

## **Inputs to the Secretary General's Report to the 68<sup>th</sup> General Assembly:** *Development, Transfer & Dissemination of Clean and Environmentally Sound Technologies*

It is with pleasure for UN Capital Development Fund (UNCDF) to present a technology facilitation mechanism for consideration in the preparation for the Secretary-General's recommendations to the 68th Session of the General Assembly.

### **I. Summary**

UNCDF (UN agency with recognized expertise in microfinance) is implementing an innovative approach to increase poor peoples' access to sustainable, low-cost clean energy. The approach uses four independent though mutually supportive strategies:

1. ***FINANCE FOR CLEAN ENERGY*** to strengthen capabilities of financial service providers to provide microfinance for clean energy to low-income households and micro-entrepreneurs;
2. ***TECHNICAL ASSISTANCE FOR CLEAN ENERGY*** to remove barriers to the successful deployment of those technologies and services for which the selected financial service providers will provide microfinance;
3. ***GLOBAL KNOWLEDGE AND LEARNING*** to enhance awareness globally of the potential for microfinance to scale-up access to clean energy and make available the tools 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 microfinance for clean energy.

The approach is called 'CleanStart' for short to describe clean pathways for poor people to jump-start their permanent access to modern energy, and aims to support at least 2.5 million people to move out of energy poverty by 2017.

### **II. Working methods of the technology facilitation mechanism**

#### **Background**

Appropriate end-user financing mechanisms – combined with local technical capacity and supportive regulatory environment - are instrumental to expanding markets for clean energy. Against this background, UNCDF has developed an integrated approach to dramatically scale up access to clean technologies among poor households and micro-entrepreneurs through microfinance, supported by energy supply chains and policy environments that are focused on reaching the poor. The methodology is called 'CleanStart' for short to describe clean pathways for poor people to jump-start their permanent access to modern energy.

#### **Strategy**

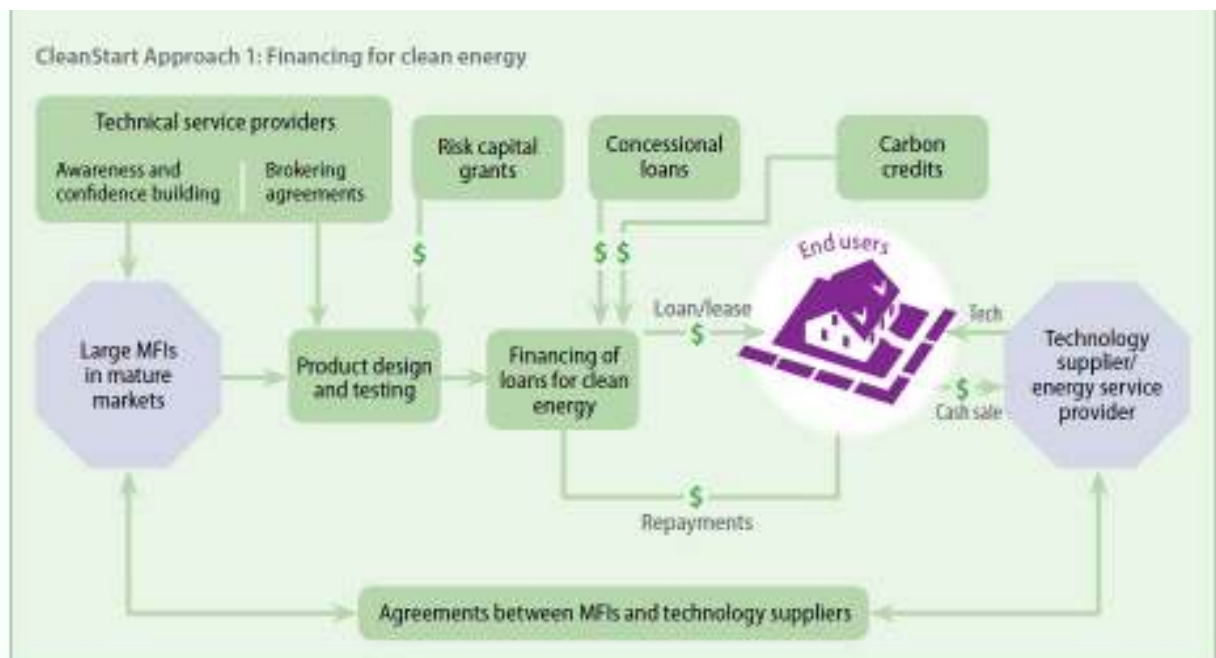
***Four programme components (integrated sector-wide approach):*** The direct financing model by financial service providers will operate in the context of broader efforts to support initial risk-taking by the private sector, develop entrepreneurial skills, promote productive uses of energy for income generation, facilitate access to finance and markets and promote conducive policies. Furthermore, the growing body of knowledge and learning from the six countries will be distilled into knowledge and learning products offered as public good which will contribute indirectly to scaling-up end-user financing globally.

