCDF strategy, described in the Corporate Management Plan (CMP), contains clear objectives and a results matrix for the Financial Inclusion Practice Area. Results are reviewed yearly and published in the annual report.

10.3 Evaluation

The programme is subject to:

- A **mid-term global evaluation** scheduled at the end of the third year of the programme period, managed by the UNCDF Evaluation Unit. The global evaluation will assess the programme's overall performance, the outputs and outcomes produced against its initial targets, the impact it has brought or would likely bring about. This evaluation is in compliance with the UNCDF mandatory evaluation requirements in the UNDP Evaluation Policy, to which UNCDF is party. An evaluation plan will be formulated at the start of the programme and UNCDF will solicit the input of donors for its development.
- A **final evaluation**, if specifically required by programme partners.

Evaluations will build on the findings from the Global Knowledge and Learning output of the programme, and fill in any gaps needed to highlight programmatic and technical lessons learned. It will also examine constraints and opportunities for developing an enabling environment for access to energy finance, the policy changes needed to remove the constraints or seize opportunities. Funding for these evaluations is included in the programme budget. In countries where FSPs funded under this programme coincide with countries where UNCDF is supporting sector development programmes, country-based evaluations will complement the mid-term/final evaluation by examining the FSPs' contributions to the development of an inclusive financial sector (competitive environment, range of products and services, etc) and to overall access to clean energy. These evaluations will be managed through a multi-disciplinary, multi-cultural team, led by independent evaluation specialists with input from field-based staff, including the Programme Manager, Regional Technical Advisors and Country Technical Advisors. Collectively, the team will visit all grant recipients to perform the evaluation.

[43] Microfinance Information Exchange

Table 6: Programme Monitoring Framework (Logical Framework)

EXPECTED RESULTS (Outcomes and Outputs)	INDICATORS (with baselines & indicative timeframe)	MEANS OF VERIFICATION	COLLECTION METHODS	RESPONSIBILITIES	RISKS AND ASSUMPTIONS
OUTCOME (purpose): By end of programme, increased sustainable access to clean and affordable energy by more than 2.5 million people (through financing of 501,000 low-income households and micro-entrepreneurs)	1. Number of people that secure access to low-cost decentralized clean energy supplies disaggregated by gender Target: Y3: 115,000 people Y4: 290,000 Y5: 531,000 Y6: 850,000 Y7: 1,266,000 Y8: 1,805,000 Y9: 2,505,000 *Note: Targets are cumulative*	Quarterly reports submitted by FSPs or other partners, Research reports, Evaluation	PIU compiles quarterly progress reports and research reports, UNCDF Evaluation Unit and/or Investment Committee commissions evaluation	UNCDF	Assumptions: Large numbers of low-income people will not have access to grid electricity in the medium term Risks: • Government announces plan to connect programme areas to the grid • Clients lack awareness about the benefits of clean energy • FSPs perceive clean energy lending as risky • Supply chain of technology/service chosen for lending is weak • Political constraints delay programme implementation • Availability of programme funding • Political unrest and natural disasters delay programme implementation •

	2. Number of Least Developed Countries (LDCs) and developing countries where CleanStart methodology is adopted Target: By 2020, CleanStart is operational in 6 countries and 10 additional LDCs and developing countries adopt the CleanStart methodology	Programme progress reports, Research reports, Evaluation	Bi-annual and Annual Progress Reports are submitted by the PIU, UNCDF Evaluation Unit and /or Investment Committee commissions evaluation	UNCDF	
OUTPUT 1: Finance for Clean Energy to strengthen capabilities of 18 FSPs to provide financing for clean energy to low-income households and micro-entrepreneurs	1. Number of country assessments conducted to finalise the selection of pilot countries and design country-specific business plans Target: Y1: 3 assessments Y2: 1 Y4: 2 Y6: 2	Country assessment report, country business plan	Country assessment is conducted in each potential pilot country	UNCDF	Assumptions: • FSP able and willing to offer financing for clean energy • Low-income households and micro-entrepreneurs willing and able to pay • Model can become self-financing within 5 years. Risks: • Lack of familiarity with energy financing among FSPs • Financial risk to FSP is high (Refer to Annex 6 for details) Risk mitigation strategy: • Expose FSPs to the potential value of clean energy finance • Competitively select partner FSPs based on quality of business plans • Incentivize FSPs to make up-front investment through risk-sharing instruments such as grants and concessional loans
	2. Number of FSPs that participate in the Awareness and Confidence Building Training and/or other pre-investment activities Target Y1: 10 FSPs Y2: 5 Y3: 5 Y4: 10 Y6: 10	Application, evaluation survey, participants list, training/information session material	PIU compiles all relevant data	UNCDF	
	3. Number of partner FSPs competitively selected for risk-capital grants and technical assistance	FSP business plans, due diligence report, Investment Committee minutes, PBAs	PIU compiles all relevant data	UNCDF	

