

Mid-term Evaluation of the CleanStart Programme

Accessing Clean Energy for the Poor

Final Report

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microfinanza

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 MICROFINANZA
RATING

Mid-term Evaluation of the CleanStart Programme

Accessing Clean Energy for the Poor

(Cambodia, Ethiopia, Myanmar, Nepal, Uganda)

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Contents

Programme Data Sheet	v
Abbreviations and Acronyms	vii
Executive Summary	1
1 Introduction.....	6
2 Evaluation Purpose and Scope	7
3 Programme Profile	9
3.1 Programme Description and Background	9
3.2 Current Programme Implementation Status.....	10
3.3 Current Programme Financial Status.....	12
4 Evaluation Approach and Methodology.....	14
5 Evaluation Findings Per Evaluation Question	16
5.1 Relevance and Quality of Design	16
Relevance of programme [EQ1.1]	16
Appropriateness of programme design [EQ1.2 & EQ1.3]	19
Design considerations for cross-cutting issues [EQ1.4].....	22
Design considerations for programme transition, expansion and replication [EQ1.5].....	23
5.2 Efficiency of Management and Quality of Activities	24
Use of funds [EQ2.1].....	24
Quality of management and oversight [EQ2.2].....	26
Quality of non-financial support (capacity building) [EQ2.3]	29
Quality of financial support (grant funding) [EQ2.4].....	31
5.3 Effectiveness to Date	33
Level of output delivery and outcome achievement (micro level) [EQ3.1 & EQ3.2]	33
Influence on broader system (macro, meso, and market level) [EQ3.3 & 3.4].....	43
5.4 Possible Impact.....	46
Final beneficiaries (client level) [EQ4.1]	46
Indirect positive and/or negative possible impacts (macro, meso, market level) [EQ4.2]	52
5.5 Prospects for Sustainability	53
Sustainability and ownership at micro level [EQ5.1 & EQ5.2]	53
Support and interaction at policy level [EQ5.3].....	56
6 Conclusions and Recommendations.....	58
6.1 Overall Assessment	58
6.2 Recommendations.....	59

7	Gender, Human Rights and Ethical Considerations.....	62
	Annex 1: CleanStart Programme Results Chain and Theory of Change Overview	63
	Annex 2: Evaluation Matrix	67
	Annex 3: Programme Indicators.....	79
	Annex 4: List of relevant stakeholders interviewed	85
	Annex 5. CleanStart supported FSP/ESP information	93
	Annex 6. REEP DEMO analysis	100
	Annex 7: Guidelines for Interviews with FSP and ESP	103
	Annex 8: Guidelines for Focus Group Discussions (FDGs) with CleanStart Clients	108
	Annex 9: Questionnaire for Structured Interviews with CleanStart Clients.....	111
	Annex 10: Guidelines for Interviews with Other Stakeholders	113
	Annex 11: Sampling strategy.....	118

Programme Data Sheet

Country:	<i>Cambodia, Ethiopia, Myanmar, Nepal, and Uganda (direct countries) Benin, Burkina Faso, Cameroon, Kenya, Senegal, and Tanzania (indirect countries)</i>
Programme Title (long)	<i>Access to Clean Energy for the Poor through Microfinance (CleanStart)</i>
Programme Atlas Code (by donor)	00059354 (Initiation Plan) 00086749

Financial Breakdown (by donor)¹

Commitments	As per ProDoc 2013 (USD)	Actual as of Q4 2016 (USD)
UNCDF	1,000,000	1,000,000
SIDA	2,588,000	9,842,470 ²
NORAD	3,873,387	3,658,153
Austrian Development Cooperation	389,610	389,610
Government of Liechtenstein		161,850
A. Total Commitments	7,850,997	15,052,083
B. Estimated Budget	26,193,525	26,193,525
Funding gap (B-A)	18,342,528	11,141,442

Delivery to date (per donor): Effective disbursement as of Dec 2016 (USD)

Donor	2012	2013	2014	2015	2016	TOTAL
UNCDF	95,602	-	-	-	-	95,602
SIDA ³	434,472	217,561	-	1,143,387	2,138,751	3,934,170
NORAD	92,690	1,256,348	773,624	1,498,848	35,799	3,657,309
ADC	27,273	-	362,308	30	-	389,610
Government of Liechtenstein	-	-	55,481	10,928	40,884	107,294
Total disbursements	650,036	1,473,909	1,191,414	2,653,192	2,215,434	8,183,985

UNCDF = United Nations Capital Development Fund; SIDA = Swedish International Development Cooperation Agency; NORAD = Norwegian Agency for Development Cooperation; ADC = Austrian Development Cooperation

Executing Agency	UNCDF
Implementing Agency	UNCDF
Key Programme Partners	SIDA, NORAD, ADC, and Government of Liechtenstein
Approval Date of Programme	December 2011 (Project Initiation Plan)
Programme Duration as per ProDoc	January 2012 – December 2017 – extended to December 2020
Programme Amendment	Repositioning Strategy (July 2015), Programme Amendment Oct 2016
Evaluation Period	Dec 2016 - May 2017
Other current UNCDF programmes in-country	EFA, LFI, LGCDP, LoCAL, MAP, Microlead,

¹ For more details on the financial breakdown (estimated amount, commitment in the ProDoc and effective capital secured), refer to Section 3.3. *Current Programme Financial Status*

² SIDA PFIS USD 1,238,144; SIDA LDGR USD 4,229,456; SIDA RECF USD 4,374,870.

³ SIDA PFIS and SIDA LDGR.

	MM4P, Nepal A2F, SHIFT, YouthStart
Previous UNCDF projects (if relevant)	n/a
Previous evaluations (if relevant)	n/a
Dates of audits	n/a

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Abbreviations and Acronyms

ADB	Asian Development Bank
ADC	Austrian Development Cooperation
AEPC	Alternative Energy Promotion Centre
AFD	Agence Française De Développement
APR	Annual Progress Report
AWP	Annual Work Plan
CGF	Credit Guarantee Fund
CREF	Central Renewable Energy Fund
CPP	Client Protection Principle
CS	CleanStart
DAC	Development Assistance Committee
DFID	Department for International Development – Gov UK
DFS	Digital Financial Service
DIM	Direct Implementation Modality
EAC	Energy Africa Compact
EQ	Evaluation Question
ESP	Energy Service Providers
FIPA	Financial Inclusion Practice Area
FGD	Focus Group Discussion
FSP	Financial Service Provider
GEF	Global Environmental Fund
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GNI	Gross National Income
GOGLA	Global Off-Grid Lighting Association
IC	Investment Committee
ICS	Improved Cookstove
JC	Judgment Criteria
LDGR	Leveraging Domestic Finance for Inclusive Growth and Resilience
MAP	Making Access Possible
MDG	Millennium Development Goal
MEMD	Ministry of Energy and Mineral Development (Uganda)
MFI	Microfinance Institutions
MIS	Management Information System
MM4P	Mobile Money for the Poor
MNO	Mobile Network Operator
KM	Knowledge Management
KPI	Key Programme Indicators
NORAD	Norwegian Agency for Development Cooperation
OECD	Organization for Economic Cooperation and Development
OSS	Operational Self-Sufficiency
PAC	Project Appraisal Committee
PAYG	Pay as You Go
PBA	Performance Based Agreement
PFIS	Partnership Framework for Inclusive Growth and Sustainable Development

PI	Programme Indicator
PIP	Project Initiation Plan
PIU	Programme Implementation Unit
PM	Programme Manager
PPI	Progress Out of Poverty Index
ProDoc	Programme Document
RE	Renewable Energy
REA	Rural Electrification Agency
RECF	Renewable Energy Challenge Fund
REEP-DEMO	Reduction Expenses Energy Product Delivery Model
RFP	Request For Proposal
ROA	Return on Assets
ROE	Return on Equity
SACCO	Savings and Credit Cooperative
SDG	Sustainable Development Goal
SE4ALL	Sustainable Energy for All Initiative
SHIFT	Shaping Inclusive Finance Transformation
SHS	Solar Home System
SIDA	Swedish International Development Cooperation Agency
SMART	Specific, Measurable, Achievable, Relevant, Time bound
TA	Technical Assistance
ToC	Theory of Change
ToT	Training of Trainers
UECCC	Uganda Energy Credit Capitalization Company
UN	United Nations
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme

Executive Summary

Programme Overview. CleanStart is a multi-year and multi-donor programme implemented by UNCDF seeking to **increase sustainable access to clean and affordable energy** for more than 2.5 million people, and specifically **501,000 low income households** and **micro entrepreneurs** through **access to finance**. The programme - initially designed with a timeline from January 2012 to December 2017 - has been extended up to December 2020. The estimated resources for the programme amounted to USD 26 million and, as of December 2016, a total of USD 15 million had been secured by UNCDF, SIDA⁴, NORAD, ADC, and the Government of Liechtenstein (resulting in a funding gap of 42%).

In seeking to address the numerous challenges and constraints of the green energy sector and programme management, CleanStart **has mostly focused its efforts at micro level adopting three different business models** (sector-based model involving the microfinance sector, investment-based model with also energy service providers - ESPs, and partnership model with a microfinance network), by providing mostly **financial support**, and some **capacity building**. Other activities carried out by the programme are related to **initiatives at macro and meso level** in the countries of implementation, **knowledge sharing** (dissemination through publications and events) and **advocacy**. As of December 2016, against a backdrop of fewer financial resources than expected, the **CleanStart programme had increased its rate of results in the previous two years** and it is, as of now, roughly on target in terms of client numbers. The **most substantial results to date have been achieved in Nepal and Uganda**, while lighter initiatives have been promoted in Myanmar and Cambodia, and activities in Ethiopia are still under development. Overall, however, the programme is registering delays in attaining some of its intermediate outputs, struggling to reach (overly-demanding) targets related to the majority of indicators.

Evaluation Purpose and Approach. The mid-term programme evaluation seeks to: i) allow UNCDF and funding partners to meet their **accountability and learning objectives**; ii) support the ongoing attempts by the programme and its funders to **capture good practices** and **lessons learned** to date in a sector that is still relatively new and innovative; and iii) guide and inform the next years of CleanStart implementation as well as – if appropriate – the next phase of the programme, with a **practical and achievable set of recommendations (and lessons learned)** towards the achievement of intended programme results by the expected completion date, as well as in support of possible extension/scaling-up and/or replication of the programme. The evaluation process was **structured around a Theory of Change framework and an Evaluation Matrix** covering the **five OECD/DAC evaluation criteria**, as well as the elaboration of a data collection toolkit to support the various components of the evaluation; namely: (i) documentary review; (ii) FSP/ESP performance data collection; (iii) interviews with stakeholders at all levels (global, macro, meso, market and micro); and (iv) focus group discussions (FGDs) and structured interviews with final beneficiaries, Progress out of Poverty Index (PPI) analysis and energy diaries. The evaluation has been conducted by an independent evaluation firm - Microfinanza, partnering with MicroFinanza Rating, engaging a team of six experts from December 2016 to June 2017. The analysis covers the period **between January 2012 and December 2016**, and includes outcome projections and some judgments on the likelihood of the programme and its implementing partners to achieve intended targets.

⁴ SIDA provided financing through three global programmes/agreements: SIDA PFIS (Partnership Framework for Inclusive Growth and Sustainable Development), SIDA LDGR (Leveraging Domestic Finance for Inclusive Growth and Resilience in LDCs) and SIDA RECF (Renewable Energy Challenge Fund), the latter financed by the Embassy of Sweden in Uganda.

Relevance and Quality of Design. Based on the assumption of **going beyond financial inclusion as a final goal** towards **increasing access to clean energy**, CleanStart was initially **intended as a pilot programme**. It has adopted a **global approach**, appropriate to **pilot different models**, without focusing (at the design stage) on a specific country or region. In 2015, to address market evolutions, the initially quite restrictive programme design, based on a business model for credit-based financing targeting only FSPs, was re-oriented following a dedicated study that recommended some key strategic changes. The programme has launched activities in countries where **energy inclusion is highly relevant** (demand side) and is a **key political** concern (mostly in access to grid), although **clean energy is not** always considered as a **high priority** according to the respective governments involved. Furthermore, the programme design - based on the approach of being agnostic to any one type of technology - has not sufficiently considered some other potentially promising areas of intervention (i.e. such as promoting access to energy also through non-financial services, capacity building or training; or considering outreach from a wider perspective including also communities) and other key elements (such as environmental sustainability in terms of product efficiency or access to markets). **Targets were set at demanding levels**, which can be considered appropriate for leveraging funds, but not for a pilot programme (that ideally has limited size). In terms of programme design, the comparability between CleanStart and other worldwide initiatives appears difficult because they differ not only in scope, but also in size, and geographical coverage. However, it is worth mentioning the ability of CleanStart to create **relevant synergies with existing UNDP/UNCDF programmes and other global initiatives**. While the programme design has ensured **meticulous monitoring of partner performance** (i.e. results at the micro level), it **does not** presently **include a comprehensive system for the monitoring of programme achievements**, which would have helped the transition, expansion and the replication of the piloted business models in different countries.

Efficiency of Management and Quality of Activities. Given the level of innovation, the programme involves a **relatively reasonable average unit cost for each beneficiary (76 USD)**. The unit cost varies greatly across the countries of implementation, but is on the whole likely to decrease in the next years of implementation. Programme management is assured by a **well-equipped centralized team**, but with targeted involvement and local presence at the country level only in Nepal and, since mid-2015, Uganda. Donors receive regular and comprehensive updates on programme progress and challenges, but their **effective engagement** (or involvement in general of other independent stakeholders relevant for the sector) in the programme governance might be improved to ensure external oversight and strategic support. Despite **good quality programming, the monitoring and reporting systems are improvable**, information is fragmented and spread out in several monitoring tools and mostly focused on data and information at micro level, while overall programme measurement is missing, hence data usability (in terms of having a comprehensive overview of the programme status) can also be strengthened. In terms of service delivery, CleanStart has provided a **relatively limited amount of direct capacity building** support (mostly concentrated in Nepal and Uganda), but has produced **three well researched studies and launched five Requests for Proposals (RfPs)** to finance FSP/ESPs with direct disbursements in Nepal and through the mechanism of the challenge funds in the other countries, that have attracted a **lot of visibility and applications**.

Effectiveness to Date. The programme is directly supporting **14 implementing partners in four countries** (Cambodia, Myanmar, Nepal, and Uganda), a **Credit Guarantee Fund (CGF)** in Ethiopia, and a **microfinance network (PAMIGA)** that assists 11 MFIs in five countries (Cameroon, Ethiopia, Kenya, Senegal, and Tanzania) and has started activities in three other countries (Benin, Burkina Faso, and Madagascar). By December 2016, the programme had through its partners achieved a **cumulative outreach of 107,265 new CleanStart clients** (direct beneficiaries) as well as an additional 429,060 indirect beneficiaries mostly in Nepal. As a result, a **total**

of 536,325 people (direct and indirect beneficiaries assuming an average household size of five) **have gained access to clean energy** thanks to the programme, effectively meeting the intermediate (2016) programme outcome target. Nevertheless, in general, the programme is **registering challenges in achieving defined targets** concerning the majority of the programme indicators. CleanStart has adopted **three business models** (sector-based, investment-based, and partnership models), characterized by differences in innovation in terms of delivery channels and/or type of linkage between FSPs and ESPs. FSP/ESPs have been supported through a **risk-capital grant mechanism** only (despite other financing mechanisms being proposed in the design phase, i.e. concessional/commercial loans, or equity) **and direct capacity building activities have been limited** (mostly provided in Nepal). On the other hand, the **FSPs supported by PAMIGA have received a considerable amount of training and TA** through the network (indirect support), but their performance has lagged behind their targets. At micro level, the **main delays** in implementation were related to the initial building-up phase that for many institutions required initial time-consuming investments, taking into account the fact that results timelines are considered over-ambitious in the immediate term. In general, the programme has brought about some **promising initial organizational changes for the ESPs**. The quality of **global knowledge and learning activities is good** (despite being rather limited in number if compared to the size of the programme and its geographical coverage). In terms of **collaboration with the broader financial system** for clean energy, CleanStart has registered a **few achievements** at macro level in Nepal, meso level in Uganda and Ethiopia to date, while at market level evidences of other FSP/ESPs (i.e. competitors not supported by CleanStart) being indirectly influenced by the programme have yet to be proven.

Likely Impact. At client level, CleanStart **has improved access to clean energy for 81% of the clients consulted during the evaluation**, with some newly introduced to the topic of using clean energy products (while continuing to use a mix of sources) and some also becoming recently familiarized with the Pay As You Go (PAYG) mechanism. **Clients show general satisfaction** with the CleanStart products. While clients in Myanmar, Nepal, and Uganda, express a generally **high acknowledgement of positive changes or improvements in their lives thanks to the access to energy**, clients in Cambodia generally do not point to innovative advantages, but rather to having slightly simplified their living situations. Regarding the other levels of intervention (macro, meso, and market level), given the limited and different timeframes of country implementation as well as the limited actions (in some countries) to address these levels, it is **difficult to form an opinion on whether indirect effects/impacts (in terms of positive or negative externalities) have been produced yet**.

Prospects for Sustainability. At micro level, given that in three countries of implementation (Cambodia, Ethiopia, and Myanmar) activities with the partners started only in 2015 and six ESPs have not yet launched operations, **no strong conclusions can be drawn yet on longer-term sustainability**, as a longer track record would be needed to properly assess this aspect. Nevertheless, according to available data, the **sustainability of the CleanStart product model shows some promising mid-term results**, above all for FSPs in Nepal (that declared of having reached the break-even point in the new green products). Overall, the **willingness and commitment** on the part of supported FSPs/ESPs to continue offering the products and/or delivery channels developed through the CleanStart programme **is strong** (despite the drop out of three institutions). **At macro level, limited results** have been materialized thus far (except for the case of Nepal) in terms of support and interaction at policy level, and therefore the sustainability of their actions has yet to be proven.

Cross-cutting Themes. **Gender outreach** is addressed in targets as well as tracked by the programme, but on the part of FSP/ESPs no particular focus has been developed for female access to clean energy (in terms of addressing different needs, differentiating products or delivery channels). In terms of **human rights**, albeit not specifically addressed, the programme does not interfere negatively on issues related to equality of

rights. **Client protection** has been promoted by the programme, but with limited instruments that were not always appropriate to the kind of institutions involved. However, the topic has partially been embedded in programme implementation. **Financial education** has in general not been promoted, while some implementing partners have specifically addressed **education on energy issues**. Finally, **environmental standards** of the physical products have been encouraged, even though environmental sustainability issues have not clearly been adequately addressed.

Conclusions and Recommendations. On the whole, working in a relatively new, innovative and evolving sector, CleanStart has realized some important **achievements to date**, despite difficulties in attracting new funds and some delays in implementation. Important accomplishments include for example: i) the adoption of a global programme approach (appropriate to pilot different business models) that despite an initially quite restrictive design, underwent a major re-orientation that positively changed the programme strategy to adapt it to the market evolutions; ii) the running of a relatively cost-effective programme, managed by a well-equipped centralized team, but understaffed with regards to the country strategies; iii) the provision of financial support to a relatively good number of implementing partners, piloting three different business models with differences in innovation in terms of delivery channels and/or type of linkage between FSPs and ESPs; iv) the extension of clean energy access to some 500,000 final beneficiaries; v) high levels of satisfaction and recognition of some changes/improvements in their lives from the consulted clients; vi) the production of good quality knowledge and learning activities (despite in a limited number if compared to the size of the programme and the geographical coverage); and vii) engagement with highly motivated implementing partners towards achieving financial sustainability. While recognizing these significant accomplishments, the CleanStart programme has also been faced, or is currently facing, with a **number of challenges and weaknesses**, for instance: i) struggling to reach (overly demanding) targets related to the majority of indicators and not having designed a comprehensive system for monitoring programme achievements at all levels; ii) limited external and independent governance composition that might have limited the creation of a stronger environment to adopt more critical points of view, necessary to guide a programme that is working in a relatively new and innovative framework, to expand its networking and potentially to attract new funds; iii) provided relatively limited capacity building activities and a limited number of financial tools to implementing partners; and iv) relying on a limited targeted involvement at country level (especially for Cambodia and Myanmar) that led to a limited influence on broader system and multipliers effect (positive externalities).

Based on the findings of the evaluation, the Consultant proposes the following main recommendations at four different levels:

1. STRATEGY LEVEL

The programme should continue with the **piloting approach**, and:

- a. Concentrate on the five existing countries of implementation;
- b. Focus on the development and research of specific initiatives at global and regional level to share best practices, capitalize lessons learned and try to attract additional funds;
- c. If possible within this programme, or eventually in future interventions, distinguish objectives and expected results between direct and indirect interventions to attribute a different weight to the expected contribution to the programme (and consequently to monitor their achievements);
- d. Starting from the existing country business plans (or market assessments), to design (or revise) a specific action plan for each country of implementation in order to establish the 'appropriate' entry level and the best sequence to upstream and/or downstream connections at different levels to identify and address market bottlenecks, challenges and opportunities; and

- e. Design a strategic positioning of CleanStart vis-à-vis other UNCDF programmes in order to establish clear institutional relationships in the countries and to avoid gaps or overlapping amongst the Programme Implementation Units.

2. OUTREACH LEVEL

Focus also on a broader target definition, i.e. **micro-entrepreneurs** (as also declared in the final outcome) **and community economies** (namely centers of aggregation such as hospitals, schools, market places, etc.) with a view to accelerate programme accomplishment and increase awareness in communities. In addition, consider to improve the definition and monitoring of household's level of income or poverty rate to ensure of reaching the expected segment of population (low income households).

3. GOVERNANCE LEVEL

Reinforce the current Investment Committee with a dedicated Committee (Advisory or Steering Committee) to maintain a more effective relationship with donors, global stakeholders and other relevant international energy initiatives towards strengthening the programme's governance structure, gaining larger participation of relevant international actors and building capacity to attract additional funds.

4. MANAGEMENT LEVEL

- a. Develop **more diversified supporting tools** in terms of: i) **financial tools** that apart from grants also include other funding mechanisms (such as senior debt and/or sharing risk credit and guarantee funds); and ii) **capacity building** by first assessing the effective needs of the institutions and then providing targeted assistance and/or training.
- b. Improve the **monitoring** and **reporting** system by including programme achievements beyond the micro level.
- c. Encourage implementing partners to identify and **promote projects based on innovative and strategic core-business models** avoiding to support projects that are residual activities respect to their main business.
- d. **Reorganize the Programme Implementation Unit** through increased presence at country level of dedicated staff (preferably local).

1 Introduction

The mid-term evaluation of the CleanStart programme (hereinafter referred to as 'CS' or the 'programme') in Cambodia, Ethiopia, Myanmar, Nepal, and Uganda - implemented and partly funded by the United Nations Capital Development Fund (UNCDF) with financial contributions from the Swedish International Development Cooperation Agency (SIDA), the Norwegian Agency for Development Cooperation (NORAD), the Austrian Development Cooperation (ADC), and the Government of Liechtenstein - was carried out by Microfinanza Srl and MicroFinanza Rating Srl (hereinafter collectively referred to as the 'Consultant'). The overall evaluation process engaged a team of six professionals between December 2016 and May 2017.

This evaluation report (hereinafter referred to as the 'report') is structured as follows:

- Section 2 presents the **purpose and scope of the evaluation**;
- Section 3 summarizes the **main features and current status of the CleanStart programme**;
- Section 4 describes the **methodological approach of the evaluation**;
- Section 5 presents the **main findings structured around the five key evaluation criteria** of relevance, efficiency, effectiveness, (possible) impact, and (prospects for) sustainability;
- Section 6 proposes the **main conclusions and recommendations** based upon the findings; and
- Section 7 outlines **general considerations concerning some key cross-cutting areas**, namely gender, human rights, client protection, financial education, and environmental sustainability.

The report also includes a number of annexes attached following the main text.

2 Evaluation Purpose and Scope

Following the reporting guidelines set out by UNCDF and the Terms of Reference (ToR), the Consultant provides an **external and independent evaluation** based on the **five OECD/DAC evaluation criteria** typically used in the assessment of UN initiatives - namely relevance of the design and activities, efficiency of operations, effectiveness, likely impact and sustainability of the programme results - as well as the cross-cutting topics of gender, human rights, client protection, financial education, and environmental standards included throughout the evaluation analysis.

The CleanStart evaluation was commissioned with the **overall objectives** of:

- i) allowing UNCDF and funding partners to meet their **accountability and learning objectives**;
- ii) supporting the ongoing attempts by the programme and its funders to **capture good practice and lessons** to date in a sector that is still relatively new and innovative;
- iii) guiding and informing the next years of CleanStart as well as – if appropriate - the next phase of the programme, with a **practical and achievable set of recommendations (and lessons learned)** towards ensuring support to the achievement of intended programme results by the expected completion date as well as for the possible extension/scaling-up and/or replication of the programme.

The evaluation covers the CleanStart programme from 2012 (the start of the initiation plan) until December 2016, with outcome projections and some judgments on the likelihood for the programme and its implementing partners to achieve targets. Based on field visits carried out in January and February 2017 in four countries (Cambodia, Myanmar, Nepal, and Uganda), extensive desk reviews and remote interviews (through phone and conference calls), the evaluation analyzes progress, strengths and weaknesses of the programme. The team also analyzed the programme implementation in Ethiopia (as a desk review) and the activities carried out by a key operational partner, the Participatory Microfinance Group for Africa (PAMIGA), a network of MFIs that provides technical and financing support to its members, and which was responsible for implementing CleanStart activities in a total of 6 countries in Sub-Saharan Africa (Benin, Cameroon, Ethiopia, Kenya, Senegal, and Tanzania), as an indirect intervention. In total, **100 stakeholders** (see Annex 4 for the complete list) **and 77 clients have been interviewed**.

Within this context, the analysis focuses on various levels; namely:

- **Micro level**, analysis of the energy financing models and mechanisms adopted by the supported Financial Service Providers (FSPs) and Energy Service Providers (ESPs) in terms of financial support and adequate tailor made technical assistance received;
- **Client level**, likely impact on final beneficiaries through: i) the analysis of their opinions and satisfaction on the new green products and delivery channels (i.e. cash, loan or ‘pay-as-you-go’ methods), ii) likelihood of them being below/above a defined poverty line (Progress Out of Poverty Index - PPI - analysis), iii) perception on potential improvements of their living standards (female empowerment, health, education, savings capacity, etc.), iv) the analysis of energy diaries;
- **Broader financial inclusion environment for clean energy (meso, macro and global)**, analysis of the activities related to knowledge dissemination, best practices and tools emerging from the programme implementation and analysis of the potential improvement of finance for clean energy policies and the business environment to create a viable market for boosting clean energy.

Gender analysis, as well as other key cross cutting themes (human rights, client protection, financial education, and environmental issue), is embedded in the evaluation process in terms of the concern that CleanStart has adopted all along the programme life-cycle (design, implementation, monitoring, etc.). Some

specific considerations on gender issues (and the other cross cutting themes) are provided also in a separate chapter 7 '*Gender, Human Rights and Ethical Considerations*'.

3 Programme Profile

3.1 Programme Description and Background

CleanStart, a multi-year and multi-donor programme (funded by UNCDF, SIDA⁵, NORAD, ADC, and the Government of Liechtenstein), has the ultimate goal to **‘contribute to the achievement of the 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)’**, by seeking to increase, by end of the programme, sustainable access to clean and affordable energy for more than 2.5 million people through financing of 501,000 low income households and micro-entrepreneurs (Outcome).

Programme design was based on the preliminary question *‘Financial inclusion for what?’* and on a set of assumptions: **worldwide 1.6 billion people do not have access to grid electricity** or other sources of energy; nearly 3 billion people are still using wood, coal, charcoal or animal waste to cook food and heat their homes, and nearly 2 million people die each year for reasons related to smoke and fumes that damage their health. Asian and African countries, and mostly in rural areas, are the most exposed to energy poverty that is a serious obstacle to the achievement of the several MDGs (expired in 2015) and SDGs mentioned above in the ultimate goal. More specifically, women and girls are the most vulnerable people for cultural reasons and for roles and responsibilities they have within their societies.

Access to finance, seen as a means to achieve also access to clean energy for people at the base of the pyramid, still represents a key-challenge in terms of designing technologies and services adequate to the needs of low-income customers, with an affordable price, reliable maintenance and replacement services, and efficient delivery channels.

At macro level, both in the Sub Saharan African region and Asia, national policies are often characterized by the lack of coordinated systems between financial sector development and access to energy with limited communication strategies and tools for promoting visibility on the ongoing programmes. Despite green energies being generally mentioned in the Energy Agenda of the majority of these developing countries, the promotion and use of renewable energy is still weak and the **use of solar products is limited to households, with the productive sector not involved in the process**. At meso level, the clean energy sector is suffering from a lack of stakeholder coordination, weak information and communication, deficiency of capacities and funding and public and private partnerships are still limited and weak or inadequate. Finally, at micro and market level, gaps are mostly related to the lack of capacities, resources, sensitiveness on green energies and potentialities in terms of sustainability, reduction of expenses and weak coordination.

In seeking to address these challenges and constraints, the programme was designed (and modified with the amendment in 2016) around four outputs, plus an additional one on effective global programme implementation, namely:

- Establishing a **financing system for clean energy** (Output 1) – micro and market levels – including the creation of the Challenge Funds for FSP/ESPs to invest in energy financing; providing pre-investment advisory assistance; designing the Risk Capital Grants and Liquidity (concessional loans) systems;
- **Capacity building** (Output 2) – micro level – include technical assistance to selected FSP/ESPs to

⁵ SIDA provided financing through three global programmes/agreements: SIDA PFIS (Partnership Framework for Inclusive Growth and Sustainable Development), SIDA LDGR (Leveraging Domestic Finance for Inclusive Growth and Resilience in LDCs) and SIDA RECF (Renewable Energy Challenge Fund), the latter financed by the Embassy of Sweden in Uganda.

remove barriers and support the successful deployment and commercialization of new technologies and services in clean energy;

- **Global Knowledge and Learning** (Output 3) – global, macro and meso levels – to enhance understanding and awareness globally of the potential for microfinance 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 microfinance;
- **Advocacy and Partnerships** (Output 4) – macro and meso levels – to create an enabling policy and business environment to expand finance for clean energy.

Annex 1 presents a visual presentation of the Theory of Change (ToC) that facilitates the reading and understanding on how the programme was designed and how it would have supported access to energy (through financial inclusion) by involving three levels of partners and stakeholders (macro, meso, micro/client level).

3.2 Current Programme Implementation Status

The **current architecture of the CleanStart programme has been conceived in three main steps**. Initially, a Project Initiation Plan (PIP), of one year and a half, was launched in January 2012, spanning until June 2013. The aim of this phase was to establish the global programme structure based on preliminary findings and lessons learned and secure funding. In May 2013, a ProDoc was signed to launch the global programme until the end of 2017. In October 2016, based on a strategic repositioning paper⁶, which brought about significant changes in the programme strategy, CleanStart was extended until the end of 2020, for a total duration of nine years. To manage CleanStart, a Programme Implementation Unit (PIU), based in the UNCDF Asia-Pacific regional office in Bangkok, was established with CleanStart representatives in countries of direct implementation (see paragraph under Efficiency - '*Quality of management and oversight*' for more details).

Following the quick evolution of the energy sector, and influenced by the development of new technologies and new business models, **CleanStart shifted its focus during implementation** (based on the repositioning paper mentioned above) **from promoting access to energy only through microfinance, towards a broader perspective of inclusive finance, including direct financing also to ESPs**. This is a substantial change for poor households deprived of grid connection and relying on poor and unsafe quality energy products, and to pilot new financing models to clients, by involving FSPs but also ESPs and by adopting innovative technology-based solutions through mobile money and, the Pay As you Go options (PAYG). In its implementation, CleanStart is adopting an agnostic technology approach, without favoring any single modality in terms of its support to a specific type of clean or efficient energy provision.

Implemented in two macro regions (Asia and Sub-Saharan African countries), CleanStart has gradually started programme activities with different timelines. As of December 2016, the programme is directly supporting:

- **14 implementing partners** (5 FSPs and 9 ESPs) in four countries (Nepal where operations started in 2014; Cambodia, Myanmar, and Uganda where operations started in late 2015),
- **a microfinance network**, PAMIGA (from 2014), that in turn is supporting 11 MFIs (two of them not offering green products any more) in 5 countries (Cameroon, Ethiopia, Kenya, Senegal, and Tanzania) and started activities also in Benin, Burkina Faso and Madagascar, and
- **a Credit Guarantee Fund** (CGF) in Ethiopia (in 2016).

⁶ 'Access To Clean Energy For The Poor Through Finance' - CleanStart Strategy Re-Positioning (July 2015). For more details, see paragraph under Relevance and Quality of Design - '*Appropriateness of programme design*'.

For more details see paragraph under Effectiveness '*Level of output delivery and outcome achievement (micro level)*'. As further presented in Section 5, Nepal and Uganda achieved the highest performance while the other countries present lower results in terms of outreach, and also with regard to broader influence on the financial system for clean energy.

Programme **implementation has picked up in recent years, institutionalizing a more advanced, and market-engaging approach of investing in private sector partners**, and achieved its main results in piloting three different business models with a number of significant nuances in terms of delivery models or linkage with the implementing partners, tailored to the market conditions and opportunities (see paragraph on *Effectiveness - Level of Output delivery and outcome achievement*):

- i) **sector-based model** related to the microfinance sector characterized by providing support to FSPs to develop/improve green products and delivery channels;
- ii) **investment model** that refers to the direct involvement of also ESPs to support them in setting up new branches, developing/improving green products and delivery channels; and
- iii) **partnership model** (also defined as indirect intervention) according to which FSPs are indirectly reached by CleanStart and supported by a microfinance network.

The programme has also carried out a few relevant activities at macro level in Nepal, in support of the regulatory and policy framework; at meso level in Uganda, working with the industry to disseminate best practices, in Ethiopia by supporting the development of a Credit Guarantee Fund, globally by producing some relevant demand-side studies and supporting the industry in developing a set of KPI to monitor the performance of the energy sector.

Compared with targets set out in the programme monitoring framework, the CleanStart **programme is registering important delays** in implementation, given that a huge initial, but underestimated, investment was necessary, in terms of programme set up and the establishment of the CleanStart management team in the various countries in which it is now operational (against a backdrop of fewer financial resources than expected and UNDP-GEF partnership that did not fully materialize). More details are provided in the paragraph '*5.3 Effectiveness to Date*' and '*Annex 3 Programme Indicators*' which presents an overview of the progress to date (i.e. as of December 2016) with regard to the 31 Programme Indicators (PIs) across the five output and one outcome areas .

According to the analysis of the PIs (see Exhibit 1 below), **35% of the programme indicators have been fully achieved or are 'on track'**, 52% are behind schedule (considered as challenging to be achieved or not seriously achievable by the end of the programme), and 13% have not been evaluated because information was not fully available to measure them. Main achievements are registered in the Programme Unit implementation (Output 5), where except for one indicator (namely mobilizing funds) the others have been accomplished. Other progress is noted in the preparation of country assessments and training activities (Output 1), number of business models (Output 2), awareness activities and synergies with complementary programmes (Output 4), and total indirect beneficiaries (Outcome). On the other side, no achievements have been accomplished against the indicators in Output 3 (related to Global Knowledge and Learning).

Exhibit 1. Progress of the programme indicators



Progress towards programme targets has certainly moved forward, especially in the last couple of years, but the Consultant nevertheless considers the achievement of some targets by the end of the programme to be particularly challenging. For a couple of indicators (namely PI1.4, PI2.4, PI2.5, PI2.8, PI3.1 and PI5.5) current results are still too far from (perhaps unrealistically defined) end-of-programme targets, while for other indicators (for example PI2.1, PI2.2, etc.) specific activities towards reaching stated targets are seemingly yet to be forecasted.