**COMPONENT 1. FINANCE FOR CLEAN ENERGY** to strengthen capabilities of financial service providers to provide microfinance for clean energy to low-income households and micro-entrepreneurs;

- CleanStart supports up to 18 partner financial service providers (FSPs) to mitigate financial risks associated with scaling up end-user finance for clean energy applications among low-income clients. Risk mitigation instruments will be offered as follows:
  1. **PRE-INVESTMENT ADVISORY ASSISTANCE** to expose FSPs to international experience and help develop business plans for energy lending;
  2. **RISK-CAPITAL GRANTS** to cover the up-front cost of introducing a new financial product line;
  3. **CONCESSIONAL LOANS** to provide initial liquidity before FSPs deploy their own equity or existing credit lines to scale-up energy lending.

**COMPONENT 2. TECHNICAL ASSISTANCE FOR CLEAN ENERGY** to remove barriers to the successful deployment of those technologies and services for which the selected financial service providers (FSPs) will provide microfinance;

- CleanStart supports three main groups of stakeholders (partner FSPs, supply chain, end-users) to develop scalable business models. Technical assistance will be provided as follows:
  1. **MARKET RESEARCH** to develop financial products based on understanding of client energy needs and resource availability;
  2. **BROKERING PARTNERSHIPS BETWEEN FSPs AND ENERGY SUPPLIERS** to select technologies/services to be commercialized and develop sustainable business models for a given customer base;
  3. **FINANCIAL PRODUCT DEVELOPMENT AND ROLL-OUT** to develop energy lending products most appropriate for target clients, and build institutional systems and capacity necessary to scale-up energy lending into a core business;
  4. **STRENGTHENING ENERGY SUPPLY CHAIN** to strengthen supplier capability to market and reliably deliver, install and maintain technologies and services.
  5. **END-USER AWARENESS** to raise substantial client awareness of the benefits new fuels and technologies provide as well as financing opportunities.



**COMPONENT 3. GLOBAL KNOWLEDGE AND LEARNING** to enhance awareness globally of the potential for microfinance to scale-up access to clean energy and make available the tools needed to scale-up access to clean energy beyond the project;

- CleanStart actively documents and shares tools and lessons generated through the results of CleanStart and beyond to improve awareness and skills in energy financing for base of the pyramid populations within target countries and internationally. This is both practically and strategically important particularly given the embryonic stage of this market. Research grants and capacity building will be offered as follows:
  1. **GRANTS FOR RESEARCH INTO PRACTICE** to improve practices in areas such as partnership arrangements between FSPs, energy companies and carbon brokers; delivery mechanisms for energy financing and services; and financial product development and management
  2. **GRANTS FOR RESEARCH INTO IMPACT** to assess impact in areas such as client living standards and poverty reduction; business prospects for supply-side actors such as FSPs, energy companies and carbon finance players; and national policies and regulations that promote adoption of clean energy among the poor;
  3. **TRAINING CURRICULA ON CLEAN ENERGY FINANCING AND TRAINING GRANTS** to build a critical mass of trained microfinance professionals in energy lending by integrating energy finance curriculums into trainings offered by national microfinance associations and internationally recognised microfinance training programmes;
  4. **COMMUNICATION OF KNOWLEDGE** to widely disseminate outputs from different research activities through various knowledge sharing platforms

**COMPONENT 4. ADVOCACY AND PARTNERSHIPS** to create an enabling policy and business environment to expand microfinance for clean energy.

