



Department for
Business, Energy
& Industrial Strategy

RENEWABLE ENERGY PERFORMANCE PLATFORM

Mid-Term Evaluation

Final Evaluation Report

Final Draft

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August 2018

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Glossary of key terms

Capital buy-down	<i>See 'senior debt'</i>
Comm. Operation Date	Commercial Operation Date occurs after financial close is achieved and construction is completed. From this date onwards, actual power generation and distribution to beneficiaries starts.
Concept Note	Summary of a proposal containing a brief description of the idea of the project and the objectives to be pursued. www.sswm.info
Conditions Precedent	In a loan agreement, a condition that must be satisfied by the borrower before it may request a drawdown and the lender is obliged to lend. www.uk.practicallaw.thomsonreuters.com
Construction finance	A form of results-based financing provided to projects to bridge the gap between financial close and construction phase, for large scale on-grid projects.
Debt finance	Money that a company or government borrows in order to do business or finance its activities, for example by selling bonds, taking out loans, or using credit. www.dictionary.cambridge.org
Disbursement requests	This indicates a request towards disbursement of funds against successful completion of pre-agreed REPP milestone activity.
Due Diligence	Audit of potential investment, people, records and key documents. The process is designed to make the investor or buyer aware of the inherent risks. www.cooleygo.com
Equity	A stock or any other security representing an ownership interest. www.investopedia.com
Financial close	Occurs when all the project and financing agreements have been signed and all the required conditions contained in them have been met. It enables funds (e.g. loans, equity, grants) to start flowing so that project implementation can actually start. eib.org
Financial close (off-grid)	Financial close in the context of off-grid projects implies that the projects have fulfilled all necessary project preparation activities (community engagement, environmental and social impact assessments (ESIA), securing funding support) for a tranche of installations (that are beyond pilot plants) and are ready to begin rolling out the equipment on the ground.
Internal rate of return	A metric used in capital budgeting to estimate the profitability of potential investments. Internal rate of return is a discount rate

	that makes the net present value (NPV) of all cash flows from a particular project equal to zero. investopedia.com
Know Your Customer	Process by which companies verify the identity and financial conditions of customers before doing business with them. www.graydon.co.uk
Loan guarantees	An agreement where a government or financial organisation promises to pay back a loan if the borrower cannot. www.dictionary.cambridge.org
Mezzanine equity	Mezzanine financing is a hybrid of debt and equity financing that gives the lender the right to convert to an equity interest in the company in case of default, generally after venture capital companies and other senior lenders are paid. investopedia.com
Private finance	Private finance includes finance from non-public sources such as banks (but not multilateral or regional development banks-MDBs), private companies, private or company pension funds, NGO money, CDM financing, voluntary carbon credit market, insurance companies, private savings, family money, entrepreneurs' own capital and sovereign wealth funds. It includes all types such as equity, debt and guarantees.
Project structuring	Projects require 'structuring' (i.e. information on e.g. construction costs, sales forecasts, expected rates of return) in order to provide the clarity or depth that investors are looking for to assess the implications of investment. Structuring can be challenging when developers either do not have the technical capacity to structure their project or when they do not adequately understand investors' expectations.
Public finance	Public finance includes finance from public (i.e. government) sources outside of the UK. This could include finance from other donors and partner governments, UN agencies and multilateral or regional development banks and investment agencies such as CDC or DEG.
Quasi-equity loans	Form of lending to businesses in which a company that is borrowing pays a higher rate of interest than on other loans but has longer to pay back the debt. www.dictionary.cambridge.org
Revenue	Amount of money that a company actually receives during a specific period. It is the top line or gross income figure from which costs are subtracted to determine net income. www.investopedia.com
Senior debt	Borrowed money that a company must repay first if it goes out of business. www.investopedia.com
Structure Paper	Contains detailed information relevant to the decision making of whether or not to provide REPP support.

Support Agreement	This is the formal agreement between the Project Company and REPP confirming the terms and conditions of the support and the exact nature of the support that REPP will provide the project.
Term Sheet	Provides a consolidated overview of the REPP support to the Project Company together with other important terms and conditions.
Working capital	Difference between a company's current assets and current liabilities, it is a measure of both a company's operational efficiency and its short term financial health. www.investopedia.com

Abbreviations

BEIS	Department for Business, Energy and Industrial Strategy
COD	Commercial Operations Date
CP	Conditions Precedent
DD	Due Diligence
DECC	Department of Energy and Climate Change
DFI	Development Finance Institutions
EIB	European Investment Bank
EPC	Engineering, Procurement and Construction
ESIA	Environmental and Social Impact Assessment
FI	Financial Institution
FTE	Full-Time Employed
GET-FiT	Global Energy Transfer Feed in Tariff
GHG	Green House Gas
GW	Gigawatt
ICF	International Climate Fund
IPP	Independent Power Producer
IRR	Internal Rate of Return
ITT	Invitation to Tender
KII	Key Informant Interviews
KPI	Key Performance Indicator
KYC	Know Your Customer
LoI	Letter of Intent
MoU	Memorandum of Understanding
MRV	Monitoring, Reporting and Verification
MTE	Mid-term evaluation
MW	Megawatt
MWe	Megawatt (electric)
OPIC	Overseas Private Investment Corporation

PCOA	Put-Call-Out Agreement
PPA	Power Purchase Agreement
PPF	Project Preparation Facilities
RBF	Results Based Finance
RE	Renewable Energy
REPP	Renewable Energy Performance Platform
RMI	Risk Mitigation Institution
SE4ALL	Sustainable Energy for All
SHS	Solar Home Systems
Solar PV	Solar Photovoltaic
TA	Technical Assistance
TANESCO	Tanzania Electric Supply Company Limited
ToC	Theory of Change
UNEP	United Nations Environment Programme
VFM	Value for Money

Executive summary

The REPP mid-term evaluation

The Renewable Energy Performance Platform (REPP) is a £48m programme situated within the UK's International Climate Fund (ICF) portfolio. It was established in December 2015 (with operations beginning in March 2016), and will run until 2020. Conceived originally by the European Investment Bank (EIB) and United Nations Environment Programme (UNEP), BEIS, together with EIB and UNEP form the REPP's Management Board. As sole funder of REPP, BEIS has a correspondingly high level of interest in the success of the programme.¹

This mid-term evaluation was implemented from late February to early September 2018 and was timed to feed into BEIS' work to develop a Business Case for a 'REPP Phase II'. Alongside this mid-term evaluation, two other pieces of work were conducted by the evaluation team to design a summative impact evaluation and review current results reporting arrangements with results monitoring tool creation.

This report refers to the evaluation workstream 1 and will be used by BEIS and the programme manager to 'course-correct'. Additionally, as with all BEIS evaluations, the evaluation is intended to generate learning, particularly around understanding/judging the REPP approach's replicability and the wider implications of evaluation findings for the ICF.

Box 0.1. Summary evaluation findings

REPP plays an important and unique role in the ICF portfolio. It also plays a fairly unique role in the market context it targets. The rationale for REPP was justified, and the delivery and governance structures through which it has operated during its first three years have been largely fit-for-purpose. This evaluation has found many positive attributes to the programme and concludes, overall, that there is good justification for the programme to be continued – and even scaled up – on the assumption that the findings of this evaluation will be taken into account and a clear strategy and approach developed for continuation / scale-up in accordance.

The REPP: strategy and implementation

REPP was developed in response to the identified problem of a lack of early-stage development support for small-scale renewable energy (RE) projects in Sub-Saharan Africa.²

¹ REPP is supported and advised by a panel of members called the Assessment Committee and is delivered by a private sector investment company (Camco Clean energy plc, the Delivery Agent). REPP is a private limited company, limited by guarantee and is managed by the REPP Management Board.

² The 'market' for this kind of support is thought to be either under-developed in REPP's target countries, or the types of projects targeted by REPP face barriers in accessing this market. As a result, private sector confidence for investing in small-scale early stage RE projects in Africa is still low.

REPP is unusual in that it aims to promote more ‘commercial thinking’ amongst project developers – not by providing fully commercial financing if the market was not quite ready – but by moving away from a purely grant-based approach.

REPP’s objective, set out in several programme documents, is to incentivise or catalyse private sector funding for small-scale RE producers over the long term. The measure of success will be a ‘transformation’ (increase) in private sector financing to small-scale RE projects in Sub-Saharan Africa. REPP’s strategy is to support projects with a high demonstration value and replicability potential. Specifically, it seeks to:

- Increase the capacity / potential for developing and investing in RE in Sub-Saharan Africa – both amongst project developers and market actors (investors and service providers);
- Demonstrate the market potential and commercial returns for developing and investing in RE in Sub-Saharan Africa;
- Deliver development and climate benefits stemming from successful projects;

Whilst at the same time:

- Being additional to the market (i.e. no viable alternatives and adding value projects) and crowding in commercial finance; and
- Not crowding out the private sector.

This flexible, bottom-up approach has resulted in several adjustments to the REPP over time.

Evaluation approach

The evaluation is theory-based, with the evaluation questions and evaluation framework being focussed on collecting evidence to test the (plausibility of) the programme ToC and its assumptions. It makes use mainly of qualitative data and qualitative analysis of this data. The final list of evaluation questions are presented below.

- To what extent are REPP-sponsored activities likely to meet the needs of project developers and incentivise financial institutions whilst remaining relevant to the overarching objectives of REPP?
- Is the REPP strategy, and its processes, facilitating the achievement of the programme’s desired outcomes in all countries? Are there preferable alternatives?
- Is the REPP being implemented in line with its strategy? If not, are changes required to the ToC?
- Is the REPP’s delivery structure appropriate to REPP for achieving its desired impact and value for money within expected timeframes?
- Are the REPP’s outputs being achieved as planned?
- What evidence is there to date that outcomes have been or are likely to be achieved and what are the factors that might explain these?
- Have REPP interventions met the expectations of the beneficiary projects and target groups?

In order to increase the transparency, quality and robustness of the evaluation's analysis, the team devised an evidence framework during the inception period. This identified what evidence would be needed to answer each evaluation question and the likely strength of this evidence.

Several data collection and analysis methods were used: portfolio and in-depth project and programme documentation analysis, key informant interviews, market context analysis, meeting observation and case studies.

Evaluation findings and conclusions

REPP relevance and additionality

This evaluation has found that REPP is dynamic and responsive to internally-driven changes (e.g. in its short-term strategy(s)) and to changes in the market context. REPP is also – overall – responsive to target groups' needs. Stakeholders have converged overall in reporting this as positive and the evaluators would also judge this flexibility as positive.

REPP is highly additional in the contexts within which it works. REPP is not crowding out alternatives, because the REPP portfolio includes the kind of small-scale, risky projects which others (particularly commercial actors) do not target and is offering the type of support (early-stage TA) which others do not provide. Indeed, one of the most positive aspects of the REPP approach (according to both stakeholders consulted and the judgement of the team) to be its targeting of those almost-viable projects which would struggle to receive support from anywhere else.

REPP progress towards outputs and outcomes

Against the expectations set out in REPP's Business Case, at the stage of REPP's implementation, only one quarter of REPP's contracted projects have yet reached financial close³ and are beginning to produce electricity and related benefits.

Project completion and operation are primarily being held back by forces currently out of their and REPP's control: mainly regulatory challenges. However, unless REPP or a REPP partner (or other actor) can address these remaining barriers, REPP might find it challenging to progress towards the achievement of its anticipated outcomes and impact.

Table 0.1 overleaf sets out progress against REPP's target outputs and outcomes.

³ All three are off-grid projects. Financial close in the context of off-grid projects implies that the projects have fulfilled all necessary project preparation activities (community engagement, environmental and social impact assessments (ESIA), securing funding support) for a tranche of installations (that are beyond pilot plants) and are ready to begin rolling out the equipment on the ground.

Table 0.1 REPP progress towards outputs and outcomes with Red-Amber-Green rating

Output / outcome	Analysis of progress	Strength of evidence
Pipeline development	Good progress	Verifiable
Project contracting	Good progress	Verifiable
Reaching financial close	Less progress than expected. Barriers outside of REPP's current control - REPP needs to decide whether it should change or adapt the scope of its activities to address the salient country-specific (policy) barriers.	Verifiable
Project developer capacity	Good progress	Minimal
RE generated	Slightly behind in its targets	Plausible
Social benefits (e.g. energy access and jobs created)	Insufficient information to judge	N/A
Influencing market actors	All in all, good progress	Plausible
Financial leverage	Some indications of good progress for public actors, but less progress than expected by private sector financial leveraging.	Plausible
Demonstration effect	Not possible to say for this evaluation (lack of clear definition of the term)	N/A
Climate and development outcomes	Insufficient information to judge	N/A
Increased capabilities and understanding in FIs and RMIs	Insufficient information to judge	N/A

The REPP strategy

REPP objectives and ambitions

REPP has an ambitious strategy. It works towards several intermediate and longer-term outcomes (additionality, demonstration effects, financial leverage, value for money and the achievement of development and climate benefits) which are often, in practice, challenging to achieve simultaneously and which may even be conflicting.

Additionality, the evaluation has found, is most easily achieved through REPP early-stage support for on-grid projects. However, these projects are also the riskiest and most challenging to bring to financial close. A greater focus on later-stage support to projects may improve REPP's chances of bringing (more) projects to financial close more quickly. It may

also risk moving REPP into domains inhabited by other donor programmes, commercial funds and Development Finance Institutions.⁴

These competing objectives generate questions as to the composition of the REPP portfolio and the direction in which REPP should head if it intends to further finance a continuation or scale-up. Where do BEIS, and REPP's governors, want to focus their attentions and efforts?

A big question also remains in the strategy as to whether – and if so, how- REPP intends to address the principal outstanding barrier to project close and operation: country-specific regulatory barriers. These barriers are currently outside of REPP's scope to act. However, if REPP is to bring projects to financial close, it may need to identify ways to address this remaining challenge.

REPP implementation and alignment with its strategy

REPP implementation is largely in line with the ToC except in relation to its Partner-focussed actions. As REPP's strategy has evolved it has moved away from developing a pool of Partners that it can hypothetically call upon / influence more generally, to targeting partners on a project by project as-needs basis. The actual implementation of the REPP Partner strategy is therefore much broader than the 'aligning due diligence procedures' indicated in the logframe. It is also interlinked with the project-development activities more than the current ToC suggests.

However, there are some key aspects of REPP's strategy which are absent from the ToC. First, it lacks detail around the ways through which the ultimate goal of 'transformational change' will be achieved. It requires more detail around the causal pathway from outcome (demonstration effect) to impact (transformation). This could be reflected in more detailed assumptions, but the ToC would probably also benefit from more detail on this in the outcome and impact statements. Second, the ToC doesn't cover some of the nuances in REPP's Strategy that relate to their choice of support, particularly RBF support. The ToC is also absent of any 'alternative ToCs' and does not therefore identify any of the risks or potential adverse consequences of making one investment decision over another. Third, the ToC does not reflect REPP thinking around portfolio composition and how different configurations of the latter affect outcomes.

The scalability of REPP's strategy

The dynamism and responsiveness of REPP's strategy to a rapidly changing market context has been a logical and largely positive feature of the programme during its first 2-3 years of implementation. Indeed, REPP has approached this initial phase of REPP from a 'proof of concept' or piloting perspective.

However, as REPP nears its third year of operation, it has reached a position at which it can and should consolidate its strategy and direction. This evaluation has identified clear gaps in the strategy which need to be consolidated or made more specific if REPP is to operate more purposefully and clearly. This may mean that REPP will need to become somewhat

⁴ Whilst this may not be problematic in itself (the needs remain sufficiently great and the number of actors addressing these small) to render the risk of REPP overlap with these options low.

less flexible / dynamic, or else it may mean that REPP defines its flexibility as a key feature – or mechanism – of the programme, whilst monitoring and managing associated costs.⁵

REPP's organisational structures

The suitability of REPP's organisational structures

REPP's Delivery Agent (Camco Management Limited), Management Board and Assessment Committee members are overall well-suited for their roles. They have the right experience and skill-sets to operate at REPP's present scale. They are dedicated and work, largely, in an efficient manner.

A notable problem with the current structural set-up of the REPP, identified by all internal stakeholders consulted was the Delivery Agent fee structure, which currently leaves the Agent in a financially challenging situation whilst – at the same time – failing to incentivise project closure. This should be adapted before the end of this first phase of REPP and certainly in time for a second phase (if commissioned).

The scalability of the organisational structures

The evaluators did not observe any inefficiencies which gave them great concern for this stage of the REPP. However, given the current level of effort being expended in REPP delivery and with delays in the achievement of some outputs and outcomes (see Section 3.2), it is unlikely that it would have sufficient absorption capacity to manage a REPP scale-up without significant, strategic staffing increases. Similarly, the Management Board and Assessment Committee in their current form do not have in place the capacity, nor the procedures and processes that would allow them to perform their functions if REPP were to operate at larger scale.

REPP implementation

In its current form, REPP is not scalable: the delivery and governance structures are too small and would need to broaden in terms of skills covered and the back-office systems supporting REPP (including tools such as the logframe and project selection guidelines) would need to improve.

In relation to REPP's results reporting, this evaluation has found that there are some shortcomings of the logframe. For example, the logframe is lacking indicators that would enable REPP to monitor portfolio composition. REPP would benefit (or would have benefitted) from greater insight into the portfolio composition in terms of countries covered, technologies, type of support provided, and stage at which support is provided.

The Review of REPP's Reporting System also conducted as part of this evaluation also identified some areas for improvement in REPP's reporting accuracy and calculations and has proposed a new tool to enable BEIS to more accurately convert Camco monitoring data into reports on ICF KPIs. Its conclusions and recommendations are summarised at the end of this executive summary.

⁵ There are lessons for BEIS to capture in relation to the positive effects of this flexibility: on piloting, learning and (possibly) on demonstrability. It would be useful for BEIS to bear these in mind for future (new) programming. See Section 6.5 for more information.

The evaluation's consultation with target stakeholders has revealed chiefly positive feedback and a high degree of satisfaction with REPP. However, areas of dissatisfaction / possible areas for improvement remain in terms of:

- REPP's communication to contracted and pipeline project developers;
- REPP's clarity in and conveyance of its purpose and direction (i.e. its Strategy) and the Strategy's flexibility; and
- Delays in the project approval process.

The evaluators consider that these issues are to some extent inherently linked to the challenge of operating a new and relatively innovative programme. REPP's design involves activities and approaches that are new to both the market and the UK government; therefore, it is not unexpected to find some 'teething problems'.

Summary findings against the evaluation questions

The evaluation was framed by seven main questions. The table below summarises these, quickly indicates the headline finding, as well as the evidence gathered to answer them and the strength of this evidence. A more detailed and elaborate 'evidence framework' can be found in the main Report.

Table 0.2 Summary findings against the evaluation questions

Evaluation question	Summary finding ⁶	Strength of evidence scale ⁷
To what extent are REPP-sponsored activities likely to meet the needs of project developers and incentivise financial institutions whilst remaining relevant to the overarching objectives of REPP?	• REPP support is well-designed to meet all project 'needs' except for country-specific regulatory barriers which are outside of REPP's remit. The evaluation did not uncover strong evidence of partner engagement by REPP, though REPP was able to identify partners when needed to support on specific projects.	• Plausible and some verifiable evidence • Verifiable evidence

⁶ Summarises evidence found in support of hypotheses linked to the evaluation question and evidence that refutes it. See Annex 3 'evidence framework' and Annex 8 'methodology' for more information.

⁷ Verifiable evidence refers to data that are both plausible and possible to verify. Plausible evidence comprises evidence which may make a plausible claim but may draw heavily on assumptions from secondary literature, or which is the plausible conclusion drawn by an expert stakeholder or observer. Minimal evidence comprises that which simply claims an outcome without any information about the data or methodology used to evidence this claim. For more information see Annex 3 and Annex 8 (Table A8.6).