	Target: Y1: 3 FSPs Y2: 6 Y3: 3 Y4: 6 Y6: 6 Y7: 3				
	4. Number of FSPs that receive concessional / commercial loans or equity Target: Y5: 1 FSPs Y6: 1 Y7: 2 Y8: 2 Y9: 2	Loan applications, loan agreement, partner progress report	PIU compiles all relevant documentation	UNCDF	
	5. Number of clients that receive energy loans through partner FSPs disaggregated by gender Target: Y3: 23,000 clients Y4: 58,000 Y5: 106,200 Y6: 170,000 Y7: 253,200 Y8: 361,000 Y9: 501,000 *Note: Y3-9 is cumulative*	Quarterly reports submitted by FSPs and other partners, Research reports, Evaluation	PIU compiles quarterly progress reports and research reports, UNCDF Evaluation Unit and /or Investment Committee commissions evaluation	UNCDF	
	6. Increasing trend in profitability of energy lending portfolio Target: Y2-9: share of income from energy lending shows progressive upward trend	Quarterly reports submitted by FSPs, Research reports, Evaluation	PIU compiles quarterly progress reports and research reports, UNCDF Evaluation Unit and /or Investment Committee commissions evaluation	UNCDF	
OUTPUT 2: Technical Assistance for Clean Energy to remove barriers and	1. Number of market research conducted by partner FSPs	Market research reports; business proposals; partner progress reports	Partner FSPs are assisted in conducting market research	UNCDF	Assumptions: • FSPs and suppliers see the benefit of partnership

support institutions to the successful deployment and commercialization of those technologies and services for which the selected FSPs will provide financing	Y1: Up to 3 research Y2: 6 Y3: 3 Y4: 6 Y5: 3 Y6: 6 Y7: 3				• Suppliers see business case to go down-market and target low-income customers • Low-income households and micro-entrepreneurs willing and able to pay • Model can become self-financing within 5 years. Risks: • Marketing risk due to uncertainty about market demand • Risk of technology failing before repayment (Refer to Annex 6 for details) Risk mitigation strategy: • FSPs conduct market research to obtain insights on client energy needs, willingness and ability to pay • Loan products are broadly in line with clients' current energy expenditure patterns • FSPs partner with organizations with strong distribution and after-sales capacity
	2. Expo and other events to showcase benefits of renewable and efficient technologies organised Target: Y1: 1 expo/event Y2: 2 expos Y3: 1 expo Y4: 2 expos Y5: 1 Y6: 2 Y7: 1	Event proceedings	PIU compiles all relevant documentation	UNCDF	
	3. Number of risk-sharing agreements by partner FSPs (business model partnerships) Target: Y1: 9 agreements Y2: 18 Y3: 9 Y4: 18 Y6: 9 Y7: 18	Signed risk sharing agreements between CleanStart partners and their business partners e.g. distributors, financial institutions; joint business plan	PIU compiles all relevant documentation	UNCDF	
	4. Number of partner FSPs that roll-out energy lending products that are demand-based and sustainable over time Target: Y2: 9 FSPs Y3: 12 Y4: 18 Y5: 15	Quarterly reports submitted by FSPs, Programme progress reports, Research reports, Evaluation	PIU compiles quarterly progress reports and research reports, UNCDF Evaluation Unit and /or Investment Committee commissions evaluation	UNCDF	