- CleanStart will collaborate with three different sets of players 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. Key partners include:
  1. **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;
  2. **WHOLESALE FUNDERS**, including national and international commercial banks and wholesale financing institutions that refinance microfinance portfolios;
  3. **CARBON BROKERS** that are working on energy projects and trading on the major voluntary and compulsory carbon markets.

### **III. Technology-neutral approach**

#### **Technology options**

In the context of CleanStart, clean energy includes renewable energy solutions (e.g. solar, hydro power), low-GHG emitting fossil fuels (e.g. LPG), and traditional fossil fuels that, through the use of improved technologies and practices produce less CO<sub>2</sub> emissions (e.g. improved cook stoves).

CleanStart will move away from a technology-driven supply approach to become more technology-neutral and client demand-oriented. CleanStart will identify high to medium potential technologies or services that could be supported through microfinance through initial market research.

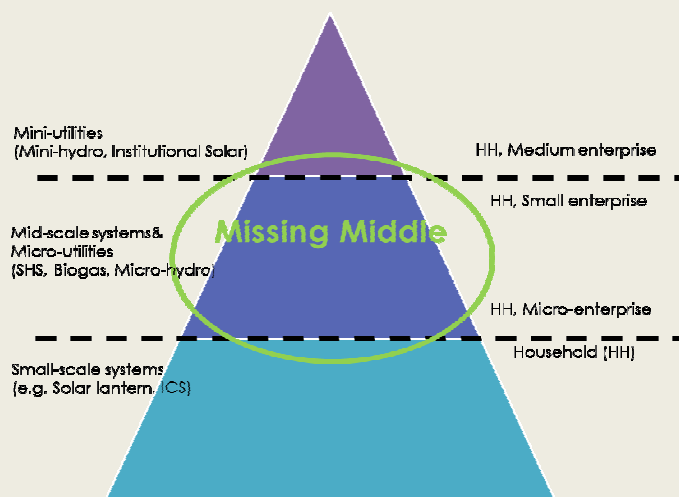
Ultimately, partner financial institutions will select the clean energy solutions to finance based on their own market research for financial product development. It is assumed that an energy loan could be as large as USD 300 for systems such as solar home systems or biogas plants in the case of Nepal. In Uganda, the following have been identified as technologies/services scalable through microfinance based a market assessment commissioned by CleanStart in 2012: solar PV lanterns, solar home systems, institutional improved cook stoves, biogas systems and biomass briquetting machines.

### Box 1. The challenge of energy poverty, missing middle & next frontier

The challenge of energy poverty goes beyond improving basic living standards. Sufficient & high-quality power is needed for productive use of energy beyond the home and into businesses. Mid-scale energy systems (e.g. solar home systems, biogas plants) or mini-utilities have the potential to offer sufficient power for multiple households, small enterprises and public facilities. These can be on or off-grid, or may connect in mini-grid formats, and may involve a number of different technologies, including solar, hydro and gasification.

Financial intermediaries are beginning to understand the potential of larger energy systems and see it as the next frontier given the potential to generate greater returns and impact. These are capital-intensive (typically ranging between USD50,000 to USD5 million) and require private-public partnerships (e.g. local governments) and flexible payment schemes. However, commercial investors are still generally reluctant to finance such projects due to perceived risks, lack of proven partnership and delivery models, and lack of experience in structuring such deals.