Evaluation question	Summary finding ⁶	Strength of evidence scale ⁷
Is the REPP strategy, and its processes, facilitating the achievement of the programme's desired outcomes in all countries? Are there preferable alternatives?	- REPP is increasing project developer and market actor capacity in Sub-Saharan Africa. - It is difficult to judge conclusively whether REPP's demonstrability and the likelihood of it achieving development benefits. - There are no or very few alternatives to REPP in respect of REPP's service offering and the types of projects it targets. - REPP is not crowding out the private sector due principally to the fact that it targets projects which generate too low an IRR or are considered still too risky for commercial actors. - It is not possible yet to judge whether REPP is likely to / already crowding it in.	- Minimal evidence only at this stage of implementation - Minimal evidence, not least due to lack of clear definition of 'demonstrability' - Strong body of plausible evidence - Strong body of plausible evidence - Minimal evidence
Is the REPP being implemented in line with its strategy? If not, are changes required to the ToC?	REPP is being implemented largely in line with its strategy, but the strategy requires further refinement and changes are required to the ToC.	Strong body of verifiable and plausible evidence.
Is the REPP's delivery structure appropriate to REPP for achieving its desired impact and value for money within expected timeframes?	- REPP's delivery structure is appropriate to the achievement of impact, though only if adapted to enable programme scale-up. - REPP demonstrates some inefficiencies, which represent a concern for the programme (e.g. the approval process which creates delays, the fee structure for the Delivery Agent). On the other hand, REPP also demonstrates some cost-efficiencies, such as the voluntary nature of the Board and Assessment Committee and the effectiveness with which Board and Assessment Committee meetings are conducted.	- Plausible evidence - Plausible evidence, as an in-depth VfM analysis (investigating e.g. financial inputs and outputs) was not within the scope of this evaluation.
Are the REPP's outputs being achieved as planned?	There is mixed effectiveness in REPP's progress towards outputs and outcomes and currently REPP is behind target on several of its logframe milestones, largely due to the delays in projects reaching financial close.	Verifiable evidence
What evidence is there to date that outcomes have been or are likely to be achieved and what are the factors that might explain these?		

Evaluation question	Summary finding ⁶	Strength of evidence scale ⁷
Have REPP interventions met the expectations of the beneficiary projects and target groups?	As only a small number of projects have started to reach financial close, it is premature to make conclusions on the effectiveness of REPP at meeting needs. However, the feedback from project developers and market actors is remarkably consistent and highly positive regarding REPP's approach to helping fulfil needs unmet so far in the targeted countries.	Plausible evidence

Recommendations

Recommendations linked to REPP's strategy

- The evaluators' main recommendation is for **REPP to update its strategy and ToC** by: developing a more detailed outline of the mechanisms through which it expects to achieve transformational change; defining what it means by 'demonstration effect' and what implications this has for project selection and REPP's support to projects; considering the implications of this for the REPP portfolio (see also below); and considering whether (and if so how) it might try to address remaining barriers to financial close (which are mainly regulatory).

REPP might do this by holding a joint Management Board-Camco workshop on the ToC and encouraging this to be used as a framework for defining (and updating) REPP's strategy.

- In implementing recommendation 1, REPP should consider operationalising one or more of the following three strategies in order to **ensure that the balance between REPP objectives / goals is not conflicting**; either:
 - Narrow down REPP ambitions and make the portfolio more targeted; or
 - Be transparent about the implications of different portfolio compositions and set soft targets for the proportion of the portfolio that will be composed of on-grid/off-grid, different technologies, early-stage and late-stage projects, etc.; or
 - Consider taking a more strategic approach to project-specific and/or country-level partnering, and/or identify potential co-donors or additional Delivery Agents to apportion responsibility for the objectives in a more harmonious way.
- In terms of REPP's offering, it should consider the **relative additionality of its RBF provision** over its TA provision. It may consider developing some type of framework or approach to justify clearly that there are no other investors capable or willing to provide such finance, particularly for markets with more developed national capital markets such as Kenya and Ghana, where the regulatory framework is already in place and hence investor interest has been quite high.

4. Once agreed, REPP should **clearly define and publicise REPP's scope, offering and direction** as well as any processes or plans for future (re)iteration.

Recommendations linked to REPP's organisational structures

5. **Increase the Management Board and Assessment Committee size and skill set:** An addition of around 2-3 members to increase the number of decision-makers (in the Board) and to cover skills arising in need, such as investment planning could work well.
6. **Invest in developing tools to support project selection and decision-making:** See *the strategic recommendations*.

Recommendations linked to implementation

7. **On the REPP logframe, consider:**

- a. **Changing indicators on 'number agreements signed with REPP Partners'** to indicators such as (i) 'financing leveraged (from these actors)' and (ii) 'REPP due diligence accepted' iii) 'number of REPP support products (or packages) co-developed with REPP Partners' to better reflect REPP's actual desired outputs in this area.
- b. **For future programmes, ensuring sufficient intermediate goals forecasting the likelihood of outputs (e.g. projects reaching financial close) are monitored through the logframe.**
- c. **For future programmes, better integrating indicators that monitor portfolio composition.** This would facilitate more systematic assessment of progress towards different REPP outcomes (assuming that different portfolio compositions and project selections affect outcomes in different ways, as outlined in this evaluation's conclusions).

These changes could also be introduced into the REPP logframe if considered sufficiently relevant to do so at this stage of implementation.

8. **Improve the speed of the approval process:** This may involve REPP adjusting its current procedure of having two Board members sign approvals.
9. **Consider limiting the number of projects to which RBF is offered / the complexity of the RBF offering:** Whilst such projects might work if REPP scales up and Camco hires additional staff, if the decision to scale is not made, Camco will need to step back from providing potential RBF to every project and only extend support to selected ones (e.g. with high additionality benefits) where they can use standardised REPP RBF products.
10. **The REPP Management Board should ensure its 'back office' systems are more efficient and effective:** This would include allowing project developers to upload documents, track project pipeline development and provide real time updates on KPIs onto 'Camco's project database management system' to reduce email traffic.

1. Introduction

In February 2018, LTS International Ltd and IMC Worldwide were commissioned by the Department for Business, Energy and Industrial Strategy (BEIS) to conduct a mid-term evaluation (MTE) of the Renewable Energy Performance Platform (REPP). The evaluation commenced on the 29th February 2018 and ends 3rd September 2018 coinciding with the REPP Management Board meeting.

In addition to the MTE, the evaluation team also designed a summative impact evaluation and a review of current results reporting arrangements with results monitoring tool creation which are summarised in Sections 4 and 5 respectively.

1.1 Evaluation objective

The evaluation objective is to provide BEIS with insights and analysis into the relevance, effectiveness and efficiency of REPP's overall strategy, its services (Results Based Finance (RBF) and Technical Assistance (TA)), its governance and delivery structures/processes and the value for money (VFM) it offers.

1.2 Scope and purpose of the evaluation

The evaluation considered the design and implementation of REPP from its inception in December 2015 to the present. Cut-off dates for the consideration of REPP results and portfolio composition were 31st December 2017 and 27th April 2018 respectively. The evaluation consulted all internal REPP stakeholders (BEIS, the REPP Delivery Agent (Camco Management Limited), Management Board and Assessment Committee), the developers of all REPP contracted projects, a selection of developers of REPP pipeline and 'dropped' projects and a selection of REPP Partners, project supporters and other market actors (see Annex 8).

The evaluation answered seven evaluation questions on:

1. The relevance of REPP to its target groups;
2. The appropriateness of the REPP strategy and implementation approach to its objectives and the context in which it operates;
3. Implementation effectiveness;
4. Achievement of outputs;
5. Likely achievement of outcomes;
6. Effectiveness in meeting target groups' needs; and
7. The need for changes to the REPP Theory of Change (ToC).

The evaluation will be used by BEIS and the programme manager to 'course-correct'. As the current timeframe for REPP is 5 years (from 2015 to 2020), BEIS is keen to use the evaluation findings to assess whether REPP should / could be extended (either in duration or budget, or design). Additionally, as with all BEIS evaluations, the evaluation had a purpose to generate learning, particularly around understanding/judging the REPP

approach's replicability and the implications of evaluation findings for the wider UK International Climate Fund (ICF).

1.3 Evaluation team

The evaluation was conducted by a small team comprised of a mix of evaluation, climate finance and RE experts.⁸ The team was led by an evaluation manager and team leader, who were supported by an advisory committee that reviewed the data collection tools and deliverables and advised on technical aspects including market analysis and ICF programmes, policies and priorities.

The majority of data collection and analysis was conducted by a core team of four persons, two of whom focussed on the market context (including interviewing market actors) and two of who focussed on consulting REPP internal stakeholders, reviewing REPP documentation (and understanding their processes in-depth) and interviewing and surveying project developers. The team met regularly to exchange iterative findings and each team member has made some contribution to this Final Report.

1.4 Evaluation approach

The evaluation is theory-based, with the evaluation questions and evaluation framework being focussed on collecting evidence to test the (plausibility of) the programme ToC and its assumptions. It makes use mainly of qualitative data and qualitative analysis of this data.

In order to increase the transparency, quality and robustness of the evaluation's analysis, the team devised an 'evidence framework' during the inception period (see Annex 3 for the final, completed version of this Framework). For each evaluation question, several hypotheses underpinning these questions were identified, then – for each hypothesis – the evaluators defined the evidence that they would expect to see if the hypothesis were 'true' or 'not true' - i.e. the evidence that would support or refute this hypothesis. This framework was then used to: (i) identify which data collection and analytical methods would be used to answer each of the evaluation questions; (ii) what lines of inquiry the evaluators would take, and the evidence they expected to uncover; (iii) how 'strong' or 'weak' this evidence could be judged to be;⁹ and (iv) review iterative findings after each main data collection strand (desk-based review, consultation with REPP-internal stakeholders, consultation with external stakeholders and case studies).

⁸ Julia Larkin (team leader), Laura Hayward (evaluation manager), Peggy Mischke (climate financing and RE expert), Ankit Agarwal (RE expert), Jeroen van der Laan (climate financing expert), Fraser Macleod (evaluation expert), and Jeremy Doyle (RE programming expert).

⁹ Each evidence type defined in the framework was rated as to whether it was 'verifiable' (the strongest evidence); 'plausible' (less strong); or 'minimal' (least strong).

1.5 Methodology

A description of the full methodology applied is provided in Annex 8. The evaluation assessed effectiveness, relevance and efficiency.

The data for this mid-term evaluation has been collected through various sources. The team was given open access to programme documentation and was permitted to observe various processes involved in REPP's management, including meetings of its governance bodies and its data repository and reporting system. Representatives of all internal stakeholder groups and external ones (comprising contracted, pipeline and dropped project developers, as well as REPP Partners (who are financial service providers – see Section 2.3.3), projects supporters and other market actors) were consulted. For an overview of these and the number per stakeholder group consulted, please see Annex 8 on methodology.

The evaluation team undertook a theory of change analysis portfolio analysis, thematic analysis of programme documentation and of interview transcripts, comparative analysis of the logframe, project fiche preparation, context analysis and case studies. A dedicated quality assurance team supported the evaluation.

The evaluation was delivered to a six-month schedule which created some constraints on the methodological scope: for example, a process-tracing approach, proposed in the Invitation to Tender was not possible, and the team's capacity to consult a large range of non-REPP affiliated market actors was also limited.¹⁰

These constraints were mitigated by the robust approach to evidence generation and analysis taken by the team (see Section 1.7) and by balancing limitations in the breadth of stakeholders consulted with the depth to which the team went in analysing the data and consulting the stakeholders available to them. Additional to the original proposal, the evaluation team observed meetings of the REPP Assessment Committee and Management Board and conducted two full-day workshops with Camco to fully understand the REPP strategy and (project) design. For limitations and how they were mitigated see Annex 8.

1.6 Note on the evidence

The evaluation team took several steps to generate a strong body of evidence and reduce bias in the evaluation (e.g. we created the evidence framework so as to target particular types and volumes of evidence, we specifically set out to collect the same information from different stakeholder sources to enable triangulation, and we analysed our primary data reported from stakeholders in a critical way so we could weigh up how credible the evidence was). Nonetheless, we recognise that for some of the evaluation questions, the evidence gathered may be slightly weaker. Where this is the case we have aimed to be transparent about this in the text and the completed evidence framework in Annex 3 outlines this further.

¹⁰ Up to ten market actors with little or no awareness of REPP were targeted and six were reached. An additional seven market actors with knowledge or affiliation to REPP (eight targeted) were reached. Both groups helped build up a picture of the REPP market context and REPP's standing within this landscape.

1.7 Navigating this Report

Chapter 2 provides an overview of the REPP, outlining its purpose and scope, key elements of REPP's strategy, its organisational and delivery structures, the REPP portfolio and its market context. Chapter 3 discusses our findings for the seven evaluation questions. Chapters 4 and 5 summarise the findings of the Results Reporting Review and The Plan for an Impact Evaluation respectively while chapters 6 and 7 outline our conclusions and recommendations.

To maintain consistency with the evidence framework, Chapter 3, which discusses the evaluators' findings per evaluation question, to a large extent follows the structure of the hypotheses. Also, throughout Chapter 3, boxes appear which provide quotes from the various Key Informant Interviews (KIIs) the evaluators have conducted. In doing so, the evaluators have categorised the quotes as to whether they reflect:

- “= positive feedback (speech mark in **green** font)
- “= mixed or cautionary (speech mark in **yellow** font)
- “= negative feedback (speech mark in **red** font)

2. Overview of the REPP

2.1 Purpose and scope of REPP

REPP is a £48m programme, established in March 2016 to contribute to the achievement of UN Sustainable Energy for All (SE4ALL) objectives. REPP was designed to provide TA to developers of small- to medium-scale RE projects in Sub-Saharan Africa to help them attract finance and to make their project commercially viable. The programme aims also to provide RBF to projects as a last resort, to de-risk the project in order to attract outside investment. REPP is set up to work in close collaboration with financial service providers ('REPP Partners') to build their capacity and streamline approval processes such as provision of risk mitigation instruments.

The projects that REPP supports involve small scale power generation technologies such as solar PV, run-of-river hydro, waste to energy, biomass, biogas, wind power generation and the more recently included geothermal energy. REPP also supports off-grid technologies such as mini grids and solar home lighting systems (SHS).

The target groups of REPP are project developers and the market actors (investors and services providers) who can help them implement, grow and expand, and the end beneficiaries are people with little to no access to modern energy services.

REPP has set the following targets towards the achievement of these objectives by end of 2020¹¹.

- Number of people with improved access to clean energy as a result of REPP intervention: **1,500,000**
- Number of direct jobs created as a result of REPP: **1500 Full-Time Employed (FTE)**
- Change in Greenhouse Gas (GHG) emissions as a result of REPP: **80,000 tCO₂e**
- Level of installed capacity of clean energy generated as result of ICF support for REPP: **113 MW**
- Volume of public finance mobilised for climate change purposes as a result of REPP intervention: **60%**
- Volume of private finance mobilised for climate change purposes as a result of REPP intervention: **40%**

2.2 REPP strategy

2.2.1 Origins of the REPP

REPP was developed in response to an identified problem: a lack of early-stage development support for small-scale RE projects in Sub-Saharan Africa. The 'market' for this kind of support is thought to be either under-developed in REPP's target countries, or

¹¹ These targets have been revised from the original targets proposed in the REPP Business Case owing to a recent change in the REPP baseline. More information on this is available in Annex 6.

the types of projects targeted by REPP face barriers in accessing this market.¹² As a result, private sector confidence for investing in small-scale early stage RE projects in Africa is still low.¹³

REPP was originally designed to provide grant-based TA support and tariff top-ups in the form of RBF.¹⁴ However, this original thinking evolved, even before the contracting of the Camco, in response to an expanding climate finance landscape and evolving market needs that led to perceptions that the market was becoming more receptive to a commercial approach than a grant model.¹⁵

According to KIIs with the REPP Management Board, as well as with BEIS and Camco staff, and as recorded in the programme documentation, there was a desire for REPP to promote more 'commercial thinking' amongst project developers – not by providing fully commercial financing if the market was not quite ready – but by moving away from a purely grant-based approach.

2.2.2 The REPP strategy

REPP's strategy is set out in several documents, including its ToC, the REPP Strategy Paper,¹⁶ and REPP Support Policy and Guidelines. There is relative consistency between these documents in terms of the high-level objectives and framework, though the mechanisms and details of the strategy has evolved over time (as described at the end of this Section).

At its core, REPP's objective is to incentivise or catalyse private sector funding for small-scale RE producers over the long term. The 'end goal' of REPP, or its measure of success, as pointed out unanimously during the scoping KIIs during the inception phase,¹⁷ is to 'transform' (increase) private sector financing to these project types over the long term by supporting projects with high demonstration value and replicability potential.

The REPP implementation strategy is to:¹⁸

- Increase the capacity / potential for developing and investing in RE in Sub-Saharan Africa – both amongst Partners¹⁹ and project developers;

¹² The REPP Business Case identified that this was lacking where equity return expectations were high due to high perceived project risk (for example political, off-taker, regulatory and foreign exchange risks), where access to long-term debt financing was limited or not available because of an inadequate experience of commercial banks to evaluate projects, or where the financial incentives provided through feed-in tariff levels alone were inadequate to make projects bankable and commercially viable.

¹³ It was also clear from discussions at the REPP Management Board meeting, which the evaluators attended in June 2018, that all Board members converge upon 'transformational change' as the ultimate objective of the programme. The finding is also confirmed by the market context analysis presented in Section 2.5 and Annex 4.

¹⁴ Individual scoping interviews conducted with BEIS and Camco personnel between 07- to 09-March 2018.

¹⁵ *Ibid.*

¹⁶ REPP (2017) REPP Strategy, August 2017.

¹⁷ Individual scoping interviews conducted with BEIS and Camco personnel between 07- to 09-March 2018.

¹⁸ This specific list was developed by the evaluation team after a comprehensive review of programme documentation, e.g. Business Case, REPP Support Policy and Guidelines, as well as notes from KIIs with BEIS, the Board and Camco.

¹⁹ For a definition of 'REPP Partner' see Section 2.3.3.

- Demonstrate (through project completion²⁰ and dissemination) the market potential and commercial returns for developing and investing in RE in Sub-Saharan Africa;
- Deliver development and climate benefits stemming from successful projects;

Whilst at the same time:

- Being additional to the market (i.e. no viable alternatives and adding value projects) and crowding in commercial finance; and
- Not crowding out the private sector.

To achieve this, REPP offers TA through contingently recoverable/reimbursable grants, loan options and/or RBF support with a scheduled repayment protocol, instead of traditional grants.^{21, 22}

According to the REPP Strategy,²³ a “key feature” of the REPP is that it is “*deliberately bottom-up*”; it considers that individual project support can contribute to market transformation by: (i) helping to develop the local ecosystem for project development; (ii) proving by demonstrating that small scale RE project development can be beneficial and commercially attractive; and (iii) giving practical reasons for local policy makers, regulators and financiers to work on identifying and removing financial and non-financial barriers, thereby engaging them on something more than a ‘theoretical problem’.

Figure 1 illustrates where REPP places itself in the market: This is based upon the Strategy which runs from 2015 to 2020.

²⁰ Defined here as having achieved commercial operation and generating electricity.

²¹ REPP (2017) REPP Strategy, August 2017, verified through KIIs with BEIS and Camco.

²² 'Direct equity' investment is actively being considered by REPP as a financial offering. Currently it is being offered as a loan conversion option on committed TA and/or RBF.

²³ REPP (2017) REPP Strategy, August 2017. This is a document authored by Camco on the basis of joint discussions between REPP and the Management Board. It has gone through two iterations: the original 2017 version was updated in 2018. The document was approved by the Board at the fourth Board meeting of 2017.