3.3 Current Programme Financial Status

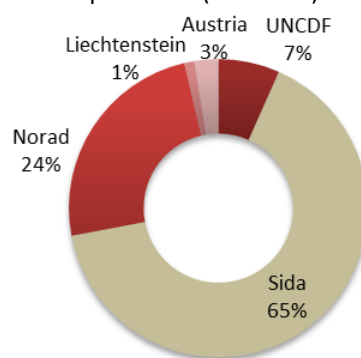
The ProDoc from May 2013 outlined a **total estimated budget of 26.2 million USD**. UNCDF contributed 1 million USD directly to kick-off the project, and as of May 2013 funds were secured from three organizations, namely SIDA (2.6 million USD), NORAD (3.9 million USD), and Austria (390,000 USD). **The programme started underfunded by a substantial margin**, with a wide funding gap of 18.3 million USD (70.0%). During programme implementation, CleanStart gradually attracted more funding from SIDA, that nearly tripled its commitment (also involving the Embassy of Sweden in Uganda that recently in December 2016 contributed with 4.4 million USD for Uganda only), and the Government of Liechtenstein, but with an important funding gap of 42.5% of the initial estimated resources, that is considered an important concern also by CS management (as highlighted for example in the 2017 Annual Plan), and clearly challenges programme implementation towards defined end-of-programme targets.

Table 1 and Exhibit 2 present the composition of the **effective funding contributions from each donor as of October 2016**. SIDA is the most significant donor, representing nearly two-thirds (65.4%) of the effective contribution, followed by NORAD (24.3%).

Table 1. Committed funding structure, as per Annual report 2016 (Dec 2016)

Funding sources	USD
UNCDF	1,000,000
Sida	9,842,470
Norad	3,658,153
Liechtenstein	161,850
Austria	389,610
Total	15,052,084

Exhibit 2. Committed funding structure, as per Annual report 2016 (Dec 2016)



As of December 2016, CleanStart had effectively spent 8.2 million USD (**91.5% of the available budget for the**

2010-2016 period and 54.4% of the total committed budget for 2010-2020)⁷. During programme implementation, the budget has been periodically revised to allocate it in different years based on progress of funding and to reflect the updated programme timeline. However, the use of financial resources, as presented in Table 2 below, does not present large deviations (except for 2011 and 2012) between what was planned and effectively spent.

Table 2. Budget allocation and actual expenditure: 2010-2016

Year	Budget Allocation	Actual Expenditure	Actual expenditure / budget allocation
2010	49,644	41,935	84.5%
2011	8,065	2,720	33.7%
2012	1,033,120	605,363	58.6%
2013	1,535,141	1,477,377	96.2%
2014	1,243,478	1,191,414	95.8%
2015	2,683,942	2,653,192	98.9%
2016	2,392,727	2,215,434	92.6%
Total	8,946,116	8,187,435	91.5%

Analyzing the budget allocation and expenditure per programme Output (Exhibit 3 and 4 below), it shows that Output 5 (Effective Global Programme Implementation) has had more programme resources dedicated to it (28.7%) than others. Outputs 1 and 2 (Finance and Technical Assistance for Clean Energy) incurred 20.8% and 22.5% of expenditure respectively. Outputs 3 and 4 (Global Knowledge/Learning, and Advocacy / Partnerships) represent a relatively smaller share at 13.5% and 13.9%.

Exhibit 3. Budgeted vs. actual expenditure per output (Dec 2016)

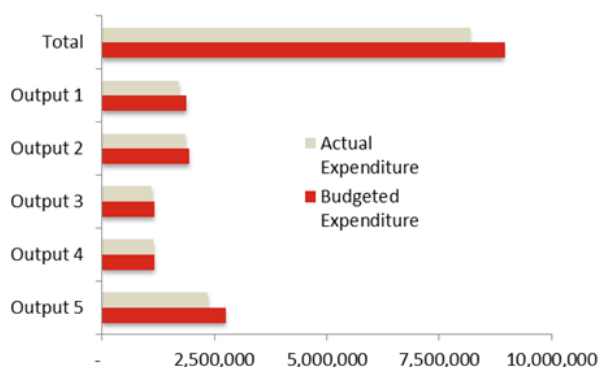
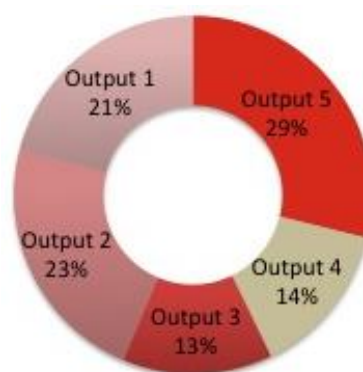


Exhibit 4. Actual expenditure per output (Dec 2016)



Note: The above exhibits do not include Projection Formulation costs in 2010 and 2011, representing 0.5% of actual expenditure.

⁷ This analysis also includes the Projection Formulation costs related to 2010 and 2011.

4 Evaluation Approach and Methodology

The design of the evaluation process has sought to fulfil the areas of the UNCDF Quality Grid for External Evaluations (as per RFP July 2016) adopting a **multi-dimensional approach**, with a mix of quantitative and qualitative/descriptive methods based on primary and secondary sources of information. The entire process has been structured around the **Theory of Change (ToC) framework** (see Annex 1) and an **Evaluation Matrix** (see Annex 2) including a series of evaluation, and sub-evaluation questions (EQs), and judgment criteria (JC) as well as an accompanying data collection toolkit setting out a series of ‘lines of evidence’ in responding to the EQs.

The ToC, built starting from the ProDoc 2013 and revised according to the Consultant’s understanding of the framework, gives an overview of the programme design, with descriptions of activities, outputs and outcome and shows a comprehensive picture of the expected early, intermediate and long term changes in the countries involved in the process.

The **evaluation matrix** and related EQs and JC, used during the evaluation process and that provided guidance during interviews, are **organized around the five OECD/DAC evaluation criteria** typically used in the assessment of UN initiatives - **relevance, efficiency, effectiveness, (possible) impact, and (prospects for) sustainability**. Throughout the analysis, the Evaluation Matrix **addresses all levels of analysis** (i.e. global, macro, meso and micro/market level as well as client level), as well as **cross-cutting issues** (i.e. gender, human rights, client protection, financial education, and environmental standards), and outlines the EQs to be covered along with the respective judgement criteria (indicators) and means and sources of verification that guide the team in data collection, analysis and reporting.

Based on the evaluation matrix, the Consultant elaborated a **data collection toolkit**, namely a comprehensive set of instruments and guidelines that supported the evaluation team in the collection and analysis of data and information. Relevant parts of the tools were cross-referenced against the EQs of the evaluation matrix as well as the level of analysis (macro, meso, market, micro, and client) in order to easily identify the main purpose of the requested information. The data collection process and toolkit comprises:

- **Document review** - the evaluation included a desk review of the CleanStart programme, other relevant documentation, such as country studies and papers related to access to clean energy, financial inclusion, policy and regulation framework on energy, internal documents on ESPs and FSPs globally and in the countries in which CleanStart was operational.
- **FSP/ESP tools and guidelines** (micro level) – the data collection form and analysis for the FSPs/ESPs relied on the use of a preliminary excel file (which the FSP/ESPs were asked to fill out to provide some initial information on financial statements, portfolio, products/services, etc.) with the goal to collect primary source data and to analyze CleanStart’s contribution to changes in FSP/ESPs performance in terms of effectiveness and sustainability, also in relation with their global portfolio. A data analysis file, one for each FSP/ESP, automatically generates ratios, indicators, and tables needed for the related analysis. The Consultant carried out interviews (with FSP/ESP staff at various levels, following some guidelines – see Annex 8) with **15⁸ direct implementing partners and 3 indirect partners** (Wasasa in Ethiopia, member of PAMIGA and two FSPs/training service providers linked to the FSPs in Nepal, i.e. WinRock and Sahara cooperative) for a total of **36 interviews**.
- **Interviews with other stakeholders** (global, macro, meso, and market level) – in addition to meetings with FSP and ESP staff and clients, the evaluation team also interviewed other relevant stakeholders at all levels, based on some semi-structured interview guidelines / probing questions (see Annex 10).

⁸ Namely the 14 implementing partners FSP/ESPs and PAMIGA.

The Consultant met with (or talked to – some interviews were carried out over the phone/Skype) a **total of 64 stakeholders from 34 entities**⁹ at all levels. The complete list of interviewed stakeholders is attached in Annex 4.

- **Focus group discussions (FGDs) and structured interviews with final beneficiaries** (client level) - during the branch visits, the evaluation team held FGDs, as well as brief structured interview sessions (including Progress Out of Poverty Index interview, and energy diary analysis, following the Microfinanza REEP-DEMO approach) with a selection of clients of FSP/ESPs. A total of 12 FGDs and subsequent interviews were held with a **total of 77 clients** from mainly Uganda and Nepal (see further Section 5.4 on *Possible Impact*). The FGDs were structured around a series of guideline and probing questions, while the structured interviews with individual clients were based on questionnaires (see Annex 8 and 9).

In processing and analyzing the data and information collected, the evaluation team has made use of dedicated input sheets (and transcription files) as well as analysis files/sheets and findings from various sources have been triangulated in order to ensure validity and significance. The data collection (and analysis for evaluation) process has been faced with a number of challenges. At the FSP/ESP level, **actual availability of reliable data** has been relatively limited. Where possible, other sources of information apart from the Management Information System (MIS) of the partner FSP/ESPs have been used – but for some institutions mostly ESPs (that probably are not used to regular reporting to donors or consulting companies) are also missing from the CleanStart KPI dashboard¹⁰. In addition, timeliness in receiving requested data from FSP/ESPs has also been a challenge and with the assistance also from the CleanStart team, partner submitted the preliminary files (albeit not all of them complete or consistent in all requested parts). Therefore, the quantitative analysis in the report of FSP/ESPs is based on a mix of sources, using the internal CleanStart KPI files and the preliminary files collected by the Consultant. It is important to note that the outcome of the interviews with clients are **not meant to provide statistically significant results** (see Annex 11 for more details on the sampling strategy), but rather only to qualitatively report on the ideas and thoughts of a selected number of clients. Results from the FGDs and interviews can hence not be extrapolated onto the whole client population. Nevertheless, with 77 interviewees, a fairly broad variety of answers was provided and the findings seem to at least point to some seemingly common or notable aspects. On the other side, results from the PPI analysis and the REEP-DEMO interviews are very limited in size; therefore they just provide a glimpse on the well-being/habits of the clients interviewed, but with any pretense of transferring conclusions to the entire population.

Finally, considering the constraints in terms of data availability (especially for what concerns historical data series and general sector data) as well as the existence of other intervening factors (including other donor initiatives in the financial inclusion field), the evaluation has to the extent possible tried to correlate CleanStart inputs and activities with specific results at the various levels of intervention. In most cases, however, it has not been possible to prove or isolate the actual causal link between CleanStart inputs / activities and results. The evaluation has therefore focused on trying to explore CleanStart's **contribution to partner results rather than direct attribution**. To this end, the evaluation has also considered parallel and/or complementary interventions from different partners towards seeking to identify and assess all possible contributions to results (and not just those of the CleanStart programme per se).

⁹ The different UNCDF programmes count as one, as well as the multiple 'external consultants' count as one single entity.

¹⁰ The monitoring tool used by the CS team.

5 EVALUATION FINDINGS PER EVALUATION QUESTION

5.1 Relevance and Quality of Design

EQ1. How relevant and well-designed is the programme to increase sustainable access to clean and affordable energy for low income households and microfinance-entrepreneurs through energy and financial service providers and to what extent are the objectives of the programme still valid?

CleanStart, intended as a pilot programme, goes beyond financial inclusion as a final goal towards increasing access to clean energy. It has adopted a global approach, appropriate to pilot different models, that was re-oriented to address market evolutions (from a business model for credit-based financing targeting only FSPs, towards a model including direct financing also to ESPs).

CleanStart is operating in countries where energy inclusion is highly relevant and a key political concern (mostly in terms of access to grid), although clean energy is not always considered as a high priority.

Programme design adopts an agnostic approach from any technology but has not sufficiently considered some other potentially promising areas of intervention; it has been set at demanding levels, appropriate for the ambition of leveraging funds, but not for a pilot programme. The system for the monitoring programme achievements is not appropriate to capture data and information on all levels of programme implementation and that would have helped the transition, expansion and the replication of the business models piloted.

Finally, despite it not being possible to compare CleanStart with other worldwide initiatives operating in the same area (because differ for scope, size and geographical coverage), it is worth to mention that it has created some relevant synergies with existing UNDP/UNCDF programmes and other global initiatives.

Relevance of programme [EQ1.1]

Initial programme formulation was driven by UNCDF - namely, the Financial Inclusion Practice Area (FIPA) - following a 2010 preliminary needs assessment and **based on the concept of going beyond financial inclusion as a final goal, and with a focus instead on inclusive finance instruments as a means for energy inclusion** for low-income people without access to the grid and other non-traditional energy sources. In 2011, during preliminary discussions among the HQ Project Appraisal Committee (PAC), the 'business case' of the proposed programme idea was not considered as sufficiently robust¹¹, which raised concerns over the possibility of the programme attracting sufficient funding. However, with the idea of getting a strong support from UNDP in terms of technical back-stopping on the energy side, the PAC agreed to the viability of the project by requesting that **a pilot approach towards seeking verification of the programme concept be applied** (i.e. the business case of promoting energy inclusion through financial inclusion).

¹¹ Namely, the PAC raised concerns over sufficient confidence in the business case in terms of: sufficient demand, knowledge of the market failure, reliability of technology (and maintenance), as well as over the profitability of MFIs involved in the green energy sector.

Proposed in a period where access to energy for the poor was receiving a lot of attention and prioritized in the global development agenda, CleanStart adopted a **global approach** without focusing on a specific country or region. As such, the programme (in all its programmatic phases in 2010 with the PIP, in 2013 and with the subsequent amendment in 2016) did not rely on an in-depth country-level gap analysis to demonstrate the effective needs of specific countries prior to implementation. Rather, it proposed some criteria to guide the country selection by setting proxy indicators (on the maturity level of the microfinance sector and opportunities within different energy markets), as well as a list of potential countries to be further assessed during the programme implementation.

The theme of **energy inclusion is highly relevant in the targeted countries**, where demand for access to energy is high, especially in rural areas (see Table 3 below). Electrification access is very low (except in Nepal) and is growing at a slow pace. Deforestation is an important concern and renewable energy is a promising and young sector. In light of these elements, **clean energy is therefore seen as an opportunity** to address lack of access to energy for low income households and microentrepreneurs, given the more affordable prices (mostly for solar) and product improvements in terms of energy efficiency of end-use technologies (including innovations in payment systems).

Table 3. Energy access: 2016

Country	Population without electricity (millions)	National electrification rate (%)	Rural electrification rate (%)	Population relying on traditional use of biomass (%)
Cambodia	10	34%	18%	88%
Ethiopia	73	25%	10%	95%
Myanmar	36	32%	18%	92%
Nepal	7	76%	72%	80%
Uganda	31	19%	12%	98%

Source: International Energy Agency (IEA), World Energy Outlook 2016.

The programme is **implemented in a set of countries where access to energy** (mostly addressed as an issue of electrification and access to grid) **is a key political concern, although clean energy is not always considered as high priority** in the national agendas. Therefore, CleanStart is positioning in a sector where interventions are needed to accelerate universal energy access. For instance in Uganda, where renewable energy (defined as bio-fuels, wind, and solar as well as nuclear) is part of the energy mix of the 2013-2022 Strategy Plan of the Ministry of Energy and Mineral Development (MEMD), a predominant part of the attention is nevertheless placed on grid extension rather than off grid solutions (such as solar, mini-grid and rural power development)¹². Also in Myanmar, access to energy is one of the key issues outlined by the national policy agenda and considered one of the main priorities for the development of the country. The energy master plan, however, focuses on hydropower (intended to provide 38% of total supply), coal (33%), and natural gas (20%) and only 9% are expected to come from renewable sources. Solar and other renewable energy sources hence remain low on the list of priorities and the country's renewable energy industry is still in the early stages of development. In Cambodia, since the country has a significant hydropower potential, the national agenda focuses on developing and connecting most of the country to the hydropower grid. On

¹² Ugandan policies and strategies set clear targets for clean energy outreach; for example: (i) the Renewable Energy Policy aims to increase the share of clean energy in the total energy mix from 6% to 61% by 2017; (ii) the Uganda Vision 2040 envisages that 80% of the population will use renewable energy by 2040; and (iii) the Sustainable Energy for All Action Agenda strives towards 99% of the population using non-solid fuels by 2030. In terms of financial projections, however, the Rural Electrification Agency (REA) is primarily focusing on grid extension (accounting for 91% of the first five-year budget of USD 55.4 million) and only a small portion (6%) is dedicated to off grid solutions.

the other hand, in Nepal, access to clean energy is more embedded in national strategies as well as linked to the financial inclusion strategy. In fact, according to this strategy, commercial banks should commit a defined portion of their portfolio to rural/energy lending.

As presented in Box 1 on the following page, there are a number of other donor initiatives on access to energy (including other UN programmes that transversally also cover the energy themes). While these initiatives demonstrate the great interest of the industry in the topic, in general it is not possible to compare CleanStart with them in terms of programme design given that they differ not only in scope, but also in size, and geographical coverage. In some programmes with a broader scope, clean energy is only one component, while other programmes focus only on clean energy and adopt targeted interventions that seek to stimulate the supply of a specific energy source (be it biogas or solar), by supporting the regulation side or working with the private sector. As an example, GIZ's Endev programme that operates in 26 countries (including also countries where CleanStart is working - Cambodia, Ethiopia, Nepal, and Uganda) is seeking to facilitate self-sustaining markets for modern energy solutions also closely working with the macro level (with a budget of EUR 350 million to reach out to 19 million people worldwide).

Although programme design did not include a defined strategy in this regard, CleanStart **has created relevant synergies with existing UNDP/UNCDF programmes** in order to share expertise and financial resources within a regional/country context. For example, upon inception, the programme sought to strengthen its relationship with UNDP/GEF, albeit with limited results. CleanStart subsequently started working closely with the SHIFT programme (sharing human resources and jointly implementing activities, including management of a challenge fund – see Section 5.2 EQ2.4 - *Quality of financial support* below) as well as with Making Access Possible (MAP) in Cambodia (where CleanStart supported the integration of questions related to energy access in the Finscope research). Although collaboration with the SHIFT programme in particular has been fruitful, it has not been accompanied by a clear visibility strategy and hence has caused some confusion in programme management (see Section 5.2. EQ2.2 - *Quality of management and oversight* below).

In addition, **the programme has created some synergies with similar actions (or components of broader programmes) supported by other (i.e. non-UN) donors**, to increase programme visibility (also with the aim of attracting donors), to coordinate and avoid replication or to gain strength in advocacy/lobbying activities. Namely, in Uganda, it is part of the Steering Committee of the Energy Africa Compact (EAC) campaign launched by DFID and signed with the Ministry of Energy and Mineral Development (MeMD) to promote the growth of the solar market; jointly with Acumen Fund, a non-profit organization that aims at alleviating poverty, conducted the 'Energy Ladder Research' (2015). In addition, the collaboration with the Embassy of Sweden resulted in the co-designed funding of the Renewable Energy Challenge Fund (RECF) together with UNCDF. Finally, indirectly CleanStart has also supported the Global Off-Grid Lighting Association (GOGLA) an industry association borne out of the IFC/World Bank's Lighting Global programme, that together with Village Power (one of the ESPs involved in the programme implementation in Uganda also supported by the World Bank), developed a set of harmonized industry metrics and KPIs, to track performance of clean energy companies, laying the foundations to influence the debate around performance indicators for the sector globally.

Box 1. Other global and country-specific initiatives related to access to clean energy

In the countries of CleanStart implementation, access to clean energy is a topic covered by a number of other donor initiatives, as well as by other UNDP/UNCDF programmes. Below a list (not exhaustive):

- **AFD (Agence Française De Développement)** – ‘Green Microfinance Program’ in Cambodia (2015-2018), aims at promoting access to energy by linking MFIs with ESPs with a credit facility and technical support, working on quality standards, and lobbying at macro level with the final goal to reach 25,000 households (2.5 million EUR).
- **DFID (Department for International Development – UK Gov)** – worldwide, and specifically also in Uganda, it launched the Energy Africa Compact (EAC) campaign, signed by the Ministry of Energy and Mineral Development (MeMD) and other partners (including CleanStart) to give the poorest Ugandans access to clean, reliable and affordable energy, by providing finances through regional programmes and a national programme.
- **GiZ (Deutsche Gesellschaft für Internationale Zusammenarbeit)** – ‘Energising development (Endev) Programme’ (2009-2019) implemented in 26 countries, including Cambodia, Ethiopia, Nepal and Uganda, for the development of energy markets to foster the diffusion of renewable energies and more efficient technologies for households, social institutions and businesses (350 million EUR).
- **European Union** – ‘EU-ACP Energy Facility’ (2005-2013) is a programme implemented in African and Caribbean countries, including also Uganda, where it launched three projects: i) Access to energy services in rural and peri-urban areas in northern Uganda (5.4 million EUR); ii) Scaling-up rural electrification using innovative solar photovoltaic (PV) distribution models (5.7 million EUR); iii) Scaling up access to modern electricity services on a regional scale in rural Sub-Saharan Africa by means of a fee for service business model (2.3 million EUR).

World Bank

Uganda: ‘Energy Rural Transformation – III’ (2016–2020) - Component 2: Off-grid Energy Access (25 million USD) to increase access to electricity in rural areas of Uganda.

Nepal: ‘Scaling up Renewable Energy (SREP) Programme’ is a global programme to develop markets for large scale Commercial Biogas and Municipal Solid Waste to energy projects. It operates also in Nepal and had dedicated 7.9 million USD of financial resources.

Myanmar: ‘Energy Programme’ (2014-2016) to alleviate acute electricity shortages and set the power sector on a sustainable path (1 billion USD).

- **ADB (Asian Development Bank)** – ‘South Asia Sub-regional Economic Cooperation - Power System Expansion Project (SASEC Project)’ (2014-2018) is supporting off-grid renewable energy sector mini-hydro, solar or/and wind hybrid projects in Nepal.

In addition, in Uganda several donors and partners (Norad, DFID, GiZ/KfW, EU and WB) are jointly contributing to the ‘GET FIT Uganda Programme’ developed by the Government of Uganda, the Electricity Regulatory Agency launched in 2013 to achieve universal energy access by 2030 and leverage private investment into renewable energy generation projects in Uganda.

Other UNDP/UNCDF Programmes/initiatives

- **SHIFT (Shaping Inclusive Finance Transformations)**, (2014-2020), jointly co-funded by UNCDF and the Australian Department of Foreign Affairs and Trade (DFAT), aims at promoting formal financial inclusion, mostly for women in rural areas. One component, the Challenge Fund Facility, is in common with CleanStart in support of Myanmar and Cambodia country strategies (33.5 million USD).
- **Global Environmental Finance (GEF)** is not a programme but a newly established UNDP Unit that aims at supporting countries to achieve eradication of poverty reduction of inequalities and exclusion, by catalyzing environmental finance for sustainable development.

Appropriateness of programme design [EQ1.2 & EQ1.3]

The CleanStart programme has adopted a **global approach**, seeking widespread geographical coverage. This approach is considered by this evaluation team to be **appropriate to effectively pilot different solutions (or ‘models’)** in different markets (and hence countries and regions). Having said this, however, a pilot experience, in order to be effective, should not disperse resources across too many countries. As stated by one stakeholder at the global level: ‘Going broad, before going deep does not prove the concept and

undermines sustainability’.

Programme design allowed for CleanStart to engage with target countries at different levels: i.e. working with donors at the global level, decision makers at the macro level, networks and other support structures at the meso level, and FSPs/ESPs at the micro level within programme countries. In fact, the programme’s initial Theory of Change (ToC) framework (see Annex 1), goes well beyond the scope and capacities of FSPs/ESPs (i.e. the micro level) with overall ambitions to influence the broader context. This **multi-level engagement can also be deemed to be appropriate for the pilot approach of the programme** if accompanied by clear country strategies (supported by the in-country presence of CleanStart representatives) in order to ensure ownership of, and coherence with, programme implementation at the national and international levels (see further Section 5.2, EQ2.2 - *Quality of management and oversight* below). However, the **primary emphasis to date has mostly been on the micro level** (see Section 5.3 below). In fact, beyond the micro level, the programme has been active to date only in a limited way, with examples at macro level in Nepal and Uganda, albeit to a smaller extent (*‘CleanStart is being well promoted but at a limited level’*), at meso level in Uganda and Ethiopia respectively with the engagement of industry and the Development Bank of Ethiopia for the Credit Guarantee Fund procedure manual, and activities with GOGLA.

Even if CleanStart was intended as a pilot, the **initial design** was rather built for a programme with an already defined methodology and **did not include the flexibility required for programme implementation to adapt to opportunities and bottlenecks in the markets**. The 2013 ProDoc, based on recommendations of the initial PIP, proposed a detailed business model for credit-based financing targeting FSPs only. This core business model was based on the idea of entering into mature microfinance markets with a developed infrastructure for clean energy, involving different actors (including FSPs, ESPs, and carbon credit agents) and adopting different financing means (concessional loans and risk capital grants). Therefore, to follow market evolution and improvements in product efficiency and technology standards (with innovation also in end-user payment systems), the **programme required a significant change in strategy**. Consequently, in 2015, CleanStart commissioned a strategic repositioning analysis¹³, towards defining a strategy adequate for and consistent with the development of the market. The analysis confirmed the relevance of CleanStart in addressing access to energy by eliminating financing barriers, but proposed significant changes to the programme strategy. In particular, it recommended three main modifications (eventually included in the amended 2016 ProDoc), namely: (i) provision of direct support also to ESPs, following the recent deployment of clean energy in off-grid markets (mostly linked to the solar) and the development of digital financial solutions such as PAYG enabled by remote monitoring digital payment technology, among others; (ii) adoption of a more investment-driven financing model, through the use of challenge funds; and (iii) strengthening of the demand-side knowledge of energy access markets. **The current revised strategy and programme development is more in line with partners’ needs and opportunities at market level** (that also reflects the programme needs), despite inadequate revision at the same time of the overall programme framework/indicators (log frame, results and resources framework).

CleanStart, therefore, **comprises two models** that mostly differ in terms of the targets and modalities of TA provision, namely: i) the microfinance sector-based model, initially designed in the ProDoc 2013, linked to the microfinance sector (i.e. the FSPs) that focuses on support with technical assistance and/or grant funding for the development of new financial products and business systems, through an holistic approach also involving the energy eco-system (macro and meso levels); and ii) the business incubation (investment-driven)

¹³ “Access To Clean Energy For The Poor Through Finance CleanStart Strategy Re-Positioning” (July 2015), Christine Eibs Singer, SE4ALL Consultant.

model, newly designed with the ProDoc amendment in 2016, where the catalyst element is the investment directed to the implementing partners, whereas the ecosystem development is a marginal element (but still present), and where the technical assistance for the institutions involved is embedded in their grant funding. A third model, albeit not explicitly defined, that can be read as a sub model of the sector-based model, includes a strategic partnership (such as the one with the PAMIGA network) through which the programme indirectly interacts with a number of FSPs in different countries.

The final outcome of the programme is ‘to increase sustainable access to clean and affordable energy’ (emphasis added). However, while **CleanStart has clearly sought to emphasize affordability** (and financial sustainability) of the clean energy products (and related financial products), **programme design has not sufficiently addressed the aspect of ‘clean’ energy**, by for instance indicating a set of minimum standards that defines the boundary for efficiency or product end-of-life management. CleanStart’s design has rightly not promoted a certain type of clean (or ‘green’) energy products (i.e. solar versus wind, etc.) by adopting a technology agnostic approach, nevertheless, it could have provided guidelines on how to more adequately ensure environmental sustainability and prevent potential negative effects. For example, what environmental considerations should be taken into account when selecting adequate products (i.e. Up to which level can a cookstove using charcoal can be considered as an ‘efficient’ stove? How should old batteries be disposed of? What will happen to products at the end of their life?). For solar, as mentioned in EQ1.4 - *Design considerations for cross-cutting issues*, CleanStart has promoted the international standards under IFC’s Lighting Global programme. In addition, in terms of physical access to clean energy and infrastructure (existing or under development), CleanStart has not taken a clear position on where to direct the interventions (i.e. ‘is it better to start providing clean energy in rural areas where grid is limited or in villages not served, or in the urban areas to substitute non-renewable energies?’). This is for instance the case of Nepal, where the national action plan encourages FSPs to serve rural areas more than cities. Indeed, within the countries, there are some areas where grid and off grid solutions are expanding more rapidly than in others and therefore the potential demand of green products can be more or less desirable.

Furthermore, **programme design does not identify other areas of intervention that could be relevant from a strategic point of view**. First, from a design point of view **access to energy** is mostly promoted through financial inclusion, but, as has been confirmed by practice, **also alternative (non-financial) channels**, such as non-financial services (capacity building or training) or other direct investments can produce important results. For example, in Nepal, the local partners organized a training programme on the traditional art of building energy-efficient homemade cookstoves using mud (leading to the reduction in the use wood and charcoal) that demonstrates how communities can gain access to more efficient energy products without access to finance (and reliance on industry made products). Second, the current targets for CleanStart include household and microentrepreneurs, but do not consider the target in a broader way, including also **community economies** such as schools, hospitals, religious centers, or other ‘aggregation’ or productive hubs relevant at local level.

With regard to outreach, a **target of 2.5 million** people (indirect beneficiaries) was set in 2012, while the number of loans (501,000) to low income households and micro-entrepreneurs was introduced as a programme indicator (PI1.5) in the 2013 ProDoc. It is, however, not clear to the Consultant what these estimations are based on or come from¹⁴. The **target is considered very demanding by a number of global stakeholders interviewed**, but is consistent with the ambition of leveraging funds (albeit, in the Consultant’s

¹⁴ A 2010 assessment refers to 1 million people overall and 750,000 people supported with a financial tool.

opinion, this is not a suitable approach for a pilot approach such as this). In general, the launching of an ambitious programme with a restricted initial secured budget¹⁵, intending to attract funds at a later stage can be **risky because limited funds may seriously hamper programme implementation and hence progress towards targets**. Furthermore, programme design did not include a breakdown of targets (and therefore does not track and monitor them) in terms of level of income of beneficiaries or the purpose for the use of green energy products (household versus income generating projects).

In conclusion, **those global stakeholders interviewed generally appreciate the programme as innovative in its approach** to create a business case around the provision of financial services in order to improve access to energy. They recognize that implementation has been faced with difficulties, but support its ambitions. They approve of the change in strategy, pointing out that access to energy for the poor is a complex and challenging topic and that the microfinance and green energy industries are evolving fast. A couple of stakeholders at global level nevertheless believe that the programme could have anticipated the need for a change in strategy earlier or adopted a modular strategy on a smaller scale (considered more appropriate for a pilot initiative). With regard to the latter, however, it appears that UNCDF procedures require formal re-appraisal for any programme that increases its budget by 30%, effectively discouraging smaller scale pilots.

Design considerations for cross-cutting issues [EQ1.4]

During the design phase (i.e. both in the 2013 ProDoc and the 2016 amendment, but not in the 2012 PIP), **both gender and environmental standards were considered as important cross-cutting issues** since the ultimate goal sought to address, among others, the Sustainable Development Goal (SDG) on gender (SDG5) and access to affordable and clean energy (SDG7). **Gender-specific needs** were considered in the design of the programme, targeting an overall female outreach of 50% (PI0.1) and extension of loans to female clients (PI1.5) as well as the collection of and reporting on gender differentiated data. Programme design also promotes gender-related analysis¹⁶. Specific measures on how to promote access to energy and finance on behalf of women are however not outlined and in practice, the programme's gender dimension appears limited to overall programme outreach. Only one of the CleanStart grantees' business plans consulted addresses gender. When dealing with gender issues, in countries such as Nepal, it is important to bear in mind the difference between targeted and final beneficiaries. FSPs mostly target women and the female portions of their portfolios are often high, but in some cases decisions to take a loan are led by men. In other communities, with relatively more emancipated women, the situation is different. This type of social and cultural analysis of the countries of intervention would have been helpful in order to correctly target the intended population and identify the most appropriate methods to reach them.

With regard to **environmental standards**, CleanStart has not translated the ultimate goal of providing 'clean' energy into a specific output or activity. However, in order to ensure a certain level of quality and efficiency of products, some ESPs have been asked to provide international certification for solar panels (namely, 'Lighting Global') and/or adhere to national standards for cookstoves. Nevertheless, as mentioned above (EQ1.2 and EQ1.3 - *Appropriateness of programme design*), sustainability issues have not been clearly and adequately addressed. For example, how can CleanStart promote the recycling or disposal of batteries on part of households that install a solar power home system? And what about solar components? Are ESPs requested to adopt a specific policy on exhausted batteries? In addition, while carbon emission/reduction was indeed addressed during the design phase, this topic has not been translated into action during the

¹⁵ I.e. only USD 1 million USD in the case of CS.

¹⁶ For instance: Output 3 - Research will include gender-specific analysis; Output 4 - number of broader and gender-sensitive interventions.

course of implementation.

Human rights, disabilities, minorities and vulnerable groups are not clearly addressed in the 2013 ProDoc (or 2016 amendment), but the programme's monitoring system (see Section 5.2, EQ2.2 - *Quality of management and oversight* below) requires FSPs/ESPs to report on the percentage of minority or disadvantaged groups (but not tracked). In Myanmar, this aspect has been sufficiently addressed by implementing partners towards seeking to respect local cultures and address marketing issues according to the social environment. Even if human rights were not considered during programme design, the approach adopted by CleanStart does not negatively influence issues related to the equality of rights.

Finally, during the design phase, **client protection** was also considered as a cross-cutting issue and implementing partners are asked to endorse the Smart Campaign and report on the seven client protection principles (CPPs). A target for some FSPs/ESPs also includes the setting up of a toll-free call center to manage client complaints and/or handle late payments. However, only the Ugandan partners effectively report on actions taken related to client protection and, according to the institutions, no additional support or further indications have been provided by the programme. It is worth mentioning that the Smart Campaign principles are not fully relevant for ESPs (i.e. the seven CPP are microfinance related). Indeed, only one ESP (i.e. Kamworks in Cambodia) has endorsed the Campaign. **Financial education** (or education on energy issues) was not addressed in the programme design, which can possibly have contributed to difficulties in achieving the expected outreach at country (and programme) level. A UNESCO study 'Global Education Monitoring Report' (2016) shows the importance of the role of education in relation to all UN SDGs, including the SDG 7 on access to affordable and clean energy. Specifically, in this context, the Consultants underlines the importance for the clients to be sufficiently informed in order to effectively make appropriate financial decisions based on an understanding of the immediate or long-term savings incurred if adopting efficient energy solutions as well as decisions related to healthier energy alternatives, as also confirmed by some responses of some clients interviewed (for more details see the session 5.4 Possible Impact *EQ4.1 - Final beneficiaries*).

Design considerations for programme transition, expansion and replication [EQ1.5]

As an intended pilot initiative, CleanStart was designed with the idea of testing various business models to be scaled up based on the experience and lessons learned (and Output 3 and Output 4 specifically serve this purpose). Nevertheless, **the current monitoring mechanism adopted is mostly focused on the analysis of the implementing partners' achievements** (micro level), while the Consultant noted that a comprehensive monitoring system of the whole programme achievements (measuring all programme indicators, as well as differentiating by direct and indirect intervention, and recording and monitoring learned lessons and best practices), is missing. This would have facilitated programme understanding at global level and would have helped in programme strategy adaptation on the basis of needs raised, market opportunities and country contexts. An effort in developing a more systematic approach in gathering quantitative and qualitative data at programme level would have helped the transition, expansion and the replication of the business models piloted in the different countries.