	Y6: 15 Y7: 15				
	5. Capacity developed within partner financial institutions to appraise risks connected with energy lending Target: Y2: 9 FSPs Y3: 12 Y4: 3 Y5: 6 Y6: 4	Training report, Quarterly reports submitted by FSPs, Research reports, Evaluation	PIU compiles quarterly progress reports and research reports, PIU submits annual progress reports, UNCDF Evaluation Unit and /or Investment Committee commissions evaluation	UNCDF	
	8. Number of Local Technical Assistance Providers (TSP) trained Target: Y1: 1 provider Y2: 3 Y3: 3 Y4: 3 Y6: 3	Training material, course evaluation	PIU compiles all relevant documentation	UNCDF	
	9. Supported business models that prove to be cost-effective models/mechanisms for delivering, maintaining, and financing clean energy systems and services Target: Y6: 3 models Y8: 1 Y9: 2	Research report, evaluation	PIU compiles research reports, UNCDF Evaluation Unit and /or Investment Committee commissions evaluation	UNCDF	
	10. Number of innovative models of collaboration	Business plans, Risk-sharing agreements	PIU compiles all relevant documentation	UNCDF	

	between financial institutions and other actors in the energy value chain supported Target: Y3: 1 innovative models Y4: 2 Y5: 1 Y6: 2 Y7: 1 Y8: 2				
OUTPUT 3: Global Knowledge and Learning to enhance understanding and awareness globally of the potential for finance to scale-up access to clean energy and make available the tools and knowledge needed to scale-up access to clean energy beyond the project	1. Number of knowledge products produced and disseminated Target Y1: 3 reports Y2: 4 Y3: 5 Y4: 6 Y5: 3 Y6: 5 Y7: 2 Y8: 2 Y9: 2	Research report, Feedback from stakeholders on the value and utility of the reports	PIU compiles research reports, Feedback is collected through various platforms (e.g. website, meetings organised by CleanStart)	UNCDF	Assumption: Knowledge and skills gap on clean energy financing exists Risk: • Limited number of experts that have background in both microfinance and energy • Limited number of established data sources on energy financing Risk mitigation strategy: • Establish pool of experts as well as build expertise internally • CleanStart website will serve as platform for knowledge sharing • Partner with entities with established data sources (e.g. IEA, UNDP, Mix Market, GOGLA)
	2. Training curriculum on energy lending developed for microfinance associations and international training institutes Target: Y5: 1 curriculum developed Y9: locally adapted version of curriculum used in 3 countries	Training curriculum; number of microfinance associations or training institutions using the curriculum	PIU compiles training curriculum	UNCDF	
	4. Number of FSP staff trained on clean energy financing Target: Y2: 300 staff Y3: 400	Course evaluation, research, partner progress report	Information sharing agreement will be stipulated in the MoU with training institutions, PIU compiles research reports	UNCDF	

	Y4: 500 Y5: 500 Y6: 500 Y7: 600 *Note: Y3-7 is cumulative*				
	5. Number of events organised to promote dialogue on clean energy financing Target: Y2: 2 events Y3: 2 Y4: 3 Y5: 3 Y6: 3 Y7: 3 Y8: 3	Event proceedings, outcome document	PIU compiles relevant documentation	UNCDF	
	6. CleanStart website and social media attracting substantial hits per year Target: Y2: create website Y3 to Y9: 30% increase per year	Number of visitors and downloads	Data will be tracked automatically through the CleanStart website and social media	UNCDF	
OUTPUT 4: Advocacy and Partnerships to create an enabling policy and business environment to expandfinance for clean energy	1. Number of complementary energy programmes that are assisted to build a conducive environment for end-user financing Target: Y1: 1 programme Y2: 1 Y3: 2 Y4: 1 Y5: 1 Y6: 1 Y7: 1	Mission report, minutes of the meeting, concept note, project document	PIU compiles relevant documentation	UNCDF	Assumption: Improved policy and business framework will encourage FSPs to provide clean energy lending at scale Risk: • Lack of willingness and commitment by the government to work on policies favourable to clean energy microfinance • Carbon market funding not available
	2. Number of countries where CleanStart is integrated into or closely cooperating with	Country business plan, UNDP/GEF project document	PIU compiles relevant data	UNCDF	Risk mitigation strategy:

	complementary programmes, including UNDP/GEF projects and Green Climate Fund Target: Y1: 1 country Y2-9: 3 countries				• Demonstrate success cases with policymakers and share lessons from engaging with grassroots stakeholders • Carbon market funding is not essential to the success of the programme • Align CleanStart programme with new market-based funding mechanisms established under UNFCCC, such as the mechanisms under Art.6 of the Paris Agreement, and the Green Climate Fund (GCF).
	3. Number of workshops organised to facilitate partnerships with market-based funding mechanisms Target: Y2: 1 workshop Y3: 3 Y4: 3 Y5: 2 Y6: 2 Y7: 2 Y8: 2 Y9: 2	Workshop material and outcome report	PIU compiles relevant documentation	UNCDF	
	4. Number of events where CleanStart is presented Target: Y1-9: At least 1 event per year	Event agenda and presentation	PIU compiles relevant documentation	UNCDF	
	5. Policies and programmes recognize CleanStart model Target CleanStart model acknowledged in at least 2 major policy and/or project documents per country	Policy documents, Project documents	PIU compiles relevant documentation	UNCDF	
OUTPUT 5: Effective global programme implementation	1. Programme Implementation Unit (PIU) is established to effectively manage the programme Target: Y1: Recruitment of Programme Manager and Knowledge Management and Learning Analyst	Recruitment advertisement and contract	PIU compiles relevant documentation	UNCDF	Assumption: PIU will develop systems and tools to help coordinate and deliver results efficiently and effectively over time Risk: • Limited number of experts with well-rounded expertise

	Y2-3: Full PIU is established				in both energy and financing • Day-to-day monitoring of country-level activities difficult as a global programme piloting in multiple countries Risk mitigation strategy: • Interact closely with relevant energy programmes for recommendations on validated experts • Evaluate experts at the end of assignment • Clearly identify roles and responsibilities of CleanStart focal points at the regional and country level and facilitate regular communication
	2. Investment decisions are made based on sufficient data and objective analysis Y1: Investment Committee established and ToR endorsed by relevant parties Y1-7: Investment appraisal process and tools are developed and refined over time (e.g. RFP, due diligence, PBAs)	IC ToR, RFP document and due diligence methodology and tool, PBA	PIU compiles relevant documentation	UNCDF	
	3. High-quality technical assistance to programme partners are deployed in a timely manner Y1-6: Roster of vetted experts established and updated	CVs and contract	PIU compiles relevant documentation	UNCDF	
	4. Programme activities and results are monitored closely Y1-9: Various data generated from monitoring activities collected systematically Y1-9: Investment Committee convenes at least twice a year	Monitoring strategy, IC minutes	PIU compiles relevant documentation	UNCDF	
	5. Additional resource is mobilised by delivering results and proving concept Y1-3: Develop resource mobilisation strategy with clear targets	Resource mobilisation strategy, partnership agreements	PIU compiles relevant documentation	UNCDF	

	Y1-9: Ensure visibility of results by engaging with various stakeholders				

11. Legal Context

This project forms part of an overall programmatic framework under which several separate associated country level activities will be implemented. When assistance and support services are provided from this Project to the associated country level activities, this document shall be the "Project Document" instrument referred to in: (i) the respective signed SBAAs for the specific countries; or (ii) in the Supplemental Provisions attached to the Project Document in cases where the recipient country has not signed an SBAA with UNCDF, attached hereto and forming an integral part hereof

This project will be executed by the agency (name of agency) ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNCDF. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNCDF shall apply.

The responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNCDF's property in the Implementing Partner's custody, rests with the Implementing Partner. The Implementing Partner shall: (a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried; (b) assume all risks and liabilities related to the Implementing Partner's security, and the full implementation of the security plan. UNCDF reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The Implementing Partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNCDF hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

12. Annex

Annex 1: Linkages between energy and MDGs
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Annex 12: UNDP/GEF V Projects – Private Sector Financing Mechanism
Annex 13: Criteria for Identification of LDCs
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Annex 16: Selection of Clean Energy Technologies and Applications
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Annex 18: Summary of the UNDP Energy Access Portfolio
Annex 19: CleanStart Investment Committee Terms of Reference
Annex 20: Terms of Reference for Programme Implementation Unit
Annex 21: 2012 (Year One) Workplan
Annex 22: 2013 (Year Two) Workplan