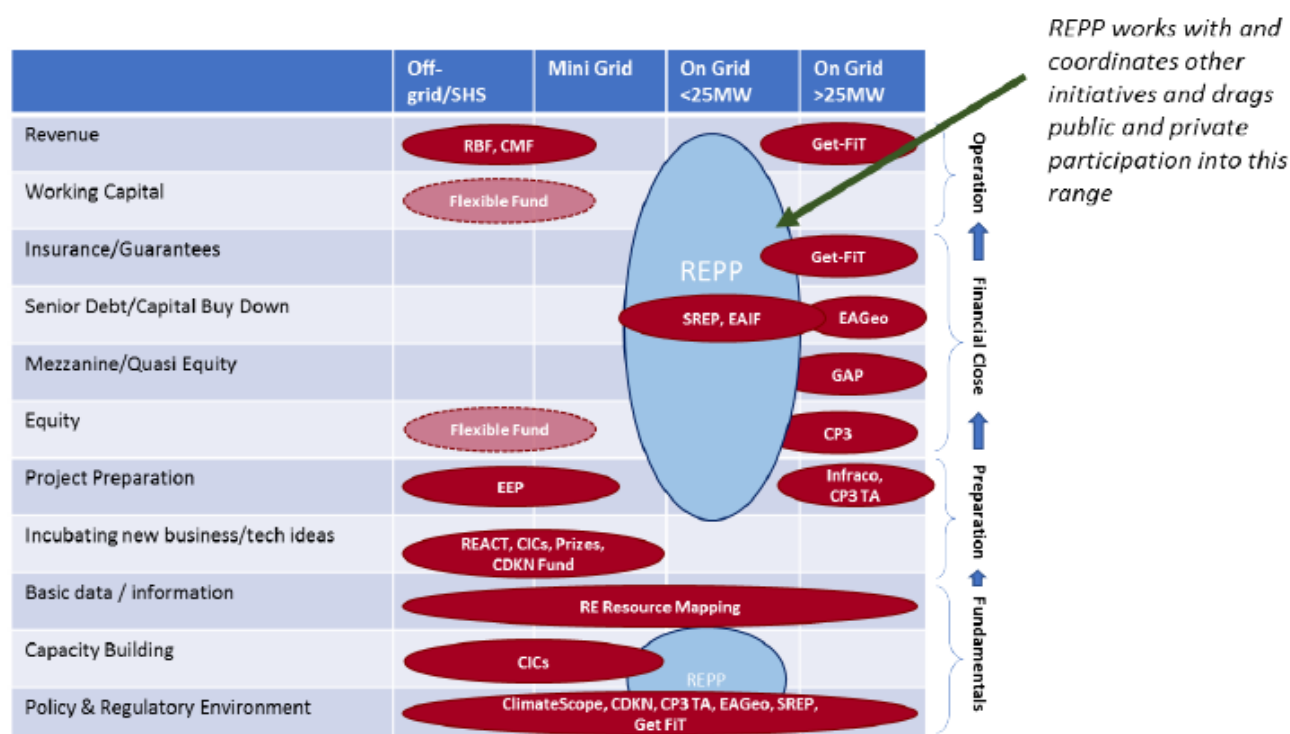


Figure 1: REPP's positioning in the market (Source: REPP Strategy V2, August 2017)

REPP structures its support packages to address specific project needs / challenges, intending to enable projects to get off the ground, i.e. reach financial close, begin construction and – ultimately – commercial operation. It does this by providing customised TA whilst pricing this support²⁴ at a level that these individual projects could bear. This means both the support and the pricing of that support are tailored to the specific context.²⁵

REPP seeks to price its products and services effectively to support almost viable projects just enough without distorting the market. The premium charged by REPP must be low enough to attract RE project developers requiring that extra 'push' to make their projects financially viable. Yet it must not be so low as to crowd out private sector financiers offering their own financial products (debt finance, loan guarantees, construction finance, etc).²⁶

Although tailored to each project scenario, broadly speaking the REPP team sets the interest rates for these repayments at a level between the concessional rates offered by Development Finance Institutions (DFIs) and commercial rates offered by banks.²⁷ The aim of this approach is to catalyse a commercial way of thinking amongst the RE project development community in Africa and to make such projects more attractive to private debt providers and climate finance providers. This pricing approach is also expected to maintain reasonable returns for project equity share-holders as well as attract private sector debt-providers²⁸ since REPP's support in slightly subsidising the technical assistance costs will

²⁴ Project developers repay the funding they received for TA support with interest – at a level of interest set project by project - once the projects reach financial close. If projects stall and do not reach financial close, the funds do not have to be repaid.

²⁵ REPP Strategy June 2017 confirmed through KIIs with BEIS and Camco.

²⁶ KIIs with Camco, consistent with REPP Strategy June 2017 and KIIs with BEIS.

²⁷ *Ibid.*

²⁸ KIIs with Camco, consistent with REPP Strategy June 2017 and KIIs with BEIS.

help reduce the project company's debt burden on the balance sheet (hence presenting a more favourable Internal Rate of Return (IRR) for these equity shareholders).

In addition, the REPP has sought to build a network of 'REPP Partners' to provide financial or risk mitigation support to contracted projects. A primary target of establishing the REPP Partnerships originally, as is documented in the ToC and supported by Board and BEIS KIIs, was to build the capacity of financing and risk mitigation providers to secure finance and risk mitigation for RE projects, particularly within REPP's size target range. Some²⁹ interpreted this further as aligning the due diligence procedures to ease the burden on applicants and/or to have specific products from its partners and match them to projects needing that type of product. However, as explained by Camco and BEIS, the use of REPP Partners has evolved to a more project-driven approach of facilitating links to service provider(s) offering products to meet that specific project's needs, whether or not there is already a formal memorandum of understanding (MoU) designating it as a REPP Partner (for more information on Partners see Section 2.3.3).³⁰

The evaluators observed that REPP operates very much in a 'pilot mode' of testing concepts to see what works.³¹ Within the context of the overall strategy outlined above, what REPP tests through its support of committed projects is largely demand-driven based upon the projects that enter the pipeline. For example, REPP does not issue formal calls for project proposals to meet specific criteria as has been the norm for many DFIs active in Africa.³² Instead, REPP attracts projects largely through word-of-mouth or through meeting developers at events or conferences and this has resulted in a diverse pipeline,³³ as described in Section 2.4.1.

This flexible, bottom-up approach has resulted in several adjustments to the REPP over time, yet REPP remains within its overall mandate. Key manifestations of this evolution observed by the evaluation team include the following:

- **Offering concessionary finance.** When determining the approach to support individual projects, the REPP strategy has evolved to offer more concessionary terms directly to a project to address risk – i.e. to prevent burdening the project with a cost, which (later) deters future commercial investors. However, there is an inherent tension in that the more that REPP provides to a project, which could theoretically be provided through another source, the less funding remains to support other projects.³⁴
- **New and more innovative types of support.** REPP is experimenting with additional, more innovative, types of support or financing constructions (e.g. equity) beyond that

²⁹ E.g. the contractors who compiled the REPP ToC for BEIS in 2016.

³⁰ The evaluators understood from the market actor interviews that the MoU is rather voluntary in the sense that there are no specific obligations from Partners to REPP.

³¹ This was the approach Camco described themselves as taking in workshops and interviews held with them April 2018, and it was also observed in the Board and Assessment Committee meetings attended by the evaluation team, and confirmed through feedback from KIIs with Camco, BEIS and the Board.

³² KIIs with REPP Partners and market actors, validated with KIIs with Camco and BEIS.

³³ KIIs with Camco, confirmed with KIIs with project developers, and BEIS.

³⁴ KIIs with Camco, Board and BEIS, validated through a review of REPP Strategy V2, and Structure Papers for contracted projects.

which was originally envisioned, yet still within the general TA and/or RBF frameworks outlined in the REPP Strategy Paper.³⁵

- **Broader technology profile.** The technology types and sizes and/or overall profile have evolved from original thinking, e.g. by allowing wind projects (up to 50 MW) larger than the original 25 MW limit and including support to geothermal energy projects. Also, at a recent meeting, the REPP Management Board agreed to fund a developer with multiple projects, which is something new. However, within this context, REPP continues to focus on proven RE technologies.³⁶
- **More portfolio-based approach.** As summarised in Section 2.4.1, the current mix of committed (and pipeline) projects is quite diverse. BEIS staff and Board members have recently started to act in a way that suggests a shift to a somewhat stronger portfolio-based approach; starting to put more emphasis on specific countries. So instead of hypothetically having one project each in the 19 countries originally targeted,³⁷ there would be a preponderance of projects in a handful of countries and then a few countries with only 1 project, and several of the 19 countries would not have any. Country strategies are being developed for projects where multiple projects are expected. One key area of ongoing concern is whether, or to what degree, REPP should support projects that do not (yet) have a conducive policy environment as these could be quite catalytic, or alternatively they could become stranded with no broader transformative effects possible. Yet, Board members stated they still wish to consider new projects in an as yet unrepresented, but eligible countries.³⁸
- **Shift in project status of newly committed projects.** At the beginning of implementation, REPP engaged primarily with projects in quite early stages of project development. One side effect of this is that they would take relatively longer to reach financial close, and therefore longer for BEIS to see, and report, results. As noted in the portfolio analysis in Section 2.4.1, there has been a recent shift toward focusing on more projects that are closer to reaching financial close, due in part to the high percentage of the TA allocation that has already been committed, relative to the RBF-designated funding.

The Board has indicated that BEIS are currently in the process of refining priorities which will dictate what goes into or is excluded from the portfolio, e.g. in terms of the transformational potential of the project, or level of financial risk. When updated, this will provide clearer top-down boundaries related to the themes identified above.

³⁵ KIIs with Camco and BEIS, validated through review of REPP Strategy V2, and Structure Papers for contracted projects.

³⁶ KIIs with Camco and BEIS, validated through review of Structure Papers for contracted projects.

³⁷ The country focus has shifted depending on the sources and date, e.g. the Business Case looked at 12 countries in depth and the logframe expects 17 countries and the REPP Support Policy and Guidelines_Version 1 document refers to 19 countries. The REPP website states: “Countries which are initially targeted for REPP support include: Benin, Burkina Faso, Burundi, Cote D’Ivoire, Ethiopia, Ghana, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, Togo and Zimbabwe. However, and with enough justification, projects in all countries in Sub-Saharan Africa could be eligible for support under REPP, with the exception of Namibia, Botswana, South Africa, Zambia and Uganda.” See www.repp-africa.org

³⁸ REPP Strategy V2 and KIIs with the Board, BEIS, and Camco.

2.2.3 REPP Theory of Change

The REPP ToC was initially developed and included within the REPP Business Case in 2015. However, following the commissioning of an evaluation plan in 2016, the authors of the plan proposed changes to the ToC based on an analysis of REPP documentation.³⁹ This ToC still followed the Business Case closely, but provided more detail in the ToC. It is this ToC which is presented below and is currently used by BEIS for their Annual Review process and for communicating about the Programme.

This evaluation takes a theory-based approach to enable the testing of REPP's programme approach / its ToC. In theory-based evaluations, it is common practice to begin the evaluation with an analysis of the ToC, usually through a workshop with key stakeholders.⁴⁰ However, given (i) the short timeframe for this evaluation and (ii) the fact that the ToC was only recently revised and appears to be representative of the REPP approach (see below),⁴¹ the evaluation team and BEIS agreed that such a ToC workshop would not add value. Instead, any modifications/refinements to the ToC would be made based on the evaluation findings.

Our analysis⁴² indicates that the ToC (2016) is very **clear**: the long-term impact and outcomes of REPP are clearly identified and the proposed steps towards achieving them clearly defined. This makes the ToC **testable**, though its 'testability' is influenced by the extent to which REPP collects data on ToC components, the assessment of which is provided in Section 3.2.

For practical purposes in this evaluation, its testability is also affected by the status of REPP implementation. As only a small number of projects have started to reach financial close, it was only possible to assess inputs to actions and indications of actions to outputs in this evaluation.

The **relevance** of the ToC to its target stakeholders and REPP objectives is assessed through evaluation question 1 (Section 3.3). The ToC model is **plausible**. However, several assumptions (e.g. 'potential energy customers are able to pay for energy' and 'success of REPP leads others to invest in RE') are risky – i.e. assumptions which are less likely to be realised than others.^{43,44}

The **validity** of the ToC – i.e. the extent to which the REPP results monitoring tools support the tracking of the ToC (and the extent to which the ToC is aligned with the results monitoring tools) – was investigated as part of the Review of REPP Reporting Systems and is presented in Section 4.

³⁹ The actual process followed, and resources reviewed are not yet known to the evaluation team. The team have contacted the company responsible for the review and are aiming to set up a telephone call with the authors to understand the process better.

⁴⁰ List of aspects to be assessed based on Mayne (2017) 'Theory of Change Analysis: Building Robust Theories of Change' in *Canadian Journal of Program Evaluation* and Davies (2013) 'Planning Evaluability Assessments: A Synthesis of the Literature with Recommendations', DFID Working Paper 40, October 2013

⁴¹ BEIS stated that it is happy that the model is representative. Camco also is content with the ToC, though they noted (see also above) that they do not use the ToC as a programming tool.

⁴² Using the ToC evaluability checklist outlined in Davies (2013) p20.

⁴³ See Mayne (2017).

⁴⁴ In the REPP context, the risk is highly country and project specific, for example depending on the national regulations and tariff policies.

Our analysis is that the ToC is **consistent** overall with how REPP BEIS and Camco perceive the REPP and does reflect the direction they are taking it in, with the following caveats. The current ToC does not fully reflect all of the unique elements of REPP's strategy. It also does not represent the full political and regulatory context within which projects operate.

However, it should be noted that the ToC is not currently used as a tool for programming by Camco and is being used only for Annual Reviews by BEIS. Therefore, the **utility** of the ToC as a tool is currently weak. On the one hand, this is not problematic, since REPP has alternative management tools (e.g. Camco's Dashboard reports, Management Board and Assessment Committee meetings, and Camco's regular update emails to the Management Board) which it uses for tracking progress and the need for adaptation over time (see Section 3.5). On the other hand, REPP's strategy is lacking clarity and direction in some key aspects (see Sections 6.1.1 and 7.1) which could be improved by better defining the ToC.

Based upon our evaluation findings, the evaluators recommend updates to the ToC (see Section 3.6). The evaluation team consider that this could be done through a joint Management Board-Delivery Agent workshop on the ToC and the promotion of the ToC as a framework for defining (and updating) REPP's strategy.

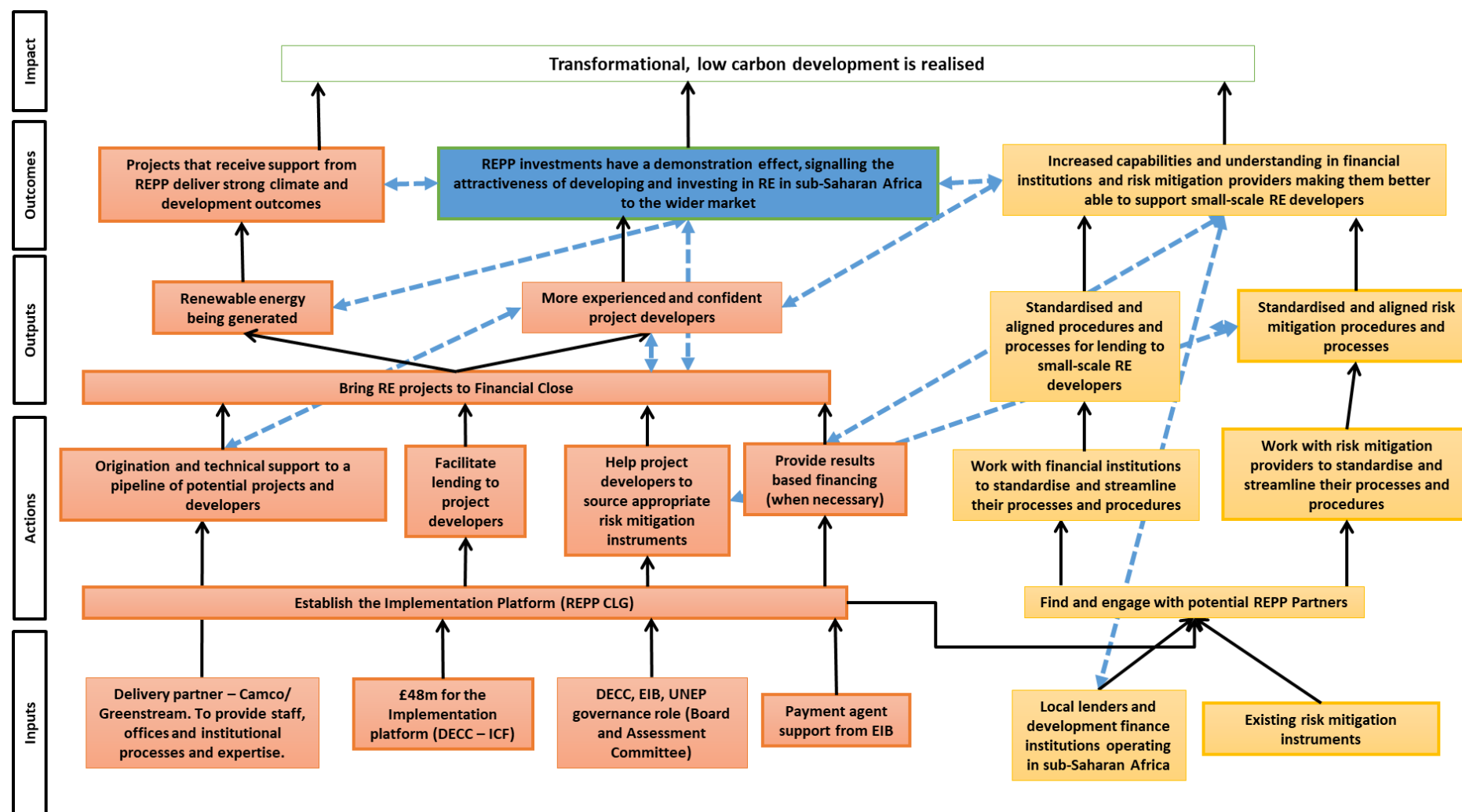


Figure 2: REPP Theory of Change⁴⁵

⁴⁵ A larger version of the ToC with assumptions is presented in Annex 2.

2.3 REPP's organisational and delivery structure

2.3.1 Organisational structure

REPP is a private limited company, limited by guarantee and is managed by the REPP Management Board that is supported and advised by the Assessment Committee – a panel of members. Camco, implementing REPP, is a private sector investment company based in London with offices in other countries, including the three African countries where REPP 'champions' are located. Champions have the role of representing REPP on the ground, originating and managing projects and delivering some of the additional technical aspects of the programme, including the identification of REPP Partners (see 2.3.3).

The Assessment Committee and the Management Board are staffed by members of Camco and BEIS, the European Investment Bank (EIB) and the United Nations Environment Programme (UNEP). These latter two organisations were the original designers of the REPP programme and they now provide institutional support (each nominate a director on the Management Board and an advisor in the Assessment Committee).

The Board oversees Camco's performance and is responsible for approving REPP operations (new products, REPP Partners, the annual budget and relations with donors and other stakeholders).⁴⁶ The Assessment Committee reviews the project pipeline that Camco proposes for portfolio selection making recommendations on level and type of support. It does not have any power to sign off on projects (though it can reject them). The Assessment Committee meets once a month (until recently it was every 2-3 months), or as required. The Management Board meets quarterly and Camco provides monthly updates (until recently these were sent on a more frequent, but ad-hoc, basis).

2.3.2 Delivery structure

REPP's pipeline development process has evolved from its first few projects and now follows a structured approach that is set up in the format described in Figure 3 below.

⁴⁶ Based on programme documentation (REPP Support Policy and Guidelines) and BEIS/Management Board interviews and Management Board meeting observation.

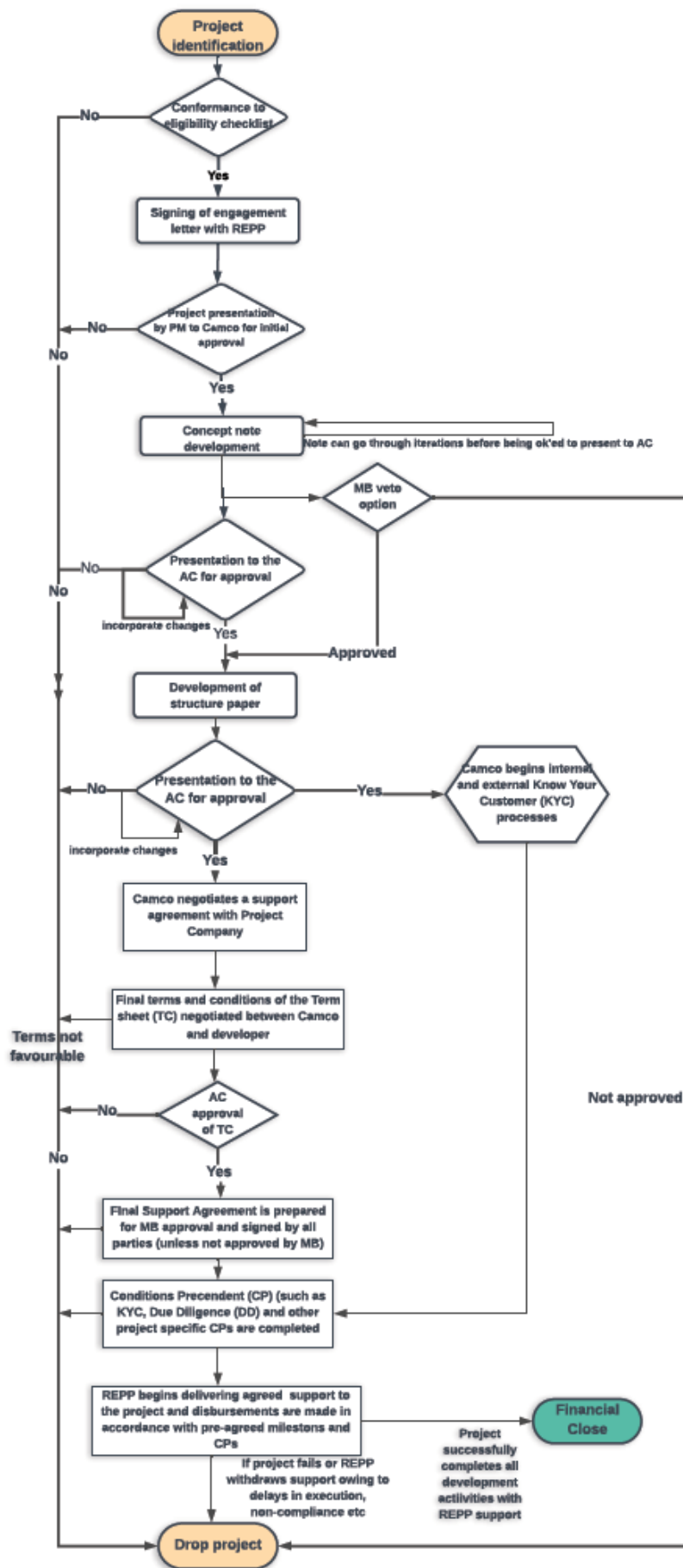


Figure 3: Pipeline Development Process (evaluation team's interpretation based on information gathered during the programme evaluation)

2.3.3 REPP Partners

Camco has at the time of writing signed agreements to engage with 12 REPP Partners. Of these 12 Partners 4 are publicly-owned and 8 are publicly-backed private financial institutions e.g. development banks, equity funds, financial intermediaries, investment agencies and fund management entities such as REPP.