CleanStart will support high-potential financial intermediaries and energy service providers to diversify into larger-scale systems (“missing middle”). To this end, CleanStart will use a mix of grants and concession loans to help entities graduate from partial grant funding to fully commercial investment to fuel growth of their business models.



## IV. Programme Scale & Leverage Potential

CleanStart will support up to **18 financial service providers** in **six countries** in **Asia and Africa** to provide microfinance for clean energy solutions at scale. It will also work towards building a sustainable supply chain for energy technologies or services chosen for lending.

CleanStart (USD 26.1 million, 2012-2017) is implemented by the UN Capital Development Fund in close cooperation with the United Nations Development Programme Global Environment Facility (GEF). A total of USD 60 million will have been lent over the life of the programme, with the potential to reduce over 300,000 tonnes of CO<sub>2</sub>.

**Long-term vision:** CleanStart is much an approach as a programme itself. The programme’s long-term vision is to dramatically scale up energy financing for the poor beyond the initial six LDCs and also other developing countries with high levels of energy poverty. To this end -- where there is demand and potential to reach scale -- CleanStart will provide technical assistance or 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.

**Leverage potential:** 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. Based on an initial investment of USD 26 million, CleanStart could leverage an additional USD 49.5 million by collaborating with other actors or programmes in refinancing (USD 30 million), energy value chain development (USD 18 million), and carbon financing (USD 1.5 million).

## V. Geographic Scope

CleanStart will support up to **18 financial service providers** in **six countries** in **Asia and Africa** to provide microfinance for clean energy solutions at scale.

The pilot countries to be selected should demonstrate key characteristics that provide the most favorable environment for clean energy financing through financial service providers, namely countries that combine a **mature microfinance market** with a **developed clean energy infrastructure**.

*Provisional candidate countries* include the following:

Continent	Country
Asia	Bangladesh, Cambodia, Nepal, Philippines
Africa	Ethiopia, DR Congo, Tanzania, Uganda

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. UNCDF will therefore strategically choose countries that present the most enabling environments for the programme's success.

It is expected that the following will ensure the sustainability of this approach:

- demonstrated values for FSPs such as improved viability of core financial products and higher rate of revenue;
- more enabling policy and business environment in support of clean energy microfinance; and
- improved productivity and ability to repay microfinance loans as the poor break out of energy poverty.

## VI. List of partner organizations that will be essential to be involved

<b>Micro-level</b>	<ul style="list-style-type: none"> <li>▪ microfinance institutions;</li> <li>▪ private sector, specifically clean energy suppliers;</li> </ul>
<b>Meso-level</b>	<ul style="list-style-type: none"> <li>▪ wholesale financing institutions;</li> <li>▪ microfinance training institutes;</li> <li>▪ providers of business support services;</li> <li>▪ industry associations;</li> <li>▪ market research institutions;</li> <li>▪ technology research institutions;</li> <li>▪ carbon finance brokers;</li> </ul>
<b>Macro-level</b>	<ul style="list-style-type: none"> <li>▪ central and local government;</li> <li>▪ national government agencies;</li> <li>▪ development partners, including donor and UN agencies;</li> </ul>

## **VII. UNCDF Capabilities**

Over the past two decades, UNCDF has been extending financial services through microfinance 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<sup>1</sup>” for overall donor effectiveness in the microfinance sector.

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• <sup>1</sup> 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.