5.2 Efficiency of Management and Quality of Activities

EQ2. How well means/ inputs and activities were converted into results (as in 'outputs')?

The programme has achieved to date a relatively reasonable average unit cost for each beneficiary (76 USD), that varies greatly across the countries of implementation. These average costs are expected to decrease as programme implementation proceeds.

Programme management is assured by a well-equipped centralized team, but with limited targeted involvement and local presence at the country level.

Donors receive regular and comprehensive updates, but their effective engagement (or involvement in general of other independent stakeholders relevant for the sector) in the programme governance might be improved to ensure external (and independent) oversight and strategic orientation.

Despite good programming, the monitoring and reporting systems are improvable, while overall programme measurement is missing.

CleanStart has provided a relatively limited amount of direct capacity building support; in addition, it has produced three well research studies and launched five Requests for Proposals (RfPs) to finance FSP/ESPs that have attracted a lot of applications and strongly improved programme visibility.

Use of funds [EQ2.1]

As presented in Table 4 below, **human resources** (including salaries for internal staff as well as costs for external consultants) **represent just above half of total programme expenditure** as of December 2016. Since the programme inception and until 2015, the programme was understaffed with three people directly involved in programme management (Programme Manager, Programme and Knowledge Management Analyst and a Project Associate). Therefore, a fairly extensive use of external consultants (accounting for almost one quarter of total programme cost) can be justified by the need for specific expertise on the relatively innovative subject matter not readily available within UNCDF itself. However, since direct capacity building support to FSPs/ESPs on the part of the programme has been fairly limited (see EQ2.3 - *Quality of non-financial support* below)¹⁷ and support at the macro level almost nil except for Nepal (see EQ2.3 - *Quality of non-financial support* below), most human resources (internal as well as external) have been dedicated to overall programme support. The share of human resources over total programme costs can hence be considered to be on the high end, even if this can at least partly be explained by the programme's in-country presence (albeit not on a full-time basis)¹⁸. The ratio is also expected to drop somewhat as the programme

¹⁷ In fact, according to the Consultant's calculations, USD 626.661 (just below one third of the costs for external consultants or 7.7% of total programme expenditure) have covered direct assistance to FSPs/ESPs under Output 2 (TA for clean energy). However, since data on the number of people benefitting from this assistance are not available, the Consultant has not been able to calculate the unit cost per person assisted (or 'trained').

¹⁸ Benchmarks for similar external (i.e. non UNCDF) initiatives are unfortunately not available and other UNCDF programmes (for which cost ratios are available) do not serve as good comparator initiatives. For example, while the YouthStart programme is also a global UNCDF initiative, it is managed entirely from the regional office in Senegal and does not have an in-country presence in the countries of operations (and consequently had a management and overhead operational expenses ratio of only 13.5% in 2014). Similarly, the MAFIPP programme in Lao PDR (with a

moves along and grant disbursements pick up following initial operational delays (as of December 2016, grants accounted for one quarter of total programme expenditure).

Table 4. Cost ratios (based on actual expenditure as of December 2016)

Ratios	
Salaries and related costs for internal staff / Total programme cost	27.8%
Costs for external consultant cost / Total programme cost	24.0%
Grants / Total programme cost	25.9%
Facilities and administration / Total programme cost	8.7%
Logistics training, workshops & conferences / Total programme cost	3.3%
Communications / Total programme cost	1.0%

At 8.7%, costs for facilities and administration can be deemed quite reasonable given the share in the Bangkok regional office and CleanStart' presence in the countries of operations. Similarly, logistics with regard to the organization of workshops and alike only account for a very limited part of total programme expenditure; nevertheless it should be underlined that some training activities have been carried out also by CleanStart staff, therefore, resources allocated to training are potentially hidden in the 'Facilities and administration' costs (see table 4 above). Finally, only 1% of programme resources are currently dedicated to communication. In order to improve dissemination of information and best practices, more funds could perhaps be allocated to this budget line (see EQ2.2). On a final note, thanks to the **flexible use of non-core funds**, the programme has been able to reallocate resources among the activities, according to effective needs on the part of FSPs/ESPs as well as within the wider scope of CleanStart as a whole.

The use of funds (i.e. grants)¹⁹ can also be assessed in terms of the type of institution and country of operations. As of December 2016, 45.6% of the total grant amount was allocated to FSPs and 39.2% to ESPs (see Table 5 below). While it is not possible to break down total programme expenditure by FSP/ESP or country, the grants disbursed (which represent only a portion of programme resources spent in the countries of operations) can be split by country/region (see Table 6 below). With 31% of the total disbursed grant funds, Nepal is the largest recipient thus far (also given that operations started earlier and that Nepal's funding commitment is higher than other countries/region's), while the other three main countries of operations (i.e. Cambodia, Myanmar, and Uganda) have each received 12-15%. The remaining 28% of total grant disbursements are distributed between the PAMIGA countries (23%) and non-country specific activities (i.e. a research grant).

Table 5. Grants disbursed by institutional type: 2013-2016

Institutional type	Total grant disbursed USD
FSP	1,009,000
ESP	867,307
Other*	336,100
Total	2,212,407

* Includes a macro-level institution (AEPC) and Humboldt University research study.

Table 6. Grants disbursed by country/region: 2013-2016

Country/region	Total grant disbursed USD	
Nepal	690,100	31%
Africa*	812,762	37%
Myanmar	331,258	15%
Cambodia	273,287	12%
Not region specific**	105,000	5%
Total	2,212,407	

* Including Uganda (14%) and PAMIGA (23%)

** Research grant to Humboldt University

personnel cost ratio of 40.2% in 2016) is a national, and not a global, initiative. However, both the YouthStart and MAFIPP programmes have provided substantial direct assistance to targeted institutions (as well as, in the case of MAFIPP, to macro and meso level entities).

¹⁹ Even if programme formulation foresaw two different financing tools (i.e. risk capital grants and concessional loans), CS has so far only made use of grants.

In terms of cost-effectiveness and ‘bang-for-the-buck’, **the total programme unit cost for each beneficiary** (total programme expenditure divided by the number of beneficiaries as of December 2016) **stands at around USD 76**. This figure quantifies not only the initial investment incurred by the programme, but also the challenges of sluggish outreach to new clients in the first few years due to delays in securing funding as planned and hence also delays in operations (with many of programme indicators below targets – see Section 3.2 above). In some cases, the outlook for this ratio is, however, positive as initial investments and efforts on the part of FSPs/ESPs are expected to gain momentum and produce faster growth rates in outreach levels in the coming years. Nevertheless, the time required to adequately fine-tune business models and delivery channels at the field level was longer than expected, and therefore most of the ESPs already involved in the programme will only begin to offer CleanStart products in 2017. Furthermore, it is worth mentioning that a very promising ESP in Myanmar has interrupted its operations, which will naturally affect CleanStart outreach levels in that country²⁰.

If the **beneficiary unit cost is applied only to the grants disbursed** to FSPs/ESPs, the numbers are more reassuring (i.e. overall it is just below USD 20 in grants disbursed per beneficiary). However, as presented in Table 7 below, the **unit costs vary greatly between the countries of implementation**, where the results are not only correlated to the timeframe (for more details see paragraph 5.3 Effectiveness to Date ‘*Level of output delivery and outcome achievement (micro level) [EQ3.1 & EQ3.2 - Level of output delivery and outcome achievement]*’. Whereas the unit cost is very low (USD 8) in Nepal (where CleanStart activities started earlier than in other countries and have gained momentum in terms of number of beneficiaries), it is significantly higher in both Cambodia and Myanmar (where CleanStart operations started only in 2015 and have not yet effectively reached out to a substantial number of beneficiaries). On the other hand, PAMIGA’s results (identified in the table below under ‘Other Africa’) can be considered as high, while for Uganda, given that CleanStart operations also commenced in 2015, the unit cost is adequate, primarily thanks to FINCA’s client base, levels of outreach are much higher (bringing the unit cost per beneficiary to just above USD 40).

Table 7. Beneficiary unit costs (based on grants disbursed and number of beneficiaries as of December 2016)

Country	Year of starting operations	Unit cost (USD)
Nepal	2013/2014	8.07
Cambodia	2015	1,636.45
Myanmar	2015	787.84
Uganda	2015	42.84
Other Africa*	2013/2014	64.29
Total		19.65

* PAMIGA FSPs including Cameroon, Ethiopia, Kenya, Senegal and Tanzania.

Quality of management and oversight [EQ2.2]

Through a Direct Implementation Modality (DIM), CleanStart is managed by a **Programme Implementation Unit (PIU)**, primarily based in the UNCDF Asia-Pacific regional office in Bangkok. Initially understaffed, and with a period of interim programme management²¹, CleanStart is now supported by a centralized team of five staff²². In order to support the implementation of the programme’s country strategies (see below), this

²⁰ Brighterlite’s decision to suspend operations in the country was based on their own evaluation, which outlined the limited sustainability of their initiative due to several factors among which subsidies and energy policies that are affecting current market opportunities. .

²¹ On part of the UNCDF Senior Regional Technical Advisor, Financial Inclusion Asia.

²² CS team includes: (i) a Programme Manager, who joined in 2013; (ii) a Project Associate; (iii) a Fund Facility Coordinator (shared with the SHIFT programme); (iv) a Programme and Knowledge Management Analyst, who joined

team is (following the 2015/2016 change in programme strategy) supported by CleanStart **representatives in the countries of operations**. For example, a full-time CleanStart representative is based in Nepal, while, in Uganda, in-country presence is covered (as of mid-2015) by the CleanStart Programme and Knowledge Management Analyst (with a strategic decision, albeit with no clear job description regarding the country specific work). In Cambodia and Myanmar, day-to-day CleanStart management is covered by the PIU at the regional office in Bangkok and local representation is shared with the UNCDF SHIFT programme²³. However, while the country representative in Myanmar focuses on assistance to one ESP and other activities that indirectly support CleanStart, *in loco* CleanStart assistance in Cambodia is effectively nil (and according to some stakeholders this situation creates confusion and makes it *'difficult to say who is the key contact'*). In all cases except for Uganda, the country representatives are national consultants that support country buy-in and cost-effectiveness. In terms of gender approach, despite the fact that UN human resources policy encourages qualified women to apply, the CleanStart team is predominantly composed by men (also considering external consultants). A strong and centralized PIU with committed staff has clearly been essential for the coordination of a programme across multiple countries. However, a more targeted involvement of country representatives (or other local consultants), in terms of operational/technical assistance staff, not only in Nepal and Uganda, but also in Myanmar, Cambodia and Ethiopia, could assist programme implementation in several aspects: i) closely work with the implementing partners (to have a better understanding on the daily difficulties they face, needs, opportunities, market constraints, new potential partnership and collaboration and provision of tailor made capacity building support to FSPs/ESPs); ii) enhancing the visibility and accountability of the programme; iii) strengthening close relationships with the macro level, the industry, and interacting with relevant stakeholders; iv) coordinating with existing initiatives and eventually attracting new funds. Finally, programme management and in-country representation are complemented by a **roster of international consultants** engaged mostly in the carrying out of studies and research and providing support to UNCDF staff²⁴.

The Board established in May 2012 since programme inception, includes representatives from UNCDF, UNDP, and more recently (from December 2015) has included one external stakeholder from GOGLA. It is mostly responsible for reviewing the progress of the programme, country and partners' selection process (see EQ2.4 - *Quality of financial support* below), human resources issues, addressing key issues and how to move forwards, building new strategic partnerships, approving the budget and workplan. As mentioned in Section 3.3 above, CleanStart is funded not only by UNCDF, but also by SIDA (including, as of 2016, the Embassy of Sweden in Uganda), NORAD, ADC, and the Government of Liechtenstein. Programme management regularly submits reports to these donors (especially SIDA, but also NORAD, through the respective embassies at the country level) in order to inform them on progress and challenges (see 'reporting' on the following page). However, by their own choice, donors are not actively engaged in governance of the programme (for example, both SIDA and NORAD have been invited to sit on the Board of the Investment Committee (IC), but these invitations have been declined). The lack of effective donor engagement might have entailed limited external programme oversight that was considered an important weakness of the programme. A broader governance composition (namely also including stakeholders with different interests and areas of intervention) could have create a stronger environment to adopt more critical points of view, necessary to

the programme in the beginning and currently based in Uganda; and (v) a Data Management Specialist (also shared with the SHIFT programme).

²³ In Myanmar, SHIFT support focuses on one ESP and other activities that will indirectly support CS, but day-to-day management of CS activities is covered by the PIU in Bangkok.

²⁴ External consultants with adequate profiles are selected according to standard UN procedures.

guide a programme that is working in a relatively new and innovative framework, expanding its networking and potentially attract new funds.

In general, however, a more open and proactive governance structure could benefit the programme in terms of assisting not only in the orientation of programme operations but also in increasing the likelihood policy influencing and fund-raising. In terms of financial oversight, CleanStart underwent external audits with no adverse comments.

In terms of **programming**, CleanStart is primarily guided by annual work plans (AWPs) and, in the countries of operations, by country strategies (or business plans). The AWP provides an adequate global overview of the timeframe for activities to be carried out (as well as those that have already been implemented) under each output. The country strategies or business plans are believed to serve as a useful tool for orienting CleanStart activities in the countries of operations, even if they provide limited guidance for actions at the macro and meso levels (the two strategies/plans, i.e. Ethiopia and Uganda, that the Consultant has been able to review are comprehensive and detailed).

In terms of the **monitoring system at micro level**, CleanStart has a number of documents and tools, including a traffic light system that presents the status of performance in achieving the targeted outreach. Other documents, such as the FSP/ESPs quarterly reports, show progress highlights and key risks and challenges faced by the implementing partners. The current **monitoring** tool, the KPI dashboard, is a newly designed instrument and has not yet been consolidated with all countries of implementation. The dashboard tracks the total number of sales per country, institution, product and delivery channel (cash, loan or PAYG), gender, as well as other information on portfolio (PAR 30, write-off). Based on these numbers, it automatically creates tables and graphs. At the country level, however, different monitoring tools are used, making it difficult to compare data (sometimes incomplete) across countries (and in some cases the logo of the SHIFT programme might cause some confusion). In addition, indicators are not split between performance with regard to direct (i.e. CleanStart) and indirect (i.e. PAMIGA) countries of implementation, which hamper the comparison of results following from different methods of implementation. Monitoring basically follows a bottom-up approach and the information provided by FSPs/ESPs through the quarterly reports (see further EQ2.4 - *Quality of financial support* below) and fed into the dashboard is generally not aggregated (except for outreach achievements) and fully used in a constructive way (i.e. exchange of feedback – see below). For instance, despite through the monitoring system the team had identified the main risks for BrighterLite in Myanmar to continue operating in the sector, when in February 2017, it communicated that it would have suspended its CleanStart operations due to poor outreach, the reaction was *'a big shock for us and really unexpected'*.

At programme level, the 31 **indicators are not fully tracked** and this clearly hampers comprehensive monitoring as well as the analysis of progress and effective awareness on the status of activities, and in general, the monitoring system can be defined as fragmented. The lack of data consistency and usability can in fact be considered one of the weakest points of the management of the programme. A more precise and adequate (in terms of the data to be collected at all levels, i.e. not only micro) monitoring system should, apart from providing an overview of the current status (through a limited set of relevant indicators), also be able to detect and alert potential internal and external risks as well as, consequently, provide the basis for decisions on how to orient, and possibly readdress, programme activities.

Monitoring indicators are disaggregated by **gender** and the programme has effectively reached out to a significant number of female clients (see Section 5.3 below). Specific programme resources have, however,

not been strategically allocated to the promotion of female outreach and engagement. Furthermore, at the FSP/ESP level, implementing partners have not developed specific gender sensitive strategies even if green energy products targeting rural households address also (perhaps even primarily) the needs of women in terms of easier and cleaner access to energy. Human rights were included in the reporting tool (namely percentage of products sold to minority people) but not tracked because institutions do not in general consider this variable. For instance, as mentioned by one institution *'We do not wish to track this as part of our customer contract as customer could perceive it negatively (and have not previously agreed with UNCDF to do so)'*.

Programme **reporting** includes narrative annual progress reports (APRs) prepared by the PIU and submitted to donors. The APRs (which include the AWP and budgets for the upcoming year) provide detailed and clear accounts of programme progress, although it is not always clear to what extent the country strategies/business plans have actually been followed. On the whole, however, both the quality and timely submission of the reports are recognized by donors. Furthermore, IC meetings are documented in the form of comprehensive minutes accounting for both discussions and decisions.

With regard to programme **communication**, there seems to be room for improvement, both internally and externally. A number of stakeholders (at all levels, i.e. macro, meso and micro) claims to not have received further information after the first CleanStart contact. Some FSP/ESP grantees particularly lament the uncertainty around renegotiations of Performance Based Agreement (PBA) targets. On the other hand, at the international/global level, one stakeholder believes programme communication to be *'efficient, quick and good'*. In terms of promotion of the programme, newsletters and publications are seemingly not forwarded to relevant stakeholders (at micro, and macro level), and only two workshops have been organized at the international level (one in Ethiopia and one in Thailand). Some stakeholders called for CleanStart *'visibility'* material as well as opportunities (in the form of roundtables or alike) with other CleanStart partners and beyond in order to share experiences and find solutions to common problems and challenges (and also to feel that they are *'part of a multi-country programme'*). Given that communication currently accounts for only 1% of total programme expenditure (see EQ2.1 - *Use of funds* above), also considering the increasing use of new channels (as the social media), additional resources could benefit the development of a more effective communication strategy (and tools) focusing on external (wider public and potential partners at micro, meso and macro level) as well as internal (i.e. implementing partners and current donors) outreach. In general, more programme visibility could assist in promoting market demonstration effects as well as in the mobilization of resources needed to close the funding gap.

Quality of non-financial support (capacity building) [EQ2.3]

Apart from funding support at the micro level (see EQ2.4 - *Quality of financial support* below), the programme design foresees the provision of targeted capacity building (Output 2), as well as knowledge management (Output 3) and advocacy support (Output 4) to relevant stakeholders at all levels (namely micro, but also meso and macro level). Capacity building through the programme is promoted through various means, including: (i) the delivery of training and technical assistance (TA); (ii) the organization of exposure visits; (iii) the facilitation of workshops; and (iv) the commissioning of research studies. Quarterly monitoring on part of the CS team also involves the provision of advice on general direction and implementation of activities, and main efforts on part of programme management consist of following up FSP/ESPs activities and monitoring progress. However, overall **the programme has to date provided a relatively limited amount of direct capacity building support and concentrated in a couple of countries** (namely Nepal and Uganda). This might be influenced by two main factors: first of all, the partnership with UNDP-GEF, that was initially

supposed to support CleanStart on energy supply chain development/technical assistance, has not fully materialized. As a result, CleanStart had to build up the expertise in-house by engaging external consultants. Secondly, after the change in approach, where from the sector based model CleanStart promoted the investment model, the technical assistance could have been directly included by the institutions into their business plan and embedded in their grant funding (indirect capacity building). In **Nepal**, the programme has organized some activities to build the capacity of the involved institutions: two exposure visits (2013 in Sri Lanka and 2014 in India) with good participation also from non-supported partners; in collaboration with the Alternative Energy Promotion Centre (AEPC), a governmental institution, a 2014 training-of-trainers (ToT) course to MFI branch managers on the preparation of business plans for their clean energy lending; and other on job support to FSPs to monitor their activities. The quality of the ToT course (delivered by WinRock International, an international non-profit organization) was particularly appreciated by participants. In **Uganda**, CleanStart has organized two participatory workshops, so called 'ThinkShops'; one in 2016 on Energy Access and Financial Inclusion and one in early 2017 on Solar PAYG Business. These workshops were greatly appreciated by participants that provided very positive and enthusiastic feedback (*'really good input'; 'exactly what is needed'*). One stakeholder also suggested that similar workshops (*'from which the industry as a whole benefits'*) could be held with participants from more than one country in order to share experiences and best practices across borders. In addition, the programme has also provided pre-investment support (from a pool of international consultants) to three Ugandan FSPs/ESPs in terms of assisting them in complying with the requirements and formalities of the grant application process (see EQ2.4 - *Quality of financial support* below) and organized public events to give visibility to the call. On the whole, **supported stakeholders in both Nepal and Uganda are appreciative of the assistance received through the programme**²⁵.

Apart from some initial support received through preparatory workshops as well as advice on general direction and implementation of activities through quarterly monitoring conversations, FSPs/ESPs in other countries than Nepal and Uganda, have **not benefitted from substantive capacity building activities provided directly by the programme** (i.e. not including allocations for TA, albeit limited, from external consultants in their grant applications). In Cambodia, for instance, Kamworks was supported by CleanStart to leverage additional financial resources. Feedback from stakeholders at all levels underline the importance of providing TA and training alongside financial support (*'Money is not enough alone'; TA is 'critical to better achieve the results'; additional TA 'would have helped', especially with regard to mobile money integration*). Only one of the providers having received a CleanStart grant declared that they *'don't need external TA as we know our work'*. On the other hand, the **FSPs supported by PAMIGA receive a considerable amount of training and TA through the network** (indirect capacity building). PAMIGA is already experienced in the provision of new microfinance products for green energy and has supported institutions in the identification and piloting of innovative delivery channels (and the support received is considered as helpful).

Finally, in terms of studies, CleanStart has recently conducted the following **three well researched studies** in Nepal and Uganda on: (i) the 'energy ladder' for pico and large solar products (in partnership with the Humboldt State University's Schatz Energy Research Center); (ii) energy diaries with Low Income Financial

²⁵ Feedback on the quality of capacity building support is based only on feedback provided during the interviews carried out during the course of the Assignment as participants' satisfaction upon the end of a capacity building event is not tracked by the programme. The only one written feedback is for a 2013 training in Nepal on Business Planning on Clean Energy Microfinance; trainees (20) rated the training on average 4.25 (Good 4/Excellent 5).

Transformation (L-IFT); and (iii) and energy loan client monitoring study carried out by Rooster Logic. These quality studies provide important contribution to consumer insights for sector development, into understanding client demand and hence into developing a client-oriented approach to energy access. However, the dissemination and actual use (on part of other relevant stakeholders) of the studies are not clear. While, for instance, the energy diaries study is available on L-IFT's website, none of the studies can be found on the CleanStart website. Furthermore, macro and meso level stakeholders consulted during the course of the Assignment claim to not have received (or indeed even know of the existence of) these studies.

Quality of financial support (grant funding) [EQ2.4]

Since the programme started in 2013, **five requests for proposals (RFPs)** have been launched in four countries (namely two in Uganda²⁶ and one each in Cambodia, Myanmar, and Nepal). During programme implementation, the partner selection process evolved from direct disbursement in Nepal to the mechanism of the challenge funds in the other countries. Specifically the Energy Access Challenge Fund in Uganda and the SHIFT programme's Energy Access Window for the ASEAN region were launched in 2015. This new mechanism is based on a pre-selection phase of expression of interest (step one), development of the concept for request of admission (step two) and development of a complete business plan (step three). The Challenge Funds are country-based, managed by the fund management team with guidance from a highly qualified independent Investment Committee. As of December 2016, a total of USD 3.3 million have been awarded and USD 1.4 million (41% of the total) disbursed. Even if RFPs have usually not been promoted at the country level, but rather disclosed through other channels at the international level, they have nevertheless resulted in a good number of applicants. The **selection process** (led by the IC – see EQ2.2 - *Quality of management and oversight* above) **follows clear and transparent procedures**. The grant application process is fairly standard, similar to other international bids, **but procedures are generally considered as complex and time consuming**, especially for ESPs²⁷. Furthermore, in Uganda, some stakeholders believe the requirements to be too high and consequently favor stronger international companies over national providers. While certain standards should naturally be adhered to, some criteria could perhaps be reconsidered to promote the participation of national companies (mainly for ESPs) towards supporting the consolidation and development of local markets.

Contracts with implementing partners (i.e. FSP/ESP grantees) are based on **PBAs**. These agreements define a plan of action to enable the monitoring of progress and include a set of milestones (that are negotiated with and shared by the FSPs/ESP)²⁸ that link disbursements to the actual attainment of results. PBAs are drafted according to UNCDF standards (and include the endorsement of the Smart Campaign) and defined on the basis of the business plans of the FSPs/ESP. Supported institutions generally consider the targets to be *'fair and achievable'* and appreciate the timely disbursement of grant funds when targets are met, but a few also report **difficulties with reaching the milestones and, especially, renegotiating agreements on identified targets or timeframe**. The use of PBAs with disbursement linked to the achievement of certain milestones, are designed to encourage the implementing partners in achieving targets more quickly, however, in the case of CleanStart most of the institutions lag behind their schedule and (as of December

²⁶ However, only one of the two RFPs launched in Uganda was eventually finalized.

²⁷ In fact, in Myanmar, one ESP, after being shortlisted decided to renounce the second step of the bidding process as it was considered too complex to pursue in relation to its business objectives (i.e. 'green' products only represent a limited part of the portfolio).

²⁸ In a few cases, namely with regard to the international certification of products, targets are set upon the request of (rather than negotiations with) the programme.

2016) have achieved few milestones, hence received little funding²⁹.

Finally, in order to support monitoring (see EQ2.2 - *Quality of management and oversight* above), FSP/ESPs grantees are requested to submit **quarterly reports** to the PIU. These reports include both descriptive and quantitative parts and are generally of good quality, highlighting achievements, challenges as well as next steps. While the descriptive part is designed to be concise and schematic (five questions normally addressed in 2-3 pages only), the quantitative part (collected with an excel file) capture many information that it seems not fully exploited by the programme. On part of implementing partners, for the majority of staff interviewed, data collection for the quarterly reports is considered frustrating not only in terms of complexity but also in terms of usefulness (most institutions consider data collection either as '*too overwhelming*' or '*complicated*')³⁰. In general, the process is considered as particularly unsatisfying from the FSP/ESP point of view since it is not easy for most partner institutions to collect consistent and reliable data.

²⁹ While all institutions in Nepal have reached three milestones, the achievement of targets is weaker in the other three countries. In Uganda, only two ESPs have reached one milestone, while one ESP in Cambodia and one ESP in Myanmar have respectively reached one and two milestones, out of the total 5 or 6 tranches.

³⁰ In fact only one institution considered the data collection process as "*not too demanding*".

5.3 Effectiveness to Date

EQ3. To what extent is the programme on track to increase in capacity of partner institutions to deliver good quality and affordable financial products or financing schemes for clean energy? To what extent is the programme on track to influence the broader financial system for clean energy in the countries where it operates?

CleanStart is directly supporting 14 FSP/ESPs in four countries (Cambodia, Myanmar, Nepal, and Uganda), a Credit Guarantee Fund (CGF) in Ethiopia, and a microfinance network in Sub Saharan Africa countries (PAMIGA); it has adopted three business models (sector-based, investment-based, and partnership models) characterized by differences in innovation in terms of delivery channels and/or type of linkage between FSPs and ESPs. Implementing partners are supported through a risk-capital grant mechanism and limited direct capacity building activities.

The Programme met the intermediate outcome target, having achieved 107,265 new CleanStart clients (direct beneficiaries) for a total of 536,325 people (direct and indirect beneficiaries).

In general, however, the programme is registering challenges in achieving defined targets concerning the majority of the programme indicators.

Good quality of knowledge and learning activities (despite in a limited number if compared to the size of the programme and the geographical coverage).

While the programme has positively collaborated with the broader financial system in some countries (namely, at macro level in Nepal, meso level in Uganda and Ethiopia), to date, it is premature to establish whether CleanStart has effectively influenced or is on track to influence the overall financial system. Also in terms of indirect effects, at market level there is no evidence gathered yet of other FSP/ESPs (i.e. competitors not supported by CleanStart) being indirectly influenced by the programme.

Level of output delivery and outcome achievement (micro level) [EQ3.1 & EQ3.2]

As per the ProDoc (and as further illustrated in Annex 1), CleanStart's activities at the micro level include (i) finance for clean energy (Output 1) and (ii) TA for clean energy (Output 2), which in turn are expected to promote increased access to clean energies on the part of low-income customers and households as countries adopt the CleanStart approach and methodology (Outcome). On the whole, **intermediate programme progress** in this regard **points to challenges in achieving targets** concerning the majority of the programme indicators (see Annex 3 as well as Section 3.2 above). In fact, it is likely that a number of targets – especially those under the Output 2 and Output 3 – will not be met by the end of the programme in 2020.

While **results are generally more encouraging in Nepal and Uganda**, programme efforts have yet to yield results in terms of improved access in Cambodia, Ethiopia, and Myanmar. Programme implementation suffered from a limited budget availability (as mentioned in paragraph 3.3 *Current Programme Financial Status*) and from the fact that the partnership with UNDP-GEF did not end up taking place, which had been intended to deliver results in terms of collaboration and funds.

Given that programme design is not country-specific, CleanStart **initially carried out a total of seven scoping assessments** for Cambodia, DR Congo, Ethiopia, Nepal, Philippines, Tanzania, and Uganda as well as **one desk research** for Myanmar in 2012 and 2013 towards identifying the most adequate countries to be piloted. Actual CleanStart operations with FSPs/ESPs commenced in 2014 (Nepal and with PAMIGA) and in late 2015 (Cambodia, Myanmar, and Uganda), while they have yet to be launched in Ethiopia. Therefore, despite the programme starting in 2012, the **analysis of effectiveness at micro level refers to only a couple of years of initial implementation.**

As presented in Section 5.3 (EQ1.2 - *Appropriateness of programme design*) above, CleanStart is seeking to pilot two different business models, namely: (i) a **sector-based model** that refers to the involvement of the mature microfinance sector (i.e. the original model outlined in 2013 ProDoc); and (ii) an **investment-based model** to support new FSP/ESPs (resulting from the change in programme strategy and included in the 2016 ProDoc amendment). Furthermore, albeit not specifically defined as a distinct ‘model’, the programme is also implemented, as of early 2013, through a network (i.e. PAMIGA) that provides technical assistance to FSPs providing clean energy related products (i.e. the **partnership model**).

The effectiveness to date of these three models is presented in the paragraphs below. Finally, this sub-section concludes with an assessment of outreach (Outcome).

Sector-based model (microfinance sector) and investment-based/incubation model (FSP/ESPs)

A total of 14 implementing partners (five FSPs and nine ESPs) in four countries (i.e. Cambodia, Myanmar, Nepal and Uganda) have been supported directly by CleanStart and, as of December 2016, eight institutions are providing CleanStart products. In practice, the two business models are **characterized by differences in delivery channels as well as in the type of linkage between FSPs and ESPs** (see Table 8 below).

Table 8. Business model innovation per delivery channels and/or type of linkage between FSP/ESPs (as of Dec 2016)

Country	Name of FSP/ESP	CS Business Model	Cash	Loan	PAYG
Uganda	BioLite	International ESP linked with FSP and PAYG system	x	x	(ud)
	d.Light	International ESP with PAYG system	x		(ud)
	EcoGroup	<i>National ESP with PAYG system</i>	x		x
	FINCA	FSP with integrated ESP partnership (fully owned)	x	x	
	Village Power	International ESP with PAYG system	x		(ud)
Myanmar	Biolite	International ESP with PAYG system		x	x
	Brighterlite	International ESP with PAYG system	x		x
	GreenLightPlanet	International ESP with local distributor and PAYG system	x		x
Cambodia	Hydrologic	International ESP deep-rooted in the country in partnership with KIVA	x	x	
	Kamworks	International ESP deep-rooted in the country with PAYG system and in partnership with KIVA	x	x	x
Nepal	ACE Bank	<i>Consortium between ACE Bank and Sahara SACCOs to implement products</i>	x	x	
	JBS	<i>FSP with integrated ESP partnership (fully owned)</i>	x	x	
	NMB	<i>Partnership with a local microfinance development bank</i>	x	x	x
	SKBBL	<i>Implement clean energy products through cooperatives who are shareholders, for example Margui Cooperative</i>	x	x	

(ud) = under development

Models in italics have been developed with CleanStart contribution.

In some cases, for example FINCA's integrated partnership with BrightLife (non-CleanStart ESP), linkages between FSPs and ESPs existed prior to the programme, while in other cases, for example relationships in Nepal (FSPs linked with cooperatives or MFIs or with an integrated ESP) have been facilitated by the intervention of CleanStart. With regard to the latter, CleanStart has effectively seized the opportunities in the market mostly thanks to a strong alignment with the national policies (macro level) in the promotion of the clean energy sector.

Performance from Nepal, which is encouraging, besides the pure fact that operations started earlier, benefited from the positive macro context and from the existing market ecosystem. On the other side, the achievement of results in the other three countries has been limited. In general terms, many institutions register **delays in implementation, mostly because the launch phase required initial time consuming investments** (above initial expectations) primarily linked to the development and implementation of PAYG delivery channels. In many cases, the milestones and related timelines outlined by the PBAs, discussed and mutually agreed, after a few months of operations were considered by some partners as over-ambitious in the immediate term. Furthermore, delays have probably also been aggravated by the fact that, even if Output 2 (and many of its indicators) refers to the provision of technical assistance, **programme implementation** (except, again, for Nepal where some assistance has been provided – see Section 5.2, EQ2.3 - *Quality of non-financial support*, above) **has not effectively intervened to support institutions with technical assistance.**

In general terms, the following relevant strengths and challenges on both sides (FSPs and ESPs) should be considered:

- ESPs do have more expertise with regard to the market and after-sales services. Nevertheless, in general (namely when they are not well-rooted in the country), they do not have the social know-how with regard to a given community, and knowledge on evaluating clients' repayment capacity. In general, they should overcome issues related to the infrastructure to deliver appropriate services. They also do not have access to credit bureau data (even where such bureaus exist), which may result in the over-indebtedness of clients. Finally, for the ESPs themselves it can be difficult to access finance because of their limited creditworthiness (high risk perceived, lack of collateral and guarantees, but also restricted liquidity).
- FSPs have a competitive advantage in market penetration as they can rely on a wide distribution network, also through retail networking solutions and local distributors, as well as know-how and financial resources to pre-finance green products. Providing such products also improves the social image of the FSPs among their clients. The main challenges for FSPs are lack of experience with technology products – and hence a focus that is far from their core business - and limited experience to provide after-sales services. Finally, even if FSPs generally are better equipped to assess client's repayment capacity, they may also contribute to the over-indebtedness of clients³¹.

With CleanStart contribution, **FSPs/ESPs launched or improved a total of 28 energy products** (see Table 9 below) by developing new financial products or setting up new delivery channels (such as the PAYG system). Even if CleanStart is not deliberately promoting a certain kind of clean energy technology (i.e. the programme in this regard is 'technology agnostic'), institutions primarily offer **solar products** (50% of the launched/improved products are solar home systems or smaller lighting devices) and **improved cookstoves**

³¹ Field interviews in Myanmar highlighted the potential risk of over-indebtedness as people have loans also from FSPs (for purposes other than green products) or informal money lenders.

(29%, in some cases with integrated solar components). Only in Nepal do FSPs/ESPs offer other technologies, namely biogas and water pumps.

Table 9. Number and type of CS products by FSP/ESP: Existent or *to be launched (in italics)* as of December 2016

Country	FSP/ESP	Improved cookstove	Solar home system	Solar lighting system	Biogas / water pump
Uganda	<i>Biolite</i>	1		1	
	<i>d.light</i>		1	1	
	EcoGroup	3	1		
	FINCA	1	1	1	
	<i>VillagePower</i>		6		
Myanmar	<i>Biolite</i>	1			
	Brighterlite		2		
	<i>GreenLightPlane t</i>		1	1	
Nepal	ACE	1	1		1
	JBS	1	1	1	1
	NMB-CEDB	1	2		3
	SKBBL	1	2		1
Cambodia	<i>Hydrologic</i>	1			
	CA-Kamworks		2		
Total		11	20	5	6
Total new products launched/improved		8	12	2	6

With regard to types of financial products and delivery channels, credit is the most common. According to available data (not all institutions provided information in this regard), 73% of clients have covered the purchase through a loan, 13% paid through PAYG system, and 11% in cash (the remaining 3% used other delivery channels). These findings are mostly driven by the FSPs in Nepal, whereas PAYG channel is still underutilized in other countries because of the early stages of development of this mechanism in general (and a number of ESPs have not yet started operations)³². In the next few years, however, the **use of the PAYG channels will likely increase**. In general, it is **considered as an innovative and feasible solution**, mostly because it helps to cut transaction costs (i.e. client and/or loan officers do not need to meet regularly) and, thanks to improved technology, FSPs/ESPs can overcome the problem of late payment by using a GPS system to remotely switch off the devices in case of default. This promising approach is also adopted by the other programmes/donors (such as World Bank in Uganda and GiZ). One challenge with this mechanism is related to the fact that implementing a sound PAYG scheme is possible only in countries and areas where a solid Mobile Network Operator (MNO) system is in place, even though also non real-time payments are possible through scratch-card/code enabled.