REPP Partners provide a variety of project finance and infrastructure development related instruments such as loans, equity, quasi-equity loans (such as mezzanine loans), trade finance and various type of risk insurance instruments (such as political risk insurance, credit risk insurance, currency hedging mechanisms and loan guarantees etc) (see Table 1).

Table 1: The range of products in which REPP Partners specialise

Country	Equity Investment	Investment Support	Risk Mitigation Instruments (including guarantees, insurances)	Early Stage Financial Support	Insurance	Asset Management	Brokerage services	Loans
Mauritius			√					
Kenya	√		√		√			
UK		√				√		
Mauritius		√		√			√	
Togo	√			√				√
Switzerland		√ ⁴⁷		√				√
USA		√	√		√			√
Belgium	√			√				√
Netherlands	√	√						√
South Africa	√							
Netherlands	√	√	√					√

The main rationale for REPP to partner with these organisations is twofold:

- To work collaboratively to provide late-stage access to financial instruments so that REPP projects reach a level of bankability attractive to these Partners; and
- To standardise and streamline the REPP Partner's procedures and processes in lending to small-scale RE projects in Africa, thus enabling easier access for projects.

Some of these REPP Partners also provide finance for project development support and technical assistance facilities similar to REPP but based on KIIs of developers and other market actors, the evaluation team felt that REPP was not crowding out these facilities. Overall, Camco is confident in its ability to reach out and network with financial institutions (including non-REPP-Partners) to facilitate access to project support.

⁴⁷ By supplying finance to local financial institutions that in-turn provide sub loans for energy projects.

2.4 REPP Portfolio

2.4.1 Overview of the REPP portfolio

This Section analyses the make-up of the REPP portfolio. Figure 5 provides a snapshot of REPP's portfolio (i.e. contracted)⁴⁸ projects (left graph) and its pipeline (right graph). This data is true as of 27th April 2018⁴⁹ which at the time consisted of 11 contracted projects and 12 pipeline projects at various stages of the REPP selection process.

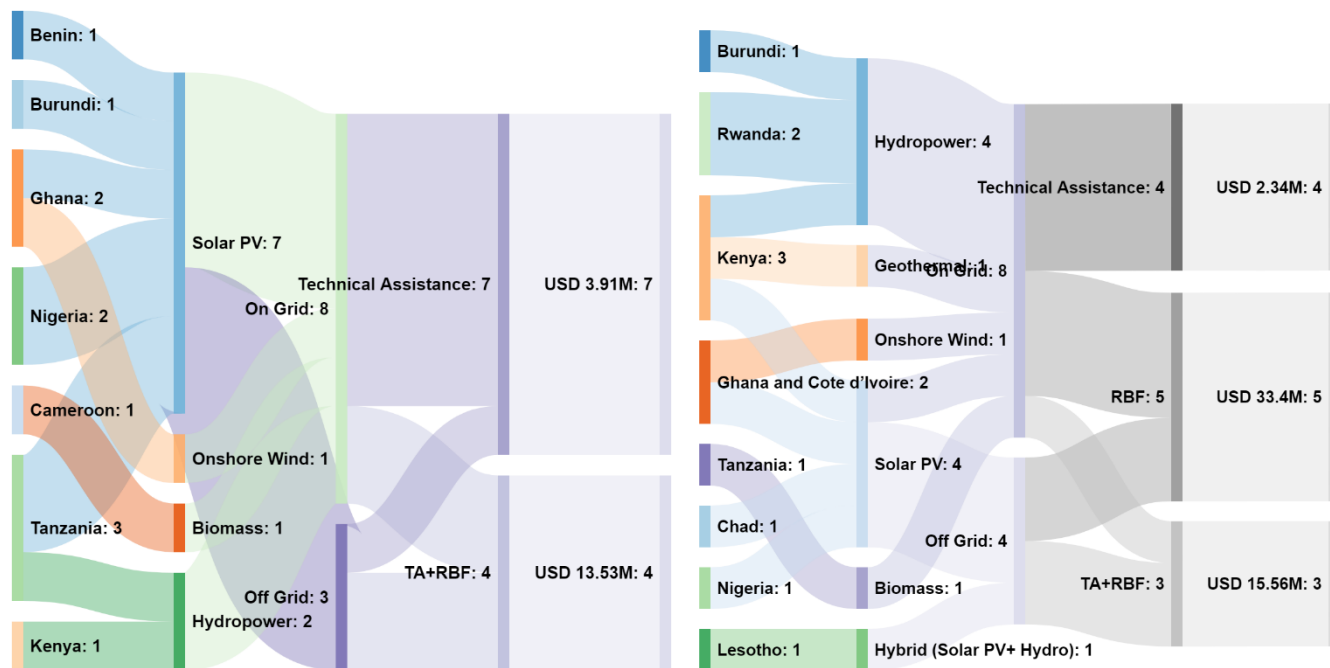


Figure 4: Overview of 23 REPP contracted projects (left graph) and pipeline projects (right graph)

A snapshot of REPP's projects provides interesting insights into the balance of REPP's portfolio and its conformity with the Business Case. It should be noted that while some pipeline projects may not finally reach the portfolio, they have been considered to reflect an evolution in the REPP portfolio.

Geographic Mix: Nineteen countries were initially targeted for REPP support.⁵⁰ Of these, REPP is already providing support to six (Benin, Burundi, Ghana, Kenya, Nigeria and Tanzania) and is on track to support three pipeline projects in two others (Cote d'Ivoire and Rwanda). Additionally, REPP supports three countries not originally targeted (Chad, Cameroon and Lesotho). When REPP supports new countries not originally targeted, the Camco develops a country strategy paper to justify the rationale behind this.

Technology Mix: As per Figure 4, REPP has taken a fairly 'technology-agnostic' approach to selecting potential portfolio projects. In terms of numbers, a majority of these projects are concentrated across two technologies: solar PV (on grid and off grid) and hydropower (on

⁴⁸ Contracted projects refer to projects that have signed support agreements (either TA or RBF or both) with REPP in place.

⁴⁹ This is the date agreed with BEIS for data collection 'cut off'; it coincides with the April REPP Assessment Committee meeting.

⁵⁰ Benin, Mali, Kenya, Burkina Faso, Mozambique, Liberia, Burundi, Nigeria, Madagascar, Cote D'Ivoire, Rwanda, Malawi, Ethiopia, Sierra Leone, Togo, Ghana, Senegal, Tanzania, Zimbabwe.

grid run-of-river). This is understandable, due to their high technological maturity, lower costs and ease of installation and repair as compared to other supported technologies.⁵¹ The only anomalous technology is a geothermal project in the pipeline. Amongst pipeline projects, REPP is supporting fewer on-grid solar PV and more off-grid solar projects.

On-Grid versus Off-Grid Mix: Of the 23 projects (contracted + pipeline), 16 are on-grid with a total expected installed capacity of approximately 262.9 MWe and seven are off-grid (SHS or mini grids) with an expected installed capacity of 13.85 MWe. Interestingly, 49% of REPP's original MW installed target (150 MW)⁵² was to be composed of off-grid RE technologies which is a stark contrast to the current contribution of 5% of the expected capacity.⁵³ Despite this massive difference, there has been no significant increase in the number or size of off-grid projects supported with on-grid projects remaining roughly twice the count of off-grid projects across both contracted and pipeline projects.

Energy production: Apart from three off-grid projects that have started deploying mini grids or SHS on the ground, it is still to be determined how many of the remaining 20 projects will be built. If REPP achieves even half of this expected capacity, it should be able to meet its long-term targets in terms of total capacity installed. It is important to note that two on-shore wind projects contribute to just over 36% (100 MWe) of this expected capacity and thus their implementation success will have a dramatic impact on the final results.

TA versus RBF Mix:⁵⁴ As observed from Figure 4, all 11 contracted projects have signed TA support agreements with REPP to the tune of up to USD 5,469,000; and four of these also include some form of RBF support (of up to USD 12,000,000).⁵⁵ Three of these RBF agreements are designed to support the three contracted off-grid solar projects to address a funding gap in necessary capital expenditure to facilitate roll-outs. The remaining RBF package is for an on-grid project that requires REPP support to provide a construction finance bridge loan. Given none of the other on-grid projects are close enough to financial close, these are not yet in any active RBF discussions with REPP.

Overall, there has been an evolution in REPP's approach to financing, with increased RBF support (up to USD 45,156,000) being reserved for projects that have (almost) completed all technical project development activities. This confirms the current REPP strategy outlined in Section 2.2.2 of supporting more projects at an advanced stage of development. All off-grid projects will receive RBF support, indicating REPP's intention to support early-stage scale-up and expansion of off-grid projects as part of its mini-grid strategy.⁵⁶

TA support (of USD 3,433,287) is only currently offered to seven of the 12 pipeline projects. The TA provided ranges from \$270k to \$900k per project across the portfolio and pipeline. RBF per project ranges from \$1.5 million to \$13 million with bigger RBF deals being observed in the pipeline as compared to the portfolio. This seems to be due to the inclusion

⁵¹ It is part of REPP's approach to only work with projects using proven technologies.

⁵² REPP Business Case. Value for Money Appraisal. Page 28, Paragraph 117.

⁵³ The evaluators understand that this was because the Business Case calculation was based upon analysis of a proxy pipeline of 17 projects which were quite balanced between on-grid and off-grid. The actual pipeline differs from this proportionally as well as in number.

⁵⁴ This Section tracks the total 'committed' TA and RBF to 23 projects in the REPP pipeline and not what has been disbursed.

⁵⁵ Only one project has a signed RBF agreement and the other three were in advanced stages of negotiation as of April 27, 2018.

⁵⁶ REPP Mini Grid Strategy 2017.

of 'big ticket' on-grid projects such as wind and geothermal in the pipeline, which are being offered direct RBF support.

Comparison to REPP Business Case

Figure 5 compares REPP's current financial commitment to the estimate in the Business Case. The Business Case estimated a total spend of USD 11.7 million on TA and USD 34.8 million on RBF services. It is evident that while REPP is in line with its spending targets for TA support, the level of RBF support envisaged is almost 1.6 times that which is available. Given that REPP has not yet seen any funds getting 'recycled' through loan repayments, since projects have only started gradually to reach financial close (see Section 2.4.2), honouring such large RBF payments may become a challenge.

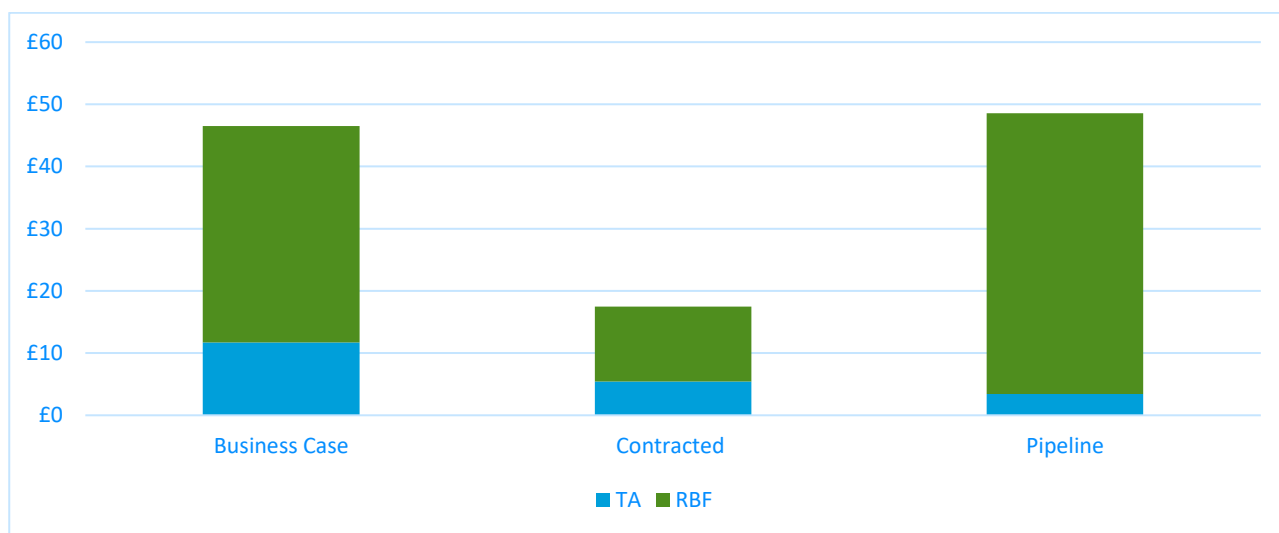


Figure 5: Comparison of available TA and RBF committed (Business Case, portfolio and pipeline) in millions of USD

2.4.2 REPP project development support

The stages at which REPP provides support

REPP provides project development support tailored to the needs of the developer. These needs are determined by context, developer capacity and the stage of development the project has reached when encountering REPP. Figure 6 below provides a broad overview of these stages and maps out where REPP usually joins this process.

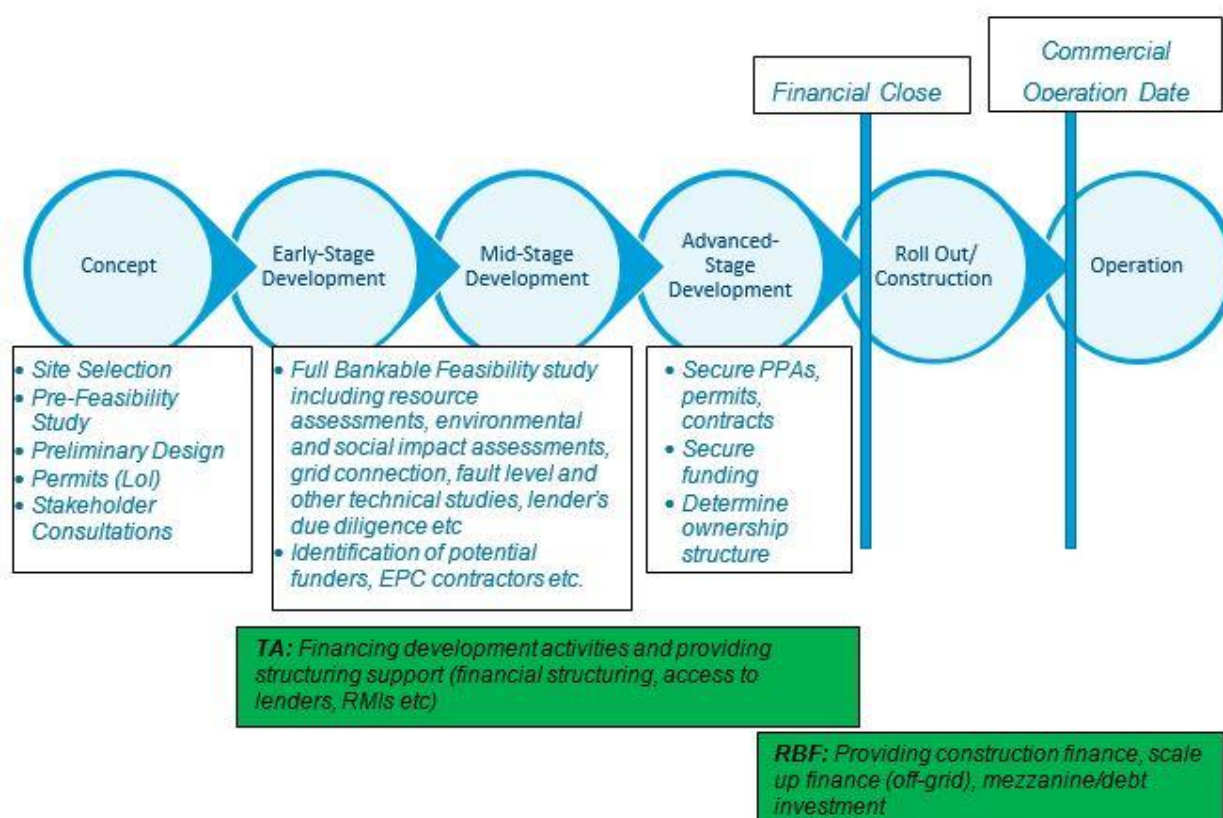


Figure 6: Development Stages of a typical RE project and positioning of REPP's offering in this process

TA services comprise (i) funding to pay for a proportion of a developer's third-party development expenses (including feasibility studies,⁵⁷ lender's due diligence and legal, social and tax advice) in the form of a reimbursable grant (soft loan) that is repayable, with interest, if the project reaches financial close; and (ii) support with financial structuring and arrangement, including linking REPP projects with REPP Partners and other financial institutions.⁵⁸ RBF has the aim of 'topping up' the economics of a project to an acceptable equity rate of return.⁵⁹

RBF (in its current form) involves complex financial instruments intended to close the funding gap preventing projects from reaching financial close. For off-grid projects, RBF is mainly structured as debt finance for the capital expenditure costs needed for the construction (mini grids) or purchase (SHS) of equipment. For on-grid projects, RBF is being structured innovatively to provide different financial instruments such as: senior debt, subordinated or junior debt, mezzanine loans such as quasi-equity loans (with equity conversion options). An analysis of these suggest that they are indented mainly to provide construction finance or, in the case of geothermal, exploration drilling finance to help projects reach commercial operation date (COD). The assumption is that this will then create more secure and attractive terms for senior lenders to refinance the project upon COD.

REPP tries to maintain diversity in its portfolio, in part, by selecting projects that are at different stages of project development (except for concept stage). The rationale for this is

⁵⁷ Covering aspects such as grid connection studies, fault level studies, resource assessments, environmental and social impact assessments (ESIA), etc.

⁵⁸ REPP Strategy V2, August 2017.

⁵⁹ *Ibid.*

to ensure that REPP is selecting both promising early-stage projects with high transformational potential as well as projects close to financial close but stuck owing to a critical gap in funding.