## Key Partners

Partner Name & Type of Organization	Current Capabilities	Role	Main Objectives
<b>UN Capital Development Fund (UNCDF)</b> <i>Implementing agency</i> <i>UN agency</i>	<ul style="list-style-type: none"> <li>Over the past two decades, UNCDF has been extending financial services through microfinance institutions in Africa and Asia, reaching 3.5 million clients globally in 2010 and targeting 6 million by 2013.</li> <li>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 for microfinance.</li> <li>UNCDF ranked first in the 2011 “SmartAid for Microfinance Index<sup>2</sup>” for overall donor effectiveness in the microfinance sector.</li> </ul>	<ul style="list-style-type: none"> <li>Making an initial capital contribution of US\$ 1 million and raising additional funding to allow a gradual roll-out of programme countries and catalysing approximately an addition of US\$ 50 million in the form of liquidity support for FSPs directly;</li> <li>Overall technical oversight and quality assurance, particularly for financing components;</li> <li>Overall programme oversight and quality assurance;</li> <li>Monitoring, reporting and evaluation;</li> <li>Managing programme funds;</li> </ul>	<ul style="list-style-type: none"> <li>UNCDF is the UN’s capital investment agency for the world’s 49 least developed countries. It creates new opportunities for poor people and their small businesses by increasing access to microfinance and investment capital. UNCDF programmes help to empower women, and are designed to catalyze larger capital flows from the private sector, national governments and development partners, for maximum impact toward the Millennium Development Goals.</li> </ul>

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<p><b>United Nations Development Programme (UNDP)</b></p> <p><b>Global Environment Facility (GEF) Unit</b></p>	<ul style="list-style-type: none"> <li>• A central part of the UNDP energy portfolio is the range of programmes that focus on off-grid energy solutions for poor people. More than 1,500 off-grid decentralized energy initiatives in over 100 developing countries have reached at least one million beneficiaries a year.</li> <li>• 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).</li> </ul>	<ul style="list-style-type: none"> <li>• UNCDF will invite UNDP-GEF for its cooperation in the following areas: <ul style="list-style-type: none"> <li>- Technical inputs to validate CleanStart country strategies.</li> <li>- 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.</li> <li>- Linking individual projects horizontally to exchange knowledge, lessons and potential for policy work.</li> <li>- Leveraging synergies with current and future UNDP-GEF energy projects, where relevant.</li> </ul> </li> <li>• 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.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• UNDP partners with people at all levels of society to help build nations that can withstand crisis, and drive and sustain the kind of growth that improves the quality of life for everyone. UNDP works in four main areas: poverty reduction and achieving the Millennium Development Goals (MDGs); democratic governance; crisis prevention and recovery; environment and sustainable development. On the ground in 177 countries and territories, UNDP offers global perspective and local insight to help empower lives and build resilient nations.</li> </ul>
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<p><b>Central coordinating body in the energy sector</b>  <i>national agencies mandated to develop and promote renewable/alternative energy technologies</i>  <i>(e.g. Alternative Energy Promotion Centre in Nepal)</i></p>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Delivering smart subsidies for the energy value chain disbursed by complementary energy programmes reach programme areas;</li> <li>Ensuring FSPs partner with pre-qualified suppliers that follow quality-standard guidelines;</li> <li>Monitoring installations and maintenance;</li> <li>Testing technologies selected for lending are tested and establishing standards;</li> <li>Ensuring partner FSPs and suppliers have access to energy service delivery structures at the local level;</li> <li>Facilitating relationship-building and information-sharing between FSPs and suppliers;</li> <li>Securing long-term financing for FSPs to scale-up energy lending;</li> <li>Supporting innovation such as carbon financing;</li> <li>Advising CleanStart on relevant policies and regulations;</li> <li>Reflecting lessons from CleanStart in policy formulation and advocating the programme in various forums;</li> <li>Coordinating efforts of various energy programmes including CleanStart</li> </ul>	<ul style="list-style-type: none"> <li>Central coordinating bodies in the energy sector are lead national agencies mandated to develop and promote renewable/alternative energy technologies. Its responsibilities could include a combination of the following: <ul style="list-style-type: none"> <li>renewable energy policy formulation, planning and facilitating the implementation of the policies/plans;</li> <li>pre-qualification of suppliers of energy products and services;</li> <li>technology standardization;</li> <li>quality assurance and monitoring as well as delivery of financial assistance including subsidies and credit;</li> <li>national focal point for coordinating and monitoring renewable energy related activities and/or promotes the use of these energy technologies through implementation of a number of energy projects</li> </ul> </li> </ul>
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