Despite the different financing tools envisaged by **CleanStart's** design in support of institutions (i.e. risk-capital grants, concessional/commercial loans, or equity), **so far only the grant mechanism has been used**. To some extent, CleanStart is also supporting the implementing partners (namely Kamworks in Cambodia as well as BioLite and EcoGroup in Uganda, and d.Light globally) in the deployment of other financial instruments, encouraging and supporting the investees in diversifying their funding structure. On the part of

³² Hydrologic, d.Light, BioLite and Village Power in Uganda and Myanmar are supposed to start sales through the PAYG system in 2017.

the FSPs/ESPs, **CleanStart grants are mainly used to cover operational costs** to support/improve the business model (hire new operational staff or purchasing machinery for production and electronic components), product development, deployment of the PAYG system, and marketing activities. Table 20 in Annex 5, summarizes the main purpose of the grants by institution. To date, **only half of the institutions have achieved one or more of the milestones set out in the PBAs**³³. These results are a real concern and highlight the difficulties and delays that FSPs/ESPs are generally encountering, **regardless of country of implementation or of business model, product or delivery channel promoted.**

In terms of capacity building, as presented in Section 5.2 (EQ2.3 - *Quality of non-financial support*) above, **direct TA or training received as part of CleanStart has so far been concentrated only in Nepal** (except for some pre-investment support to a couple of institutions in Uganda). TA within the framework of the programme has focused on the building of key skills related to the implementation of CleanStart products, mainly for middle and top management staff (i.e. renewable energy technology training and institution-specific training on relevant projects, for example solar panel installation, repair, and maintenance). The number of FSP/ESPs participating in capacity building activities is below target³⁴. Furthermore, awareness raising campaign at client-level has been insufficient and is likely to have hampered uptake.

For FSPs in Nepal, CleanStart has positively contributed to organizational change by introducing a new segment, i.e. clean energy, which commercial banks can address, and by facilitating the creation of a number of partnerships for the distribution of the products (i.e. through MFIs or cooperatives). Another important programme contribution in Nepal relates to the introduction of non-financial services (namely training and awareness campaigns) in order to promote green products and promote awareness among communities to understand the importance of, and are actively involved in, adopting available clean energy solutions. Finally, for FINCA in Uganda, CleanStart proposed the development of a credit scoring system to assess new clients³⁵. Not yet fully in place, results are limited to the enlargement of its client base, reaching out also to new clients (before FINCA was only offering energy products to existing clients). Table 21 in Annex 5 provides a brief analysis of the main strengths and weaknesses for all institutions.

With regard to ESPs, even if six (out of nine) have not yet started CleanStart operations, **the programme has brought about some promising initial organizational changes.** For example:

- EcoGroup in Uganda, with the launch of PAYG, has added a new financing option for its clients and expanded its clientele;
- Kamworks in Cambodia also developed a PAYG system;
- BioLite in Uganda has diversified its distribution network based on agreements with different institutions (NGOs, MFIs, MNOs);
- d.Light, with operations in other African countries, is launching operations in Uganda;
- BrighterLite in Myanmar launched a fee-for-service innovative model also known as perpetual lease;
- Hydrologic in Cambodia, alongside its traditional water filters activity, will open its market to improved cookstoves; and
- Village Power in Uganda is developing some tools (namely a web-based data collection and sharing

³³ As already mentioned: in Uganda, only two ESPs have reached one milestone – the other has reached zero. One in Cambodia and one in Myanmar have reached more than one milestone. In Nepal all have achieved three milestones. Six institutions have only received the first tranche at the contract signature.

³⁴ PI1.2 Number of FSPs that participate in the Awareness and Confidence Building Training and/or other pre-investment activities.

³⁵ High Volume Low Denomination (HVLN) credit scoring, according to which a set of information from different sources can provide a good overview of the financial behavior of a client, also if unbanked.

platform) to increase harmonization and transparency in the industry and, in agreement with GOGLA, to create partnerships with its members.

Apart from support to FSPs/ESPs in Cambodia, Myanmar, Nepal, and Uganda, CleanStart **has also started implementing actions in Ethiopia** as of late 2016. Technical assistance, provided by one international and one local consultant, has been offered for the development of an operational manual of the Credit Guarantee Fund established by the Development Bank of Ethiopia, and financially supported also by UNDP/GEF.

In terms of **cross cutting issues**, there is evidence that **FSPs/ESPs have integrated some of them**. More specifically, regarding **gender**, available data (see Table 22 in Annex 5) show that the numbers of female clients are encouraging (mostly driven by Nepal). However, the focus group discussions held in Nepal found that in some cases men are behind the decision to acquire the product rather than the female client herself. There are **some signs of concrete measures towards reaching out to women** on part of some FSPs/ESPs, but more efforts are needed. For instance, in Uganda, EcoGroup uses different marketing approaches differentiated by gender in rural areas, while for the other implementing partners gender is not relevant and they do not adopt different marketing strategies (or tailored products).

With regard to **client protection**, the PBAs request institutions to endorse the Smart Campaign (albeit seemingly without providing additional information on the campaign its principles, and evaluation indicators). As of December 2016, four FSPs and one ESP have endorsed the Campaign, demonstrating some commitment (even if none of them are Smart Campaign certified). For ESPs, endorsement is limited since the Smart Campaign methodology is tailored to financial institutions and only financial service providers are eligible for certification. In some cases, CleanStart has also promoted client protection practices by linking PBA milestones to some of the campaign's Client Protection Principles (CPP). One example is related to mechanisms for complaint resolution (CPP 7) by calling for the setting up of toll-free call centers to manage client complaints and after-sales services. Feedback on actual practices from the FGDs points to **improvements in some areas** (e.g. provision of high quality physical products and improved levels of transparency). A potential risk arising from the use of PAYG systems is related to over indebtedness (CPP 2). In some countries, MNO/DFSs (Digital Financial Services) are not yet regulated by the central banks and hence do not follow the strict regulations applicable to FSPs. Clients can therefore buy a green product (which in some cases can also be expensive) without contributing to the sharing of information through a credit bureau, where present. Cambodia, for instance, where the National Bank of Cambodia has recently improved the regulatory framework for mobile money by requiring operators to be linked with commercial banks through guarantee, is keeping a close eye on the PAYG system. In general, however, given the limited size of the market and the benefits that rural communities can obtain, there are no real serious concerns, according to a relevant macro level stakeholder in the country.

Together with the financial products, a few institutions also provide **primarily financial education but also other forms of training** (for example on new technologies and environmental issues). For example, in Nepal, JBS (as mentioned above) organizes awareness campaigns and provides training on clean energy products to its clientele.

In order to promote **environmental standards** and the quality of energy products from suppliers, PBA agreements with some institutions (for instance to EcoGroup, BioLite or d.Light in Uganda) include milestones related to international or national certifications. Furthermore, as part of the Evaluation, the Consultant assessed supported institutions through a Green Index - developed for the microfinance sector by the European Microfinance Platform's Microfinance and Environmental Action Group, but also applicable to

other sectors - that measures to what extent an institution has formalized its environmental engagement in terms of analysis of internal and external risks and green opportunities. While an adequate assessment has been difficult due to limited availability of relevant data, the **Green Index performance** can be estimated to be relatively moderate, but **not yet adequate**. Specific green and clean energy financial products are offered, but analysis of internal (e.g. internal ecological footprint) and external environmental risks (e.g. risks generated by client activities) is not formalized and not usually part of a defined environmental strategy that is consistently and appropriately managed and monitored.

Access and affordability are generally identified as the key two challenges to clean energy product uptake in the supported countries, especially for low-income households. Interviews with CleanStart clients (see Section 5.4 below), also confirm that access to energy would not be possible without access to finance. The **PAYG system** has been implemented (or is under development) by most ESPs. This system, **together with a good management for the provision of credit, is expected to provide reasonable energy access** to low-income households at modest returns to allow for sustainability, also taking into consideration pricing and loan terms³⁶. In fact, near future prospects for this delivery channel seems very promising thanks to new technological devices able to address financial risks and to expand outreach into previously uncovered (too costly) market segments.

Partnership model

In December 2013, CleanStart signed a USD 800,000 grant agreement with PAMIGA for the provision of technical assistance and training to FSP members of the PAMIGA network. As of December 2016, with USD 500,000 in disbursed funds, the **PAMIGA partnership has supported eleven FSPs** (two of them not offering green products anymore) **in six countries in Sub-Saharan Africa** (namely Benin³⁷, Cameroon, Ethiopia, Kenya, Senegal, and Tanzania) and conducted pre-scoping analysis also in Burkina Faso and Madagascar. Different from the other two CleanStart models presented above, it has, however, **so far brought only limited results** despite the good number of countries and institutions involved. Main challenges from PAMIGA's partners are related to lack of medium-term financial resources to disburse, unstable demand (based on seasonality of the cash flow), issues linked to the technology agents or weaknesses on the clean energy supply chain side. In addition, performance in some of the countries of implementation was negatively affected by civil unrest (Ethiopia and Cameroon).

PAMIGA is working on both financial and energy access, **providing technical support** to member FSPs, and organized a number of training sessions and workshops as well as developed a methodological toolkit on how to offer financial products for access to clean water or energy. As of December 2016, it had supported the implementation of ten market studies across eight countries for the development of new products. In a second phase, realizing the potential of the FSP/ESP model, it subsequently sought to link FSPs with ESPs trying to balance weaknesses and strengthens of the two sides. So far, PAMIGA's FSPs have signed a total of 20 agreements with ESPs and **five FSPs in four countries³⁸ are currently offering credit for green energy products** (while the other FSPs only offer green products in cash and two do not provide green products

³⁶ As the REEP-DEMO tool shows, pricing and loan term are relevant during the product design in order to ensure affordable pricing for clients that matches the reduction of energy expenses of the clients.

³⁷ The MFIs in Benin have not started disbursing loans, but MFIs are almost ready to launch their operations.

³⁸ Namely, BG and Wasasa in Ethiopia, MCB in Tanzania, WPS in Kenya and Caurie in Senegal offer green products with credit and cash payments options. A3C, ICS, UCCGN and SWAVIB in Cameroon do only offer cash payment option; finally, CEC in Cameroon and PRIDE Tanzania do not offer any more any green products.

anymore). According to available data³⁹ however, green energy products represent on average only 2% of the total portfolio. Nevertheless, PAMIGA seems committed to continue supporting its members (the 2015-2019 business plan includes funding for on-lending to support loan portfolio growth and for complex product development related to green energy).

PAMIGA has also considered several cross-cutting issues when supporting its members. All supported FSPs have undergone a Smart Campaign assessment, which is likely to have raised their level of awareness with regard to **client protection**. Four FSPs⁴⁰ have endorsed the Smart Campaign and other PAMIGA supported actions have addressed over-indebtedness (CPP 2), complaint mechanisms (CPP 7), and client satisfaction (CPP 1). In terms of **financial education**, some training modules have been adapted to energy loans towards educating clients on how to manage their debt related to clean energy. In order to **mitigate environmental risks** (in terms of waste management of used batteries, soil contamination, etc.), PAMIGA has adopted and promoted a clear strategy for its members to use, also promoting an increased level of awareness in their communities. Finally, gender, according to available information, does not seem to be sufficiently considered; in fact, PAMIGA FSPs' CleanStart portfolio reaches out to a smaller portion of women (41%) than their overall portfolio (62.3%)⁴¹.

Outreach

In terms of outreach, the programme is monitored by two indicators: namely Outcome (that consider the **indirect beneficiaries**, namely the total clients multiplied by an household factor) and PI1.5 Output (that counts the **direct beneficiaries**, i.e. number of clients served through the financial system, namely that ask for a loan or adopted the PAYG repayment method).

As of December 2016, the programme achieved a **cumulative outreach of 107,265 new clients, or beneficiaries** where female presence is predominant (88.7%) and with a focus also on clients in **rural areas** (for more details, see Table 22 in Annex 5). These figures are based on the Consultant's calculations for the number of new clients/beneficiaries for CleanStart-specific products⁴². Considering that the entire household is benefitting from the use of clean energy products, the programme can count an additional 429,060 indirect beneficiaries (computed with a multiplier factor of 5 that correspond to the average size of household). As a result, a total of 536,325 people (direct and indirect beneficiaries) have gained access to clean energy thanks to the programme, effectively meeting the intermediate (2016) programme outcome target, as shown in the table 10 below. Nevertheless, it is worth mentioning that given the ProDoc amendment of 2016 and the programme extension, the intermediate targets have been significantly revised and re-distributed over a longer timeframe, therefore in the first ProDoc 2013, by the end of 2016 the programme should have reached a much more higher target, namely 1.7 million people.

Table 10. Outcome: number of (and targets for) new clients (cumulative figure)

CS clients	2014	2015	2016
Actual	85,465	275,490	536,325

³⁹ Data refer only to A3C in Cameroon, CAURIE in Senegal, WPS in Kenya, BG and Wasasa in Ethiopia.

⁴⁰ Namely Wasasa and Gonofa in Ethiopia, Pride in Tanzania, and Caurie-MF in Senegal.

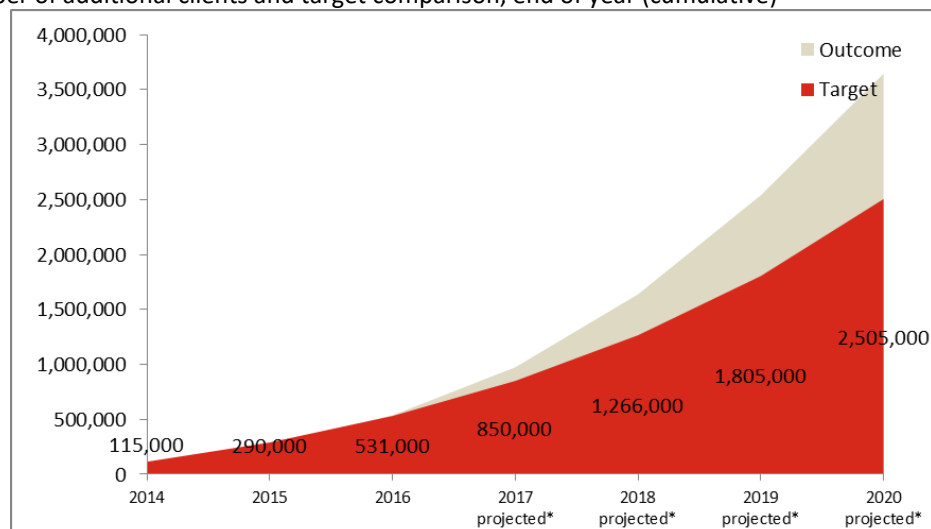
⁴¹ This percentage refers to active borrowers only rather than clients (for which data were not available).

⁴² Assuming that FSPs and ESPs have provided accurate figures for CS-specific activities, calculations were made using (and comparing) data from CS KPI dashboard and data collected by the Consultants through the preliminary files.

FSPs	85,465	275,490	531,690
ESPs	0	0	4,635
Outcome Target 2016	115,000	290,000	531,000

Exhibit 5 below provides a projection for progress in outcomes over the next four years of programme implementation (with estimated projections based on the average of growth of the previous years, discounted by a growth factor). This analysis assumes very optimistic results that consider a high growth rate (on average 56.3%) related to an efficient organization of the programme implementation, considering that in 2017 all ESPs started their operations. Accordingly, the programme end target would be achieved.

Exhibit 5. Number of additional clients and target comparison, end of year (cumulative)



* Projections of additional clients for 2017 -2020 are based on estimations from 2015 and 2016 performance.

With regard to Output and the related indicator PI1.5 (table 11 below), the Consultant estimates that 94% of the total clients are served through a financial product (loan or PAYG repayment method), and the remaining 6% paid the product in cash (in this case the programme facilitates the access to energy, without passing through financial inclusion).

Table 11. Output: number of (and targets for) new clients (cumulative figure)⁴³

CS clients	2014	2015	2016
Actual	17,093	55,098	107,265
<i>Cash</i>			6,807
<i>Loan</i>			99,427
<i>PAYG</i>			1,031
Output Target 2016	23,000	58,000	106,200

With regard to geographical outreach, **the great majority (85.5%) of CleanStart clients/beneficiaries reside in Nepal** (Table 12 and Exhibit 6 below), further demonstrating the strength of CleanStart operations in this country thanks to a more conducive environment (and greater interaction with this environment) as well as to the programme effectively carrying out more capacity building activities. Better performance is hence not only a result of operations being launched earlier, for example PAMIGA supported FSPs (across five countries) started operations in 2014, but in total the network has reached out to the same amount of clients/beneficiaries as the FSPs supported directly by the programme in Uganda (one country where

⁴³ This is estimation, given that for Nepal not full breakdown are available, therefore, for Nepal the Consultant considered that all clients received a loan and no-one paid in cash.

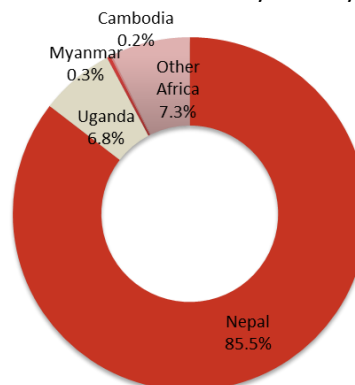
operations started in late 2015).

Table 12. Outreach by country, 2016

Country/region	# beneficiary
Nepal	91,663
Uganda	7,301
Myanmar	357
Cambodia	167
Other Africa	7,777
Total	107,265

'Other Africa' refers to countries reached through the PAMIGA network (Cameroon, Tanzania, Kenya, Senegal and Ethiopia).

Exhibit 6. Outreach by country



Programme indicators define clients/beneficiaries as the number of people securing access to clean and affordable energy through financing to low-income households and microentrepreneurs. While difficult to quantify given the limited availability of data, the Consultant estimates that **clients/beneficiaries are typically not micro-entrepreneurs⁴⁴, but households supported by CleanStart are low-income** using the proxy of CleanStart's loan size, which are typically small (see Table 13 below)⁴⁵.

Table 13. Average disbursed loan size, December 2016

FSP/ESP*	Average disbursed loan size** (USD)	GNI per capita
ACE Nepal ^	47	6.4%
JBS Nepal ^	67	9.1%
NMB Nepal	211	28.9%
SKBBL Nepal	162	22.2%
FINCA Uganda	32	4.4%
EcoGroup Uganda	154	21.1%

* For Kamworks, and Brighterlite, data are not available

** Average loan balance specifically for the CS portfolio only.

^ Data refer to the loan outstanding rather than total CS loan disbursed

In addition, CleanStart **should also be able to count (or estimate) other kinds of indirect beneficiaries** that are reached from positive externalities of the programme. Indeed, as already mentioned, in Nepal, a training programme on how to build homemade cookstove using mud based traditional principles allowed entire communities to gain access to cleaner / more efficient energy without actually having accessed credit. This is a very interesting result, which enriches programme implementation, not only with regard to additional outreach, but above all in terms of relevant best practices to be capitalized.

In terms of target countries (PI0.2 is related to the country outreach), CleanStart is directly supporting implementing partners in four countries (Cambodia, Myanmar, Nepal, and Uganda) with operations being set up in Ethiopia. An additional six countries are reached indirectly through the PAMIGA partnership. This **level of country outreach can be considered satisfactory as a mid-term result** towards reaching the 2020

⁴⁴ Although clean energy products are often being offered as top-up loans by some FSPs, with an existing income-generating loan being serviced by the client, and hence would be counted as a microentrepreneur.

⁴⁵ Even though the average disbursed loan size does not refer to the repayment capacity of the client but to the cost of the green products, that in general is low.

target at six countries with CleanStart operations and ten additional countries adopting the CleanStart methodology (Outcome). However, since **plans to expand to other countries are not yet formalized**, the achievement of the expected end-of-programme target can be questioned.

Influence on broader system (macro, meso, and market level) [EQ3.3 & 3.4]

Based on the programme ToC, CleanStart aims to enhance understanding and awareness globally through global knowledge and learning activities (Output 3), and to create an enabling policy and business environment to expand microfinance for clean energy through advocacy and partnerships activities (Output 4). The intermediate progress of related programme indicators is registering **slow progress and challenges to achieve end-of programme targets**.

In terms of Output 3, as presented in Annex 3, CleanStart activities are improvable given that so far the programme has carried out the dissemination of a few publications, the organization of a limited number of events, and the limited distribution of CleanStart newsletters or publications (i.e. relevant stakeholders seemingly do not receive newsletters or other programme publications) – for more details see also EQ2.3 - *Quality of non-financial support*. With regard to global dissemination activities, CleanStart has organized two international workshops ‘CleanStart Connect’, one in Thailand in 2013 and one in Ethiopia in 2014 with the collaboration of PAMIGA, well received by participants that have increased awareness on clean energy. In addition, CleanStart has also been represented at other prestigious worldwide events for the financial and energy sector, as the European Microfinance Week, the Clean Energy Forum, Rio +20 in 2012, SE4ALL annual meetings, and a conference in Paris (for more details, please see Annex 3). In general, **global knowledge and learning activities seem to be limited, if compared to the size of the programme and the geographical coverage**. As demonstrated by the encouraging results in Uganda, with the two ThinkShops (as mentioned Section 5.2, EQ2.3 - *Quality of non-financial support* above), events in the countries of implementation can provide CleanStart with the opportunity to increase its visibility and generally build conducive relationships towards supporting energy access though financial access.

With regard to the influence on broader system (Output 4), the ProDoc 2013 (and also the amendment ProDoc 2016) mentions a number of stakeholders at macro and meso level to be involved⁴⁶ that are not fully included in the actual implementation (pointing to an **apparent mismatch with the programme design**). **With predominant results in Nepal, and to some extent also in Uganda, the programme has carried out relatively few actions** to date to support such an involvement in the countries of operations, also confirmed by the main focus that CleanStart put on the micro level.

More specifically, **in Nepal, CleanStart has actively cooperated with government institutions**, and it is working to support a regulatory and policy framework encouraging FSPs to serve rural/energy sectors. Continuous advocacy efforts and some specific dedicated events have contributed to improve institutional awareness on the strategic link between energy and financial access. However, it is still early to establish whether CleanStart has effectively influenced or is on track to influence the overall financial system. In 2013 and then amended in 2016, CleanStart signed a total grant agreement of USD 590,757 (with USD 231,100 disbursed as of December 2016) with the Alternative Energy Promotion Centre (AEPIC), a government institution, to ensure day-to-day implementation and monitoring of the CleanStart programme in the

⁴⁶ Namely central and local government, national government agencies, development partners, including donor and UN agencies at macro level; wholesale financing institutions, microfinance training institutes, providers of business support services, industry associations, market research institutions, technology research institutions, and carbon finance brokers at meso level.

country. This agreement successfully took advantage of AECP's position as a bridge between policy makers and development partners. Furthermore, CleanStart has finalized an agreement with the Central Renewable Energy Fund (CREF), a funding programme under AEPC, to develop a business plan and to support its partner banks with technical assistance in preparing future strategies and it is organizing sharing moments with the banking and clean energy sectors to promote financial tools for access to clean energy. In addition, CleanStart has started discussion with AEPC for further capacity development in accessing funding from the GCF. The two relationships are generally appreciated by stakeholders, with CleanStart having '*opened the way to commercial bank to enter into rural areas*' and, at the same time, providing the programme with useful knowledge of the renewable energy sector in Nepal (renewable energies currently cover only 3% of energy need). Finally, CleanStart has been integrated into the Project Identification Form (PIF) of the UNDP/GEF Renewable Energy for Rural Livelihoods (RERL) Programme and with the National Rural and Renewable Energy Programme of Nepal Government, creating relevant partnership related to energy financing.

In **Uganda**, CleanStart has **recently started to lay the ground for involving the entire energy industry** towards sharing best practices, and knowledge and coordinating efforts. For instance, CleanStart is part of the Steering Committee of the Energy Africa Compact (EAC) campaign, launched by DFID and signed also by the Ministry of Energy and Mineral Development (MEMD). Furthermore, upon inception of programme activities in the country, CleanStart carried out some **preliminary consultations at the macro level** (namely meetings with MEMD and its implementing agencies REA and UECCC⁴⁷), but in the end, MEMD was only involved in the validation of the CleanStart country strategy (i.e. through the signing of a no-objection clause). This programme 'approach', negatively assessed by some stakeholders, has seemingly hampered the creation of collaborative macro level relationships, and as of December 2016, it is difficult to establish how CleanStart has influenced or is on track to influencing the overall financial system.

In **Cambodia and Myanmar**, given the limited CleanStart engagement beyond the financial support at the micro level, no results are recorded yet with regard to its influence on the broader financial system. In Cambodia, macro level stakeholders were consulted only initially in order to receive consent of programme engagement in the country, and relations at the macro level in Myanmar have been constrained by the complex and sensitive political environment. In these two countries, however, the weak regulatory frameworks are strongly negatively affecting programme implementation and market development and CleanStart has not demonstrated sufficient work to effectively eliminate barriers in the energy sector.

Programme design also foresaw the engagement of country stakeholders at the **meso level**, but actual implementation has seen limited initiatives in this regard to date. In Ethiopia, for instance, CleanStart with support to develop a credit manual started a positive collaboration with the Development Bank of Ethiopia. Important is also the collaboration with GOGLA that, through the implementing partner, Village Power, can be seen as a promising relationship to develop the solar market and, if followed up, could probably result as an innovative and industry-relevant initiative worldwide. Nevertheless, with regard to the other potential stakeholders mentioned in the ProDoc 2013 (such as carbon brokers, or technology research institutions) limited engagement (and/or results) can be recognized. In some cases, for example the carbon brokers, CleanStart started preliminary discussions that did not materialize to concrete actions given the limited potentialities and value added that they could bring to the programme.

Furthermore, in terms of **market replication**, given the early stage of programme implementation (considering that most of the implementing partners has started operations in 2016 and six of them has not

⁴⁷ Rural Electrification Agency (REA) and Uganda Energy Credit Capitalization Company (UECCC).

started yet), it is premature to expect to find evidence of other FSPs/ESPs (i.e. competitors not supported by CleanStart) being indirectly influenced by the programme. This will probably come as soon as the industry will be able to demonstrate its potentialities.

5.4 Possible Impact

EQ4. To what extent is the programme on track to contribute to improve financial access to clean energy for the base of the pyramid?

CleanStart has improved access to clean energy for 81% of the consulted clients: some newly introduced to the topic of using clean energy products and some also recently familiarized with the Pay As You Go (PAYG) mechanism. In general, after introducing a new source of energy, households do not fully substitute the others, but rather keep using a mix of sources.

Clients show general satisfaction with the CleanStart products, and express a generally high acknowledgement of positive changes/improvements in their lives thanks to the access to energy (main improvements are linked to the quality of the life and decrease in the average household expenses on energy).

Regarding the other levels of intervention (macro, meso, and market level), it is difficult to form an opinion on whether indirect effects/impacts (in terms of positive or negative externalities) have been produced yet.

Final beneficiaries (client level) [EQ4.1]

During the in-country visit, twelve **(12) FGDs⁴⁸** and **77 individual interviews with CleanStart supported clients from 5 FSPs and 4 ESPs⁴⁹** were carried out in four countries (Uganda, Myanmar, Nepal and Cambodia)⁵⁰. Among them, **29% of the respondents underwent also the Progress Out of Poverty Index (PPI)** interview, and some selected people **went through a detailed energy diary analysis**, following the Microfinanza REEP-DEMO approach and tailored to the national contexts – and an overview on the main elements emerging from the interviews is provided. Eleven **(11) FGDs were carried out in rural areas** (and only one in urban), of which five visited branches (almost half of the total) with access to grid electricity⁵¹. Indeed, **FSP/ESPs serve both grid and no grid districts without any specific focus on remote areas**. All these branch/districts, except for Nepal, are also characterized by **a high level of competition for solar products**, but according to clients, the market offers products of low quality (or in Myanmar there are other programmes that offer subsidized products for free creating distortions at market level); on the other side, it seems that **for cookstoves there is a very limited competition**, with the exception of Cambodia where other actors, such as SNV/GERES have already served a large portion of the country.

⁴⁸ Given difficulties in the logistics, in Myanmar only individual interviews were carried out with clients and non-clients. Nevertheless with two clients, also the topics of FGD were collected, therefore, counted as one FGD.

⁴⁹ At the time of the field visits, five ESPs (d.Light, BioLite and Village Power in Uganda, Hydrologic in Cambodia, and BioLite in Myanmar) had not started yet reaching CS supported clients, yet.

⁵⁰ Despite a clear sampling strategy being designed, the organization of meetings with clients was in some cases challenging given, first of all, very short notice for the institutions to organize the meetings. Secondly, from a logistic point of view, gathering people randomly was not advisable as clients do not live in general close each other. To overcome this issue, once selecting the region and branch following the sampling rule, for many FGDs the meetings were arranged in those districts where clients had already scheduled other meetings for repayment or other issues. In doing so, a sort of exogenous selection of clientele was kept valid.

⁵¹ Not always served with solid services (in Nepal for instance, two areas served by electricity were characterized by frequent problems of shortage or unstable voltage).

Table 14. Characteristics of the FGDs

Country	# FGDs ⁵²	Products	FSPs	ESPs	Rural Area	Grid
Cambodia	2	Solar Home system (SHS)	0	1	100%	0
Myanmar ⁵³	1	Solar	0	2	100%	0
Nepal ⁵⁴	6	Solar, SHS and cookstove	4	0	100%	3
Uganda	3	Solar and cookstove	1	1	66%	2
	12		5	4	92%	5

The table 15 below summarizes the main socio-economic features of the clients interviewed. The client sample is **predominantly female (85.7%)**, primarily influenced by Nepal where only women were interviewed as women are the main target of local institutions. Nevertheless, some clients⁵⁵ in Nepal and Myanmar declared that their husband took the decision of taking the green products. Moreover **access to energy** was mainly promoted by FSP/ESPs in rural areas that are **mostly off-grid**; in these areas there is a strong need for access to energy and therefore a market potential. On average, the consulted clients are 41 years old, live in a household composed of 5.3 members (including themselves) and have completed 6.4 years of schooling. The **majority of consulted clients (92%) are engaged in some sort of economic activities**, primarily self-employed in agriculture - farming and breeding – (65%) and small-scale commerce (17%). With regard to **access to energy, 81% of the respondents⁵⁶ can be considered as newly introduced** to the topic of using clean energy products therefore CleanStart introduced variations in the use of renewable energy products and services.

Table 15. Characteristics of consulted clients

Country	# respondents	Female (%)	Age (mean)	Years in school (mean)	# in household (mean)	New access to energy (%) ⁵⁷
Cambodia	12	58.3%	45.8	6.8	4.7	50%
Uganda	23	91.3%	44.1	7.3	5.3	91%
Myanmar	8	50.0%	39.9	4.5	4.6	100%
Nepal	34	100.0%	37.4	6.0	5.6	n/a
	77	85.7%	40.9	6.4	5.3	81%

According to the PPI analysis, even if linked to a limited sample, findings show that the **clients interviewed cannot be considered as low income⁵⁸**, indeed only 15% of the respondents are likely to lie below the poverty line of 2 USD⁵⁹, and 44.6% below the 2.50 USD⁶⁰ poverty line. The limited sample size of clients interviewed

⁵² For each CS supported institution that has started reaching clients, one or two meetings were organized depending on the number of products/delivery channels launched.

⁵³ Despite as of December 2016 only one ESP, namely Brighterlite, has started the operations and given the limited opportunities to meet with clients, the Consultant took the opportunity to talk also with clients from GreenLight Planet that started operations in January 2017 (during 2016 the ESP mainly focused on the set-up of the overall organization, market study, etc.)

⁵⁴ An additional field visit was conducted with a solar pump client and two biogas householders.

⁵⁵ In two FGDs (one in Myanmar and one in Nepal) it emerged that decisions are taken by men, while in one in Nepal women share the decision.

⁵⁶ Lack of information on Nepal prevents the analysis of this aspect.

⁵⁷ Clients that have bought a green product after the FSP/ESP partners have joined CS programme

⁵⁸ According to the World Bank definition (2016), low income refers to GNI per capita, calculated with the World Bank Atlas method, less than 1,025 USD.

⁵⁹ For Myanmar, the data refers to the likelihood of being below the 1.50 USD poverty line.

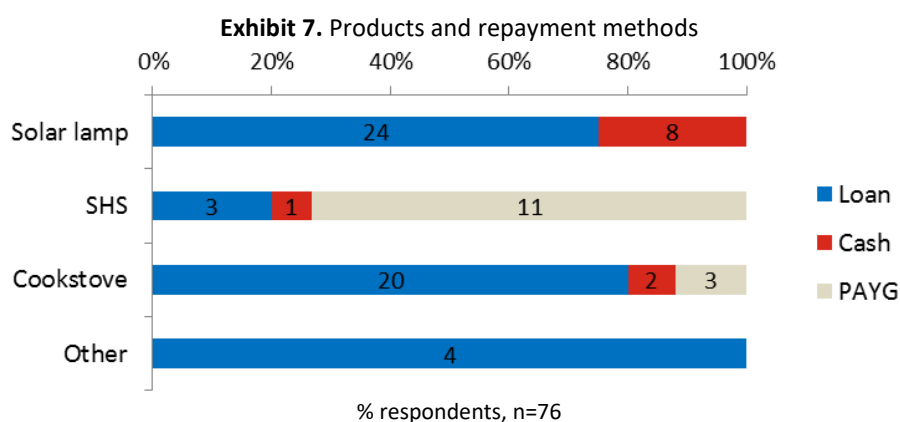
⁶⁰ Considering that CS is not adopting a clear definition of “low-income household”, the Consultant assumed that people below absolute poverty lines of 2 and 2.50 USD are considered as low income.

with PPI prevents these results from being attributed to the institution-wide; nevertheless, these results can provide an interesting starting point to analyze in a systematic way the poverty profile of the CleanStart clientele.

Table 16. PPI results from different countries⁶¹

Country	# respondents	2 USD poverty line	2.50 USD poverty line
Cambodia	8	21.7	34.0
Uganda	6	5.0	15.6
Myanmar	8	18.5	84.2
	22	15.0	44.6

Among interviewed clients, as shown in Exhibit 7 below, **solar lamps are the most popular products**, bought by 42% of respondents, followed by improved cookstove (33%) while a limited number (20%) have bought solar home systems (SHS) and 5% other products (biogas and solar pumps). **The loan is the most adopted repayment method (67.1%)** and a sizeable number of people are able to pay in cash – also through local agents according to the adopted business model (18.4%) and 14.5% of clients use the PAYG method, according to which they pay monthly, or weekly fixed installments after the payment of an initial deposit. Except for Cambodia, where WING, a mobile money operator, is frequently used by the clients, in the other countries, **among the interviewed clients, the PAYG system was newly introduced by FSP/ESPs** thanks to CleanStart. In addition in one FGD where clients has not used this system, but they revealed interest in the channel.