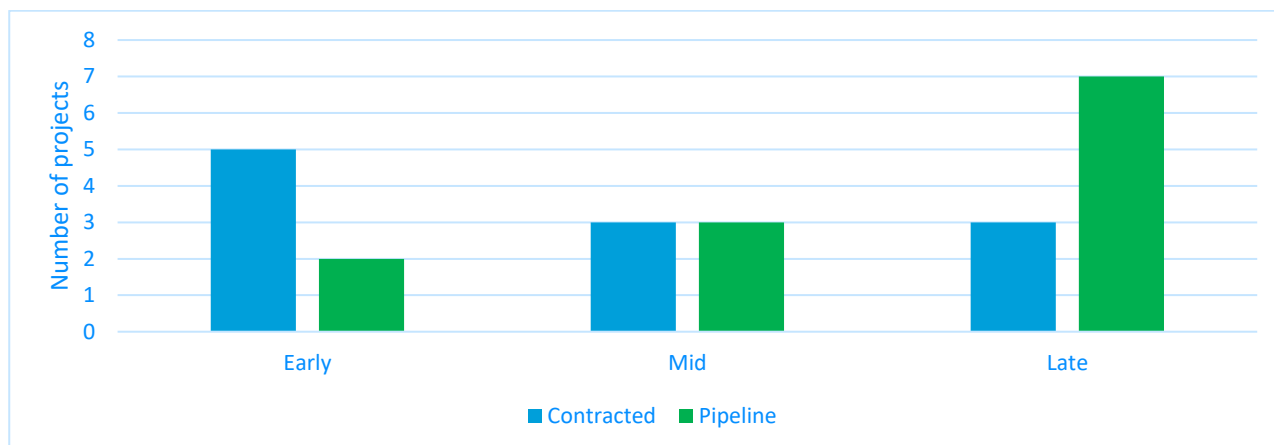


Figure 7: Portfolio and pipeline projects by stage of development (at the time of REPP origination)

As evident from Figure 7, there has been a shift in REPP's approach in selecting projects based on the stage of project development. The contracted projects were composed of several early stage projects while the pipeline projects selected are at more advanced stages of project development. This conforms with REPP's current strategy of assisting projects closer to financial close thus allowing BEIS to report verifiable progress against its logframe targets and also partly to begin using REPP's currently underutilised RBF budget.

REPP portfolio progress towards financial close

Table 2 provides an overview of the time that projects are currently expected to take to reach financial close from the date of signing the support agreement with REPP.

Table 2: Status of project with respect to reaching estimated financial closure (as of 27th April 2018)⁶⁰[illegible]

As evidenced in Table 2, the three off-grid projects in REPP's current portfolio have reached financial close. Financial close for such off-grid projects implies that the projects have fulfilled all necessary project preparation activities (community engagement, environmental and social impact assessments (ESIA), securing funding support) for a tranche of installations (that are beyond pilot plants) and are ready to begin rolling out the equipment on the ground. RBF support is currently under preparation for two of these projects to fund further expansion and roll-out. None of the on-grid projects have reached financial close, likely because they can only begin construction once they have all the necessary finance, approvals and permits in place. By contrast, off-grid projects can roll out equipment in batches.

According to Camco, all mid-stage projects are expected to reach financial close by the end of 2018, indicating that the average time to move from support agreement to financial close is roughly around 1.5 years. On the other hand, apart from one early development stage project, all other such projects are not expected to reach close until the third quarter of 2019. This includes two projects that were first to sign support agreements (in late 2016). The average time for early-stage projects to reach financial close is 2.5 years. The REPP Business Case estimated that it would take approximately nine months to go from due diligence to financial close.⁶² This shows a significant forward shift from REPP's original projections, indicating a clear mismatch in expectation versus reality.

⁶⁰ The projected financial closure timings for each project is based on Camco's current estimates and not available in any project documentation.

⁶¹ Refers to the stage projects were at when signing REPP support agreement.

⁶² REPP Business Case. Value for Money Appraisal. Page 55, Annex 3.

2.5 REPP Market Context

Annex 2 presents a detailed analysis of the market context in each REPP country. Table 3 below provides a summary and the evaluation team's judgement of the additionality of REPP's engagement in the seven countries in which it is currently implementing its 11 contracted projects. This assessment is based on data from secondary literature review and interviews with market actors.

Table 3: Summary of the market context per country in which REPP has contracted projects

Country	Current Market Context	REPP Additionality
Kenya	Stable and investable government policies, but relatively slow progress owing to delayed and lengthy planning and approval processes (current oversupply compared to demand for electricity possibly one major reason). Pioneering country for off-grid solar in Africa, with several successful PAYG companies with innovative business models leading the trend. On-grid has also attracted lot of interest from investors.	Lack of easily available early development stage finance, so REPP's role seems to be in: • providing early stage support to projects to reach financial close; and • in only cautiously providing RBF funding in cases where it is truly additional and innovative.
Nigeria	Finance in the on-grid space (e.g. from the World Bank) seems to focus on fixing the distribution and transmission networks with little evidence of spurring growth into new RE generation solutions. In general, interest from local and international private investors in Nigerian on-grid RE projects is negligible owing mainly to the local currency depreciation and restrictions in use of foreign currency to pay for energy tariffs. Off-grid sector showing promising signs of growth given the heavy reliance on diesel generators across the economic strata and hence high ability to pay. However, the depreciation in the national currency (Naira) still a concern hindering the growth of this fledgling sector.	Opportune timing for REPP to support early stage development of small scale (particularly off-grid) solutions to demonstrate its investability potential and unlock further private finance.
Benin	Current institutional and regulatory framework to support RE is poor. Credit worthiness of off-taker is low. However, momentum to support energy sector and encourage private to invest in RE is high.	Given REPP is supporting the first-of-its-kind IPP RE project in Benin, this can be instrumental in attracting further public and private sector into a country where it is currently negligible.
Burundi	One of the hardest places to do business in. High political risk coupled with unfavourable market environment and lack of legislation keeping investors away with the EU being the only identifiable donor in the country.	Similar to Benin, REPP is playing a crucial role in the development of RE capacity in the country to create a market where there essentially is none.

Country	Current Market Context	REPP Additionality
Cameroon	Positive developments in enabling environment triggered by the government. A few commercial players are active in the market (e.g. Eco-Bank) but owing to short tenor requirements coupled with the low capacity and expertise of local commercial lenders in RE, these barriers are still preventing the influx of more private sector finance into the country. Furthermore, the political stability in the region is rather low owing to the infighting between anglophone and francophone parts of the country. Hence any further investment needs to be carefully considered.	REPP support to first-of-its-kind IPP RE project in Cameroon likely to demonstrate viability of such investments in the country. Potential to crowd-in additional investors could therefore be high assuming a stable political environment.
Tanzania	Recent unfavourable regulatory changes (such as Power Purchase Agreements (PPA) reductions) and internal ministry tussle has heavily impacted the sector, particularly on-grid which is reliant on necessary regulatory approvals. The off-grid sector is still considered attractive to private sector investment, although availability of debt finance is still challenging particularly at early stages of the project.	Current regulatory environment can hinder growth in the on-grid sector and REPP support needs consideration given the reduced potential for demonstration effects owing to these regulatory barriers. However, REPP support in the off-grid sector can be helpful to develop the market and attract more private sector investment to it.
Ghana	Ghana has a comprehensive institutional framework for RE in place but given the current oversupply of electricity, incentives to sign new PPAs is low. This coupled with challenges in obtaining a Put-Call Option Agreement (PCOA) owing to Ghana's financial debt burden is slowing the sector and denting investor confidence.	With the current market, regulatory and financial challenges the country faces, the incentive to support projects needs to be carefully considered to avoid 'artificially' subsidising projects that will not necessarily attract future investment unless these high-level barriers are resolved.

3. Process Evaluation of the REPP

3.1 The appropriateness of REPP's strategy and its additionality

Is the REPP strategy, and its processes, facilitating the achievement of the programme's desired outcomes in all countries? Are there preferable alternatives?

3.1.1 Key elements of the REPP strategy

During the inception phase of this evaluation, the evaluation team performed a review of the ToC and conducted scoping KIs with Camco and BEIS staff, through which we understood that the REPP strategy at its highest level is designed to:

- Increase the capacity / potential for developing and investing in RE in Sub-Saharan Africa – both amongst Partners and project developers;
- Demonstrate (through project completion and dissemination) the market potential and commercial returns for developing and investing in RE in Sub-Saharan Africa;
- Deliver development and climate benefits stemming from successful projects;

Whilst at the same time:

- Being additional to the market (i.e. no viable alternatives and adding value projects) and crowding in commercial finance; and
- Not crowding out the private sector.

For a more in-depth discussion of the REPP strategy, see Section 2.2.

3.1.2 Increasing capacity and potential for projects

On increasing the project-development capacity of developers

The evaluation team judge the REPP activities to be **well-designed to positively impact the capacity of individual project developers** for developing more RE projects in Sub-Saharan Africa. The views of REPP-supported project developers and other market actors converge in this regard. As illustrated in Box 1, **project developers provided positive examples of how their capacity is being built through engagement with REPP**. They mention an improved understanding of (international) investor requirements, the replication of REPP-learned best practices learned on non-REPP projects, joint trouble-shooting of issues (with REPP), learning from comments provided on draft studies or financial models, and project experience as their project progressed through development, resulting in increased confidence as well as knowledge of potential issues and experience in overcoming them. Promisingly, **some project developers reported that they planned to expand and replicate existing projects** following the above-mentioned best practices instilled by REPP.

On linking project developers with REPP Partners

Given that only a small number of projects have started to reach financial close, it is quite early to see significant evidence of REPP linking project developers with REPP Partners or

other development and commercial finance providers. Yet, a majority of contracted developers reported that they had benefitted directly from REPP support in engaging with potential partners.

A few developers noted that they are too early in the development process to fully engage with REPP Partners or similar market actors; some of these have been in initial discussions but are not yet at the point of reaching an agreement.⁶³ This subset, however, commented that they assumed REPP would be able to help them make connections, as Camco is reputed to have a wide network. A few developers noted that they had their own networks or otherwise did not need REPP support in this area.

From the other side, REPP Partners consulted said that **REPP tends to commit to smaller projects (in terms of project investment size) at an earlier stage than are feasible for the REPP Partners to provide support.** Yet, several noted that access to the REPP pipeline was a consideration in engaging further with REPP. A few mentioned that they do “exchange project leads” with REPP periodically (i.e. discuss mutual pre-pipeline opportunities in order to see if there are any opportunities each might be respectively interested in).⁶⁴

Box 1: Stakeholder feedback regarding making linkages

“We must rely on people like [project champion] to give us information or bring us together with partners they have in the network, we would like very much to take advantage of that in the future and we think that is extremely valuable.” – *a developer with an active project: on-grid*

“We’ve definitely made a number of contacts with investors through REPP. Over the years they’ve been very helpful in putting us in touch with different types of capital varieties if we asked if they had any ideas. So, I would say definitely yes, it’s been very helpful, the contacts and networking put together.” – *a developer with an active project: on-grid*

“I think they’ve been helpful in supporting conversations [with two market actors]. I think our challenge is still that when we get to these conversations these investors are looking for commercial returns and currently the market is just not quite ready for that.” – *a developer with an active project: off-grid*

“Yes, absolutely, the most significant one I would say is with the personal risk guarantee by the [risk management institution] and our [missing] facility. Even though we knew about them, and we even interacted with them beforehand, it was absolutely a big part from REPP and [our] actual relationship [with REPP] that made a difference in terms of them participating in this project.” – *a developer with an active project: on-grid*

“We would never have touched [the project] without prep and when REPP contacted us for that project, the initial response was blunt refusal, and then it was by talking, and also by talking to our stakeholders, that gradually we warmed up to the idea and we decided to give it a go. They have really demonstrated, let’s say, their added value.” – *a REPP Partner*

“REPP partnerships and networks in [the country] were weak. REPP did not introduce us to anyone – we introduced REPP to partners in [the country].” – *a developer with an active project: on-grid*

⁶³ The main reasons for this – observed through the market actor interviews – is the relatively small project investment size of REPP-sponsored projects and too low IRRs (for commercial investors).

⁶⁴ The responses quoted in Box 1 correspond to the following questions: “How satisfied with REPP support” (quote 1); “Have any of these partnerships developed or evolved because of REPP, or has REPP put you in contact with any new partners?” (quotes 2-4 and 6) and “What were the main reasons for your organisation to become a REPP partner?”

On reducing developer burden

One of the principles behind engaging REPP Partners was to help streamline the know-your-customer (KYC) and/or due diligence (DD) process for developers and/or financial institutions.⁶⁵ Essentially, the aim was for REPP to handle these steps in such a way that the REPP Partners could minimise their effort. The REPP Partners interviewed confirmed that this is happening (see Box 2). In a similar vein, the REPP Partners, as well as the market actors that addressed developer burden in their KII, commented that REPP's requirements, such as for due diligence, seem fairly well aligned with their own.⁶⁶

Box 2: REPP Partner feedback on reducing the burden

“We have been relying heavily on the preparation work that has been done by REPP. So, basically normally we do quite extensive underwriting and basically, they've done the underwriting for us. [The] senior lender has also changed, let's say, its attitude towards the project.” – a REPP Partner

“We do actively identify projects. We wouldn't only piggyback on something that was already there, but we do see the value of coming in early. That's really one of the reasons why we want to work with REPP, because coming in early helps us structure projects in a way we think is investible for us.” – a REPP Partner

“The guys who come to REPP need REPP, they're unstructured, not necessarily commercial in any way, it's a tough animal to deal with. We're delighted because they're doing some of that initial legwork to kind of hammer these projects into shape. So, the quality of pipeline is mixed but that's because of what they do, I'm not sure I would necessarily do anything differently.” – a REPP Partner

3.1.3 On demonstration effects

There are differing views amongst REPP internal stakeholders as to whether projects are more demonstrative when they are demonstrably bankable (this seems to be the approach assumed in the REPP ToC), they are 'first of a kind' unique (i.e. a 'proof of concept'), they have been implemented in sufficient number / different contexts to prove their effectiveness.

As few projects have yet reached financial close, it is difficult to draw conclusions as to their 'bankability'. Our analysis of the REPP due diligence procedure and selection process suggests that this analysis is thorough and that therefore, REPP is doing all it can (within its remit) to select projects which are demonstrative in this sense. In terms of being 'first of a kind' projects, the evaluators consider that around a third of REPP portfolio meet this description. For example, one REPP project, if completed, is expected to increase that country's national grid-connected RE capacity by 20 percent and at the same time would be the first national private-sector financed power project and is therefore likely to have a notable demonstration effect. There has been little focus so far within REPP's strategy on funding several of the same kinds of projects within a similar or comparable context in order to evidence effectiveness (though there are signs that some of the Management Board's members are considering / have considered this as a potential direction).

Another 'angle' through which a project could be considered 'demonstrative' is if it is 'replicable', though this is difficult – if not impossible – to prove ex-ante. Also, all stakeholder groups⁶⁷ reported that other market actors (e.g. impact investors and venture capitalists) are starting to move into spaces they previously avoided after noting REPP activity.

⁶⁵ REPP Strategy Paper V2. See also Section 2.2.

⁶⁶ REPP's DD procedures, like most commercial/development finance institutions, are compliant with IFC Standards.

⁶⁷ Developers, Camco, market actors, REPP Partners, BEIS.

Overall then, **it has been challenging for this evaluation to assess REPP progress towards its expected outcome of ‘demonstration effect’.** This is partly due to **inconsistency in, or even absence of, a clear definition and scope (criteria) for ‘demonstrability’.** Demonstrative power depends not only on projects being demonstrable to others (whether in the sense of being applicable or effective, or both), but also on key stakeholders disseminating information on these projects. Dissemination does not seem to be a priority area of REPP’s work: it is not covered in the ToC; only marginally covered in the logframe and little focus has been given to it in REPP’s day-to-day running. That said, interviews with market actors demonstrated quite a high awareness of REPP, including amongst commercial actors, amongst those already operating in the Sub-Saharan African market context. Nonetheless, these actors converged in arguing that **REPP could – and should – improve its awareness-raising around its strategy and scope.** It is therefore likely that they could also raise awareness around the demonstrability of REPP projects.

3.1.4 Evidence of alternatives to REPP

The evaluation found no evidence of consistent, viable alternatives to REPP in supporting early-stage development of small RE projects in any of the targeted countries. While grant-based TA and RBF offerings are not unique, the financial market actors interviewed and the case study findings emphasised that REPP’s products are not directly comparable as no other Project Preparation Facilities (PPFs) offer the same kind of flexibility in their offerings as REPP. These market actors viewed this flexibility, in particular the combination with project/finance structuring from knowledgeable experts with direct local experience, to be what differentiates REPP from others. The consensus from stakeholders engaged for this evaluation is that: commercial financial institutions have a growing interest in engaging with small-scale RE, even at earlier stages, but that this interest has not quite materialised into action yet.

Similarly, **some developers reported that an openness seems to have increased in their markets in the past few years, but most did not report an appreciable change that they recognised.** The market actors also noted that impact investors and venture capitalists are starting to enter the early-stage development phase as well, usually with equity. However, **they are expecting commercial IRRs, which probably makes it tricky to manifest.**

Stakeholders did report that, to the extent it is available, development finance is more accessible than commercial options;⁶⁸ and a few projects are already, or are expecting to, receive partial grants. Yet, even the development finance technically available was reported as difficult to access in practice, especially at the early stages of project development (which REPP targets). A few developers noted that financing was particularly difficult to access in rural areas, *“where the development has to take place before anything else can take off in the country”*, even if there is a fair amount of financing activity in the cities (See Box 3).

While information from stakeholders is not comprehensive or consistent for every REPP country, or for on- versus off-grid projects, stakeholders indicated that, to the extent funding

⁶⁸ Among the reasons for this is that private capital markets – aside of Kenya and Nigeria – are underdeveloped and/or none existent. Moreover, some of the DFIs may actually crowd-out commercial funding due to the concessionality that they can offer and lower IRRs.

was available, it was more likely to be available in countries like Kenya,⁶⁹ Ghana⁷⁰ and, to a lesser degree, Nigeria.⁷¹ It was unlikely in countries like Benin, Burundi, or Chad. Though not a REPP target country, some mentioned South Africa⁷² as an incomparable case due to its high degree of development relative to other parts of Sub-Saharan Africa (Annex 4 presents the evaluation team's context analysis by country).

The barriers to finance for small RE projects in the countries targeted by REPP are numerous and complex, with each country having its own unique barrier profile. Yet, some themes emerged from the stakeholder feedback relevant to report here as context for the lack of alternatives to REPP reported. For example, **several stakeholders commented that once the institutional framework is sufficiently developed, the private sector will become more interested and provide financing for RE – albeit at later stages than REPP is currently targeting.** Others mentioned the lack of capacity and experience both with government regulators, such as for permitting or drafting realistic PPAs, and local banks, such as in understanding the risks and development cycle for small RE projects. A few mentioned that corruption is an issue in the country(ies) in which they operate. While it is important that REPP reflects and prioritises what it means by transformational impact, generally speaking, true transformational impact (i.e. strong enabling business environment attractive to private finance and investment) will require a strong and stable regulatory and institutional environment. While successful demonstration projects could prompt policy makers to engage and set up favourable regulatory frameworks, if the regulatory environment doesn't shift favourably to attract other developers and investors, then a few stranded demonstration projects are unlikely to have a significant impact resulting in a lost opportunity.

Given that the level of effort to navigate these issues is similar for all project sizes, the relative burden of the transaction costs is disproportionately on precisely the types of small RE projects in difficult markets that REPP targets.⁷³ Especially as staffing as well as any existing investment costs must be carried through a process that can last from four to ten years, according to stakeholders. In contrast, several developers anticipated that the REPP support would help them gain access to other finance, as indicated in the subsections on crowding in and crowding out below.

Box 3: Stakeholder feedback on alternatives to REPP

“ I think in general, funds are available. I guess the access to them is then another question”. – *a developer with an active project: off-grid*

⁶⁹ As indicated in the market context analysis, Kenya is the only country that has solid access to finance for both on-grid and off-grid small-scale RE. (See the market context analysis in Annex 4)

⁷⁰ Ghana has the regulatory framework in place, which is much more advanced than its peers, especially the legal enabling environment for off-grid, but access to finance remains problematic. This is due to Ghana still being under special surveillance by the IMF. (See Annex 4)

⁷¹ Nigeria's local investors almost entirely ignore the RE sector. International interest to finance is there especially in off-grid, given the country's vast amount of people without access to electricity, but currency risk and security issues still provide obstacles for funding. (See Annex 4)

⁷² South Africa's commercial finance sector is much more advanced concerning RE investments than any other in Sub-Saharan African countries, with many private equity funds, impact investors, and commercial banks funding projects. (See Annex 4)

⁷³ This finding stems from feedback obtained in KIIs with developers, Camco, BEIS, and REPP Partners and market actors.

“Size and risk appetite is not there in the international commercial bank world. We’re clearly too small for anything capital markets related, so that’s not an option either.” – *a developer with an active project: off-grid*

“We haven’t found any private sources of development money. That’s why it’s so difficult. There’s nothing on private except for fools like myself.” – *a developer with an active project: on-grid*

“None other than self-funding, we financed it ourselves for development.” – *a developer with an active project: on-grid*

“No, there really aren’t commercial alternatives at all for early stage development costs. [...] We had definitely tried to get [public] funding for these projects for some time and were not successful.” – *a developer with an active project: on-grid*

“Private commercial is zero, there are none.” – *a developer with an active project: on-grid*

“There’s a profound lack of local currency financing. [...] The price of financing is high. [...] The finance is a mismatch for the early stages of the eco system.” – *a market actor referring to off-grid*

“There is a lot [of financing available] but the products are not adapted. For example, [our institution] has a lot of resources but it’s expensive to get those resources and the interest rate is very high, and then the maturity is not long enough to cover those interest rates.” – *a market actor: Africa-based*

“I think in most commercial banks the appetite is there, but the expertise and maybe understanding the risks in renewable energy projects and the need for long-term funding [is not there].” – *a market actor*

“A lot of commercial guys say there is no flexibility or leniency to compromise or cut corners on the process and the process is expensive and small projects can’t afford it.” – *a REPP Partner*

3.1.5 Evidence of crowding in or crowding out other financing or support

A fairly strong body of evidence generated through this evaluation and more specifically through the case studies indicates that **REPP is *not* crowding out other financial support** during different project development phases pre-financial close and **is therefore additional**. All stakeholders were consistent in reporting virtually no commercial financing for early-stage projects similar to that provided by REPP. While most developers reported that they expected to engage with other funders later, a few indicated that, once they found REPP, they stopped looking for other potentially similar forms of public finance that are available in the market for pre-financial close funding.

Several stakeholders of all types mentioned that **publicly-supported development finance options did exist**, for long term project finance support (such as concessional debt or equity) yet also qualified this by reporting **that their project did not seem to be a fit for these options**, due to *inter alia* small size, risk profile, or unrealistic terms/interest rates, and/or these sources preferred to come in later in the project development timeline than REPP. Some stakeholders commented that the level of effort investors must expend for small projects is about the same as for a large project, if not more, which contributes to their unattractiveness. However, until projects reach financial close, findings as to ‘crowding out’ can only be indicative; it is not until projects reach financial close, and the total composition of financing is complete, that REPP will be able to fully assess its impact on other market actors.

In relation, specifically, to RBF, it appears that REPP’s RBF package is well-intended and that viability gap-financing using RBF is a good approach. However, given that such RBF deals often end up quite complex and large, requiring a lot of financial management and

long-term investment thinking, they can be quite time-consuming to manage. It may therefore be useful for REPP to develop a framework to verify and justify clearly that there are no other investors (including within the REPP network) capable of providing such finance when requested from REPP, particularly for markets in some countries in Sub-Saharan Africa, such as Kenya and Ghana, where the regulatory framework is already in place and hence investor interest has been already quite high (as demonstrated by the case studies in Annex 5).

There is less evidence currently to support analysis of ‘crowding in’. A few developers mentioned that they experienced increased or positive interest from other funders, *once those funders saw that they were working with the REPP*, either due to the concrete ways that REPP helped increase project viability and/or due to the inference a market actor could make: that the project was viable (assuming that REPP had done the initial work of assessing project viability).⁷⁴ However, commercial finance institutions, in particular, seem to have a low appetite for REPP projects in the early development stage due to (internal) IRR requirements that are typically above REPP-funded projects. Moreover, the national private capital market is underdeveloped for the type of small-scale RE project investments that REPP targeting in most of REPP’s focus countries, which means that commercial finance is mainly coming from international commercial finance institutions.

Box 4: Developer feedback on crowding in/out other financing

“ [REPP support] really allows us to sort of prove our metrics and get our numbers up, so commercial funds start looking more interesting.” – *a developer with an active project: off-grid*

“ The development project assistance from REPP was very instrumental to actually getting investors. [...] the REPP team shared details of the due diligence that they conducted [...] and that significantly also gave [the public financier] some comfort to forge ahead with the discussions.” – *a developer with an active project: off-grid*

“ I think the fact that we had a project approved and funded [...] by REPP had definitely helped the engagement and these organisations took our project very seriously indeed.” – *a developer with an active project: on-grid*

“ Funders are keen and interested, and really like what we’re doing, but at the same time find it’s been too early stages for them, so REPP coming in with the TA and RBF, both of them are important. both the TA and RBF has been quite instrumental in getting us on a firm footing, and that’s what will trigger more financing from funders, larger funders.” – *a developer with an active project: off-grid*

“ There is no private sector to crowd in. So, the role that REPP is playing is like green liquidity where there is none so it’s a very valuable role to play.” – *a REPP Partner*

“ Most of the projects we have seen, or we have been shown by REPP are well-structured and make life a lot more easier for us.” – *a REPP Partner*

“ REPP is not really crowding in commercial finance (yet), as IRRs are too low and/or projects are not bankable and/or don’t reach financial close.” – *a market actor*

“ I don’t think the facility outprices what we have seen in the market being provided by other players in the same space.” – *a REPP Partner*

⁷⁴ See also the Sections presenting the case studies and market context analysis.

“ I would say on the REPP facilities, structures it in a way that will still allow for other growth type of capital to come in. REPP is getting in early stage, providing more equity type of financing, so naturally we would follow up and come after that.” – a REPP Partner

3.2 REPP outputs and progress towards outcomes

Are the REPP's outputs being achieved as planned?

What evidence is there to date that outcomes have been or are likely to be achieved and what are the factors that might explain these?

3.2.1 Defining REPP outputs and outcomes

Both outputs and outcomes are set out in the REPP ToC (see Section 2.2.3) and both are monitored in the REPP logframe. The outcomes in both more-or-less align, but several outputs listed in the ToC do not align with any logframe output and vice versa.

Based on analysis of the ToC, the logframe and on the evaluation team's findings, we consider the following to be REPP target outputs and outcomes. The remainder of this Section assesses progress against these outputs and outcomes:

- Outputs resulting from REPP's direct action to support projects:
 - Projects reach financial close
 - RE generated
 - Social benefits (e.g. energy access and jobs created)
 - Project developer capacity is improved
- Outputs resulting from REPP's direct action to work with Partners:
 - Alignment of Partner procedures and processes (for lending to or risk mitigation for small-scale RE developers) with REPP
 - Acceptance of REPP DD procedures as a reflection of project viability
 - REPP Partner support to projects
- Output resulting from REPP's work overall: finance leveraged due to the project being more attractive, either because it has REPP interest at all or because the project has reached financial close.

The outcomes are considered to be the same as those in the ToC:

- REPP investments have a demonstration effect, signalling the attractiveness of developing and investing in RE in Sub-Saharan Africa to the wider market.
- Projects that receive support from REPP deliver strong climate and development outcomes.
- Increased capabilities and understanding in financial institutions and risk mitigation providers making them better able to support small-scale RE developers.

3.2.2 Achievement of REPP outputs

Outputs resulting from REPP's direct support to projects

The extent to which REPP has developed a relevant pipeline and contracted projects

REPP has made positive progress in developing a pipeline and contracting projects. In 2017, REPP fell just short of the targeted number of projects contracted (10 were contracted instead of the target of 11). However, this was not significant. The reason for not reaching the target was administrative: the Management Board was not available to approve in the last two weeks of December. So, approval was only received in January. By the end of January 2018, REPP had signed up twelve projects for support. Four more pipeline projects now have support agreements and several others currently on the way to getting contracted. This indicates that REPP has now reached and might well exceed its cumulative target of 14 for 2018.

The REPP logframe counts the number of projects supported by REPP each year as an indicator supporting analysis of the amount of RE created.⁷⁵ The REPP logframe does not count the number of projects in the pipeline, number of projects presented to the Assessment Committee / Management Board, nor the number of projects considered and dropped; however, this is one of the areas where REPP is considered to have been highly efficient and effective (see Section 3.5.2). Such monitoring might have been useful for BEIS in maintaining a more real-time analysis of progress. It is probably unnecessary (too late) for a relevant indicator on this to be added to the logframe now, but BEIS might consider better integrating indicators that monitor portfolio composition in its future programme logframes.⁷⁶ Currently, REPP monitors pipeline progress through the discussion and presentation of projects at REPP Board meetings, which is facilitated using Camco's Dashboard tool (see Annex 6 for more information).

It may have been useful for BEIS to monitor portfolio composition through the logframe. This is done to some extent through the Management Board meetings. However, an accessible overview is clearly missing for the Board. Currently the Board is lacking a portfolio overview tool which would facilitate more systematic assessment of the extent to which each project fit within the key parameters (e.g. transformational agenda, risk appetite, financial return) driving portfolio composition and project selection. The evaluators also consider that REPP would benefit (or would have benefitted) from greater insight into the portfolio composition in terms of countries covered, technologies, type of support provided, and stage at which support is provided. This is because, dependent on these typologies, projects can often be more or less likely to impact on distinct REPP objectives – e.g. small off-grid projects might be more likely to increase access to energy, while on-grid ones might be more likely to leverage finance.

⁷⁵ The logic for linking # projects with energy installed is not captured in REPP's documentation, but it is because it monitors whether the assumptions underpinning the logframe are correct: i.e. (i) that there are projects in countries with favourable policy-regulatory-business ecosystems that are close to financial close and need the support that REPP provides; and (ii) that REPP is designed to support a range of small scale projects with sometimes small, well-targeted interventions, not to support a handful of large projects. It also works as a leading indicator, and as this indicator is disaggregate for on/off grid, it supports and provides more detail towards calculations of MW.

⁷⁶ Note that a similar recommendation was made in the First Evaluation Report of the Carbon Markets Finance Programme (finalised July 2018).

The extent to which projects have reached financial close

REPP has made slower progress than expected in getting projects to reach financial close. This is a notable feature of the REPP and one which could be subject to criticism:

- Between the third quarter of 2017 and the first quarter of 2018, three projects reached financial close. These were all off-grid projects which are able to roll out operations gradually and therefore find it easier to 'reach financial close' (i.e. begin operations) sooner (see Section 2.4.2).
- The average time for reaching financial close is now estimated to be much longer than the estimates originally set in the REPP Business Case (see Section 2.4.2).

However, the evaluators consider that the delays are not unusual for programmes operating in these areas in Sub-Saharan Africa. They also consider that the timeframe set out in the Business Case was not realistic.⁷⁷ Further, REPP initially targeted early-stage projects, which take longer to reach financial close than mid- or late-stage projects, which are now being equally targeted by REPP. Some, smaller delays appear to have been driven by delays in the REPP approval process (see Section 3.4.2). Out of the 11 contracted projects, nine are currently encountering some form of regulatory challenge either with the regulator or another national body (e.g. the customs agency). In three cases this was PPA-related.

Overall, forecasts for financial close are not monitored in the REPP logframe. This is a gap, as monitoring such intermediate goals would allow REPP to track progress towards longer-term output and outcome goals much earlier, thus enabling earlier course-correction. Currently the logframe focusses on results which can only be obtained once a project *has* reached financial close, leaving a period of a number of years during which the logframe is effectively 'blind' (though BEIS have access to such information through Camco). For future programmes the evaluators would recommend that BEIS ensure there are sufficient intermediate / process goals monitored through the logframe.

Project developer capacity

As outlined in Section 3.1.2, based on self-reporting on (increased) capacity by project developers, REPP appears to be making progress towards this output. Further, the evaluators have found that REPP increases project developer capacity by connecting them to market actors. However, it hasn't been possible to gather verifiable evidence (e.g. in the form of a before-after analysis of individual developer capacities) nor fully able to assess other indicators of increased capacity (e.g. developers developing further beyond REPP), though this may be because of REPP's relatively early stage of implementation. This is something which could therefore be usefully investigated through a future (impact) evaluation.

The ToC considers the building of project developer capacity a REPP output and it is clear from speaking to BEIS and Camco that they actively consider this a direct aim of the

⁷⁷ The evaluators consider that financial close timelines are very challenging to estimate at a portfolio level given that they are project-specific, dependent on project quality and local contexts. Data on success and failure rates is commercially sensitive, so not made public, and therefore not available for benchmarking. However, based on the evaluators' experience they would set goals for REPP from a 10-year rather than 5-year perspective.

programme. There is no logframe indicator to monitor this; perhaps because of the challenges of monitoring capacity (though other types of capacity-building are monitored).

Renewable energy generated

REPP appears to be slightly behind in its targets for RE generation. According to the REPP logframe updated in April 2018, there is no expectation for any on-grid RE capacity to be installed until 2018. However, in the 2017 logframe, 0.018MW were generated from 3 mini grids installed in Tanzania. Whilst positive that the 2017 target (of 0) was exceeded, 0.018MW is very far from the next year's.⁷⁸ Indeed, it seems unlikely that the 15 MW target will be reached by the end of 2018. Currently only three off-grid projects have reached COD; these will only not generate more than 1 MW of energy. Four on-grid projects (which are likely to generate a higher MW) are due to close in Q3 and Q4 of 2018 (see Table 2, Section 2.4.2), but since these projects require construction and connection to the grid before they can generate and supply electricity (i.e. project commissioning), the 2018 timeframe seems highly ambitious.

Social benefits (e.g. energy access and jobs created)

It was not within the scope of this evaluation to assess progress towards these outputs. The logframe calculates both the number of people with improved access to clean energy and the number of people with jobs as a result of REPP intervention. These indicators are calculated based on estimates and calculations set out in the REPP Support Agreements.⁷⁹ Since three mini grids were installed within one project during 2017, actual results were generated for both of these indicators, but not sufficient to draw strong conclusions on progress for this evaluation.

Outputs resulting from REPP's direct action to work with Partners

REPP exceeded its targets for 'signing up' Partners in 2016 and 2017 and looks set to do so again in 2018 based on the number of partnerships already reported by Camco. Furthermore, REPP actually engaged with a wider number of partners than the Partners it signs up (see Sections 2.2.2 and 2.3.3). Agreements signed is no longer very useful as an indicator, as it does not reflect the true nature and output of this activity.

As discussed in Sections 2.2.2 and 3.1.2, the approach towards partnerships has evolved from a top-down one of signing up Partners to generate a 'pool' of potential supporters, that could be relied upon when projects needed their services, to a bottom-up project specific identification of partners. REPP's main aim now, in engaging with partners, is to seek their support in financing (or providing other services) to REPP projects. A useful indicator of achievement of these outputs is therefore: (i) financing leveraged (from these actors) and (ii) REPP due diligence accepted. According to logframe, by 2017, REPP had only had one DD service paid by REPP accepted by REPP partner (lower than the target of 2), though this is reasonable, since most projects had not yet reached the stage of engaging with partners.

Another indicator which could be useful to track would be 'number of REPP support products (or packages) co-developed with REPP Partners'. This is because, with some partners, they have developed products for application in specific projects.

⁷⁸ See discussion in Annex 6: results were directly attributable to REPP support in the exceptional case of this project, because REPP directly financed mini grid equipment.

⁷⁹ REPP 2017 logframe, 'source' field.

Financial leverage

Section 3.1.5 discussed the progress that REPP is making towards crowding in financing for its projects. Progress towards leveraging public financing is looking positive, but private sector leveraging is much more challenging.

Financial leverage (public and private) is only counted within the REPP logframe once projects have come to financial close. This is because it is by reaching financial close that projects have in place agreements committing project financing. Prior to this, financiers may pledge an amount or show an interest in investment, but the logframe only considers formally agreed amounts.

3.2.3 Achievement of REPP outcomes and affective factors

[The extent to which REPP has or is likely to have a demonstration effect on the wider market](#)
The question of ‘demonstration’ is a challenging one to answer so early on into REPP’s implementation, particularly since no projects have completed. The evaluation team did not specifically assess the counter-factual situation (i.e. whether this would happen without REPP support). **It has not been possible to say through this evaluation (i.e. at this stage in REPP’s implementation) whether REPP is likely to have a demonstration effect on the wider market.**

The logframe does not monitor ‘demonstration’ accurately. As an indicator of the ‘replication of small and medium scale renewables’, REPP monitors the number of eligible countries in which projects are located. It therefore monitors an outcome through an input or activity indicator. It would be more logical for REPP to measure the number of RE projects (disaggregated by country, technology, size/MW capacity installed) at REPP baseline (i.e. December 2015) and subsequent years. Assuming that any new projects which are implemented by the same developer or bear similarity in geography, technology, size or other features to REPP projects *may* have been inspired by REPP, REPP could use the metric to monitor a potential demonstration effect, which could then be further investigated e.g. through an (impact) evaluation.

Climate and development outcomes

According to its estimated milestones, reported in the REPP logframe, REPP is on track in terms of forecast and calculated metrics. However, it is challenging for the evaluators to draw solid conclusions on climate and development outcomes since these are highly dependent on the nature of REPP projects in the portfolio and the extent to which these are successful in reaching operation and RE generation at scale. Some projects, by the nature of their size and technology type would be more likely to generate more RE and/or to generate less GHG. The evaluators also assume that, once REPP projects are generating energy, local factors (e.g. technology efficiencies, running systems at the plants, modes of using the energy generated, etc.) will have varying effects on the GHG emissions that are ultimately reduced or not. However, it will not be possible to investigate these until projects are in operation. Therefore, on these outcomes, achievement is better investigated through an impact evaluation.

[The capacity and interest of financial institutions and risk mitigation providers to support project developers](#)

Financial institution (FI) and risk mitigation institution (RMI) capacity and interest is an outcome better investigated through evaluation for reasons outlined below. The evidence

that this evaluation has managed to gather is either hypothetical or anecdotal and therefore rather weak, because projects are only in the process of attracting further financing now. However, it has found that REPP support has generated some interest amongst market actors in small-scale RE projects, which it might not have had before involvement with REPP (see Sections 3.1.4 and 3.1.5).

FI and RMI investment in small-scale RE projects is not monitored through the REPP logframe and would be challenging to monitor. Theoretically, the number of small-scale RE projects a FI or RMI provider finances (post financing a REPP project) could be considered indicative of a potential increase in the FI/RMI's interest in supporting project developers but would depend upon the willingness of FI/RMIs to share this information with REPP, which is unlikely (and would entail an expensive process).

The evaluators propose that this be a topic covered in the impact evaluation, given that it would provide information indicative of potential transformative changes (see Section 5).

3.3 The relevance of REPP to its target groups

To what extent are REPP-sponsored activities likely to meet the needs of project developers and incentivise financial institutions whilst remaining relevant to the overarching objectives of REPP?

3.3.1 The extent to which REPP targets the needs of project developers

There are five subsections below which assess the extent to which REPP targets the needs of project developers.

REPP support options relative to developer needs

The evaluators analysis of REPP documentation, observation of its processes and consultation with Camco and with the developers it supports indicate that REPP targets (in its support package) the challenges that project developers identify as preventing them from reaching financial close. Camco clearly puts in significant effort in understanding project developers challenges in reaching financial close. REPP support provided to each project varies, as it is intended to meet the most critical need(s) from a financial perspective for that project.⁸⁰ As discussed in Section 2.2, the REPP strategy is also to shift the support options offered as the market evolves and matures.

Box 5: Camco's process for assessing developer needs⁸¹

To determine what support to provide, Camco project champions discuss needs with project developers, assess the project's current status, milestones achieved and the key challenges in progressing to the next stage. Champions then analyse this information and identify what the project will need to succeed, as well as the prospects for commercial and/or subsidised support from other sources. In some cases, the focus may be on boosting equity IRRs to attract other financing, in other cases the focus may be on more qualitative barriers.

Champions consider not only any specific request made by the developer, but also their assessment of needs. For example, if their assessment indicates there is a high financial risk then they might propose a financial hedging instrument. Champions also assess whether it is appropriate to offer a particular type of

⁸⁰ Project Structure Papers, confirmed by REPP Strategy V2 and KILs with Camco and BEIS.

⁸¹ Sources: Camco Workshop, Camco KILs, and REPP programme documentation.

support in that specific context. In markets where there has been little or no similar activity, local developers would likely need basic forms of support. In maturing markets, the barrier the developer is facing may be more sophisticated or the potential solution might be more sophisticated.

Once the appropriate type of assistance is determined, the project champion proposes an amount and a 'price' or 'premium' for the assistance, which is to be repaid along with the original amount at or after financial close, as negotiated with the developer. Champions seek to structure their support to take on the risk(s) targeted on a slightly concessional basis. That is, to 'push' the project commercially as far as they think it can handle.

However, projects still face market barriers even with REPP support – most notably in terms of the regulatory environment (see Section 3.2.2) – **and REPP does not proactively seek to address this**,⁸² this would involve a top-down approach rather than the project-driven approach used by REPP. Some internal stakeholders wondered if the REPP remit should expand to also include engagement with local governments.⁸³ It is unclear to evaluators how feasible or cost-efficient this would be given REPP's breadth across 19 countries over five years; also, given the type of skillsets, focus, and deep local knowledge and embeddedness needed to do this on a broad scale. However, there may be individual cases where capacity-building or facilitation could be appropriate in the future. For example, evaluators uncovered three cases where REPP staff had engaged with local authorities, where this was a response to specific project needs and less about systemic change and institutional capacity building. This seems to fit with what project developers mention in terms of what else they would want from REPP: they mention unbiased legal support, such as in negotiating PPAs,⁸⁴ but not broader capacity building or policy advocacy.