Before adopting the innovative green products brought by CleanStart programme, the main sources for lightning were candles and kerosene (in 50% of the FGDs), electricity (28%), gasoline generators and auto batteries for off-grid energy storage (22%); for cooking all were using firewood or dried cow dung except for one village in Nepal where they were also using Liquefied Petroleum Gas (LPG). In general, it emerged that **after introducing a new source of energy, households do not fully substitute the others, but rather keep using a mix of sources. The general benefit is related to the improvements in the quality of the life of the clients** (see below for more details) and **decrease in the average household expenses on energy** (i.e. kerosene, firewood/charcoal, electricity). The level of this decrease can vary from one client to another. For example, in Uganda, clients using improved cookstove reported quite different values: from -15% to -50%. The reason is related to the use of the stove. Clients using the cookstove only to prepare the evening dinner

⁶¹ Due to stringent logistics (6 FGDs in three different areas), in Nepal it was not possible to carry out also the PPI interviews.

would in any case let the firewood burn until the end (wasting the benefits from the efficiency of the cookstove), so the impact of this product on the firewood consumption is marginal. On the other end, for one client running a street restaurant and cooking all day long, the impact was much more significant.

In all FGDs, **clients show general satisfaction about the products**, and have clear opinions on how to improve them (i.e. increase battery charging capacity of solar devices, reduce the noise of the fan connected with the cookstove, offering bigger stoves, scale up solar products to have more mobile re-chargers). **Main complaints are related to the high price** (31% of the FGDs), technological imperfections (in terms of charging power, small cookstove or noisy device – 24%), and difficulties to install or use these products for the first time (23%). Other complaints (16%) are related to the misuse of the products. For **cookstove** clients cannot see the real benefits because *de facto* **they do not fully exploit the ‘improvement’ side of the tool** and for instance do not switch off the fire but let it extinguish by itself - wasting biofuel, and producing also more smoke.

Finally, clients were asked to answer (and freely define) if their **situation/life had changed** in any way since, and as a result of, gaining access to the green products (or delivery channel – namely the PAYG system) of the CleanStart partner. While **in Uganda, Nepal and Myanmar** there is a **general high appreciation of changes**, **in Cambodia clients seem to not see a lot of innovative advantages**, but rather of having slightly simplified their living standards⁶². Indeed, only in Cambodia, three out of twelve clients declared of **not having seen significant changes**, nevertheless no one declared to have experienced negative impact.

Despite different countries, environments and business models developed by partner FSP/ESPs, similar opinions arise during the FGDs and individual interviews around the **main advantages⁶³ from using the solar equipment** (either small devices or solar home systems). The most felt benefit (emerged in 7 FGDs) is linked to the opportunity of having **more lamps with the same device and more light also during the night** (or early in the morning) that allows for **several improvements in their daily life** (possibility of working more or children to stay up late studying, easiness to reach the toilet in the night, to look after the babies and/or animals, postponement of the dinner and bed time, watching TV, listening to radio or improvements of the opportunities to socialize). In 4 FGDs people saw the advantage of **time savings** (instead of going to the station every day to recharge the batteries) and for this mainly women tended to go to the recharge station. **Saving money** is also another important issue that emerged in 3 FGDs and in all countries; **clients were able to quantify some part of their economic improvements⁶⁴**. The use of solar devices also changed daily liquidity management at household level and allowed for a better familiarity with some financial education principles which would have helped in better auto-estimating the benefits of green energy products also in terms of savings⁶⁵. Safety concerns seem on the other side not a priority, as well as the intensity of the **light that is brighter** compared to the traditional lamps⁶⁶. **Other benefits** reported by respondents are related to

⁶² Even though villages reached by the ESPs are in area with no access to the grid, the advantage of solar system is limited to a time-saving activity of no charging the battery (that is considered a service at affordable price)

⁶³ In the FGD and individual interviews there are two questions slightly similar: the focus group was asked the main advantages on using a green product – meaning short term changes; in the individual interviews rather they were asked the main changes in their life – meaning a medium long term effect. Given that clients are using these products for one year (on average) related answers overlapped.

⁶⁴ Clients were paying almost daily services to charge batteries or mobile phones at the following rates: ~2 USD in Uganda; 1-1.50 USD in Myanmar; 0.50-1USD in Cambodia.

⁶⁵ In Myanmar people were used to recharge the one lamp/battery for 250 kyats (less than 20 cents of USD) per day while actually with the new device payment to the ESP are on a weekly basis; moreover they have the opportunity to get some income by recharging mobile phones for people not having solar devices and recharges.

⁶⁶ In Myanmar the majority of the people appreciated the quality of the light and the quantity of lamps with the same device (1 or 3) compared to one with the traditional batteries.

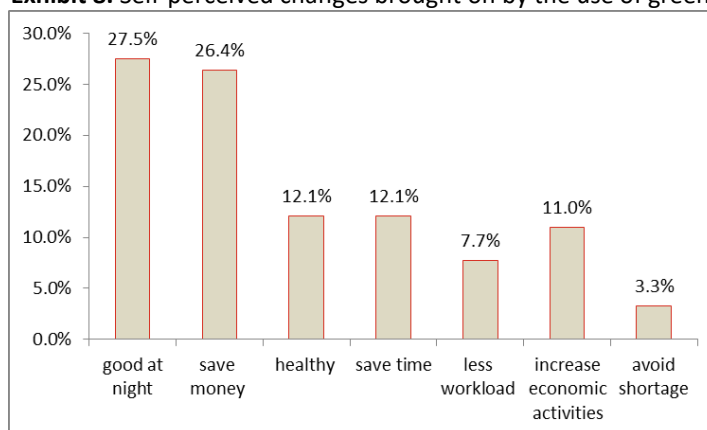
the **improvements of the income generating activities, reduction of problems related to energy shortage** or low voltage (mostly felt in Nepal), **decrease in the bill** and/or in the expenses to recharge the phone and **reduced pollution**.

For cookstoves, answers are much more diversified and benefits include health issues (no itchy skin), time savings (because faster than traditional way of cooking), using less charcoal (therefore saving money), and the possibility to move the cookstove and cook inside the house because of the limited quantity of smoke produced.

These considerations are summarized in the graph below (Exhibit 8) and the results are very similar between women and men, apart for the one linked to the workload. Indeed, this answer refers to the use of the cookstove that is in general a woman's task.

Given that CleanStart clients represent a small portion of the total clients reached by the majority of FSP/ESPs **it is difficult to state whether the institutions have changed their outreach approach and growth strategy**. For the launch of actions by international ESPs entering in some countries (i.e. Myanmar) the Programme has been the gateway for exploring and entering into a new market.

Exhibit 8. Self-perceived changes brought on by the use of green products



% respondents, n=77 (sum do not add up to 100% as some respondents stated more than one changes).

Except for Nepal, where the market seems to be more proactive, in the other countries, it **strongly emerged that without CleanStart clients would not have access to products** of acceptable quality (for solar in Myanmar) or less expensive products (thanks to the PAYG system in Cambodia), or cookstoves in Uganda (where EcoGroup is the only supplier in the market where the meeting with clients were conducted). In one FGD in Uganda, on the other hand clients did not express this because products were considered affordable even without the loan so they could not see any benefit of linking access to finance to green energy.

In terms of client protection (communication and transparency), **clients knew the basic information of the products** (total amount due, monthly installment - if any, existence of the warranty and after sales services and life – duration of the product) but in **half of the cases they cannot recall the interest rate**. None of the interviewed clients had ever experienced problems in repaying the monthly installment, except for three in Nepal. All clients declared to have received demonstrations about the functioning of the products and information related to the warranty and after sales services. **Only in Nepal, some clients' complained about the lack of after sales services**, despite the validity of the warranty, and only one client claimed to have asked to repair the product. No one else has ever experienced replacement or other problems.

CleanStart & the REEP-DEMO approach

The **REEP-DEMO (Reduction Energy Expense Product Delivery Model)** methodology was developed by Microfinanza to include the analysis of expected reduction in monthly energy expenses in the repayment scheme for any kind of renewable/green energy product. The objective is to better assess the impact on monthly energy expenses when purchasing a renewable/green energy product.

During the field visits, individual interviews were conducted in order to grasp the impact of purchasing that specific Renewable Energy (RE) product. The main criteria to assess the impact are that at least part of the decrease in the monthly energy expenses could be used to cover the monthly installments. The level of the REEP-DEMO effectiveness (i.e. how much the savings can contribute to pay the monthly installments) depends mainly on the maturity of the loan.

Due to logistic constraints, a small number of clients with two green products was interviewed: namely improved cookstoves and solar lighting systems from Finca Uganda and JBS in Nepal. Some findings are reported below and a detailed presentation of different cases is available in the Annex 6.

Different parameters can determine the results: the level of expense (price/quantity) before purchasing the RE product, the maturity of loan, and the lifespan of RE product.

In Uganda (cookstove) two different situations were detected:

- 1) the level of savings is too small to produce a cumulated positive saving before the end of lifespan of RE product; that is the case when the household has a limited firewood consumption;
- 2) If the energy expenses on firewood are high (for example, a restaurant), the saving is relevant and it appears early during the reimbursement period.

In Nepal (cookstove) the maturity of the loan does not really influence the period when the savings turn out to be positive: the main parameter to produce a significant impact is the estimated energy reduction.

The result is very different with the Solar Lighting System (Nepal): with a longer lifespan, the RE product can be amortized over a long period with a direct effect on positive reduction of energy expense for householders.

Type of product	Loan maturity	% of savings	Improvements
Solar	With a longer lifespan, solar products can be amortized over a longer period.	100%	Decrease production costs
Improved cookstove	Average life span for improved cookstove is 3 years. Therefore, loan maturity shouldn't exceed 18 months.	Minimum target: > 40% ESP should provide training on how to make the better use of the improved cookstove ⁶⁷ .	Improve the lifespan of the improved cookstove up to 5 years. Target clients that burn a lot of firewood (i.e. restaurants).

⁶⁷ In Uganda, it seemed that if the client took the habit to turn off the fire after cooking, she would have saved more firewood.

Indirect positive and/or negative possible impacts (macro, meso, market level) [EQ4.2]

Based on the main findings presented in the section 5.3 '*Influence on broader system (macro, meso, and market level)*', CleanStart has so far achieved limited actions (mostly in Nepal and Uganda at macro and meso level), and no apparent evidences of influence to the market level (i.e. competitors not supported by CleanStart). Therefore, it appears also difficult to form an opinion on whether indirect effects/impacts (in terms of positive or negative externalities) have been produced yet.

With regard to the policy framework, at macro level, there is no evidence of influence to date. In Cambodia, energy access related questions were integrated into Finscope Cambodia as part of the MAP process, but its full effects have yet to be proven. In Nepal and Uganda, the CleanStart contribution could be valuable to address the effort to provide green energy in a country with remote areas without grid electricity.

At meso level, the ThinkShop in Uganda will probably produce some results in the next years, given that CleanStart is preparing the ground to open debates on the topic of green energy. Having not yet run its full course, CleanStart has had an estimated **limited market demonstration effects** to date.

Possible effects from CleanStart to other areas of interventions in the near future might include the following considerations. First of all, the introduction of new products on the market and the support of several operators (with demonstration of the strengths of the new business case) might help to improve market conditions and competitiveness, and encourage new actors to enter in the market. From a broader perspective, global dissemination (publications and researches) is potentially the most effective tool to reach indirect beneficiaries, influencing similar programmes that could learn from CleanStart's lessons learned.

5.5 Prospects for Sustainability

EQ5. To what extent are programme results likely to be sustainable?

At micro level, no strong conclusions on the prospects for sustainability of results can be drawn, given that in three countries of implementation (Cambodia, Ethiopia, and Myanmar) partners' activities started at the end of 2015 and six ESPs have not yet launched operations.

Nevertheless, the sustainability of the CleanStart product model shows some promising mid-term results, above all for FSPs in Nepal (that reached the break-even point in the new green products).

The overall willingness and commitment on the part of supported FSPs/ESPs to continue offering the products and/or delivery channels developed through the CleanStart programme is strong (despite three drop out institutions, one in Myanmar and two among PAMIGA's partners).

At macro level, limited results have been materialized thus far (except for the case of Nepal) in terms of support and interaction at policy level.

Sustainability and ownership at micro level [EQ5.1 & EQ5.2]

Given that in three countries (namely Cambodia, Myanmar, and Uganda) activities with the partners commenced only in 2015 (and, indeed, six out of ten providers in these three countries have not yet launched CleanStart operations), **no strong conclusions on the prospects for sustainability of results can be drawn**. An adequate assessment clearly requires a longer track record. In addition, CleanStart products generally still carry a very limited weight in terms of the total portfolio and allocation of human resources (see Annex 5, Table 23). This is the case also for ESPs even if green energy products in general are their core business. An analysis of the impact of CleanStart on the institutional growth of supported FSPs/ESPs would hence be premature (as outlined also in Section 5.3 above).

Nevertheless, **available financial performance data related to the CleanStart portfolio do point to some promising mid-term results**, especially for FSPs in Nepal (see Annex 5, Table 24). In fact, as presented in Table 17 below, the four Nepalese FSPs and one ESP (in Uganda) report seems to have achieved a product-related point, having registered that the revenues⁶⁸ of the CleanStart portfolio exceeded expenses⁶⁹ in 2016. Furthermore, three (out of four FSPs in Nepal that have provided multiple years of relevant data) show improvements in the operational self-sufficiency (OSS) of their CleanStart portfolio between 2014 and 2016. Finally, the positive CleanStart portfolio figures for the four Nepalese FSPs imply that the programme has had a positive influence – even if negligible in some cases compared to the size of the institution – on their overall performance (i.e. the CleanStart products have added positively to the financial bottom line).

⁶⁸ Including CS portfolio revenue and other CS revenues.

⁶⁹ Including staff expenses (FSP staff involved in CS), operational expenses linked to CS, expenses related to CS non-financial services, other expenses linked to CS, and provisioning expenses on CS portfolio.

Table 17. Sustainability of CleanStart portfolio

Country	FSP/ESP	Sustainability of CS portfolio
Uganda	<i>BioLite</i>	-
	<i>d.Light</i>	-
	EcoGroup	YES
	FINCA	NO
	<i>Village Power</i>	-
Myanmar	<i>Biolite</i>	-
	Brighterlite	NO*
	<i>GreenLightPlanet</i>	-
Cambodia	<i>Hydrologic</i>	-
	Kamworks	n/a
Nepal	ACE	YES
	JBS	YES
	NMB	YES
	SKBBL	YES

Providers in *italics* have (as of December 2016) not yet started operations.

* Brighterlite registered a loss in the balance sheet of March 2016. However, given the limited number of CS products and that the ESP started CS operations only in 2016, it is yet too early to state whether CS products are sustainable.

Information on institutional sustainability over multiple years is sparse due to the lack of audited financial statements and/or incomplete self-reported figures, but the **FSPs providing relevant data are breaking even and generating positive returns** (OSS >100% and ROA >0%⁷⁰). Over time, as shown in Table 18 below, of the three FSPs for which multiple year figures are available, two showed an increase in ROA between 2015 and 2016. FINCA Uganda recorded a decrease, but, at 4.3% the ROA is still strong. As already pointed out above, the weight of the CleanStart portfolio is limited compared to the overall activities of the institutions. The institutional performance is the result of a mix of factors and CleanStart **products play a limited role**. Finally, since information on donations is not readily available, the Consultant has not been able to assess the contribution of donations to the institutional sustainability of the providers.

Table 18. Profitability and sustainability indicators: 2015-2016

Country	FSP/ESP	OSS	ROA	
		2016	2015	2016
Uganda	EcoGroup	=100%	n/a	5%
	FINCA	<100%	6.2%	4.3%
Myanmar	Brighterlite	n/a	n/a	n/a
Cambodia	Kamworks	<100%	n/a	-153%
Nepal	ACE	>100%	1.6%	2.5%
	JBS	>100%	n/a	n/a
	NMB	>100%	n/a	n/a
	SKBBL	>100%	2.0%	2.1%
Multi country (Africa)	PAMIGA*	n/a	n/a	11.1%

The six ESPs that have not yet started operations have not been included in the analysis.

* PAMIGA data refer to the average ROE of five FSPs in Ethiopia, Kenya, Senegal, and Tanzania.

n/a refers both to the lack of information in the CS KPI dashboard and in the data/documents requested by the Consultant.

Information (coming from both the preliminary files and CleanStart progress reports) **on portfolio quality is**

⁷⁰ OSS (Operational Self-Sufficiency) is an indicator for sustainability and ROA (Return on Assets) for profitability.

not uniform or complete (see Table 19 below). Apart from Nepal, where performance is good with regard to the CleanStart portfolio, the situation is more worrisome for other institutions/countries. For instance, Kamworks in Cambodia (with a PAR 30 of 70% on the CleanStart portfolio) has difficulties in assessing the loan repayment capacity of clients. While they know informally that clients have other existing debts, they do not have the exact amount of these debts since they do not have access to the Cambodia Credit Bureau (as MFIs do).

Table 19. Portfolio at risk at institutional level and CS product portfolio: 2016

Country	FSP/ESP	PAR 30 (total portfolio)	PAR 30 (CS portfolio)
Uganda	EcoGroup	n/a	31%
	FINCA	8.0%	18.5%
Myanmar	Brighterlite	n/a	n/a
Cambodia	Kamworks	n/a	70%
Nepal	ACE	1.5%*	0.2%
	JBS	0.1%	1.0%**
	NMB	0.3%	0.0%**
	SKBBL	0.1%*	0.5%**
Multi country (Africa)	PAMIGA^	7%	n/a

The six ESPs that have not yet started operations have not been included in the analysis.

^ PAMIGA data refer to the average of five FSPs in Ethiopia, Kenya, Senegal, and Tanzania. PAR 30 data for CS products were not uniformly provided (only Cameroon UCCGN 3.1% in 2015 and Ethiopia Wasasa 0.5% in 2016).

* Corresponds to NPL from audited financial statements (unclear how many days it refers to).

** PAR 30 provided by CS progress reports (not verified/triangulated with portfolio aging data or other data).

In addition, costs linked to debt collection are very high and hamper adequate monitoring and follow-up of clients. With regard to the overall portfolio at the institutional level, available data point to relatively good levels of quality (with PAR 30 ranging from 0.1% to 8.0% in December 2016) in support of institutional sustainability⁷¹. It should also be noted that the portfolio of recently introduced products with fast growth can appear well-performing even when there are issues with portfolio quality. A final assessment at the end of the programme will provide a more appropriate measure of the actual quality of the portfolio of the recently launched CleanStart products.

It is not clear whether CleanStart has uniformly led to an increased institutional ability to attract external funding and, on the whole, **funding remains a key challenge to support client access to clean energy products**. Some providers (namely Kamworks in Cambodia as well as BioLite and EcoGroup in Uganda, and d.Light globally) reported the attraction of new funding for CleanStart-related initiatives from both international and local sources⁷². The fact that the other institutions have not attracted new funding does not necessarily point to their inability to secure additional funding per se, as it could also demonstrate a comfortable funding structure and/or sufficient availability of funding. However, based on qualitative information gathered during interviews with FSP/ESPs, it is likely that funding is generally insufficient to

⁷¹ Reported figures could in some cases not be fully verified due to the lack of MIS reports and other reports utilized for purposes of data triangulation.

⁷² In fact, for EcoGroup in Uganda, this new, non-CS, funding is essential for the development of its CS portfolio since it has not been able to receive international certification (Lighting Global) for its solar panels (and hence might risk part of its CS grant).

support long-term sustainability of clean energy products⁷³.

From a human resources perspective, **staff allocation within partner organizations seems adequate**. On average, 14.5% of the staff of the supported providers is involved in CleanStart initiatives. Among the staff engaged in the programme, 27.5% on average are in managerial positions (including middle management)⁷⁴. It is not possible, from the data provided, to ascertain the portion of personnel time dedicated specifically to CleanStart, but the level of staff engagement can generally be considered sufficient assuming that CleanStart related staff reserve a reasonable amount of time to the programme. However, most personnel are focused on other non- CleanStart products and activities and hence not specialized. In general, the providers would benefit from assigning at least some staff exclusively to the management of CleanStart related products and activities.

Overall, almost all supported FSP/ESPs express a **strong willingness and commitment to continue offering the products and/or delivery channels developed through the CleanStart programme**⁷⁵, except for one institution in Myanmar and two PAMIGA partners that have already terminated the operations with green products. The institutions that provided their business plans in fact explicitly declare strategies in this regard, albeit without formalizing specific exit strategies following CleanStart support (as well as without specific considerations for gender). In some cases (for example FINCA in Uganda), the commitment to the continued provision of clean energy products is expressed even when profitability at the CleanStart product level has not yet been achieved. Solid partnerships between FSPs and ESPs have been formed, especially in Nepal, effectively strengthening the product offering and value proposition to clients. In general, however, the level of actual commitment is linked to the availability of funding; i.e. in case of shortage of funds, the development of traditional financial products is prioritized before the development of clean energy products. In the end, sustainability at micro level will primarily depend on the ability of FSPs/ESPs to scale up and extend outreach for CleanStart products.

Support and interaction at policy level [EQ5.3]

CleanStart **interaction with and support to the policy level have, on the whole, been limited**. In fact, apart from Ethiopia (where the policy process has just started), **Nepal is the only country in which the programme has played a strong role in this regard**. More specifically, while no particular support has been provided at the macro level in Nepal, CleanStart has involved a governmental structure (AEPC), as well as a fund (CREF), in the day-to-day implementation and monitoring of the programme. National engagement in clean access to energy would probably continue also after the end of CleanStart support since there is a strong policy on energy lending with a special focus on remote areas. In particular, a newly announced governmental plan to develop and enlarge the national electricity grid in certain isolated and underserved regions could modify the potential market for clean energy products. Another important element in the assessment of the future of the clean energy industry is related to the current rationing of credit on part of the Nepalese banking system.⁷⁶

⁷³ The lack of balance sheets for all institutions prevented a quantitative analysis of the funding structure in general.

⁷⁴ Defined as any staff supervising at least one person.

⁷⁵ In Nepal, this commitment is also supported by the fact that FSPs are preparing themselves for applying for additional grants under upcoming CS calls for proposals.

⁷⁶ It is not yet clear to what extent the recent Indian demonetization process (i.e. the withdrawal of banknotes) and consequent regional monetary instability will impact the clean energy sector.

Apart from Nepal (and to an initial extent also Ethiopia), macro level interaction/support on behalf of the programme has not yet materialized. Nevertheless, in Uganda, the success of the participatory workshops (i.e. the ThinkShops) and the number of other relevant donor initiatives demonstrate a high interest in access to energy. In Myanmar, the situation is more critical for a number of reasons linked to: (i) the complex political and bureaucratic environment; and (ii) the relatively low prioritization of clean energy in the national energy agenda. With regard to the latter, even if renewable energy (such as solar) is included in the agenda, efforts still represent only a very small portion compared to other sources of energies in the early stages of development. As indicated in Section 5.3 above, due to organizational challenges as well as recent and limited in-country presence, CleanStart has done little to interact with decision-making authorities, which could hamper future market development (which is also affected by the policy on subsidies in the sense that it creates distortions in the pricing structure negatively influencing the sustainability for private operators). Finally, also in Cambodia has the programme not been involved at the macro level, albeit consulted stakeholders point to a great need to improve the regulatory framework.

6 Conclusions and Recommendations

6.1 Overall Assessment

CleanStart is a multi-year and multi-donor programme that goes beyond the idea of financial inclusion as a final goal and promotes access to clean and affordable energy. Working in a relatively new, innovative and rapidly changing sector, the programme has realized some **substantial achievements to date**, having increased its rate of results in the last two years, despite difficulties in attracting new funds (against the expectations) and general delays in the implementation. In particular:

- CleanStart has adopted a global approach appropriate to pilot different models;
- Besides an initially quite restrictive design, the programme underwent a major re-orientation that positively changed the programme strategy to adapt it to the market evolutions (bottlenecks and opportunities);
- It has built a relatively cost-effective programme, managed by a well-equipped centralized team, but understaffed with regards to the country strategies;
- Financial support to a relatively good number of implementing partners (14 FSP/ESPs in 4 countries, a Credit Guarantee Fund, and a microfinance network – PAMIGA – that assists 11 MFIs in five countries and has started activities in three other countries) has been provided; three different business models have been piloted with differences in innovation in terms of delivery channels and/or type of linkage between FSPs and ESPs; and a total of 536,325 people (direct and indirect beneficiaries) have gained access to clean energy (having met the intermediate programme outcome target);
- There is good quality of knowledge and learning activities (despite in a limited number if compared to the size of the programme and the geographical coverage);
- 81% of consulted clients report increased access to energy and report a high level of satisfaction and a recognition of some changes / improvements in their life;
- The programme is operating with highly-motivated implementing partners (besides one drop out in Myanmar and two among PAMIGA's partners) in seeking financial sustainability.

While recognizing these important accomplishments, CleanStart also faces a **number of challenges** (including an important funding gap of 42% of the expected resources) and the programme implementation was characterized by **some weaknesses**. More specifically:

- CleanStart has struggled to reach (probably overly high demanding) targets related to the majority of indicators without a comprehensive system for the monitoring of programme achievements at all levels;
- There has been limited external and independent governance composition that might have limited the creation of a stronger environment to adopt more critical points of view, necessary to guide a programme that is working in a relatively new and innovative framework, expanding its networking and potentially attract new funds;
- Provided relatively limited capacity building activities and a limited number of financial tools to implementing partners;
- Relying on a limited targeted involvement at country level (especially for Cambodia and Myanmar) that led to a limited influence on broader system and multipliers effect (positive externalities).

Finally, with specific regard to **lessons learned**, CleanStart has rightly: (i) adopted a global approach (multi

country and multi-regional approach), appropriate to pilot different ‘schemes’, (ii) extended the concept of ‘access to finance’ towards ESPs, adopting an investment based model, and having launched the Challenge Funds mechanism; (iii) in Nepal (and to some extent is starting also in Uganda) the programme has adopted a broader approach that, besides the focus at micro level, involves macro and/or meso levels.

However, in general, more technical support to implementing partners, where needed, could perhaps also have been provided to strengthen the capacity and overcome their financial / technical barriers, by also proposing other financing tools (as equity or concessional loan). In this regard, the initiative of working with the Credit Guarantee Fund in Ethiopia will be an interesting opportunity to experiment a different line of financing the ‘missing middle’ (namely the ESPs). Globally, knowledge management and dissemination of best practices could be strengthened in order to increase programme visibility and generally build conducive relationships towards supporting energy access through financial access.

6.2 Recommendations

Given the above mentioned considerations, a set of recommendations around four pillars on **strategy, outreach, governance and management** are presented below. These recommendations include some that could be adopted by the end of the programme, and others (where indicated) could be considered for a future intervention in case of transition, replication, and/or extension of the programme.

First, **at strategy level**, to continue following the idea of a **pilot approach**, it would be helpful to consider this line of activities:

- a. concentration on the five existing countries to accelerate actions, outputs and outcomes with a more comprehensive approach, with a clear overview of the national context of the country and specific high priority initiatives according to the needs, bottlenecks and opportunities identified for each country;
- b. focus on the development and research of specific initiatives at global and regional level to share best practices, capitalize lessons learned and attract additional funds; based on the lessons learned from the countries of implementation, to disseminate them globally and regionally through initiatives similar to the ThinkShops of Uganda where the entire industry is involved. The main focus could be on the harmonized industry metrics and KPI monitoring system that tracks the performance of ESPs, or PAYG best practices, or financial risk related to the ESPs.
- c. if possible within this programme, or eventually in future interventions, clearly distinguish objectives and expected results between direct and indirect interventions (related to the three business models adopted) to attribute a different weight to the expected contribution to the programme (and consequently to monitor their achievements);
- d. starting from the existing country business plans (or market assessment), to design (or revise) a specific action plan for each country in order to establish the ‘appropriate’ entry level - macro, meso, micro/client – and the best sequence to upstream and/or downstream connections at different levels to identify (first, with a monitoring system) and address market bottlenecks and challenges and to valorize promising opportunities. Potential suggestions are the following: for Nepal to continue working with the macro level and push towards implementation in off-grid rural areas; in Uganda, at meso level to address access to finance of the ‘missing middle’ to mitigate their credit risk, and at government level to increase advocacy activities towards the removal of some barriers (i.e. facilitating for instance import and/or tax exemption for energy components); in Myanmar and Cambodia, the main entry point could be the macro level in order to coordinate with the existing national policy and lobby to improve the legal framework; in Ethiopia to move forward in linking the

ESP with the CGF in order to reduce financial risk and to extend the number of FSP/ESPs eligible to the programme.

- e. design of a strategic positioning of CleanStart vis-à-vis of other UNCDF programmes (SHIFT, MM4P, etc.) in order to establish clear institutional relationships in the countries and to avoid gaps or overlapping amongst the Programme Implementation Units.

Second, with regard to the **outreach**, besides households and continue keeping a gender approach, CleanStart could also focus on **micro-entrepreneurs** (as also declared by the programme outcome) **and community economies**, provide green energy solutions to improve economic sustainability and to support promising value chain performances mostly for two reasons: i) to reach a higher number of beneficiaries, contributing to the programme accomplishment of the final outcome; ii) most important, community economies can play an important role in reducing CO2 emissions and mostly can raise awareness and educate the population. Given that CleanStart aims at reaching low income households and ultimately its final goal is to positively impact them, it would be important to improve the definition and monitoring of household's level of income or poverty rate. Specifically, at this stage of implementation, the programme might think to measure it adopting a survey with existing clients and/or new ones, where the PPI can be a tool, in order to ensure that it is targeting the expected segment. In case of programme replication, the programme may also consider to monitor income level of clients (through census or surveys) before the intervention, and eventually if resources are available to measure it at the end of the programme implementation to compute the analysis of likely impact at client level.

Third, at **governance level**, in order to maintain a more effective relationship with donors, global stakeholders and other relevant international energy initiatives, a dedicated Committee (Advisory or Steering Committee) next to the existing Investment Committee could be an option to reinforce programme strategy, gain larger participation of relevant international actors and build capacity to attract additional funds.

Fourth, with regard to **management issues**, CleanStart should consider to revise these components:

- a. following the initial programme design, to adopt, where possible at this stage (or to consider for the potential programme replication), an adequate **diversification of supporting tools** to promote sustainable investments and promote innovative projects with a balance between technical assistance versus financial instruments: i) in terms of **financial tools** to widen the strategic investment tools/instruments and provide (besides grants) other funding mechanisms (such as senior debt and/or sharing risk credit and guarantee funds) appropriate for the stage of programme implementation; ii) in terms of **capacity building** (even though with the investment approach the partners can ask financing for this, embedding it in their business plans) to consider to add a component on targeted technical assistance and/or training, based on the effective analysis of their needs.
- b. to improve and simplify monitoring and reporting systems of implementing partners with a **complete mechanism to measure, compare and report results**⁷⁷. At the same time, CleanStart could improve its reporting system, consolidating the data and information from all the partners in a unique tool, also tracking for instance the business models and different partnership (FSPs and ESPs, national and international, commercial banks, technology platforms, national energy agencies, etc.). Finally, to consider to regularly monitor the overall programme indicators.

⁷⁷ The current data entry could be revised and can include for instance: clientele divided by gender, household vs microentrepreneurs; adding information on the loan portfolio but not asking for instance information that could be extrapolated from their financial statements; in addition, also considering to what extent the information required will be used in the future.

- c. to encourage partners to identify and promote **projects based on innovative and strategic core-business models** able to produce effective changes in terms of innovation and development of the clean energy sector and improve access to services and products to under-served populations, avoiding supporting projects that are residual activities respect to their main business.
- d. to **re-organize the Programme Implementation Unit** giving more emphasis on the country activities with permanent representatives (preferably local staff), as operational/technical assistance staff, in each country of operations and a specific service units to support national activities. This would support the programme in: i) closely working with the implementing partners (to have a better understanding on the daily difficulties they face, needs, opportunities, market constraints, new potential partnership and collaboration and provision of tailor made capacity building support to FSPs/ESPs); ii) enhancing the visibility and accountability of the programme; iii) strengthening close relationships with the macro level, the industry, and interacting with relevant stakeholders; iv) coordinating with existing initiatives and eventually attracting new funds.

7 Gender, Human Rights and Ethical Considerations

Throughout the evaluation in answering to all evaluation questions, **gender has been considered and analyzed as one of the key-cross cutting issues** and attention was given on how the programme integrated it in the design, as well as implementation and monitoring phases.

Some guiding principles from the UN Evaluation Group's *Guidance on Integrating Human Rights and Gender Equality in Evaluation*⁷⁸ include: i) for relevance: does the project align with UNCDF's mainstreaming strategy on gender, does it align with national gender-related goals, was a gender analysis included during the initial needs assessment?; ii) efficiency: were resources (funds, human resources, time, expertise etc.) allocated strategically to achieve gender-related objectives? iii) Effectiveness: Are women and men likely to benefit differently from project's activities? Do results (effects of activities and outputs) affect women and men differently? If so, why and in which way? Which alternative strategies towards gender equality would have been possible or are still possible? iv) impact and sustainability: What are the possible long-term effects on gender equality? Are the gender-related outcomes likely to be sustainable?

Other relevant topics (namely client protection and financial education, human rights and environmental standards) were all commented in design phase (EQ1), highlighting how the programme considered these issues and integrated in the programme design. For the other evaluation questions, these issues were addressed where relevant, mostly linked to the effectiveness results (EQ3).

Client protection, albeit relatively superficially, was covered to what extent the programme has promoted the principles and whether the institutions has acknowledged them. **Financial education** and training on clean energy, new technology was also described in terms of importance given by the programme and effective actions taken by the institutions. **Human rights** topic has been addressed only at the level of design phase, because it seems that the programme does not interfere on issues related to equality of rights. CleanStart asks to FSP/ESPs to report on minority groups or disadvantaged people, but it is not tracked by the institutions.

Finally, in terms of **environmental standards** attention was given not only to what extent the topic was considered in the design (and how it was addressed), but also how the implementing partners addressed it.

In general, the evaluation has strived to adhere to the principles as set out by the UN Evaluation Group (UNEG) 'Code of Conduct for Evaluation in the UN System' and the 'Evaluation Consultants Agreement Forms' (which were signed by all five evaluation team members and attached to the Inception Report). More specifically, all CleanStart clients, FSP staff and other relevant stakeholders have been treated with respect and professionalism. The evaluation team commenced all meetings (interviews and FGDs) with informing the interviewees⁷⁹/participants of the evaluation being an independent exercise as well as of the fact that they are not subject to an 'interrogation' (or test/ exam) and that their answers and feedback will be treated as strictly confidential and not disclosed to any third party. Information and data (including specific quotes) have only been presented in an aggregated and/or anonymous manner in the report. Any data input and analysis files to be shared with the UNCDF Evaluation Unit will not include names of persons or specific entities.