Box 6: Selected developer feedback on how REPP is targeting their needs

“The uniqueness of REPP is that they are quite smart and agile. [...] They understand what we're doing, why we're doing it, how we're doing it, and then they work with us to find a solution, whereas if you go to a major DFI they have their process/procedure and it takes twelve months, and if you miss one of the boxes you need to tick you're dead in the water.” – *a developer with an active project: off-grid*

“The ability to provide not free money, but kind of riskless money to kick off the projects – this is very unique and very valuable to us.” – *a developer with an active project: on-grid*

“There are all the risks from the beginning till financial close. So a risk sharing approach is [...] very innovative [...] they are really involved.” – *a developer with an active project: on-grid*

Feedback on why developers choose REPP

The main reason developers with either contracted and pipeline projects reported that they decided to engage with REPP is because they **offered support to projects like theirs prior to financial close, whereas developers must typically self-finance these costs**. Developers also appreciated **REPP's flexibility** in what they offer to meet each project's needs and several commented specifically on how unusual it was to have another entity be

⁸² There was no evidence in the Structure Papers of REPP coordinating or involving participation of other initiatives/funds in the region to support on regulatory/political barriers faced by projects. Camco also confirmed that they do not seek to lobby governments on project's behalf.

⁸³ This would be similar to a 'GET FIT Uganda model' – for more information, see: <https://www.getfit-uganda.org/>

⁸⁴ REPP TA has paid for legal services for due diligence to negotiate such agreements, so it may be that the developers were simply unaware.

willing to absorb some of the risks during the development stage. Box 7 provides illustrative examples of quotes in response to why they engaged with REPP.

Box 7: Developer feedback on why they engaged with REPP

“REPP was very helpful because they could come in at the development stage. Most of these investors only want to come in when the project is completely developed and they will fund construction.” – *a developer with an active project: on-grid*

“An experienced team in deploying capital to companies in Sub-Saharan Africa, ticket sizes [i.e. investment size] for lending similar to what we required for the current stage of the business at rates and tenors that were commercially attractive.” – *a project developer in the pipeline*

“REPP [was] attractive because they were designed for small scale renewable energy projects in Sub-Saharan Africa [...] their team has done a really good job being a little bit flexible around their structure to fit our asset class and business model.” – *a developer with an active project: off-grid*

“For a small company like ours the more the project takes time to develop, the more you're exposed and the riskier the project gets. So, REPP was offering a way for us to keep developing the project while not being so exposed.” – *a developer with an active project: on-grid*

“To have a partner who was able to stomach some risk besides us was a very important element for our budgeting and risk management.” – *a developer with an active project: on-grid*

The match between REPP 'pricing' project developer needs

REPP's current approach to providing support is to require the repayment of TA both to facilitate commercial thinking amongst project developers and also to generate returns for ongoing REPP investment. While a few contracted or pipeline developers stated they would prefer a grant, as would be expected, **all indicated the expectation to pay back the TA support provided by REPP once their project reached financial close was fair and reasonable.** A few also noted that **REPP's willingness to extend the repayment period was helpful** in managing expectations on both sides. These findings are consistent with case study findings (see Annex 5).⁸⁵ However, a concern was noted amongst REPP internal stakeholders that there is a potential moral hazard surrounding financial assistance that is paid back given the power asymmetry between REPP and project developers, which could in theory make developers susceptible to agreeing to pricing that is unrealistic for their circumstances.

As only a small number of projects have started to reach financial close, there was no example of TA repayment for the evaluators to examine. However, our detailed assessment of pricing for the two case studies discussed in Annex 5, found that **premiums were not excessive.** The evaluators' review of the project documentation and REPP processes suggested that Camco, with the REPP governance structures, spend substantial effort seeking to ensure the support is 'priced' correctly. Feedback from project developers (contracted and pipeline) similarly did not indicate any concerns over pricing:

- Developers seemed comfortable with the level of the premium, though a few did wonder whether it was necessary as it was government-backed or if it needed to be

⁸⁵ Some internal stakeholders wanted further scrutiny of the pricing. However, it is almost impossible to get comparable benchmarks from the private sector. This is addressed in the recommendations for the proposed impact evaluation described in Annex 7.

as high. (However, the evaluators note that developers would likely have a bias towards a lower premium, even when manageable);

- Where developers indicated that they had negotiated with REPP to obtain better terms, they felt that REPP had demonstrated flexibility; however,
- Some developers remain uncertain as to whether they will be able to repay the TA loan when the deadline arrives.

One developer commented that another way to provide support could also be for a programme like REPP to set up agreements directly with service providers, suggesting that various lawyers, accountants and technical providers may be willing to subsidise funds provided by the programme.

Box 8: Developer feedback on the expectation to pay back the support

“Philosophically, I’m aligned with the TA gets added onto the principal. [...] I don’t believe you can instil a proper risk management culture if you feel it’s other people’s money.” – *a developer with an active project: off-grid*

“Definitely, I can see them being repaid [...] I don’t know how they came up with [the premium] amount. We didn’t feel we could argue with it. [...] it’s going to be in the ballpark where private equity would have asked for more, so I can’t say it’s not fair.” – *a developer with an active project: on-grid*

“Our agreement is to pay back at construction, which I think is perfectly fine. The multiple is quite reasonable. They do take a premium and I think that’s right and it’s not too excessive.” – *a developer with an active project: on-grid*

“As a developer not paying it back would obviously be nice but it’s not necessary. I think the idea of a fund that recycles capital for reinvestment at this stage is more than fair and appropriate and I think the way they structured it was the right way.” – *a developer with an active project: on-grid*

“I would rather prefer this money to be grant money. Between you and me and I’m not sure about the premium they’re getting. I’m not sure that it’s really necessary since its money that comes from government but I understand that’s fair.” – *a developer with an active project: off-grid*

“It is reasonable that REPP is rewarded for its risk. [...] we negotiated the rates with REPP because at the beginning they are very high compared to the market’s rates.” – *a developer with an active project: on-grid*

“They want a premium for the funding, it was understood and respected, but if things don’t work out there was a way for it to convert to a grant [...] would otherwise put up a huge burden of pressure.” – *a developer with an active project: on-grid*

3.3.2 The extent to which REPP engages other support or financial institutions

Approach to and engagement with REPP Partners

REPP Board members noted that the rationale for engaging REPP Partners originally was:

1. Make the financial products of Partners more accessible to small-scale projects; and
2. Align their due diligence procedures to bring down transaction costs for small developers (thus also reducing financial risk).⁸⁶

⁸⁶ This is consistent with but not quite the same as that reported in REPP Strategy V2 and the DECC/BEIS Business Case, which also states that each investor / partner has the final say in its due diligence.

The REPP has signed MoUs with twelve REPP Partners and has engaged in project discussions with numerous other market actors that may provide financing or risk mitigation instruments for REPP Projects. The feedback from REPP Partners, and other market actors interviewed regarding their engagement with REPP was positive, and find the engagement complementary, as illustrated in the selected quotes in Box 9.

However, most internal stakeholders report that the **activity relating to these agreements has been less than anticipated**. There are multiple reasons for this, including:

1. The early stage of development of the REPP portfolio, i.e. most projects have not yet reached a stage where discussions would be formalised.
2. The way the REPP strategy has evolved, for example in cases where the REPP agrees to absorb risk themselves, rather than recommending a formal risk mitigation instrument from a REPP Partner.
3. Camco staff reported that they changed their approach from finding ‘as many REPP Partners as possible’ to being much more specific on which potential partners to target in relation to specific project opportunities.
4. Camco staff reported that connections with potential partners are facilitated when there is a specific project to discuss, so they provided examples of discussions of institutions they are in discussions with regarding a project or for which they are waiting for a concrete project to progress further.

Several internal stakeholders commented that they expect the engagement of partners and the use of them to increase if the REPP develops more of a track record and/or grows.

Stakeholders did report that there are several institutions that should be considered as REPP Partners now that may not be, yet Camco demonstrated awareness of most of these institutions spontaneously, i.e. without specific probes, and in several cases volunteered the status. For example, both Camco and some market actors KILs reported that a few of these are already in discussions but are awaiting a specific project to engage further with the REPP.

Alternatively, Camco staff reported that a handful of institutions they had approached were insufficiently interested to engage further, saying that they have had more success in attracting risk mitigation partners than we’ve had in attracting funding partners.⁸⁷ The reasons not fully clear, yet appear to be related to the impression that there is insufficient overlap with the projects REPP targets, e.g. projects too small.

Box 9: REPP Partner feedback regarding engagement with REPP

“Generally, they are active in the field that’s a bit early stage for us, where they are already involved and have a relationship.” – a REPP Partner

“REPP is fulfilling its role of helping developers get aligned for financial close and we are interested in moving from financial close forward, you know, with developers. It’s pretty much complementary...” – a market actor

“REPP knows exactly what [our institution] can do and what we cannot do [...] so far for each transaction where they approached us, I think they were quite on-spot.” – a REPP Partner

⁸⁷ Some forms of RMI are linked to the company, not just the project, so they can be relevant independent of project development stage, even before financial close. It depends what is needed for a particular project and how is it priced.

Evidence of influence on the behaviour of Partners and market actors

It is quite early in REPP implementation to expect results in this area, and REPP is driven more by the project developer experience than the financial actor experience.

As anticipated, there is **only limited evidence to date that REPP has significantly influenced the behaviour of REPP Partners, or other market actors**, from the KIIs and programme documentation. The logframe output indicator 5.2 provides evidence on 'Number of instances where DD service paid by REPP has been accepted by REPP partner to indicate success of aligning DD processes'. As of the end of 2017, REPP was able to do this for one partner as against the milestone target of two.

Camco staff reported that they had already been integral to the development of a new product for one of the risk mitigation partners. In another example, one market actor who is not a formal REPP Partner reported that, when first approached, they rejected a project and then over time and discussions with the developer and REPP they have decided to enter into an agreement with the project. Also, multiple REPP Partners and other market actors expressed strong interest in what REPP is trying to do, which may facilitate deeper engagement as projects progress.

Evaluators note that REPP ToC states that an assumption underpinning REPP's activity is that REPP will work with financial institutions and risk mitigation providers engaged as REPP Partners to "standardise and streamline their processes and procedures." This ambition appears to stem from the original Business Case REPP platform design that included funding support from REPP partners, besides DECC. With BEIS as sole donor, there is a different relationship. **This appears to be an overly ambitious and optimistic representation of what REPP is best positioned to accomplish.** Camco staff reported that the expectation that they would be able to directly influence the processes of REPP Partners or other market actors, is optimistic and not aligned with their current approach, to which evaluators concur.

The REPP team may be able to influence financial institutions and risk mitigation providers **regarding their openness to small RE projects and the products they offer in Sub-Saharan Africa**, but evaluators do not consider it realistic to expect that Camco is appropriately positioned to standardise and streamline.⁸⁸ Instead, REPP has already demonstrated that these market actors may be willing to take advantage of KYC and due diligence work that Camco has already documented, or engage in joint due diligence visits, to limit the burden on the developers, while the financial market actors' core processes and expectations remain the same. Therefore, a more realistic action would be that they can enable those requirements to be more easily satisfied.

3.4 REPP's effectiveness in delivering to the needs of its target groups

Have REPP interventions met the expectations of the beneficiary projects and target groups?

⁸⁸ This concern was shared by BEIS and Camco staff in KIIs and validated by the KIIs with other markets actors.

3.4.1 Feedback on meeting developer needs

As only a small number of projects have started to reach financial close, it is premature to make conclusions on the effectiveness of REPP at meeting needs. However, the feedback from project developers and market actors is **remarkably consistent** and **highly positive** regarding REPP's approach to helping fulfil needs unmet so far in the targeted countries.

Almost all stakeholders indicated that REPP is filling an important niche in the market and there are several examples of REPP already helping projects progress toward financial close (see Box 10). As discussed in Section 3.3, REPP seems also, largely to be meeting developers' needs. However, this will ultimately be tested as projects progress further or are dropped and could be covered in an impact evaluation (see Annex 5).

Box 10: Developer feedback on meeting their needs

“The capital we have from REPP [is] funding the working capital cycle and it's funding the sort of receivables from our customers. That's the kind of the story we want to maintain and scale up.” – *a developer with an active project: off-grid*

“That was exactly spot on what we needed, that was the last gap we had to fill in before we can go into the first round of funding. [...] We were quite happy to find an organisation who takes care of that last little step. It was exactly what we needed for the project and what was so attractive with them is that they were on the continent.” – *a developer with an active project: on-grid*

“We think REPP has been fantastic generally. [...] we haven't got unlimited financial resources so we've got to choose how we spend what money we have very carefully. We may not have invested in the grid study for example, which REPP funded and that has been key to the success that we've had in the last few [months]. [...] So, REPP has made a big impact.” – *a developer with an active project: on-grid*

Feedback on what else developers want from REPP

While (contracted) developers already receiving support from REPP appear to be overwhelmingly appreciative and satisfied with the types of support REPP currently offers, some themes emerged from the evaluation team's probes on what else REPP could be doing. Most of the suggested items are types of support that REPP is actually providing or has already considered and has a clear reason for not including:

- Some developers reported wanting financing for their staff's time to develop the project or for operational costs more broadly. These developers typically commented that the unpredictability and delays associated with projects in Africa are difficult to manage. When they are not able to progress, such as due to regulatory issues, they are “*losing money*”. One developer commented that, while donors paying for staff time is not the norm for “*European-based*” financing, there is more appreciation for the need for a “*good team to execute a strategy*” from Silicon Valley impact investors.
- Two off-grid developers or market actors requested that diesel back-up for mini grids be covered.
- Some wanted independent legal support for contracts, signature and contract negotiation accessible to any/all parties [government, developer, lender] to ensure there are bankable contracts (both developers and market actors suggested this).
- Others were looking for help in facilitating contract negotiations between developers and state utilities.
- Finally, some others, stated that they would have liked construction finance.

3.4.2 Delays in reaching financial close

Engagement with REPP itself does not appear to be significantly delaying projects' progress towards financial close. However, as discussed below, there have been **minor delays to some projects**, including those related to Board decisions as to whether the project was within REPP's scope. A few developers also mentioned delays or excessive procedures in the disbursement process (see Box 11).

The delays in reaching financial close appear to be due primarily to the nature of the projects targeted. Stakeholder groups universally agreed that small RE projects in the targeted countries face numerous challenges, not all of which are within the project developers' control, much less REPP's. Both BEIS and Camco stakeholders mentioned the “*significant optimism*” expressed in the original timeline for demonstrating results from projects that had reached financial close, particularly given that REPP initially targeted mainly early-stage projects (see Figure 6 in Section 2.4.2). Camco reports that they have recently engaged with more projects closer to financial close, providing RBF. Yet, REPP ultimately strives to be demand-driven, that is flexible in meeting the needs of viable projects, rather than having clear and preferred project profiles or levels of maturity.

Box 11: Stakeholder feedback relating to project delays

“We're behind in the REPP progress but you're mostly in the hands of [local] authorities and you can't predict when they'll make their next move.” – *a developer with an active project: on-grid*

“There's some improvements to be made on the disbursement side [by REPP]. Those processes were not very well established [...] We might as well have been disbursing \$100m rather than £100,000. [...] I think it's too heavy when it's going through escrow and custodians. That only makes sense if it's not scheduled disbursement or it's not conforming with the [conditions precedent].” – *a developer with an active project: off-grid*

“[REPP] have their procedures, especially with payment, so sometimes I'm saying 'Why aren't you making your payment?' They have to make sure all their boxes are checked.” – *a developer with an active project: on-grid*

“It took longer to get to a disbursement than originally thought. [...] I'm not entirely sure what the length of time from start of engagement from REPP to draw down is targeting at. [...] 4-8 weeks is fine, but anything longer than 8 weeks is challenging for small development teams.” – *a developer with an active project: on-grid*

“The project is not progressing as fast as it should, but that has nothing to do with competences of REPP.” – *a REPP Partner*

3.4.3 Stakeholder satisfaction with REPP

Overall, all stakeholder groups provided quite positive feedback on both their interactions with REPP staff and the support offered. All stakeholder groups overwhelmingly found Camco to be knowledgeable, responsive, flexible and open.

However, several developers and REPP Partners or market actors also expressed **frustration at communications, including some who were satisfied overall**. The two key themes of these communication challenges are a **lack of clarity and slowness**, which are further discussed below. While the negative messages are a minority of the overall comments, they are areas to watch. The evaluators note that these themes appear to illustrate some of the challenges a pilot programme like REPP faces as its messaging and scope is being refined or evolving.

Feedback from developers

Developers with either pipeline and contracted projects usually reported that they were satisfied with their interactions with Camco staff and found them to be knowledgeable, responsive, flexible and open. A majority of the developers with projects in the REPP pipeline who were surveyed were satisfied with their interactions with REPP to date..^{89, 90}

However, there were a few cautionary comments from developers concerning the perceived lack of relevant knowledge of their primary contact. There was also one mixed comment where the developer reported they had not received much input from REPP regarding their project but did appreciate what they had received. A handful also provided negative comments that the messages on REPP eligibility and/or processes kept shifting or that decisions took a long time, or seemed overly burdensome, e.g. relating to disbursement.

The only two developers whose projects had been dropped by REPP, who replied to the survey selected “0” on the satisfaction scale.⁹¹ Both comments indicated communication breakdowns as they both reported they did not understand why they had been dropped. One also reported that they received inconsistent messages on what REPP covered.

Box 12: Developer feedback relating to REPP

“ [REPP staff are] very forward and engaging, quite clear on [...] what is required when and sort of the response times etc.” – *a developer with an active project: off-grid*

“ REPP individuals (Camco) [are] outstanding to work with.” – *a developer in the pipeline*

“ Very responsive, very much looking to see how they can help, providing ideas, reaching out to other organisations to any extent they can be helpful, willingness to be flexible within [their] parameters.” – *a developer with an active project: on-grid*

“ The REPP people are very thorough, they have a lot of experience, probably not in [our country], but general in Africa, and that helps a lot.” – *a developer with an active project: on-grid*

“ We think REPP can help us perhaps more than they have. We believe there's quite a knowledge bank in there and we need to jointly exploit that. To be frank, they haven't inputted an awful lot but what they have inputted has been appreciated.” – *a developer with an active project: on-grid*

“ The REPP local analyst doesn't understand business in Africa.” – *a developer with an active project: on-grid*

Feedback from REPP Partners and other market actors

Feedback from REPP Partners and other market actors regarding REPP echoes the feedback from the developers reported above that Camco is knowledgeable and responsive, and a few commented that they appreciated the appropriateness of the project leads that

⁸⁹ Question: “Overall, how satisfied are you with your interactions with the REPP, using a scale of 0-5, with 0 = not at all satisfied and 5=extremely satisfied?” n=20 in pipeline.

⁹⁰ Pipeline and active project developers were also generally satisfied with the REPP eligibility and participation requirements.

⁹¹ The response rate for developers with dropped projects was extremely low, with only 2 of 21 responding. A further project which had dropped out on their own accord from REPP also responded. It is likely that the two that responded self-selected to have an opportunity to express their dissatisfaction, while others with less strong or positive views did not take the time to reply. The issues they raise are important to consider, but with such a small response rate should not be assumed to necessarily indicate the impressions of developers with dropped projects more broadly.

REPP shared. Yet this stakeholder group also reported challenges with shifting messages, as is discussed further below.

Box 13: REPP Partner feedback relating to REPP

“ I’ve found [Camco] to be supportive and capable and good chemistry.” – *a REPP Partner*

“ I found [Camco] extremely professional, extremely knowledgeable and extremely reactive, so it’s a real pleasure.” – *a REPP Partner*

3.4.4 Challenges: lack of clarity – shifting messages

Despite the high degree of positive feedback on their interactions with REPP, many project developers (active, pipeline, and dropped) as well as REPP Partners and other Market Actors reported **mild to moderate frustration at a lack of clarity on what REPP offers, or at shifting messages**, whereby what they were told REPP was willing to accept/offer changed. A few did qualify that this is likely related to REPP’s flexible approach – which was judged as positive overall.