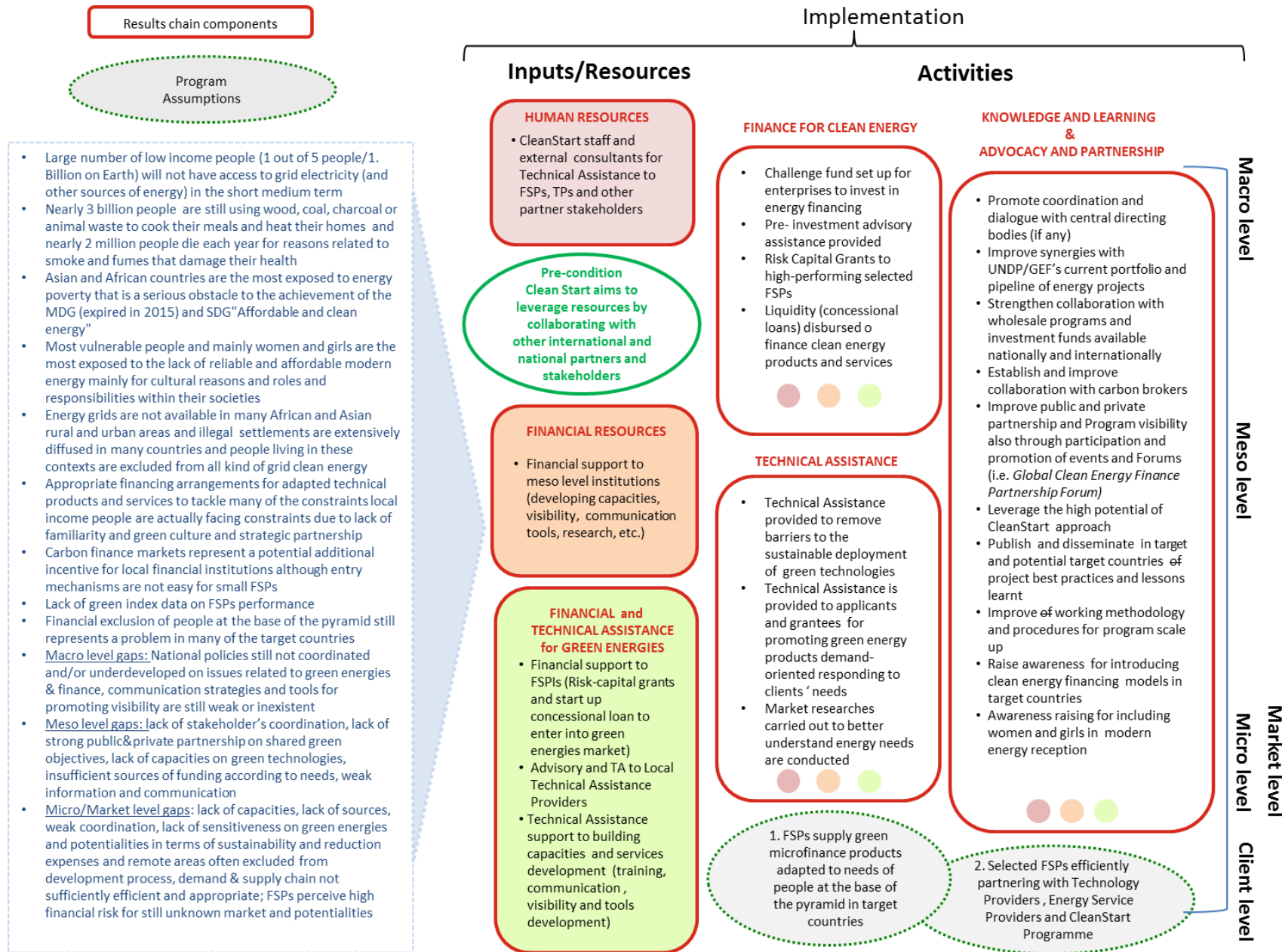
⁷⁸ <http://www.uneval.org/document/detail/980>

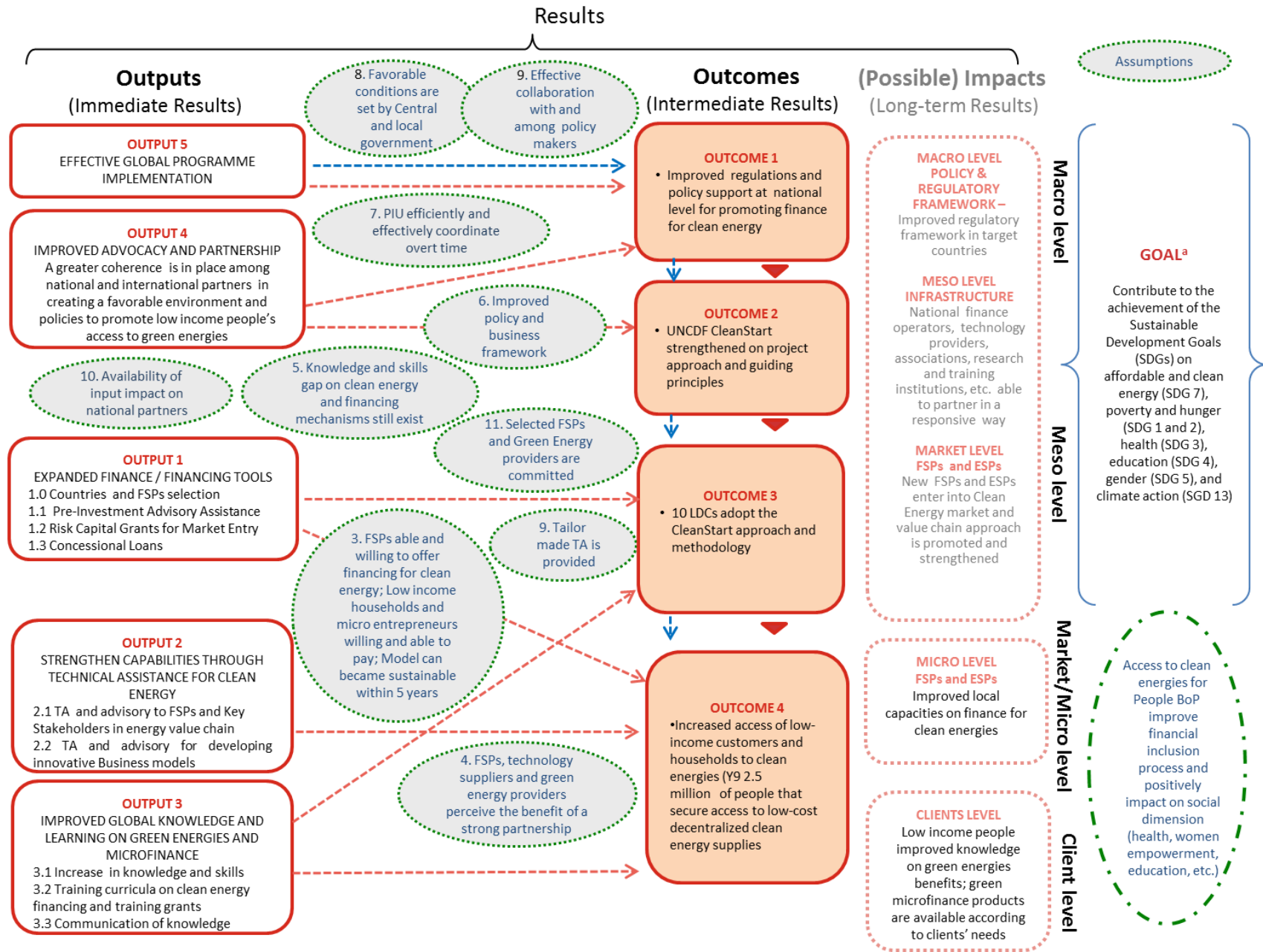
⁷⁹ Also within the same entity, where possible, the evaluation team has sought to meet with relevant stakeholders individually.

Annexes

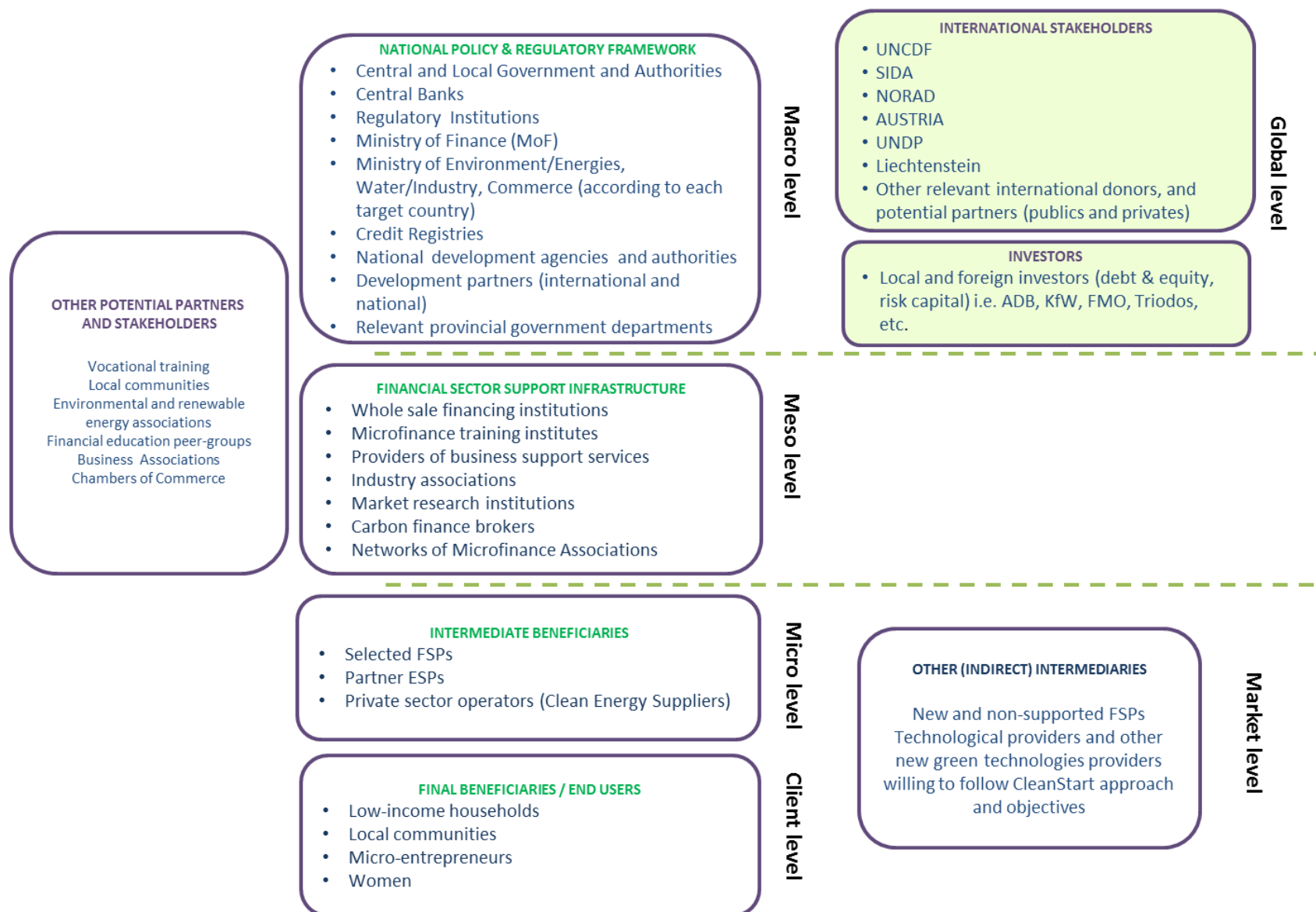
ANNEX 1: CLEANSTART PROGRAMME RESULTS CHAIN AND THEORY OF CHANGE OVERVIEW

Result chain components are presented in red, assumptions in green and actors at various levels in purple, while references to initial contextual challenges/constraints and ultimate programme goal (as presented in the beginning of this section) are set in blue. It is important to emphasize that **arrows only represent intended causal links as understood by the Consultant**, and hence do not necessarily mean that they actually hold true (or that the links can in fact be proven either because of the lack of data or evidence or/and because of the existence of many other influencing, external, factors for which the Consultant cannot control).





Main stakeholders and actors



ANNEX 2: EVALUATION MATRIX

The evaluation matrix is based on the area as defined by the five OECD/DAC evaluation criteria of relevance, efficiency, effectiveness, (likely) impact, and (prospects for) sustainability, as well as for the cross-cutting issues (as gender approach and respect of human rights, environmental standards, financial education and client protection) included in the area related to relevance and quality of programme design. EQ1.1, EQ1.2, etc. are sub-questions within each of the five evaluation areas and EQ1.1.1 are the judgement criteria that will guide the evaluation team in data collection, analysis and reporting.

Where relevant, EQs are cross-referenced against components of the theory of change framework (with **results chain components in red** and **assumptions in green**). Furthermore, where relevant in the 'Judgement Criteria' column, cross-reference is made to the **programme indicators (PIs - in blue)** as defined by the Results Framework in the amended ProDoc and as summarized in a separate table below following the evaluation matrix. Finally, questions addressing cross cutting issues, mostly focused on gender, are identified with the abbreviation **CC issues (in orange)**.

Evaluation Questions (EQ) and Sub-Questions	Judgement Criteria	Means and Sources of Verification
1. RELEVANCE AND QUALITY OF PROGRAMME DESIGN		
EQ1. How relevant and well-designed is the programme to increase sustainable access to clean and affordable energy for low income households and microfinance-entrepreneurs through energy and financial service providers and to what extent are the objectives of the programme still valid?		
EQ 1.1. What is the present level of relevance of the programme? Programme assumptions	EQ 1.1.1 Sufficient analysis of the country context that has brought to the design of the programme EQ 1.1.2 Sufficient analysis of the limitation and opportunities of the programme design that have brought to the shift in approach in 2015 EQ 1.1.3 Sufficient consideration of the national strategies in area of energy financing for all the countries of implementation EQ 1.1.4 Sufficient synergies and similar actions and donors supported initiatives and in the country of implementation on access to clean energy and consideration of other programmes/studies carried out worldwide	<ul style="list-style-type: none"> • Review of national policy agenda, strategy documents, legal / regulatory framework (green energies, financial inclusion policies, etc.) prior to the start of the programme (i.e. before 2012) for all the countries of implementation • Review of ProDoc (and amendment) and other possible programme design related documentation (incl. gap analysis) and Initial Plan (2012) • Interviews with UNCDF staff and other relevant international donors, programmes, initiatives, etc. (stakeholders at global level) • Interviews with policy makers, regulators, etc. (stakeholders at macro level) • Interviews with support structures (stakeholders at meso level)
EQ 1.2. As presently designed, how coherent is programme design with a view to achieving programme objectives?	EQ 1.2.1 Appropriateness of UNCDF's investment driven approach and appropriateness of definition of achievable programme outputs and outcomes, given the stage of development and market environment of the countries of implementation	<ul style="list-style-type: none"> • Review of ProDoc (and amendments) and other reports related to project implementation

	<p>EQ 1.2.2 Appropriateness of the revised targets with the shift in approach</p> <p>EQ 1.2.3 Likelihood that the internal design of the programme (also considering the shift in approach), funding structure (grants, loans and EACF), governance, management and implementation, and resources allocation are appropriate for the achievement of improving access to clean energy for low income households and micro-entrepreneurs</p> <p>EQ 1.2.4 Appropriateness of the use of different approaches, targeting different typologies of service providers and different energy financing models (Micro Level) – Financing mechanisms for MFIs, cooperatives, development banks, ESPs</p> <p>EQ 1.2.5 Clarity and quality of the theory of change framework, having set clear and measurable programme indicators including the design of monitoring and reporting tool – and having established clear connections between activities, outputs and expected results.</p>	<ul style="list-style-type: none"> • Field Interviews and conference calls with UNCDF/CleanStart staff and other relevant international donors, programs, initiatives, etc. (stakeholders at global and local level) • Interviews with policy makers, regulators, etc. (stakeholders at macro level) • Interviews with support structures, technology suppliers and energy service providers (stakeholders at micro level) • Interviews with energy experts and practitioners with experience in related microfinance with energy products
EQ 1.3. Is the current design sufficiently supported by all stakeholders?	<p>EQ 1.3.1 CleanStart programme design and approach recognized as appropriate by stakeholders at all level (macro, meso and micro) in direct and indirect countries of implementation PI4.5</p> <p>EQ 1.3.2 Ownership of the programme by implementing partners</p>	<ul style="list-style-type: none"> •
EQ 1.4 Is the current design sufficiently taking cross-cutting issues into account? CC issues	<p>EQ 1.4.1 Sufficient consideration of cross cutting issues (as gender and human rights, financial education and client protection, environmental and social standards) during the programme design</p> <p>EQ 1.4.2 Identification and definition of a minimum set of standards / parameters for the cross-cutting issues related to international best practices to be adopted during the programme implementation</p> <p>EQ 1.4.3 Does the project align with UNCDF’s mainstreaming strategy on gender, does it align with national gender-related goals, was a gender analysis included during the initial needs assessment?</p>	<ul style="list-style-type: none"> • Review of UNCDF/UN guidelines • Review of ProDoc (and amendment) and other possible programme design related documentation • Review of internal programme reporting documentation • Interviews with UNCDF and Clean Start Management • Interviews with some relevant stakeholders and experts for gender, human rights, financial educations, etc. issues.
EQ 1.5 How well is the programme designed with regard to transition, expansion and replication?	<p>EQ 1.5.1 Existence of a system in place to monitor, report best practices and lessons learned and create synergies to share them within the countries of programme implementation</p> <p>EQ 1.5.2 Good quality of monitoring and reporting system of all</p>	<ul style="list-style-type: none"> • Review of ProDoc (and amendment) and other possible programme design related documentation • Review of internal programme monitoring tool and reporting documentation

	<p>programme indicators (# of MFIs, energy service providers, clients, female clients market reached, agreements achieved, etc.)</p> <p>EQ 1.5.3 Definition of programme indicators that encourage the transition, expansion and replication of CleanStart programme</p> <p>EQ 1.5.4 The programme creates the architecture to transition, expansion and replication and programme scale up, enabling national authorities and service providers to prepare programme handover.</p>	
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Evaluation Questions (EQ) and Sub-Questions	Judgement Criteria	Means and Sources of Verification
2. EFFICIENCY OF MANAGEMENT AND QUALITY OF ACTIVITIES		
How well means/ inputs and activities were converted into results (as in “outputs”)?		
<p>EQ 2.1. How well are the inputs managed? Inputs/Resources in relation to Results</p>	<p>EQ 2.1.1 Analysis of the proportion of funding structure (Energy Access Challenge Fund, grants and loans) to FSPs and ESPs and country allocations; costs of CleanStart management versus external consultants, cost of publication, organization of knowledge dissemination activities, etc.</p> <p>EQ 2.1.2 ‘Bang for the buck’ ratios (total programme expenditure over the total number of final beneficiaries), other cost-effectiveness indicators, TA consultants costs over total programme costs, FSP financial support/total programme costs</p> <p>EQ 2.1.3 Were resources (funds, human resources, time, expertise etc.) allocated strategically to achieve gender-related objectives? CC issues</p> <p>EQ 2.1.4 Timely funds availability & analysis funds allocation vs effective use of funds (also considering breakdown per activities, counties) and yearly allocation</p>	<ul style="list-style-type: none"> • Review of programme budget (and revisions), planned and actual • Interview with UNCDF/CleanStart management and relevant funders • Calculations of relevant ‘value for money’ / ‘bang for the buck’ ratios – delivered results / costs • Comparison, if available, with ‘value for money’ / ‘bang for the buck’ ratios of other similar UNCDF Programmes
<p>EQ 2.2. How well is the implementation of activities managed? Inputs / Resources (in term of human resources) and Activities (programme management and monitoring)</p>	<p>EQ 2.2.1 Analysis of Clean Start management, governance, oversight and monitoring activities PI5.1, PI5.2 and PI5.4</p> <p>EQ 2.2.2 Adequacy and completeness of annual work plan vs timeframe for each activity for ESPs and FSPs</p> <p>EQ 2.2.3 Timely programme implementation and progress towards targets (extent to which outputs/activities are delivered on time) Sufficient availability of funds for foreseen programme implementation PI5.5</p> <p>EQ 2.2.4 Clear and transparent ToR and process for FSPs and ESPs selection</p> <p>EQ 2.2.5 Human resources adequate to activities needed in programme implementation (internal programme staff and external consultants)</p> <p>EQ 2.2.6 Effective internal UNCDF structures and processes (incl. quality coordination and HQ support mechanisms)</p> <p>EQ 2.2.7 Presence and role of internal UNCDF M&E unit and/or joint advisory committee with external funder(s)</p>	<ul style="list-style-type: none"> • Review of relevant programme and planning documents (ProDoc – including budget and funding sources, agreements, etc.) • Review of work plans f programme implementation and related deliverables and milestones achieved • Review of PBAs • Review of documentation relevant to the disbursement of funds to selected FSPs • Review of CleanStart monitoring instruments and reports • Review of reports submitted by training/TA (or knowledge sharing) providers • Review of relevant internal UNCDF /CleanStart structures, tools and processes (minutes, internal reporting, etc.)

	<p>EQ 2.2.8 Good quality supervision of FSP/ESPs investments on part of CleanStart management and staff and appropriate PBA system with FSPs and ESPs</p> <p>EQ 2.2.9 Good quality supervision of training/TA (or knowledge sharing) providers on part of CleanStart management and staff PI5.3</p> <p>EQ 2.2.10 Programme monitoring focused not only on activities and outputs, but also on outcomes (and possibly impact) PI5.4</p> <p>EQ 2.2.11 Programme monitoring mechanisms allow for regular collection of sufficient data to effectively support the management and decision- making process of the programme PI5.5</p> <p>EQ 2.2.12 Extent to which key national partners/stakeholders are involved in managing programme instruments and setting in place improved oversight mechanisms for the financial sector in future (sustainability)</p> <p>EQ 2.3.13 Gender sensitive strategies developed or steps taken on part of supported FSPs in order to address the specific needs, responsibilities and opportunities/challenges of female clients</p> <p>CC issues</p>	<ul style="list-style-type: none"> • Review of feedback mechanisms on progress and monitoring reports on part of both internal and joint structures • Interview with CleanStart management • Interviews with other relevant UNCDF staff • Interview(s) with funders • Interview(s) with Technological providers and green energies service providers • Interviews with key national partners / stakeholders (at macro and meso level) • Risk sharing agreements signed between partner MFIs and energy providers
<p>EQ 2.3. What is the relevance and quality of the activities (training/TA, knowledge management, advocacy activities, etc.) provided by the programme to relevant stakeholders?</p> <p>Activities (capacity building, knowledge sharing and advocacy)</p>	<p>EQ 2.3.1 Number, quality (in terms of experienced consultants and contents covered), and timeliness delivery of training/TA/capacity building activities PI5.3</p> <p>EQ 2.3.2 Training/TA (or knowledge sharing) needs identified through initial needs assessment (gap analysis)</p> <p>EQ 2.3.3 Adequate selection of experienced and relevant training/TA (or knowledge sharing) providers</p> <p>EQ 2.3.4 Appreciation on part of training/TA (or knowledge sharing) participants with regard to activities provided</p> <p>EQ 2.3.5. Adequate activities of advocacy and partnerships (in terms of number of collaborations, dissemination, awareness campaigns, etc.) PI4.1</p>	<ul style="list-style-type: none"> • Review of FSPs' proposals • Review of criteria/process for the selection of training/TA (or knowledge sharing) providers • Review of reports submitted by training/TA (or knowledge sharing) providers (incl. internal evaluations if available) • Review of training/TA (or knowledge sharing) related material (identification of activities, content of implemented activities or events, publications, etc.) • Review of agreements with ESPs • Interviews with ESPs and ESPs management and staff • Interviews with training/TA (or knowledge sharing) providers • Interviews with training/TA (or knowledge sharing) participants (FSP staff and other stakeholders) number of publication, awareness campaigns, etc.

<p>EQ 2.4 How well are partners' contributions / involvement working?</p>	<p>EQ 2.4.1 Adequate, clear and transparent criteria to select partners EQ 2.4.2 Efficient procedures to select partners (in terms of easiness and time consuming procedures) EQ 2.4.3 Efficient partner allocation (funds & TA) in terms of results to achieve EQ 2.4.4 Adequate monitoring /supervision tasks from CS/UNCDF team of partner activities EQ 2.4.5 Good functioning of steering committee that provides sufficient strategic oversight</p>	<ul style="list-style-type: none"> • Interviews with CleanStart management and with local institutional partners (i.e. Ministries, Local Energy Agencies, Capitalization Companies) • Review of relevant Partner documentation (retail MFIs, development banks, financial service providers, energy companies, etc.)and interview with some relevant partners
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Evaluation Questions (EQ) and Sub-Questions	Judgement Criteria	Means and Sources of Verification
<p>3. EFFECTIVENESS: ORGANIZATIONAL CHANGE OF SUPPORTED FSPs and ESPs</p> <p>EQ3. To what extent is the programme on track to increase in capacity of partner institutions to deliver good quality and affordable financial products or financing schemes for clean energy?</p>		
<p>Output delivery (micro and client level)</p>		
<p>EQ 3.1 How well is the project achieving its planned results in terms of organizational change?</p> <p>Output 1 and 2; Assumptions 1 & 2</p>	<p>EQ. 3.1.0 Analysis of the programme indicators vs the achievement results</p> <p>EQ. 3.1.1 # of countries, FSPs and ESPs selected and reached (PI1.1)</p> <p>EQ. 3.1.2 # of FSPs that received capacity building and pre-investment activities, as well as # of FSPs that received risk capital grants or concessional loans (PI1.2-PI.4 and PI2.3)</p> <p>EQ. 3.1.3 # of clients that received energy loans (with breakdown by gender) (PI1.5) CC issues</p> <p>EQ. 3.1.4 To what extent the financial capability of the FSPs and ESPs involved in the programme implementation have been strengthened by technical assistance and capacity building and by adopting different models (Pre-Investment approach, Risk Capital Grants and Concessional Loans or equity) PI2.5 - PI2.8</p> <p>EQ. 3.1.5 Extent to which green microfinance and other financial inclusive products are available for low income people at the right and sustainable price (for clients, FSPs and ESPs)</p> <p>EQ. 3.1.6 Extent to which the programme is effectively supporting the introduction and promotion of new clean energy products (in terms of good quality and affordability) of FSPs and ESPs PI2.4</p>	<ul style="list-style-type: none"> • Review of relevant FSP documentation: applications for loans and grants (were available), current and past (before CleanStart) business plans, market research reports (if any), credit policies, products characteristics, codes of conduct, organizational charts, mission, vision, green finance loan products and procedures, non-financial services provided, client feedback forms/client satisfaction surveys (if any), etc. • Review of PBAs • Review of annual and quarterly reports from supported FSPs <p>Data from FSPs and ESPs</p> <ul style="list-style-type: none"> • Interviews with CleanStart management and staff • Interview with Technology Suppliers and Energy Service Providers • Interviews with FSPs • FGDs with clients
	<p>EQ. 3.1.7 # and level of innovation of delivery channels adopted (cash, pay as you go, loans) PI2.10</p> <p>EQ 3.1.8 # of new green finance products launched based on market research PI2.1</p> <p>EQ 3.1.9 Improved internal practices related to financial education and CP, environment, gender issues and human rights, extent to which FSP's and ESP's perception of financing clean energy for targets clients are beginning to change (staff attitude, code of conduct, declared strategy) CC issues</p> <p>EQ. 3.1.10 Analysis of performance in terms of outreach (with breakdown by gender product and area – rural vs urban), portfolio quality also with regards to the targets set in the PBAs (both for FSPs and ESPs) CC issues</p> <p>EQ 3.1.11 Use of financial services offered by women/girls in</p>	

	<p>comparison to men/boys CC issues</p> <p>EQ 3.1.12 Programme measures assist the enablement of women (female clients) to access financial products (incl. digital technology) CC issues</p> <p>EQ 3.1.13 Supported FSPs/ESPs sufficiently engaged in financial education and client protection – micro level: CC issues</p> <ul style="list-style-type: none"> - # of FSPs/ESPs providing adequate financial education or financial literacy training to clients - # of FSPs having officially endorsed the Smart Campaign’s CPPs and awareness of client protection principles from ESPs side - # of FSPs/ESPs showing increased awareness of and improvements in client protection practices - # of FSPs/ESPs showing increased awareness of and improvements in environmental sustainable standards <p>EQ 3.1.14 Supported FSPs/ESPs having integrated green index considerations in their strategy CC issues</p>	
<p>EQ 3.2. As presently implemented, what is the likelihood of the objectives related to organizational change achieved?</p>	<p>3.2.1 Written and clear declared strategy of FSPs and ESPs to continue in providing products and services to improve access to clean energies</p> <p>3.2.2 # Demonstrated commitment to continue providing clean energy products and services</p> <p>3.2.3 Existence of exit strategy for FSPs and ESPs to continue serving the targets</p> <p>3.2.4 Evidence that market research conducted by partners inforce the service they provide</p>	<ul style="list-style-type: none"> ● Review of relevant programme documents (incl. APRs and QPRs) ● Review of MFA related documentation (incl. internal structure and processes, activities/support provided) ● Review of relevant Partner documentation (retail MFIs, development banks, financial service providers, energy companies, etc.) ● Interview with CleanStart management ● Interview(s) with local institutional partners (i.e. Ministries, Local Energy Agencies, Capitalization Companies) ● Interviews with other Financing Facilities with dedicated fund for clean energy <p>Interviews with FSPs</p>
<p>EFFECTIVENESS : MARKET DEMONSTRATION, UPSCALING (macro, meso and market level)</p>		
<p>● To what extent is the programme on track to influence the broader financial system for clean energy in the countries where it operates?</p>		
<p>3.3 How well is the project achieving its planned results in terms of influencing the broader financial system for clean energy?</p> <p>Output 3 - 4 and 5, and Outcome achievements</p>	<p>3.3.1 Achievement of related progress results according to indicators set out in the CleanStart LogFrame (Programme Indicators: PI0.1 outreach, PI0.2 countries)</p> <p>3.3.2 CS strategy to influence broader financial system and # and typology</p>	<ul style="list-style-type: none"> ● Interview with CleanStart management ● Interview(s) with local institutional partners (i.e. Ministries, Local Energy Agencies, Capitalization Companies)

	<p>of activities carried out in terms of knowledge and dissemination, advocacy, activities and kind of stakeholders involved PI2.2, PI3.1 and PI4.5</p> <p>3.3.3 Evidence that policy makers, were influenced by CleanStart (new policy to promote/facilitate the development of sector access to finance)</p> <p>3.4.4 Effectiveness at macro level of the main communication tools used (publications, events, conferences, forum and web site) PI3.6</p> <p>3.3.5 Improved partnership and Programme visibility also through participation and promotion of events and Forum (Global Clean Energy Finance Partnership Forum)</p>	<ul style="list-style-type: none"> ● Interviews with other Financing Facilities with dedicated fund for clean energy ● Interviews with FSPs ● FGDs with clients ● Interview with Technology Suppliers and Energy Service Providers
	<p>3.3.6 Number of workshops / events organised and cooperation with similar initiatives/programmes that promote access to finance, etc. by building a conducive environment for end-user financing, including UNDP/GEF projects and Green Climate Fund PI3.5, PI4.2 and PI4.4</p> <p>Meso and Market level</p> <p>3.3.7 Number of non-supported # FSPs and ESPs have launched clean energy financing products after the beginning of the CleanStart programme</p> <p>3.3.8 Evidence that CleanStart non-supported FSPs and ESPs were directly or indirectly influenced by the programme (by receiving publications, newsletter from CS or participating to forum or other knowledge and dissemination activities)</p> <p>3.3.9 Increased market awareness on the importance of promoting access to energy</p> <p>3.3.10 Efforts to involve partners from microfinance infrastructure (meso level) as microfinance associations, network to influence the market and generate positive externalities through knowledge and dissemination activities (as training activities through microfinance networks or directly to FSPs, or workshops) PI3.2, PI3.4 and PI4.3</p> <p>3.3.11 Established and improved collaboration with carbon brokers</p>	<ul style="list-style-type: none"> ●
<p>3.4. What is the likelihood of the objectives related to influencing the broader financial system for clean energy to be achieved?</p>	<p>3.4.1 Evidence that market replication will happen (# of ESPs or FSPs interested in integrating the market); existence of similar initiatives/programmes that promote access to finance, etc.)</p> <p>3.4.2 Creation of (or in pipeline) new partnership of CleanStart to</p>	<ul style="list-style-type: none"> ● Interviews with UNCDF and Clean Start Management ● Interviews with policy makers, regulators, etc. (stakeholders at macro level)

	promote access to clean energy	
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Evaluation Questions (EQ) and Sub-Questions	Judgement Criteria	Means and Sources of Verification
4. LIKELY IMPACT¹		
EQ4. To what extent is the programme on track to contribute to improve financial access to clean energy for the base of the pyramid?		
Client level		
<p>EQ 4.1. What are the direct impact prospects of the project to achieve increased sustainable access to clean and affordable energy by more than 2.5 million people financing of 501,000 low income households and micro-entrepreneurs?</p> <p>(Possible) Impact (client level)</p>	<p>4.1.1 Variation in terms of typology of clients reached by FSPs and ESPs (gender, urban/rural area, products) CC issues</p> <p>4.1.2 Variation in the use of services and products offered and delivery channels (pay as you go and mobile banking)</p> <p>4.1.3 Self-perceived change (or not) in clients' living standards on direct results or accessing to clean energy</p> <p>4.1.4. Degree of client satisfaction with green financial products (and repayment mechanism) and the supported FSPs</p> <p>4.1.5. Satisfaction on part of women/girls regarding services offered services offered and delivery channels used CC issues</p> <p>4.1.6 Whereas possible, extent of effective reduction in expenses for energy consumption related to the use of innovative products and innovative delivery channels</p> <p>4.1.7 Are clients reached conveniently served according to project objectives?</p>	<ul style="list-style-type: none"> • Review of relevant programme documents (incl. APRs and QPRs) • Review of the state (i.e. at start of the CleanStart program) and dynamics (i.e. since the start of the programme start up) of national policy agenda, strategy documents, legal/regulatory regimes (financial inclusion policies, rural development strategies, etc.) • Review of relevant country strategy documentation • Interview with CleanStart management • Interview(s) with other funders or relevant donors • Interviews with other macro level stakeholders • Interviews with meso level stakeholders • Interviews with FSPs (incl. non CleanStart partners) • Interviews with clients and focus group discussions • Simulation with REEP-DEMO tool with a sample of specific products and delivery channels.
<p>EQ 4.2 To what extent will the project have any indirect positive and/or negative impacts?</p> <p>(Possible) Impact (macro, meso, micro/market, client level)</p>	<p>4.2.1 Evidence of any positive / negative effects not planned but worthily to be mentioned (change in clients behaviours - energy expenses, shift of household income; change in market effects – change in competition, etc.)</p>	

Evaluation Questions (EQ) and Sub-Questions	Judgement Criteria	Means and Sources of Verification
5. PROSPECTS FOR SUSTAINABILITY²		
EQ5. To what extent are programme results likely to be sustainable?		
<i>Prospects for sustainability at micro level</i>		
EQ 5.1. Financial/ economic Viability	5.1.1 Improved outreach growth 5.1.2 Sufficient availability of funds (internal or through partners and donors) to support access to clean energy 5.1.3 Sufficient allocation of HR to reach the intended clientele 5.1.4 Subject to reliable data availability -extent to which the programme has contributed to increased operational and financial performance and therefore sustainability of supported FSPs (prior to and during the CleanStart programme - trend in outreach in terms of # of new borrowers for green energies and financial products, trend in client retention rate/drop-out rate, etc.) PI1.6 and PI2.9 5.1.5 Sufficient analysis of part of FSPs on operational and performance breakdown per product per services	<ul style="list-style-type: none"> • Review of relevant programme documents (incl. APRs and QPRs) • Interviews with FSPs (incl. non CleanStart partners) • Interviews with clients and focus groups • Review of FSPs' MIS data • Review of FSPs' business plans and projections for Green Energy products and delivery channels • Analysis of FSP profitability and sustainability • Interview with CleanStart management, external partners and donors • Interviews with FSPs, Technologic Providers and Energy Service providers
EQ. 5.2 Level of ownership of the project by target groups and will it continue after the end of external support	5.2.1 Evidence on part of FSP and ESP of having acquired ownership of the process in place to better serve the intended clientele including considerations on gender-related outcomes likely to be sustainable CC issues 5.2.2 Partner institutions are sustainable and the CleanStart suggested approach is endorsed and capitalized 5.2.3 Relations among FSPs and Technological providers are strengthened and services and products have the greatest potential to be scaled up after the programme ends 5.2.4 Financial and non-financial products on green energies are successfully promoted for low income clients at the base of the pyramid	<ul style="list-style-type: none"> • Review of relevant programme documents • Interviews with FSPs (incl. non CleanStart partners) • Interviews with clients and focus groups • Review of FSPs' business plans and projections for • Review of Green Energy products and delivery channels • Analysis of FSP profitability and sustainability • Interview with CleanStart management, external partners and donors • Interviews with FSPs, Technologic Providers and Energy Service providers
EQ. 5.3 What is the level of policy support provided and the degree on interaction between project and policy level?	5.3.1 Effective collaboration with other programmes and projects is established and main guiding principles are recognized PI4.1 5.3.2 Political, Institutional or organizational factors are not negatively influencing the program's impact.	<ul style="list-style-type: none"> • Interviews with external partners and stakeholders • Interviews with Local Institutions and Regulators • Interviews with FSPs, TPs

ANNEX 3: PROGRAMME INDICATORS

Analysis of the progress of the programme indicators (as defined by the Logical Framework in the ProDoc amendment –October 2016)

The scales of judgments are the following:

Achieved means that the indicator has been fully accomplished;

On track refers to the cumulative results up to Y5 (that corresponds to 2016) without paying attention to the breakdown per year;

Challenging means that the target up to Y5 has not been achieved but there is some evidence that the end target could be achieved by 2020;

Seriously not achievable refers to the cases where there is insufficient evidence to hold confidence in obtaining some results by 2020.

Information not available	Achieved	On track	Challenging	Seriously not achievable
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Programme Indicator (PI) #	Definition	Targets	Achievement to date (December 2016)
Outcome (purpose): <i>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)</i>			
PI0.1	Number of people that secure access to low-cost decentralized clean energy supplies disaggregated by gender	Target (cumulative) 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	Y3 : 85,465 Y4 : 190,025 Y5 : 260,835 Cumulative Y1-Y5 : 536,325 people (that corresponds to the 107,265 clients reached by implementing partners multiplied by a 5 household factor)
PI0.2	Number of Least Developed Countries (LDCs) and developing countries where CleanStart methodology is adopted	By 2020, CleanStart is operational in 6 countries and at least 10 additional LDCs and developing countries adopt the CleanStart methodology	5 countries where CS is operational (Nepal, Uganda, Cambodia, Myanmar and Ethiopia) 4 countries where CS methodology is adopted through PAMIGA network (Cameroon, Tanzania, Kenya, and Senegal ⁸⁰)
Output 1: <i>Finance for Clean Energy to strengthen capabilities of 18 FSPs to provide finance for clean energy to low-income households and microentrepreneurs</i>			
PI1.1	Number of country assessments conducted to finalise the selection of pilot countries and design country specific business plans	Y1: 3 assessments Y2: 1 Y4: 2 Y6: 2	Y1: 2 (Nepal and Uganda) Y2: 5 (Philippines, Cambodia, DR Congo, Tanzania and Ethiopia) Y2: 1 Desk research carried out for Myanmar No information on assessment in Bangladesh

⁸⁰ Benin, Burkina Faso and Madagascar are not operational, yet, and Ethiopia has been already counted as direct country.

PI1.2	Number of FSPs that participate in the Awareness and Confidence Building Training and/or other pre-investment activities	Y1: 10 FSPs Y2: 5 Y3: 5 Y4: 10 Y6: 10	Y2: 9 FSPs (Business Planning Training on Clean Energy Microfinance in India) Y2: 18 FSPs (Study Tour of Sri Lanka Renewable Energy Industry) Y3: 2 (Uganda, PostBank and Pride received pre-investment TA to develop the business plan) Y4: 1 (Uganda, EcoGroup received pre-investment TA to develop the business plan)
PI1.3	Number of partner MFIs competitively selected for risk-capital grants and technical assistance	Y1: 3 FSPs Y2: 6 Y3: 3 Y4: 6 Y6: 6 Y7: 3	Y3: 4 (Nepal) Y4: 1 MFI + 9 ESPs (5 Uganda + 3 Myanmar + 2 Cambodia)
PI1.4	Number of FSPs that receive concessional / commercial loans or equity	Y5: 1 FSPs Y6: 1 Y7: 2 Y8: 2 Y9: 2	Y1-Y5: 0
PI1.5	Number of clients that receive energy loans through partner FSPs disaggregated by gender	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	Information not fully available – estimation is about 100,000 clients that received a loan or bought the product with the PAYG repayment method.
PI1.6	Increasing trend in profitability of energy lending portfolio	Y2-9: share of income from energy lending shows progressive upward trend	Missing information (ROA) Finca: decreased ACE – SKBBL: increased
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			
PI2.1	Number of market research conducted by partner FSPs	Y1: Up to 3 research Y2: 6 Y3: 3 Y4: 6 Y5: 3 Y6: 6	Y1-Y5:13 10 market studies (Cameroon, Tanzania, Ethiopia, Senegal, Burkina Faso, Kenya, Benin) conducted by PAMIGA's partners (information not verified) 1 market study (Hydrologic)

		Y7: 3	2 market studies (Biolite Uganda and Kamworks – information not verified)
PI2.2	Expo and other events to showcase benefits of renewable and efficient technologies organised	Y1: 1 expo/event Y2: 2 expos Y3: 1 expo Y4: 2 expos Y5: 1 Y6: 2 Y7: 1	Y4: 1 (Nepal - Organized panel on the role of energy in post-earthquake recovery and reconstruction efforts) No other information available
PI2.3	Number of risk-sharing agreements by partner FSPs (business model partnerships)	Y1: 9 agreements Y2: 18 Y3: 9 Y4: 18 Y6: 9 Y7: 18	No information available
PI2.4	Number of partner FSPs that roll-out energy lending products that are demand based and sustainable over time	Y2: 9 FSPs Y3: 12 Y4: 18 Y5: 15 Y6: 15 Y7: 15	Y1-Y5: 8 (2 in Uganda, 4 in Nepal, 1 Myanmar, 1 Cambodia) Demand base: given info PI2.1 – not all institutions have carried out market researches to develop the product or launch new delivery channels Sustainable: 5 Institutions
PI2.5	Capacity developed within partner financial institutions to appraise risks connected with energy lending	Y2: 9 FSPs Y3: 12 Y4: 3 Y5: 6 Y6: 4	Y1-Y5: 0
PI2.6 / PI2.7	Missing as per project revision		n/a
PI2.8	Number of Local Technical Assistance Providers (TSP) trained	Y1: 1 provider Y2: 3 Y3: 3 Y4: 3 Y6: 3	Y1-Y5: 0
PI2.9	Supported business models that prove to be cost effective models / mechanisms for delivering, maintaining, and financing clean energy systems and services	Y6: 3 models Y8: 1 Y9: 2	Y1-Y5: 3 (sector-based approach, investment approach and partnership approach)
PI2.10	Number of innovative models of	Y3: 1 innovative models	Y1-Y5: 7

	collaboration between financial institutions and other actors in the energy value chain supported	Y4: 2 Y5: 1 Y6: 2 Y7: 1 Y8: 2	FSP with integrated ESP FSP with external ESP ESP with MNOs National ESP with MNOs International ESP with Kiva or PAYG FSP with network supporting with TA Consortium between a bank and a cooperative/ microfinance institution
<i>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</i>			
PI3.1	Number of knowledge products produced and disseminated	Y1: 3 reports Y2: 4 Y3: 5 Y4: 6 Y5: 3 Y6: 5 Y7: 2 Y8: 2 Y9: 2	Y1: 2 (1 policy brief and 1 methodology paper) Y2: 1 (published first issue of CS Connections the magazine) Y4:3 (Energy ladder research in Uganda and Energy Loan client monitoring study in Nepal, Second Connections magazine launched) Y5: 2 (Energy Diaries in Uganda and Getting to the Last Mile) ;
PI3.2	Training curriculum on energy lending developed for microfinance associations and international training institutes	Y5: 1 curriculum developed Y9: locally adapted version of curriculum used in 3 countries	Y3: 1 (PAMIGA - Developed step-by-step handbook on energy lending)
PI3.3	Missing as per project revision "Knowledge of clean energy finance made available as public good"	n/a	
PI3.4	Number of FSP staff trained on clean energy financing	Y2: 300 staff Y3: 400 Y4: 500 Y5: 500 Y6: 500 Y7: 600 Note: Y3-7 is cumulative	Y3: 14 FSPs (Nepal, ToT training on "Renewable Energy Business Plan ToT") – no information on the number of staff involved Y4: Cook-stove mason training organized by AEPC – no tracked number of staff trained – number not available
PI3.5	Number of events organised to promote dialogue on clean energy financing	Y2: 2 events Y3: 2 Y4: 3	Y5: 2 (ThinkShop Uganda and Zambia)

		Y5: 3 Y6: 3 Y7: 3 Y8: 3	
PI3.6	CleanStart website and social media attracting substantial hits per year	Y2: create website Y3 to Y9: 30% increase per year	Information not available
Output 4: Advocacy and Partnerships to create an enabling policy and business environment to expand finance for clean energy			
PI4.1	Number of complementary energy programmes that are assisted to build a conducive environment for end-user financing	Y1: 1 programme Y2: 1 Y3: 2 Y4: 1 Y5: 1 Y6: 1 Y7: 1	Y5: 1 (CS collaborated with GOGLA) No other information available
PI4.2	Number of countries where CleanStart is integrated into or closely cooperating with complementary programmes, including UNDP/GEF projects and Green Climate Fund	Y1: 1 country Y2-9: 3 countries	Y1: 1 (Nepal – CS is integrated into the Project Identification Form (PIF) of UNDP/GEF Renewable Energy for Rural Livelihoods (RERL) Programme) Y4: 1 (Ethiopia – CS part of the RET Programme with UNDP) Y5: 1 (CS member of DFID Energy Africa Campaign’s Energy Compact in Uganda) 1: (Energy access related questions integrated into Finscope Cambodia as part of MAP process and rolled out)
PI4.3	Number of workshops organised to facilitate partnerships with market based funding mechanisms	Y2: 1 workshop Y3: 3 Y4: 3 Y5: 2 Y6: 2 Y7: 2 Y8: 2 Y9: 2	Y2: 1 (CS Connect Forum 2013, Bangkok) Y3: 1 (CS Connected Forum in Ethiopia with PAMIGA)
PI4.4	Number of events where CleanStart is presented	Y1-9: At least 1 event per year	Y1: 4 (European Microfinance Week; CGAP event; Asia Clean Energy Forum 2012; Rio +20) Y2: 1 (AEPF presented CleanStart in the Nepal Microfinance Summit) Y3: 2 (CS presented at IIX Impact Forum and SE4all Annual Meeting)

			Y4: 1 (CS presented at Convergences 2015, Paris)
PI4.5	Policies and programmes recognize CleanStart model	CleanStart model acknowledged in at least 2 major policy and/or project documents per country	Information not available
Output 5: Effective global programme implementation			
PI5.1	Programme Implementation Unit (PIU) is established to effectively manage the programme	Y1: Recruitment of Programme Manager and Knowledge Management and Learning Analyst Y2-3: Full PIU is established	Y2: Programme manager recruited KM & Learning Analyst onboard (was there since the beginning) Y5: Other staff recruited in Nepal, Cambodia and Myanmar (shared with SHIFT) and in Uganda moved the KM & LA, plus part time support from JPO
PI5.2	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)	Y1: IC established Y1-Y5: investment appraisal process and tools developed and refined over time (see EV.Question 2 for more details)
PI5.3	High-quality technical assistance to programme partners are deployed in a timely manner	Y1-6: Roster of vetted experts established and updated	Y1-Y5: at least a roster of 23 experts (international and national) have been established
PI5.4	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	Y1-Y5: data generated from monitoring activities collected on quarterly basis Y1-Y5: IC meeting twice per year
PI5.5	Additional resource is mobilised by delivering results and proving concept	Y1-3: Develop resource mobilisation strategy with clear targets Y1-9: Ensure visibility of results by engaging with various stakeholders	Y1-Y5: additional resources mobilized but funding gap remains at 42% Visibility difficult to evaluate

ANNEX 4: LIST OF RELEVANT STAKEHOLDERS INTERVIEWED⁸¹

CleanStart team and external consultants

Institution	Person, Position	Date of interview (2017)
CleanStart team and external consultants		
UNCDF and UNCDF CleanStart	Vincent Wierda Programme Manager CleanStart Programme	30 th January and 18 th February and several times through email and skype calls
	Hee Sung Kim Programme and Knowledge Management Analyst CleanStart Programme	31 st January and 2 nd February
	Paul Luchtenburg Country Coordinator, Myanmar	7 th February
	William Naing Programme Officer for Financial Inclusion, Myanmar	6-10 th February
	Prem Sagar Subedi CleanStart Project Coordinator Nepal	12 th February
	Mr. Hong Ngin CleanStart coordinator Cambodia (shared with other programmes)	20 th February
	Fakhrul Islam Fund Facility Cordinator SHIFT and CleanStart Project	10 th February
	Faisel Hussain Senior Regional Technical Advisor & Manager	18 th February
	Robin Gravesteijn Data Management Specialist (Analytics)	18 th February
	<i>Henri Dommel Director Inclusive Finance Practice Area</i>	<i>7th April</i>
	<i>Herte Gebretsadik Partnerships Development Specialist</i>	<i>10th April</i>
	Jonh Tucker Deputy Director of FIPA	Apointment scheduled for 7 th April (then problems with connection occurred and he was not contacted, though)
MM4P - UNCDF	Bram Peters Country Technical Advisor	3 rd February
	Francois Coupienne Regional Technical Advisor	3 rd February
SHIFT – UNCDF	Rajeev Kumar Programme Management Specialist, Inclusive Finance, Deputy Programme Manager, SHIFT Programme Deanna Morris UNCDF – SHIFT Programme	8 th February

⁸¹ *In italics the stakeholders interviewed by conference call (skype or phone calls).*

UNDP	Onesimus Muhwezi Team Leader, Energy & Environmenti	31 st January
	Rosa Malango UN Resident Coordinator / UNDP Resident Representative in Uganda	Contacted on 18th Jan (no reply)
	Napoleon Navarro Senior Policy Advisor in Cambodia	Contacted on 20 th Feb (not available)
External Consultant	Anne Marie van Swinderen Monitoring and Evaluation Consultant L- IFT	2 nd February
	Eduardo Appleyard Business Advisor for UNCDF	2 nd February
	Julius Magala Country Manager Energy for Impact Uganda	6 th February
	Myint Kyaw Programme Manager L-IFT Programme in Myanmar	8 th February
	<i>Seifu Teshome Consultant at First Consult in Ethiopia</i>	<i>24th March</i>
	Neal Youngquist (independent consultant) in Myanmar	10 th February

GLOBAL LEVEL

Institution	Person, Position	Date of interview (2017)
<i>Global level</i>		
Embassy of Norway (NORAD)	Hans Peter Christophersen Trade and Energy Counselor	30 th January
	Chapagain Energy Expert – Norwegian Embassy in Nepal	17 th February
	<i>Jannike Berg Senior Advisor</i>	<i>15th March</i>
Embassy of Sweden (SIDA)	Job Mutyaba Energy, ICT and Innovation Officer	3 rd February
	Stockholm SIDA officials – Zahra and Karin	Contacted by UNCDF staff (no reply)
DFID	Robert Towers Energy and Climate Adviser	6 th February
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH	Schuett, Daniel Johannes GIZ UG Head of Country Project Energising Development (EnDev) Uganda	6 th February
	<i>Rainer Hakala Director Energising Development Ethiopia</i>	<i>27th March</i>
Department of Foreign Affairs and Trade – Australian Embassy	Katherine Pohl First Secretary Development Cooperation – Australian Embassy – First Secretary (Development Cooperation)	6 th February
International Finance Corporation (IFC)	Bill Gallery Consultant Lighting Myanmar	8 February
<i>USAID - Myanmar</i>	<i>Tocher Mitchell Access to Finance Lead, Private Sector Development Activity, Access to Finance Lead</i>	<i>15th February</i>
AFD (Agence Française De Développement) – French cooperation	Andre Glenn Project officer in Cambodia	23 rd February

UGANDA

Institution	Person, Position	Date of interview (2017)
Macro level		
Rural Electrification Agency (REA)	Benon Bena Head of Rural Electrification Dept	30 th January
MeMd – Ministry of Energy, Mineral Development	Baanabe Director Energy - Commissioner for Energy Efficiency and Conservation	6 th February
Uganda Energy Credit Capitalization Company (UECCC)	Specioza Kimera Ndagire Head of UECCC	6 th February
	Roy Nyamutale Balouma Director Transaction Execution	6 th February
	Michael Rutalo Transaction execution specialist	6 th February
Ministry of Finance, Economic Development and Planning (MoF), Competitive and Investment Climate Strategy (CICS)	Peter Ngategize National Coordinator	6 th February
Meso level		
Association of Microfinance Institutions of Uganda (AMFIU)	Jacqueline Mbabazi Executive Director	8 th February
Solar Association	Abdeel Kyezira Vice Chairman	3 rd February
Market level – other (non-CleanStart supported) FSPs or ESPs		
PostBank Uganda LTD	Alemi William Kenyi Senior Manager Strategic Planning and Projects	3 rd February
	Caroline Namukhula Manager Strategic Planning and Projects	3 rd February
		3 rd February
Pride Microfinance LTD	Veronicah Gladys Namagembe MD	3 rd February
	Francis f. Wasswa Research and Product Development Manager	3 rd February
Micro Level - CleanStart supported FSPs or ESPs		
BioLite	Jan de Graaf Country Manager for Uganda	3 rd February
d.Light	George Katendeigwa Country Manager	6 th February
	Rohit Jain Manager - Finance & Global Partnerships	9 th March
EcoGroup	Naluku Martha Marketing Executive	2 nd February
	Rose Twine Managing Director	7 th February
	Sales officer	3 rd February

Finca Uganda and BrightLife (Finca Plus)	Alice Lubwama Business Development Officer	31 st January
	Charity Busingye	31 st January
	<i>Swabrah Scovia HVLD Coordinator and Research Officer</i>	<i>14th March</i>
	Joseph Sserwanga Programme Manager (Finca Plus / BrightLife)	31 st January
	David Muwanguzi Branch Manager (Mityana branch)	1 st February
	Yofesi Bongeroa Customer Relationship Officer (Mityana branch)	1 st February
Village Power	<i>Thomas Huth Co-Founder, CEO</i>	<i>15th March</i>
	<i>Annie von Huelsen Strategy & Special Projects</i>	<i>15th March</i>

NEPAL

Institution	Person, Position	Date of interview (2017)
Macro level		
AEPC - Alternative Energy Promotion Centre	Manu Binod Aryal Programme Officer	12 th February
	Ram Prasad Dhital Executive Director	
CREF - Central Renewable Energy Fund	Mr. Manu Binod Aryal Acting Head of Secretariat	12 th February
Micro Level - CleanStart supported FSPs or ESPs		
JBS	CEO	13 th February
	Training Director	
	MIS	
	HR	
SAHARA SACCO and ACE Bank	CEO of Sahara	14 th February
	Sahara Project Manager	
Nirdhan - MF Development Bank	Mr. Janardan Dev Pant CEO	15 th February
	Mr. Jagya Pant	
SKBBL	Operation	16 th February
	Management	
	Programs	
ACE Bank	CEO and other officers	16 th February

WinRock	Mr. Binod Shrestha Team Leader, Clean Energy Group Nepal	16 th February
NMB	Mr. Dinesh Dulal, Head Micro finance and Renewable Energy	16 th February

MYANMAR

Institution	Person, Position	Date of interview (2017)
Macro level		
Ministry of Planning and Finance (MoPF)	Dr. Sandar Oo and U Ko Ko Maung	Contacted by the staff in loco (asked not to contact directly) but no answered
Ministry of Electricity and Energy		Contacted by the staff in loco (asked not to contact directly) but no answered
Meso level		
Myanmar Microfinance Association	Mr. Minn Aung, CEO	10 th February
Renewable Energy Association Myanmar	U Maung Maung Swe Tin	Contacted by the staff in loco (asked not to contact directly) but no answered
Market level – FSPs		
Pact Global Microfinance Fund	Mr. Jason S. Meikle CEO	7 th February
Proximity Finance	Mr. Jon Hiebert CEO	9 th February
Micro Level - CleanStart supported FSPs or ESPs		
Brighterlite	Mr. Martin Hamman Operational CEO	8 th February
Greenlight Planet	Mr. Kyi Area Manager	8 th February
KK East meets west	Mrs. Kay Thi Aung Managing Director – Local distributor for Greenlight	8 th February

CAMBODIA

Institution	Person, Position	Date of interview (2017)
Macro level		
National Bank of Cambodia	H.E Neav Chanthana Deputy Governor	24 th February
National Council for Sustainable Development	H.E Ken Sereyrotha Deputy Secretary-General	24 th February
Ministry of Mines and Energy (Cambodia) - Department of New and Renewable Energy	Mr. Toch Sovanna	Contacted on 20 th February (no reply)
Meso level		
Mekong Strategic Partners	Mr John McGinley Managing Partner	23 rd February

Cambodia Microfinance Association	Yun Sovanna General Secretary	23 rd February
SEAC (Solar Association of Cambodia)	Romina De Jong Secretary and Cyril Monteiller Senior adviser	Contacted on 14 th feb and 16 th February (not available)
Sustainable Green Fuel Enterprise (SGFE)	Carlo Figa Talamanca CEO	Contacted on 21 st February (not available)
Market level		
GERES - Groupe Energies Renouvelables, Environnement et Solidarités	Charlotte Nivollet Southeast Asia Regional Director	20 th February
SNV	Dennis Barbian RE Sector Leader	24 th February
HKL (MFI)	Son Savang VP & Product Development Director	23 rd February
	Ly Siven VP & Loan Portfolio Management Director	
Amret (MFI)	Sou Moniveark Chief Business Development	24 th February
LOLC (MFI)	Sok Voeun Chief Executive Officer	24 th February
	Ban Phalleng Head of Social Performance Management	
Lighting Engineering & Solutions Co., Ltd	Sum Sokun CEO	Contacted on 20 th February (no reply)
New Renewable Green Solutions Co., Ltd (NRG) Solutions	Daniel Pacheco Managing Director	Contacted on 20 th February (not available)
Micro Level - CleanStart supported FSPs or ESPs		
Hydrologic	Rachel Pringle CEO	21 st February
	Nadia Campos iDESIGN Cambodia, Director Human-Centered Innovation Lab at iDESIGN	21 st February
Kamworks	Laurent Leleu Solar Home System Project Manager	21 st February
	Alexander Beltes Project Manager Finance	21 st February
	Javier Production and Services Manager Hiek IT	23 rd February

PAMIGA

Institution	Person, Position	Date of interview (2017)
Micro level		
PAMIGA and PAMIGA Finance, S.A.	Marion Allimant Senior Programme Officer – Environment & Microfinance	18 th April
	Renee Chao-Beroff General Manager	Exchange of several emails for information
	Mathieu Merceret Investment Director	Contacted on 20 th March (no reply())
Wasasa (Ethiopia)	Amsalu Alemayehu CEO	3 rd April

Buusaa Gonofaa MFI (Ethiopia)	Teshome Dayesso CEO	Contacted on 22 nd March (no reply)
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ANNEX 5. CLEANSTART SUPPORTED FSP/ESP INFORMATION

EFFECTIVENESS RELATED TABLES

Table 20. Main purpose of the grant

Country	Name of FSP/ESP	Use of the grant
Uganda	FINCA	Recruitment, development of the credit scoring model HVLD (High Volume Low Denomination), lending system software development (First Access), marketing activities, personnel salary
	EcoGroup	Personnel salary, international certification, production equipment (machinery and electronic components), developing the ICT Nerve Center (including integration of the PAYG technology and the set-up of a call center) and marketing campaign.
	d.Light	Backend system development and integration with a mobile aggregator, recruitment of country representative and sales officers, personnel salary, set up of a call center
	BioLite	Market research, recruitment of sales agents, development of a PAYG software
	Village Power	Development of the PAYG system, web-based data collection and sharing platform (data entry tool, loan portfolio sharing functionality and market database), personnel salary
Myanmar	BioLite	Integrate Pngaza PAYG / Launch pilot testing (Dawei) / establish partnership with PACT, personnel salary
	Brighterlite	Payment processing system – customer/facing mobile based solution, SHS procured, training of retailers, Personnel salary
	GreenLightPlanet	Handsets for each VLE and field staff, marketing campaign, merchandising for VLEs, impact measurement, project management (personnel salary)
Cambodia	Hydrologic	Development of market research and sales strategy, production equipment, stock production
	Kamworks	Sales and marketing strategy development, stock production, recruitment sale forces, Upgarde PAYG Platform
Nepal	NMB	Marketing and training activities
	JBS	Human resources and training / workshops cost related
	ACE	Marketing and training activities
	SKBBL	Human resources, training and marketing material

Table 21. Brief description of main strengths and weaknesses of FSP/ESPs

FSP/ESPs	Strengths	Weaknesses
Biolite (Uganda)		
Corp/Mngt	International company, motivated & skilled General Manager	Head office in the US. Distance does not facilitate smooth coordination with Uganda office.
Product/Price	Affordable, nice looking ICS	Kind of camping style product. Not sure it fits daily cooking practices in Uganda.
Del./Channel	Pushing products through 3 delivery channels (CASH, MFI, OTHER).	Does not seem to control the delivery channel.
d.Light		
Corp/Mngt	International company, skilled Managers	na
Product/Price	Basic SHS multi-functional (radio, mobile, PAYG) and solar lamps	na
Del./Channel	Cash sales	Only customers with sufficient means to purchase outright can purchase such products. PAYG scheme not yet installed.
EcoGroup		
Corp/Mngt	Local company, pro-active CEO	Lack of equity
Product/Price	Innovative ICS with <i>volcano rock</i> .	Produced locally, difficult to decrease production costs
Del./Channel	CASH & PAYG	No connection with MFI
FINCA		
Corp/Mngt	Strong international company, strong managerial team. Established dedicated subsidiary to distribute RE products.	na
Product/Price	Basic solar and ICS	Lack of exciting marketing advertisement.
Del./Channel	CASH & MFI	Thinks with a loan product mindset.
VillagePower		
Corp/Mngt	International company, skilled management	Lack of equity
Product/Price	Simple and <i>upgradable</i> SHS, long term warranty	No other RE products
Del./Channel	CASH & PAYG	No connection with MFI.
Biolite (Myanmar)		
Corp/Mngt	Revising business plan	
Product/Price		
Del./Channel		
Brighterlite		
Corp/Mngt	Norwegian company, wealthy shareholders	
Product/Price	SHS, two models L4 & L9	Expensive for rural population
Del./Channel	CASH & PAYG	Sales agents have poor knowhow of socio-logics in rural area. As a result the poorest end up paying a fee for the most expensive device while the simple model could have been sufficient.
GreenLightPlanet		
Corp/Mngt	International VC company	
Product/Price	SHS	
Del./Channel	Not yet started in 2016	
ACE		
Corp/Mngt	Strong MFI with skilled Management	
Product/Price	Biogas, SHS >20Wp, ICS	Acts as a distributor, no direct knowledge/ knowhow with products
Del./Channel	MFI	Lack working capital

JBS		
Corp/Mngt	Large client base MFI. Operating for several years	Lack of international experience
Product/Price	Biogas, SHS <20Wp, SHS >20Wp, ICS	Acts as a distributor, no direct knowledge/knowhow with products
Del./Channel	MFI	Lack working capital
NMB-CEDB		
Corp/Mngt	Strong MFI with skilled Management	CEDB, as <i>subsidiary</i> , is a tier 2 MFI
Product/Price	Diversified range of RE products: Biogas, SHS <20Wp, SHS >20Wp, ICS, Micro Hydro, WaterMills	Acts as a distributor, no direct knowledge/knowhow with products
Del./Channel	MFI	High transaction costs
SKBBL		
Corp/Mngt	Rural MFI with large client base	Lack of equity and international experience
Product/Price	Diversified RE products: Biogas, SHS <20Wp, SHS >20Wp, ICS	Acts as a distributor, no direct knowledge/knowhow with products
Del./Channel	MFI	High transaction costs
Kamworks		
Corp/Mngt	International company, strong management skills	Lack of equity
Product/Price	Two basic SHS: SHS 100W & SHS 60W	Technically good products but <i>look</i> remains mechanic (i.e. not very attractive)
Del./Channel	CASH, MFI, PAYG & OTHER	Fragmented rural outreach.
Hydrologic		
Corp/Mngt	International NGO, skilled Managers	General manager on leave
Product/Price	Basic ICS: KhRos	Not very relevant for Cambodia
Del./Channel	Strong existing delivery channel used to distribute ceramic water filters.	CS specific delivery channel not yet operational

Table 22. Client gender breakdown (Dec 2016)

Country	FSP/ESP	Women clients (overall)	Women clients (CS products)	% women staff*	Rural areas* (CS products)
Uganda	Biolite	na	-	30%	na
	d.light	na	-	0%	na
	EcoGroup	na	67.9%	27.6%	62.4%
	FINCA	34.6%	46.7%	38.0%	79.0%
	VillagePower	na	-	35.0%	93.5%
Myanmar	Biolite	na	-	30%	na
	Brighterlite	na	31%	30%	100%
	GreenLightPlanet	na	-	na	na
Nepal	ACE	100%	100%	50.4%	na
	JBS	99.6%	1.7%	16.7%	na
	NMB-CEDB	93.5%	100%	33.3%	na
	SKBBL	37.4%	na	8.3%	na
Cambodia	Hydrologic	na	-	37%	na
	CA-Kamworks	na	50%	19%	100%

* Full year 2016 if available; otherwise latest quarter.

SUSTAINABILITY RELATED TABLES**Table 23.** Some indicators on CS portfolio

Country	FSP/ESP	% CS portfolio	% CS staff or number*
Uganda	Biolite	0%	9
	d.light	0%	100%
	EcoGroup	na	110
	FINCA	0.1%	1.5%
	VillagePower	0%	6.8%
Myanmar	Biolite	na	72
	Brighterlite	na	21
	GreenLightPlanet	na	na
Nepal	ACE	0.7%	33.4%
	JBS	2.28%	3.2%
	NMB-CEDB	2.31%	0.7%
	SKBBL	99.9%	14.8%
Cambodia	Hydrologic	na	110
	CA-Kamworks	na	31

* Some institutions did not provide the total dimension of the institutions but only the number in absolute value of staff dedicated to the CleanStart activities.

Table 24. Qualitative analysis of the sustainability

ESP profit & Loss	Equity and/or donations	Assumption on the sustainability of the ESP	Critical issue(s): funding, sales, HR, competition, other
Biolite (Uganda)	International founder should be able to secure equity and/or donations if needed.	OSS < 100% Biolite is not yet sustainable and it is hard to assess if it will be in the near future.	1 st priority is to scale up significantly sales in order to breakeven.
d.Light	International founder should be able to secure equity and/or donations if needed.	OSS < 100% Not yet sustainable.	Need to diversify sale channels and scale up sales.
EcoGroup	Will be difficult to attract additional equity.	OSS = 100% It is assumed that EcoGroup is covering its OPEX as it is active for several years.	Needs to improve efficiency (production of stoves).
FINCA	Finding additional resources is no issue for FINCA.	Brighterlife OSS <100% Brighterlife is in its early stage. It can be assumed that FINCA will strive to design a sustainable business model	Need to boost up the whole affiliate.
VillagePower	International founder should be able to secure equity and/or donations if needed.	OSS < 100% it is assumed that it is not yet sustainable.	Should strive to add a distribution channel with MFI.
Biolite (Myanmar)	<i>Revising business plan.</i>		
Brighterlite	<i>Stopped operations in Myanmar (end Q1-2017)</i>		
GreenLightPlanet	<i>Just started selling operations</i>		
ACE	Among leading MFIs in Nepal	OSS > 100% The size of the bank, its track record, etc.	Strengthen the value chain: ESP => MFI => end user.
JBS	Local shareholding structure may be limited in increasing equity.	OSS > 100% Long track record.	Strengthen the value chain: ESP => MFI => end user.
NMB-CEDB	Among leading MFIs in Nepal	OSS > 100% The size of the bank, its track record, etc.	Strengthen the value chain: ESP => MFI => end user.
SKBBL	Local shareholding structure, may be limited in increasing equity.	OSS > 100% Long track record.	Strengthen the value chain: ESP => MFI => end user.
Hydrologic	International founder should be able to secure equity and/or donations if needed.	OSS < 100% Operations did not really start yet	Need to test ICS in market.
Kamworks	International founder should be able to secure equity and/or donations if needed.	OSS < 100% but close to breakeven point.	Need to improve marketing strategy (i.e. geographic coverage).

ANNEX 6. REEP DEMO ANALYSIS

Finca Uganda

EXAMPLE 1. In this example the client from Finca Uganda spends UGX 7,750 per month on firewood for cooking the daily meal for her family. In this example, the level of savings is too small (-33%) to produce a cumulated positive saving before month 36, the average lifespan for an improved cookstove. If the initial monthly energy expenses are low, despite the fact that ICS will reduce the new monthly energy expenses by 33% (in this example), the amount of money saved during 36 months (the average lifespan of the ICS) will/may not cover the cost of the ICS (principal + interest). In other words, there must be an initial minimum monthly energy expense to allow covering the purchasing of an ICS (without spending less on monthly energy expenses).

In the case of this client, the main reason why purchasing an ICS does not bring lot advantages (i.e. she will not really save money) is because she does not spend enough firewood per month (i.e. she only prepares 1 hot meal per day). Maybe, if she would prepare 2 hot meals per day, it would make sense for her to purchase an ICS.

MONTHLY ENERGY CASH FLOW (BEFORE/AFTER)		M1	M6	M12	M18	M24	M30	M36
Currency	UGX							
BEFORE PURCHASING RE PRODUCT								
Type of activity	Cooking							
Type of energy	Firewood							
Energy expenses (UGX/month)	7,750	7,750	7,750	7,750	7,750	7,750	7,750	7,750
Monthly cash out		7,750	7,750	7,750	7,750	7,750	7,750	7,750
AFTER PURCHASING RE PRODUCT								
Estimated energy reduction (-%)	-33%							
New energy expenses (UGX/month)	5,193	5,193	5,193	5,193	5,193	5,193	5,193	5,193
Cost of product (UGX)	200,000							
Maturity of loan (month)	18.00							
Interest rate (%/month)	2.00%							
Principal repayment (UGX)		11,111	11,111	11,111	11,111	0	0	0
Outstanding principal (UGX)		188,889	133,333	66,667	-0	-0	-0	-0
Interest repayment (UGX)		3,778	2,667	1,333	-0	-0	-0	-0
Monthly cash out (UGX)		20,081	18,970	17,637	16,304	5,193	5,193	5,193
Monthly energy savings (UGX)		-12,331	-11,220	-9,887	-8,554	2,558	2,558	2,558
Cumulated (UGX)		-12,331	-70,655	-133,310	-187,965	-172,620	-157,275	-141,930

EXAMPLE 2. In this other example, the client from Finca Uganda is running a restaurant and therefore her monthly energy expenses on firewood are high. As a result, starting from the first month she starts saving UGX 31,611 per month which is significant for her. Moreover, by month 6, she already saved up to UGX 193,000 which could support renewing or purchasing an additional improved cookstove.

MONTHLY ENERGY CASH FLOW (BEFORE/AFTER)		M1	M6	M12	M18	M24	M30	M36
Currency	UGX							
BEFORE PURCHASING RE PRODUCT								
Type of activity	Cooking							
Type of energy	Firewood							
Energy expenses (UGX/month)	62,000	62,000	62,000	62,000	62,000	62,000	62,000	62,000
Monthly cash out		62,000	62,000	62,000	62,000	62,000	62,000	62,000

AFTER PURCHASING RE PRODUCT								
Estimated energy reduction (-%)	-75%							
New energy expenses (UGX/month)	15,500	15,500	15,500	15,500	15,500	15,500	15,500	15,500
Cost of product (UGX)	200,000							
Maturity of loan (month)	18.00							
Interest rate (%/month)	2.00%							
Principal repayment (UGX)		11,111	11,111	11,111	11,111	0	0	0
Outstanding principal (UGX)		188,889	133,333	66,667	-0	-0	-0	-0
Interest repayment (UGX)		3,778	2,667	1,333	-0	-0	-0	-0
Monthly cash out (UGX)		30,389	29,278	27,944	26,611	15,500	15,500	15,500
Monthly energy savings (UGX)		31,611	32,722	34,056	35,389	46,500	46,500	46,500
Cumulated (UGX)		31,611	193,000	394,000	603,000	882,000	1,161,000	1,440,000

JBS Nepal

In the above example, the JBS client will start to save money by month 21, almost 2 years after disbursement. Changing the maturity of the loan does not really influence the period when the savings turn out to be positive. The main parameter is the estimated energy reduction.

Improved cookstove: relatively long maturity until savings turn out to be positive

MONTHLY ENERGY CASH FLOW (BEFORE/AFTER)	M1	M6	M12	M18	M19	M20	M21
Currency	NPR						
BEFORE PURCHASING RE PRODUCT							
Type of activity	Cooking						
Type of energy	Firewood						
Energy expenses (NPR/month)	600	600	600	600	600	600	600
Monthly cash out	600	600	600	600	600	600	600
AFTER PURCHASING RE PRODUCT							
Estimated energy reduction (-%)	-50%						
New energy expenses (NPR/month)	300	300	300	300	300	300	300
Cost of product (NPR)	6,000						
Maturity of loan (month)	6.00						
Interest rate (%/month)	1.50%						
Principal repayment (NPR)		1,000	1,000	0	0	0	0
Outstanding principal (NPR)		5,000	0	0	0	0	0
Interest repayment (NPR)		75	0	0	0	0	0
Monthly cash out (NPR)		1,375	1,300	300	300	300	300
Monthly energy savings (NPR)		-775	-700	300	300	300	300
Cumulated (NPR)		-775	-4,425	-2,625	-825	-525	-225
							75

The following 4 screen shots show the impact of changing some specific parameters of the simulation.

MONTHLY ENERGY CASH FLOW (BEFORE/AFTER)	M20	M21
Energy expenses (NPR/month)	600	600
Monthly cash out	600	600
AFTER PURCHASING RE PRODUCT		
Estimated energy reduction (-%)	-50%	
New energy expenses (NPR/month)	300	300
Cost of product (NPR)	6'000	
Maturity of loan (month)	6.00	
Interest rate (%/month)	1.50%	
Principal repayment (NPR)	0	0
Outstanding principal (NPR)	0	0
Interest repayment (NPR)	0	0
Monthly cash out (NPR)	300	300
Monthly energy savings (NPR)	300	300
Cumulated (NPR)	-225	75

MONTHLY ENERGY CASH FLOW (BEFORE/AFTER)	M20	M21
Energy expenses (NPR/month)	600	600
Monthly cash out	600	600
AFTER PURCHASING RE PRODUCT		
Estimated energy reduction (-%)	-50%	
New energy expenses (NPR/month)	300	300
Cost of product (NPR)	6'000	
Maturity of loan (month)	3.00	
Interest rate (%/month)	1.50%	
Principal repayment (NPR)	0	0
Outstanding principal (NPR)	0	0
Interest repayment (NPR)	0	0
Monthly cash out (NPR)	300	300
Monthly energy savings (NPR)	300	300
Cumulated (NPR)	-90	210

Reduction: -50% maturity 6 months Positive cumulated at month 21 / NPR = 75				Reduction: -50% maturity 3 months Positive cumulated at month 21 / NPR = 210			
MONTHLY ENERGY CASH FLOW (BEFORE/AFTER)	M17	M18		MONTHLY ENERGY CASH FLOW (BEFORE/AFTER)	M13	M14	
Energy expenses (NPR/month)	600	600	600	Energy expenses (NPR/month)	600	600	600
Monthly cash out	600	600		Monthly cash out	600	600	
AFTER PURCHASING RE PRODUCT				AFTER PURCHASING RE PRODUCT			
Estimated energy reduction (-%)	-60%			Estimated energy reduction (-%)	-75%		
New energy expenses (NPR/month)	240	240	240	New energy expenses (NPR/month)	150	150	150
Cost of product (NPR)	6'000			Cost of product (NPR)	6'000		
Maturity of loan (month)	6.00			Maturity of loan (month)	6.00		
Interest rate (%/month)	1.50%			Interest rate (%/month)	1.50%		
Principal repayment (NPR)	0	0		Principal repayment (NPR)	0	0	
Outstanding principal (NPR)	0	0		Outstanding principal (NPR)	0	0	
Interest repayment (NPR)	0	0		Interest repayment (NPR)	0	0	
Monthly cash out (NPR)	240	240		Monthly cash out (NPR)	150	150	
Monthly energy savings (NPR)	360	360	360	Monthly energy savings (NPR)	450	450	450
Cumulated (NPR)	-105	255		Cumulated (NPR)	-375	75	
Reduction: -60% maturity 6 months Positive cumulated at month 18 / NPR 255				Reduction: -75% maturity 6 months Positive cumulated at month 14 / NPR 75			

In the first 2 above screen shots, the reduction of the maturity of the loan does not impact the month when cumulated savings turn out to be positive but it clearly impacts the level of savings at this turning point. In the second row, the increase in the estimated energy expenses reduces the number of months needed to turn out a positive cumulated savings.

Solar Lighting System: relatively long maturity until savings turn out to be positive

The same lesson can be drawn in the case of a basic Solar Lighting System of which the maturity must reach 19 months until cumulative savings turn out positive.

MONTHLY ENERGY CASH FLOW (BEFORE/AFTER)		M6	M7	M18	M19
Currency	NPR				
BEFORE PURCHASING RE PRODUCT					
Type of activity	Lighting				
Type of energy	Kerosen				
Energy expenses (NPR/month)	700	700	700	700	700
Monthly cash out		700	700	700	700
AFTER PURCHASING RE PRODUCT					
Estimated energy reduction (-%)	-100%				
New energy expenses (NPR/month)	0	0	0	0	0
Cost of product (NPR)	12,800				
Maturity of loan (month)	6.00				
Interest rate (%/month)	1.50%				
Principal repayment (NPR)		2,133	0	0	0
Outstanding principal (NPR)		0	0	0	0
Interest repayment (NPR)		0	0	0	0
Monthly cash out (NPR)		2,133	0	0	0
Monthly energy savings (NPR)		-1,433	700	700	700
Cumulated (NPR)		-9,080	-8,380	-680	20

Annex 7: Guidelines for Interviews with FSP and ESP

(Comments in blue)

Before starting please explain the purpose of the evaluation (independent exercise, their feedback will only be presented in an anonymous and aggregated way and not disclosed to a third party, etc.) and verify (depending also on information already available for the entity/person before the meeting):

- To what extent the entity and/or he/she has been involved in the CS programme (or related activities) – what, how, when, where?
- The entity's and/or her/his role with regard to the CS programme (programme partner – or potential programme partner)

FSP		Probing questions/issues to be discussed
1. RELEVANCE AND QUALITY OF PROGRAM DESIGN	Program design EQ1.2	Opinion on the design of the CleanStart program? Recommendations for how it could be improved to achieve increased financial inclusion? have been cross cutting issues (i.e. gender and/or human right, client protection and financial education, environmental standard) considered during programme design? were they relevant? If yes, can explain why and give some own evidence of it?
	Grant/loan management and process EQ2.1, EQ2.2, EQ2.3	Was the grant (or loan) received from the programme sufficient funding to meet institutional and programme actions and targets? Did you use the full amount? If more/less was needed, why? Are there other grants/loans available from other donors/investors targeting the provision of green financial services to low-income households and microentrepreneurs? Which ones (number and amount)? What is the proportion of project grant/loan to your total funding structure? Was the indicated use (and allocation to various purposes) of the grant/loan matching your existing needs in terms of providing green financial and non-financial services to low-income households? How adequately did the project grant/loan meet your actual needs? Should the grant/loan be allowed to finance other purposes? Was the grant/loan application/delivery process adequate? (bureaucracy, prerequisites, selection criteria transparency, tranches amount, disbursement timeliness) Was the criteria determining grant vs. loan allocations adequate?
2. EFFICIENCY OF MANAGEMENT AND QUALITY OF ACTIVITIES	Quality of service delivery EQ 2.3	Opinion on quality of TA/training provided: - quality of gap analysis and needs assessment to identify TA needs - number, type and timeliness of TA/training - quality of TA/training provider and content. How useful was it?
	Output delivery (micro level) EQ 3.1	Changes in product mix, marketing strategy, market research, or delivery channels since CleanStart program started? Changes in mission, vision, organizational chart, overall strategy? Has your target market for both financial and NFS changed in recent years? If so, how? Champions in branches for outreach to green/clean businesses? Has the staff attitude towards serving low-income people with green financial services changed thanks to the CleanStart program? To what extent do you think the products designed during CleanStart (credit, savings, insurance and non-financial services) meet the needs of low income clients? How could they be improved?
3. EFFECTIVENESS TO DATE	Output delivery (macro level) EQ 3.3	Degree of satisfaction with recent macro-level developments? (including regulation)
		What data is tracked in terms of enhancement of green/clean businesses (client survey results, social indicators, penetration rate of "green" clients)?

	Outcome achievement EQ 3.4	Are you present in regions of historically low penetration of green financial services? Do you think the CleanStart financial/non-financial services have helped you to extend your outreach among low income people? If so, why? Main challenges in the implementation of the CleanStart program? Which performance indicators not met, and why?	
4. LIKELY IMPACT	Achieve increased sustainable access to clean and affordable energy EQ 4.1	Overall sense of whether the market as a whole is moving towards increased/stable/decreased financial inclusion for green/clean businesses? Have other FSPs from your network entered the this market during the course of the CleanStart program? Is your institution actively expanding service outreach to green/clean low-income and traditionally financially excluded green businesses (including non-CleanStart beneficiaries) Do you do impact studies on clients? Do you have an opinion on the impact of financial/non-financial services on green low income clients? (savings of production costs, building of financial capital, change in the level of education, change in social role, change in poverty level)? Do you see a difference in the financial capabilities/success of clients who have vs. have not received non-financial services? To what extent has the legal framework/support structure influenced the results of products designed for green/clean businesses?	
		Final beneficiaries (client level) EQ 4.2	How uniform/diverse has the client profile been in recent years? (e.g. gender, urban/rural, age, income level, sector/purpose)
		Prospects for sustainability at micro level EQ 5.1 EQ 5.2	What are your plans regarding serving green/clean businesses? (Scale-up? Reduce? Continue?) Plans regarding delivery channels (for both financial and NFS)? What is your strategy for after-CleanStart program? Exit strategy? Have you accessed other sources of funds/TA thanks to your participation in the CleanStart project, with terms extending beyond CleanStart support? Sufficient availability of funds and human resources to adequately serve green/clean segment (household and businesses)? Opinion on the impact of CleanStart programme on the FSP overall sustainability? Macroeconomic, institutional, and/or organizational factors that could influence future sustainability? Opinion on the sustainability of CleanStart inspired products (credit, savings, insurance and non-financial services). Does the FSP do a sustainability analysis per product?
			Contextual factors EQ 5.3

ESP	Probing questions/issues to be discussed
<p>1. RELEVANCE AND QUALITY OF PROGRAMME DESIGN</p>	<p>EQ 1.1. Present level of relevance of the programme ? How do the components and activities of the programme help fill the gaps preventing scale-up of green energy products? What are the main advantages and disadvantages of the programme? Explain why. How did the programme help you to link with the FSPs?</p> <p>EQ 1.2. How coherent is programme design? From your ESP's point of view, how does the programme design take into account your priorities and difficulties? Are the different elements of the programme well balanced and complementary?</p> <p>EQ 1.3. Is the current design sufficiently supported by all stakeholders? Are stakeholders that should be involved really involved in the programme? If no, explain why. Which stakeholder is the most involved / the less involved? What are the consequences?</p> <p>EQ 1.4 Is the current design sufficiently taking cross-cutting issues into account? Are gender and/or human right issues relevant for such a programme? If yes, can explain why and give some own evidence of it?</p> <p>EQ 1.5 How well is the programme designed with regard to transition, expansion and replication? Does the capitalization process allow a clear hand over tool box to support replication in other countries or for other stakeholders? Who is handing over the know-how? UNCDF team, the FSPs, the ESPs, others?</p>
<p>2. EFFICIENCY OF MANAGEMENT AND QUALITY OF ACTIVITIES</p>	<p>EQ 2.1. How well are the inputs managed? Inputs/Resources in relation to Results Did you receive the appropriate mix of inputs (TA, grants, debt) to move on in scaling up your products? Before the interview, check to what extent the ESP has been involved in the programme implementation, which kind of activities has carried out and kind of support received from the programme.</p> <p>Was the coordination with primary partners easy to follow and was it effective? To what extend where the inputs managed in accordance with your real needs?</p> <p>EQ 2.2. How well is the implementation of activities managed? Inputs / Resources (in term of human resources) and Activities (programme management and monitoring) Is the implementation of activities bureaucratic or pragmatic? Can you illustrate with a few examples? Is the implementations complete (i.e. taking all issues into account) or is it partial? What is your level of satisfaction with the implementation of activities?</p> <p>EQ 2.3. What is the relevance and quality of the activities provided by the programme? Could you have done as well without the activities provided by the project? Are the activities nice to have or need to have? What could be improved? What did you appreciate most?</p> <p>EQ 2.4 How well are partners' contributions/involvement working?</p> <p>Do you have the feeling that involved partners are operating in a unique value chain (i.e. operating together, towards a same target) or partners remain independent? How well are the actions of the main stakeholders coordinated? And by whom, how?</p>

ESP	Probing questions/issues to be discussed
<p>3. EFFECTIVENESS</p> <p>EFFECTIVENESS: MARKET DEMONSTRATION, UPSCALING (macro, meso and market level)</p>	<p>EQ 3.1 How well is the project achieving its planned results in terms of organizational change? Did the programme support you to significantly increase the outreach of your products? If yes, what was essential, secondary? If no, what was missing or didn't work as expected? What are the reasons for the failures or missed achievements?</p> <p>EQ 3.2. What is the likelihood of the objectives related to organizational change achieved? Are you moving on a scaling-up path with "your" FSP? What facts support this statement? If not, what kind of support is still missing, needed?</p> <p>To what extent is the programme on track to influence the broader financial system for clean energy in the countries where it operates?</p> <p>3.3 Is project achieving planned results in terms of influencing the broader financial system for clean energy? From your ESP's point of view, what positive change did you observe in the broader financial system and access to energy ecosystem? Can you provide some examples More specifically, what changed regarding your relationship with the financial sector (not only FSPs)?</p> <p>3.4. What is the likelihood to influence the broader financial system for clean energy to be achieved? What are the key issues that still need to be addressed?</p>
<p>4. LIKELY IMPACT</p>	<p>EQ 4.1. What are impact prospects of the project to reach 2.5 m people (or 500.000 household) at BoP? In terms of growth in sales, what are your next year's projections? How did the programme contribute to these positive figures? If forecasts are low, explain why. Is promoting ESP products sustainable for a FSP? If yes, can you justify this statement?</p> <p>EQ 4.2 To what extent will the project have any indirect positive and/or negative impacts? Do you observe a change in your client's behavior that could be explained by the programme? If yes, provide some examples Did access to Challenge Funds open the door for FSP to better consider energy loans or did it have a negative effect (i.e. FSP will only go if they have access to soft loans)? Do you see any other relevant impact generated by CleanStart programme?</p>
<p>5. PROSPECTS FOR SUSTAINABILITY</p>	<p>EQ 5.1. Financial/ economic Viability What are the main issues (if any) that prevent you to scale up and reach sustainability? How should and by whom these issues be addressed? Where is the right balance between promoting affordable green energy products and covering transaction costs?</p> <p>EQ. 5.2 Level of ownership of target groups and will it continue after the end of external support What did you discover with the programme (i.e. started new activities, change mind set, etc.) and that you will continue to implement after the end of the programme?</p> <p>EQ. 5.3 What is the level of policy support and degree on interaction between project and policy level?</p>

ANNEX 8: Guidelines for Focus Group Discussions (FDGs) with CleanStart Clients

INSTRUCTIONS (in blue):

- Introduce yourselves.
- Welcome participants: thank you for coming – we are grateful for your time. This session will last around 2 hours and will be followed by shorter individual interviews.
- We are working on the mid-term evaluation of CleanStart – a programme aiming to increase and improve access to clean energy through energy and financial service provider in [NAME OF THE COUNTRY]. We are conducting an analysis to understand your needs and your points of view about your appreciation on the quality of new energy products and their delivery channels and if these products changed/improved your daily life/living conditions and benefits from using green product We will use this information to assess the changes introduced by the programme in terms of financial and non-financial behaviors and provide to programme management and main stakeholders recommendations for the future.
- Make sure that the participants understand that the evaluation is independent and that the exercise is NOT a test or exam and that all answers will be treated as strictly confidential and NOT disclosed to any third party and NOT affect the relationship with [NAME OF FSP/ESP].
- Questions are related also to the household behaviors, not only to the client itself. Try to detect if products have mainly an impact on the household or on the single client (and how). Detect changes in behaviors (if any) or changing needs and ways to meet them. Clearly analyze needs and behaviors.

KEY QUESTIONS AND RELATED PROBING QUESTIONS

Warm up / general information

Ask participants to briefly introduce themselves.

Information on energy demand [EQ3.1]

1. In your household, which are the main energy solutions adopted for lightening? And cooking? And heating and energy solutions for working purposes (example: in informal economic activities needs are often mixed with family/personal needs? **Probe:** Electricity, gas, fuel, biomass, or other renewable material etc.

List in the table below the answers

Lightening	Cooking	Heating	Other purposes (i.e. charging, powering)
			<i>Water wells, pumps</i>

2. What kind of green products does [name of FSP/ESP] currently provide you with? **Probe:** Solar home system, Small Cook Stoves (SC), Large Cook Stoves (LC), Solar Lamps (SL), other products.

Make sure you understand the difference between small and large cookstove (ask to the loan officer what kind of products do they offer and name of the products)

Solar home system	Small Cook Stoves	Large Cook Stoves	Solar Lamps	Other

3. Is there any other product/service that you would need but currently don't have access to? **Probe:** Solar system/lamps, cook stoves, biodigester, water purifier, solar water pumping system, etc.

4. What are the green energy products that the market in your village (or nearby) is offering?

Use and level of satisfaction of the green products [EQ3.1]

5. Which are the main advantages of the green products provided by [name of FSP/ESP]? **Probe:** cheap, generate savings, protect the environment, prevent health problems, save time, etc.

6. Which are the main disadvantages of the green products provided by [name of FSP/ESP]? **Probe:** expensive, generate not easy to use or repair, easy to damage, etc.

7. Which kind of after sales services do you receive? In case the product is covered by warranty, what are the main characteristics? Which are the channels for submitting a complain?

8. Have you ever returned / replaced the green product provided by [name of FSP/ESP]? If yes, what kind of problems did it have? How easy was the replacement process? If no, why?

Please, also count how many people have returned and how many have replaced the product.

9. Have you ever repaired the green product provided by [name of FSP/ESP]? If yes, did you manage to do by yourself? Did you ask for assistance to [name of FSP/ESP]? How was the quality of the assistance service? Was the assistance provided in due time?

Please, count how many people have repaired the product by themselves, and how many asked and received assistance.

Delivery Channels and methods of payment [EQ3.1]

10. How do you get (and repay) the green product? **Probe:** by cash, through a loan, with PAYG systems, other channels. Also take note if it happens in the field with COs, with external agents, in the branches, other ways-Are there any agencies or post sale company providing the needed after sale support because of a specific agreement with the FSP?

11. Have you ever used mobile or branchless banking (i.e. doing transactions in the field through an agent by a mobile phone or other device) for repaying the green loan? If yes, what do you think? **Probe:** too difficult or non-trustful hence prefer branch or deal directly with the credit officer; useful because with agents transactions can be done at any time. If no, why?

Make sure that they understand what you mean with mobile or branchless banking (alternative devices with agents). Also, try to understand whether or not new delivery channels are appropriate to their level of literacy).

Non-Financial Services [EQ3.1]

12. Have you ever received any non-financial services related to these green products? **Probe:** training on how to use / repair the product, other trainings; services of assistance, etc. If yes, was it for free? How was the quality?

13. Is there any training or advice that you would need or want, but currently don't have access to?

Relationship with FSP/ESP [EQ1.4 and EQ3.1]

14. Which information did [name of FSP/ESP] give you on the green products? **Probe: terms and conditions, interest rate, speed in disbursement, customer service, information on repayment methods.** How easy and clear was the information you received? Do you clearly understand the usefulness and the proper use of the new green technology/product? If yes, who and when. **Probe: nominal and effective interest rate**
15. How much do you pay of interest rate? Did you pay any fees? Do you clearly understand the costs of the green products and the overall amount of the green products according to interest rate and fees to be paid to the FSPs?
16. In case of loan, have you ever experienced any problem in repaying? If yes, what did you do?
- 17. Question to be done if the respondent is an OLD CLIENT (i.e. client of the FSP/ESP prior to the CS support).** Do you see any difference in the [name of FSP/ESP] green products you are using since [year on which FSP/ESP started promoting new products]? Which kind of differences? **Probe: improvement in the quality and number of services and delivery channels, improvement in the design of product, better tailored to client needs, related costs and sales price.**
18. Do you think that without [name of FSP/ESP], you would have bought the energy product? Why?

Information on financial behavior [EQ4.2]

19. Since [year in which FSP/ESP started promoting new green products and delivery methodology], have you changed your savings or credit attitudes or behaviors as a result of gaining access to these products/services, delivery methodology? How? **Probe: save more or spend more, save constantly, think twice when spending money, take credit now for investment purposes (would never have done before), improve household financial management, etc.**
20. **Only for clients that are using the pay as you go for the green products.** Do you use this channel to repay also other expenses? If yes, which ones? **Probe: other loans, utilities, etc.**

Specific targets [EQ3.1 and EQ1.4]

21. Do you have any suggestions for [name of FSP/ESP] to help them improve their products/services?
22. How important is it to you that [name of FSP/ESP] has dedicated products/services for women? Do you think that women need tailored product or specific market campaign?

ANNEX 9: Questionnaire for Structured Interviews with CleanStart Clients

[EQ4.1 & EQ4.2]

Interviewer	FSP/ESP	Branch	# Interview

0.1. Date of interview: _____ / _____ / 2017

0.2. Country: _____

Province: _____

0.3. District: _____

Area: Rural / Peri Urban / Urban

0.4. Type of FGD: _____

INSTRUCTIONS (in blue):

THE DAY BEFORE THE INTERVIEWS

- Some of the information might already be available through the FSP/ESP (cross-check with already available information).
- Find out information (by asking to field staff or FSP/ESP staff) level of competition in the village (in terms of financial inclusion and other energy service providers)
- Where possible, customize the red sentences according to the characteristics of each FSP/ESP and add the missing information.

BEFORE STARTING THE INTERVIEWS

- Introduce yourself to the client and remind her/him of the purpose of the interview, making clear that it is NOT a test or exam and that all answers will be treated as strictly confidential and NOT disclosed to any third party.
- Please keep your language simple and direct.

Personal/general information

1. Year of birth: _____

2. Gender of client: Female Male

3. Number of household components (including the client): _____

4. Are you currently in school? Yes No

4.a. If Yes, how many years (which grade) have you completed so far? _____

4.b. If No, how many years (which grade) have you completed? _____

Depending on the grade completed (i.e. not the one currently ongoing), insert the total number of years of schooling completed (repeat years are not be counted).

5. Are you currently employed / do you have a job / are you working? Yes No

5.a. If Yes, what type of employment/job/work do you have?

Take note if the client is either employed (full-time, part-time, seasonal) and/or self-employed (i.e. has her/his own business).

5.b. If Yes, in which sector are you involved (what do you do)?

Be as descriptive as possible (selling vegetables, raising chickens, making baskets, etc.).

Relationship with CleanStart supported FSP/ESP

6. When (which year) did you first become a client of [name of FSP/ESP]? _____

Comments: _____

Take note if can be considered as a “new” client or it was already served by the FSP/ESP.

6a. If the client is new for the FSP/ESP, have you ever asked for a credit to or saved money with another formal financial institution? Yes No

Take note if, before CS programme, he/she can be considered as an unbanked client. To simplify the question, name some competitors (MFIs or banks) present in the village, and also mention moneylenders and ROSCAs (ask to the loan officer how ROSCA is called in their native language).

7. Which green product(s) does [name of FSP/ESP] currently provide you with?

- Solar home system Small Cook Stoves Large Cook Stoves Solar Lamps
 Other

Add more details: _____

8. How many years ago, did you firstly adopt a green product?

Take note if, before CS programme, he/she had previous access to green energy, or whether he/she can be considered as “new” in the green energy sector.

Perception of ‘possible impact’ of green products

9. With the green product, do you believe your situation/life has changed in any way since, and as a result of, gaining access to the green product(s) and/or delivery channels that you currently use?

- Yes No

9.a. If yes, could you give some examples? And how do you explain these changes? **Probe:** more savings, less work (as easiness in pumping the water, or less work related to finding energy resources - wood or coal, etc.), etc.

Please let the client answer as freely as possible and be as descriptive as possible. Take note of both positive changes (improvements) as well as possible negative changes as well as of if changes could possibly be ‘attributed’ to accessing the CS supported products/services and/or delivery channels.

10. Other comments, observations, etc.: _____

Level of Analysis	Probing questions/issues to be discussed	Evaluation Questions
	<ul style="list-style-type: none"> Feedback on the role of the CS programme in supporting capacity building of FSPs/ESPs and prospects for sustainability (sufficient availability of human and financial resources, etc.) Opinion on funds adequacy/availability, allocation and effective use (also considering the unfunded budget) Description of FSPs/ESPs selection mechanisms Feedback on TA/training selection process, implementation and supervision (exposure visits / study tours & participation at global conferences; training, capacity building, etc.) 	
	<ul style="list-style-type: none"> Feedback on progresses towards targets at all levels (macro, meso, micro and client) Feedback on potential achievement of targets at the end of the programme (macro, meso, micro and client) Potential limits that could create constraints in the future programme implementation (and eventual strategy to overcome them) Opinion on best /worst performing country Ask for some practical examples to understand how the different approaches led to different results, given different contexts. Feedback on the possible role of the CS programme in supporting a market demonstration/replication effect among other - non CS supported – FSPs/ESPs General opinion on the interaction with / influence on national stakeholders (policy makers) General opinion on creation of (or in pipeline) new partnership of CS 	3. EFFECTIVENESS
	<ul style="list-style-type: none"> Opinions on potential impact at client level, in terms of change/improvement in clients' lives / living conditions, as a direct result of accessing CS supported products/services (or delivery mechanisms) Opinions on any possible positive externality created with CS implementation (macro, meso, micro and client level) 	4. LIKELY IMPACT
	<ul style="list-style-type: none"> Opinions on the capacity to continue with operations once the programme comes to an end: <ul style="list-style-type: none"> at macro and meso level (in terms of strategy, human resources, commitment, etc.) FSPs/ESPs level (in terms of capacity, human resources, ability to have sustainable products and delivery channels, etc.) 	5. PROSPECTS FOR SUSTAINABILITY

Level of Analysis	Probing questions/issues to be discussed	Evaluation Questions
Macro level Policy makers (Ministry of Energy – Environment; Ministry for Rural Development and Poverty Eradication)	Refer only to the country where the interview is taking place. <ul style="list-style-type: none"> General perceptions on the stage of development of access to clean energy sector in [NAME OF THE COUNTRY] (during the course of the programme as well as future prospects) – open question to encourage the stakeholder to talk about the topic and break the ice – if relevant, use what he/she mentioned as starting points for the following questions. 	1. RELEVANCE AND QUALITY OF PROGRAMME DESIGN

Level of Analysis	Probing questions/issues to be discussed	Evaluation Questions
Regulators (National Central Bank)	<ul style="list-style-type: none"> • Main issues concerning the regulatory country framework (in terms of supervision microfinance sector, branchless banking/mobile financial services) • Feedback on relevance of the CS programme with regard to the state of access to clean energy of [NAME OF THE COUNTRY] the start of the programme (ie. 2012) • General opinions on how the CS Programme was designed and reshaped - shift in the approach, considering role at national level, effective involvement of policy makers, alignment with national agenda and national context, synergies with other similar actions, stage of development of the clean energy sector, etc. • Main challenges and opportunities regarding the CS programme design also considering the multi-country/region approach • Opinion on the interaction between UNCDF/UNDP and CS Programme and integration with other UNCDF/UNDP country programmes and global thematic programmes (such as Clean Access and SHIFT) • Opinion on CS positioning in the scene of worldwide programme on access to energy • Opinion on the future of CS (transition, reshape, expansion, replication) • General impression on the integration in programme implementation of the issues <ul style="list-style-type: none"> ○ Gender and human rights ○ Financial education and Client protection ○ Environmental standards 	
	<ul style="list-style-type: none"> • Opinions on CS programme management (adequate and timely response to issues to be addressed; monitoring; etc.) • Feedback on the role of the CS programme in supporting capacity building of FSPs/ESPs and prospects for sustainability (sufficient availability of human and financial resources, etc.) • Opinion on funds adequacy/availability, allocation and effective use (also considering the unfunded budget) • Opinion on FSPs/ESPs selection mechanisms • Feedback on TA/training selection process, implementation and supervision (exposure visits / study tours & participation at global conferences; training, capacity building, etc.) 	2. EFFICIENCY OF MANAGEMENT AND QUALITY OF ACTIVITIES
	<ul style="list-style-type: none"> • Feedback on progresses towards targets advocacy and knowledge and dissemination activities (publications, events, conferences, etc.) • Feedback on potential achievement of targets at the end of the programme • Feedback on the possible role of the CS programme in supporting a market demonstration/replication effect among other - non CS supported – FSPs/ESPs • General opinion on the interaction with / influence on national stakeholders (policy makers) • General opinion on creation of (or in pipeline) new partnership of CS 	3. EFFECTIVENESS TO DATE

Level of Analysis	Probing questions/issues to be discussed	Evaluation Questions
	<ul style="list-style-type: none"> Feedback on the possible role of the CS programme in supporting changes at the macro level (policy agenda, regulations, industry dialogue and dissemination, etc.) 	4. POSSIBLE IMPACT

Level of Analysis	Probing questions/issues to be discussed	Evaluation Questions
<p>Meso level</p> <p>Networks of Microfinance, Associations, Industry associations, Pamiga (as global actor playing also at meso level), etc.</p> <p>See actors identified in the Stakeholder's list for (NAME of the COUNTRY)</p>	<ul style="list-style-type: none"> General perceptions on the stage of development of access to clean energy sector in the countries of implementation (during the course of the programme as well as future prospects) – open question to encourage the stakeholder to talk about the topic and break the ice – if relevant, use what he/she mentioned as starting points for the following questions. Main issues concerning the regulatory countries' framework (in terms of supervision microfinance sector, branchless banking/mobile financial services); is the country open to innovative approaches? Which kind of obstacles do you mainly see? (Cultural? Regulatory? Financing mechanism? Market conditions?) General opinions on how the CS Programme was designed and reshaped - shift in the approach Main challenges and opportunities regarding the CS programme design also considering the multi-country/region approach Opinion on CS positioning in the worldwide scene of access to energy Opinion on the future of CS (transition, reshape, expansion, replication) General impression on the integration in programme implementation of the issues <ul style="list-style-type: none"> Gender and human rights Financial education and Client protection Environmental standards 	1. RELEVANCE AND QUALITY OF PROGRAMME DESIGN
	<ul style="list-style-type: none"> Opinions on CS programme management (adequate and timely response to issues to be addressed; monitoring; etc.) Feedback on the role of the CS programme in supporting capacity building of FSPs/ESPs and prospects for sustainability (sufficient availability of human and financial resources, etc.) Opinion on funds adequacy/availability, allocation and effective use (also considering the unfunded budget) Opinion on FSPs/ESPs selection mechanisms Feedback on TA/training, selection process, implementation and supervision (exposure visits / study tours & participation at global conferences; training, capacity building, etc.) 	2. EFFICIENCY OF MANAGEMENT AND QUALITY OF ACTIVITIES
	<ul style="list-style-type: none"> Feedback on progresses towards targets advocacy and knowledge and dissemination activities (publications, events, conferences, etc.) Feedback on potential achievement of targets at the end of the programme 	3. EFFECTIVENESS

<i>Level of Analysis</i>	<i>Probing questions/issues to be discussed</i>	<i>Evaluation Questions</i>
	<ul style="list-style-type: none"> • Feedback on the possible role of the CS programme in supporting a market demonstration/replication effect among other - non CS supported – FSPs/ESPs • General opinion on the interaction with / influence on national stakeholders (policy makers) • General opinion on creation of (or in pipeline) new partnership of CS 	
	<ul style="list-style-type: none"> • Opinions on any possible positive externality (consequences whose benefit the overall environment) created with CS implementation (macro, meso, micro and client level) 	4. LIKELY IMPACT

<i>Level of Analysis</i>	<i>Probing questions/issues to be discussed</i>	<i>Evaluation Questions</i>
Market level	<ul style="list-style-type: none"> • General perceptions on the access to clean energy sector in [NAME OF THE COUNTRY] • General perceptions on the main challenges and opportunities regarding the access to clean energy sector in [NAME OF THE COUNTRY] • Feedback on relevance of the CS programme with regard to the state of access to clean energy of [NAME OF THE COUNTRY] at the start of the programme (ie. 2012) 	1. RELEVANCE AND QUALITY OF PROGRAMME DESIGN
Other, i.e. non-CS supported, FSPs/ESPs	<ul style="list-style-type: none"> • Knowledge of CS programme, recognized as a model for access to clean energy • Feedback on any dissemination activity (participation to events, workshop, received any publication) • General opinion on the interaction with / influence on national stakeholders (policy makers) • General opinion on creation of (or in pipeline) new partnership of CS 	3. EFFECTIVENESS
	<ul style="list-style-type: none"> • Feedback on possible current or future plans for extending outreach or developing new products to promoted access to clean energy 	4. LIKELY IMPACT

ANNEX 11: SAMPLING STRATEGY

The sampling strategy was based on a two-step approach: the first to identify the provinces, and therefore the branches, and the second to select the clients, as follows:

- **Provinces/branches** were identified according to a combination of several dimensions (subject to the availability of information), including area of operation (rural, peri urban, urban), location (Northern, Central or Southern Part of the country), types of products/services pilot and/or delivery channels offered, size of branch (number of CleanStart clients), and types of clientele (women incidence). Logistical considerations as well as the accessibility for clients on the proposed days for the branch visits are also taken into account. Finally, the suggested branch selection was discussed with the relevant FSP/ESPs in order to receive their feedback on the general circumstances and to grasp possible 'informal' information that the evaluation team is not able to detect solely on the basis of available data and information for the branches.
- **Clients** to participate in the FGDs and structured interviews was, where possible, based on a stratification sampling method. It includes considerations for the type of product (solar, cookstove, etc.) and delivery channels used by the clients (cash, loan or PAYG), as well as socio-demographic variable (gender). Once the branches to be visited were identified, the FSP/ESPs were asked to provide the Consultant with a complete list of clients (with whatever information possibly available for each client) at the selected branches in order to randomly select (using a number generator tool) eight/ten participants. To ensure a satisfactory participation on part of clients, branches were provided with another list of additional clients with similar characteristics of those on the first list so that clients (from the first list) not able / willing to participate can relatively speedily be substituted.

The team tried the best in following this approach, nevertheless time constraint issues or other country related problems have hampered it. For instance, in some cases, because clients were not living close to the branch, and they were meeting weekly at the branch for repayment issues, the team interviewed the group that was available on a selected date and branch. In doing this, exogenous selection was still ensured.

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