The challenges were somewhat more likely to refer to off-grid projects; however, it is not always clear to the evaluation team to which project type comments from REPP Partners or other Market Actors refer due to insufficient context from the stakeholder.

Almost all stakeholders indicated a willingness to continue to engage with REPP despite these issues. However, examples of some negative impacts include:

- A developer with a dropped project who is highly frustrated because he doesn’t understand why the project was dropped, as they seemed to meet all the criteria outlined and does not plan to engage with REPP again.
- A few market actors, including REPP Partners, who are not clear enough on what REPP is currently offering, one reporting that changes in strategy have been difficult to manage.

This level of frustration is noteworthy due to its consistency and that it was heard from different stakeholder groups. Yet, many, if not most, pilot programmes are subject to similar feedback as they refine their approach and establish processes and build precedent. The implication for the future is that **REPP can further improve its reputation, and therefore any marketing, especially by word of mouth, by more clearly defining and publicising the scope, and when this will next be revisited**. For example, a market actor suggested putting the current strategy on the REPP website.⁹² Given that REPP appears to have a significantly-sized pipeline for its budget allocation currently, this feedback is probably more relevant to address if the programme is scaled up in the future.

Box 14: Stakeholder feedback relating to clarity/consistency

“ The most inconsistent TA program we have ever seen. When reasons were given for the decline, they did not match the criteria we had originally been asked to meet in applying.” – *a developer whose project(s) had been dropped*

⁹² Evaluators note there is some information on the REPP website, however it is rudimentary. This could be further updated and re-oriented toward terminology and parameters more typically used by the target audience, minimising BEIS or internal programme terminology.

“ I think that process, that communication could be [...] structured a bit better to allow REPP to engage more with companies like [ours] ... the messaging around just what REPP does is not, in my opinion, is probably not as well-known as I think it could be.” – *a developer with an active project: off-grid*

“ I think it might be useful for REPP to be a bit clearer on their different streams of financing and what amounts or what pools of their capital are available for what kind of financing. [...] I think it certainly might not be clear to project developers exactly the kinds of financing they could provide. If they show the market what they can provide.” – *a market actor continuing to engage with REPP*

“ I think at least in putting in an application they're pretty responsive and then figuring out what exactly did they fund or not fund, has been I think slightly more difficult because I think there is a challenge in sort of built into the REPP fund that it needs to be additional.” – *a developer with an active project: off-grid*

“ For their own sanity and everyone's sanity the mandate must be clear, in the course of working with them for over 18 months those changes have caused some frustrations because we can't rely on that, it's going to be different. So, I think once you fix a mandate go with it. [...] It's made it a little bit harder for me to recommend and understand exactly what REPP is doing. – *a REPP Partner*

3.4.5 Challenges: slowness in obtaining feedback

As noted above, most stakeholders reported that REPP was responsive. Yet, a minority of developers and REPP Partners reported that it took a long time to obtain a decision from REPP; that they would go months without hearing from their contact.

In some cases, the stakeholder offered that this appeared to be due to internal decision-making, e.g. waiting for the Board to decide whether this was a country/project type they would cover, or relating to the disbursement process, others were not specific. One project developer in the pipeline reported that they have stopped pursuing REPP because of the lack of responsiveness.

This remains an area to watch. This issue appears related to REPP as an evolving pilot. Therefore, this issue is expected to diminish as the REPP strategy is clarified. However, in new countries or untested technology configurations, where it may take months to reach clarity, REPP should (continue to) proactively communicate timetables for decision-making as feasible and consider providing periodic updates if the timetable shifts.

3.5 The effectiveness and appropriateness of the REPP delivery structure

This Section discusses the efficiency and effectiveness of REPP's delivery structure. It considers the original expectations for REPP impact and value for money set out in the Business Case, written August 2015, as well as the update REPP strategy and implementation. In terms of 'delivery structure', it considers, specifically, the qualities and capacities of Camco, the operational set-up (i.e. contractual arrangements) within which Camco operates and the management and governance arrangements associated with REPP (Assessment Committee, Management Board and BEIS interaction).

3.5.1 The potential impact offered by the delivery structure

The appropriateness of the Delivery Agent for generating impact

When selecting the REPP Delivery Agent, BEIS was looking for an agent who could “*hit the ground running*”. Camco came to the role with an existing pipeline of more than 50 projects⁹³ and a sound commercial track record, as well as a history of involvement in the markets and work with small organisations.

Camco are a small organisation, with concentrated expertise. They understand the markets well having team members on the ground in four target REPP countries, and frequent attendance at relevant industry fora and conferences (at which they originate potential projects). The approach that Camco takes to origination (identifying viable projects through its networks and networking over Calls for Proposals) is efficient (see Section 3.5.2 below) and most probably more effective in identifying projects which already show evidence of viability than a Call-for-Proposals model.

That the Agent is small and experienced also contributes to their flexibility in adapting models quickly. A few internal stakeholders stated that they are “*nimble*”. Most external stakeholders commented that they are highly knowledgeable of the market and also converged in stating that Camco are flexible and thus well able to tailor products to target group needs (see Section 3.3).

Limitations in the selection of Camco as Delivery Agent have been noted by the evaluators: the importance of REPP for the company has the potential to impact on their financial sustainability; though ultimately this is a structural issue which could be rectified by REPP setting up more sustainable models for paying and managing Camco (see Section 3.5.2). It also seems from the evaluators’ observations that a lot of institutional knowledge on current projects is maintained amongst a small group of key staff. If these staff leave the REPP / Camco, then this information could be lost.

On the other hand, Camco document discussions and thinking to a level which is impressive given their small size and work load. This could be improved, and Camco and BEIS are aware of this, but it appears that progress is being made to improving back office systems, including documentation and filing. For example, each project has a main, plus back-up/QA person and each project is discussed with other members on a regular basis, thus meaning that project-specific information is not only held with one person. Nonetheless, the evaluators consider that, if progress towards impact, is to be supported, REPP should ensure that suitable back-office systems are in place.

The appropriateness of the management and governance models for generating impact

As outlined in Section 2.3, REPP projects originated and brought into the pipeline by Camco go through a process of approval involving, first, review by a technical Assessment Committee, then final approval by the REPP Board. Meetings of both of these groups were observed by the evaluators and opinions of REPP internal stakeholders collected as to their effectiveness and efficiency.

The evaluators found that REPP is supported by a highly-skilled and well-balanced Management Board. Some concerns were raised by stakeholders that the Board is ‘lean’ and as REPP scales up / changes direction, it is acknowledged that they would need a

⁹³ REPP Strategy V2, August 2017.

broader range of experts. However, in its current form it is well suited to REPP's expected impact. They identify risks in the portfolio and individual projects, and question additionality and impact assumptions.

However, currently the Board is **lacking a clear, agreed strategy for how it will achieve its 'market transformation' impact** (see Section 3.6). This lack of clear strategy (on transformation) affects: (i) decisions and thinking around the current and ongoing composition of the portfolio / project selection; and (ii) the direction that REPP heads towards in REPP 2 (i.e. whether it spends its money on e.g. giving larger budgets to existing / pipeline projects or on funding more, different projects). There is some urgency on the Board to devise a clear strategy on this kind of portfolio thinking in time for the development of the REPP Phase 2 Business Case.

As with the Board, the evaluators found the Assessment Committee to be staffed with a good balance of expertise, market understanding and perspective (reflecting the make-up of the REPP Board). The meetings are attended by the REPP Policy Lead, who also attends Board meetings, and this adds value in terms of information dissemination, consistency of messaging, support to (and monitoring of) Camco and coherence in terms of approach. The evaluators' observations validate positive reports on the Committee given by REPP internal stakeholders consulted.

Other aspects of the REPP implementation model which may affect progress towards impact

As described in the Review of REPP's Reporting System, all ICF programmes share a common understanding ('ToC') of how transformational change can be achieved. This states that the drivers of change comprise: innovation, dissemination of the evidence of effectiveness (or demonstrability), political will and local ownership and the possibility for capacity and capability to be increased. Mechanisms of change are replicability, implementation at scale and leverage. And enablers of change are critical mass and sustainability. In REPP's results reporting system, it monitors only three conditions (capacities/capabilities, leverage and scale) though, as noted in the Review of REPP's Reporting System, REPP is likely to have an effect on more conditions than these.

Indeed, REPP could be said to be supporting innovation, dissemination (to a greater or lesser extent – see Section 3.2) and replicability (though, again, it is too early to determine REPP effectiveness in this area).

In terms of leverage, as outlined in Section 3.2.1, REPP is making some progress; however, **REPP has been more successful in leveraging public (or public-backed) than private interest and support**. All of the partners whose support to projects REPP has influenced are public (backed) finance institutions. REPP has had no success thus far in engaging purely private sector actors to invest in REPP projects according to our findings (documentation analysis and consultations), due to the low returns. However, private sector leverage plays a major role in the theory of how REPP will reach market transformation. The more that REPP leverages financing from existing public (backed) entities, the greater the risk of distorting the market.

However, this is a challenge that REPP is aware of.⁹⁴ It is unrealistic to think that REPP will be able to leverage private sector financing in Sub-Saharan Africa at the same rate as public money. For example, the evaluators found only little evidence (in relation to one project) of

⁹⁴ It is described, for example, in paragraphs 108 to 110 of the REPP Business Case.

private sector actors talking to REPP (contracted) project developers as a consequence of its involvement with / improved capacity following REPP support. REPP encourages commercial thinking which should, in theory, improve capacities for developers to work with private sector actors as soon as the market environment becomes more inclined towards REPP type projects. So, it may therefore be that REPP just takes longer to work towards this impact than it would like. However, it may also be that REPP needs to consider refocussing its strategy e.g. by targeting countries which have a promising enabling environment for private sector investors (Kenya or Nigeria for instance) rather than spread itself too thin. These factors may need to be reflected better in the logframe and ToC.

Progress towards impact will also ultimately be affected by the choice of projects that REPP selects and its underlying strategy as to whether to: fund different variants of the same project in a country to demonstrate effectiveness with a greater burden of 'proof', or whether to continue to support a wider diversity of projects on the assumption that at least some of these will work.

3.5.2 The value for money offered by the delivery structure

Economy

It was not within the scope of this evaluation to conduct an in-depth economy assessment. The evaluation can therefore only provide limited qualitative evidence of economy. Most internal stakeholders considered that Camco's operating model was inexpensive. Only one internal stakeholder commented that, because Camco is smaller and more "*on the ground*" that it was "*more expensive*". That BEIS have a greater involvement in REPP than they do other ICF programmes is likely to result in a higher proportion of BEIS staff-time investment, but this is warranted and – considering the positive effects of this involvement – does not appear disproportionate. As stated above, the Management Board and Assessment Committee both have 'lean structures' and are run on the basis of voluntary inputs, which – again – creates an economic saving.

Efficiency

From the evaluators' observation of the Management Board and Assessment Committee meetings, the Assessment Committee processes appeared efficient and effective. Both the chair and attendees appeared well-prepared for the meeting (project information packs were issued), which was necessary given its fast pace and packed agenda. Discussions held appeared to be useful in terms of supporting effectiveness and progress towards REPP impact. Camco pushed in the meeting observed for the Assessment Committee to advise on / approve strategic shifts in approaches to project financing, and the Committee responded well to this. Overall, the evaluators consider that the effort, time and resource, put into the Board and Assessment Committee was proportionate for the number of projects approved. However, a lot of the operations observed at the Management Board meeting appeared to be surprisingly nascent for a 2.5-year programme. There was some good thinking observed in terms of suitable tools that could be created, but it was notable that these were not already in place.

Overall, the set-up of having the Assessment Committee look in detail at projects individually with the Board only approving from a portfolio perspective appears to be cost and time-efficient. For example, boards on other funds may have a more hands-on approach to approval, potentially duplicating the efforts of the assessment committee / equivalent.

Nonetheless, two out of 11 contracted developers and three out of 20 pipeline project developers commented that they found the approval process slow. One stakeholder commented that this inefficiency had been driven partly by the infrequent meetings of the Assessment Committee. Now that the Assessment Committee meet on a monthly basis, it is expected that this inefficiency will be addressed.

Nonetheless, **the factors which have driven delays in project approvals may persist**, as these appear to be linked to the fact that two Board members are required for approvals and due to the need to seek approvals and advice outside of the monthly emails to the Board. Overall, the benefits (to controls and monitoring) likely outweigh the costs to efficiency, but the approval process is one area where REPP could consider systematising further.

Further, as with the Management Board, both the evaluators and internal REPP stakeholders agree that, as projects become more financially complex and numerous, the Assessment Committee will need to adapt. **It will need to broaden the skills and, most likely, the number of members involved.** This could happen naturally if REPP were to bring on additional investors, though it may be needed more urgently if REPP continues to diversify its portfolio and offering at the speed currently observed by the evaluators.

One REPP internal stakeholder suggested that the Committee would need to become an “*Investment Committee*”, possibly with paid time being allocated to members.⁹⁵ The sustainability of the current time-provided-voluntarily model has also been raised as a concern by a couple of Board members. However, the evaluation team judges that, for the present, this system works well for the Assessment Committee and Board: Such a model provides value for money for REPP and appears to be fairly sustainable, given that members have a notable interest in REPP and are, subsequently, dedicated to its cause. However, for ongoing sustainability, it will be necessary to ensure that any members brought on have a stake in REPP, to ensure continuity in this level of dedication and involvement.

Overall, internal stakeholders reported that they find Camco to be efficient implementers. Camco already came to its role with an existing pipeline, which created an efficiency. That REPP has however been less efficient than expected in getting projects to financial close is evident from the analysis presented in Section 2.4.2. The main barriers to close appear to be regulatory (9 out of 11 projects), which are not within REPP’s mandate to address and that the portfolio first focussed on early-to-mid stage projects rather than late-stage projects.

One factor that is likely to affect Camco’s efficiency (i.e. its ability to create outputs from inputs) is **the type of projects selected and nature of the support provided**. Two dominant themes seem to emerge from various KIIs in this regard:

1. Small projects require as much technical and administrative input from Camco as larger projects, often for a smaller scale of output and outcome (in terms of energy generated and finance leveraged, at least).⁹⁶

⁹⁵ The Committee and Board are currently attended voluntarily, which also means that preparation time is voluntary which may create a risk it is not undertaken to the level needed to ensure meeting effectiveness and efficiency as the workload of the meetings increases

⁹⁶ Though, sometimes, smaller projects e.g. if off-grid, can be better at delivering development and climate change impacts than (larger) on-grid ones, since they are more likely to directly benefit communities which do not yet have any reliable access to electricity.

2. Complex RBF offerings which structure the RBF in innovative ways allow REPP to remain flexible and innovative but require a much greater time-investment from Camco owing to the overtly complex legal agreements and financial models.

Effectiveness and cost-effectiveness

Section 3.2 described REPP progress towards expected outputs. Towards the immediate outputs of pipeline development and project contracting, it found that REPP was making solid progress. However, towards the more intermediate goals of financial close, REPP was making slower progress than anticipated in the Business Case and against BEIS expectations.

3.5.3 The scalability of REPP's delivery structure

The evaluators did not observe any inefficiencies which gave them great concern for this stage of the REPP. However, given the current level of effort being expended in REPP delivery, it looks **unlikely that it would have sufficient absorption capacity to manage a REPP scale-up without significant staffing increases**. Similarly, the Management Board and Assessment Committee in their current form do not have in place the capacity, nor the procedures and processes that would allow them to perform their functions if REPP were to operate at larger scale.

Camco has a large workload and were this to increase further, it would place notable strain on the organisation. Camco has identified it would need to invest in both more back office functions (e.g. monitoring) and technical personnel (including those specialised in project execution) to cope with a REPP scale-up. Alternatively, the REPP Management Board could seek more strategic ways to partner with other donors / other programmes who *are* addressing such top-down regulation-focussed activities. REPP may also seek to expand the remit / objectives of its partnering activities to target partners who have experience in policy development activities, as well as market service provision.

4. Summary of Review of the REPP Results Reporting System

4.1 Scope of the Review

The Review of the REPP Results Reporting System answered five key questions:

1. Whether the results reporting processes in place is providing, or likely to provide, accurate results?
2. Whether the set of assumptions used in the BEIS model, the logframe and the REPP reporting processes are appropriate?
3. Whether the additionality assumption used is appropriate;
4. Whether BEIS could attribute any results to the small loans given as part of the technical assistance offer; and
5. Whether the KPI 15 “transformational change” methodology is fit for purpose, what improvements could be made.

The Review also provided conclusions on whether the results reporting is adequate for monitoring (of outcomes and impacts) beyond programme closure of REPP (scheduled for 2020) and recommendations of improvements to be made which were also integrated into a proposed new tool for REPP to convert Camco monitoring data into ICF KPIs.

4.2 Findings, conclusions and recommendations

The Review team did not uncover any major challenges to reporting accuracy. However, the team noted the risk that longer-term monitoring (i.e. of outcomes and impacts) could be constrained by the short contracts project developers hold with Camco. It was suggested that the regular use of third-party monitoring, reporting and verification experts (appointed in advance by the Board) be appointed for those REPP projects that are operational after repayments to REPP are complete.

The Review team found the set of assumptions used in the logframe and the REPP reporting processes appropriate for all the KPIs, subject to:

- Changes in KPI 2 on number of people with improved access to clean energy as a result of REPP intervention to take into account whether off-grid/on-grid, pipeline/contracted and the size of the household;
- A review of the extent to which KPI 5 (jobs created) constitutes an improvement in standard and quality of living is still needed
- Gender disaggregation being required for KPI 2 (clean energy access) and KPI 5 (direct jobs created);
- Change in KPI 11 and 12 (public / private finance leveraged) so that it is a ‘total expected investment’ rather than a percentage calculation; and

- Quality assurance for all KPIs with selected project developers, including a review of supporting documents to identify potentially overstated expected results data and underlying assumptions once projects are operational, potential site visits, potential access to project developer's digital data management systems.

The additionality assumptions at project level reviewed for all contracted projects were found to be consistent, reasonably detailed and comprehensive in the Sub-Saharan African context. Thus, the Review team concluded that the BEIS portfolio-level additionality assumption of 75% for REPP was reasonably conservative though that it should be maintained given that: (i) the expected additionality of some of the REPP projects before financial close could be overstated and (ii) some of the REPP projects might reach operational stage without REPP, however not at the same scale and pace that REPP support envisages.

As pertains to attribution, the Review team found that: attributing results to TA is complex and entails several challenges when attempting to establish a clear link between various TA activities and portfolio-level results. However, they considered that, for some projects, BEIS could review whether the specific project foresees a conversion of a (share of the) REPP TA loan to junior equity or mezzanine finance as part of the project-specific investment agreements signed at financial close and therefore assess how to potentially monetise these shares of TA by REPP among support of the project developer and potentially other donors during project development.

On KPI 15, the Review team found that the current methodology assesses transformational change at the portfolio level, which decreases its accuracy. However, given the constraints on REPP's human resources, they concluded that the methodology is proportionate. They recommended, however, two clarifications and improvements:

To collect further evidence and documentation at country-level to build a stronger supporting narrative for all transformational change criteria and identify potential benefits and trade-offs; and

To explore trade-offs between KPI 15 and all other KPIs holistically, considering REPP's portfolio composition and the balance between its objectives. KPI 2 (energy access), KPI 5 (direct jobs) and KPI 6 (climate benefits) do currently not influence the rating of any transformational change criteria.

The Review team identified challenges to the longevity of REPP's reporting system and its ability to monitor longer-term outcomes and impacts beyond financial close, given the short contracts with project developers. They recommended that, in the near future, BEIS review access rights to Camco's monitoring and reporting tools for REPP projects beyond 2020 and the need for independent long-term monitoring, reporting and verification experts.

The tool produced through this exercise included processes for facilitating:

- KPI-specific data requests from BEIS to Camco, by pre-setting formula for conversion of Camco data into REPP reporting and identifying specifically where in Camco's data monitoring tool the source data is located;
- Enabled source data (feeding into the formula) to be disaggregated by significant variants that affect overall results, such as whether the project pipeline / contracted or RBF / TA, etc. and

- ‘Future-proofed’ by creating place-holders for data currently missing data from Camco’s system, such as gender-disaggregated data, so that it can be integrated in the future.

In general, the Review team recommend REPPs results monitoring and reporting processes and underlying assumptions are reviewed whenever REPP’s portfolio changes considerably, for example when new financial instruments are introduced. The tool has been designed to provide this flexibility, as it can be sent as a data request from BEIS to Camco whenever a major change in REPP occurs.

It also recommended that REPP review the additionality assumption for REPP’s emerging RBF instruments. As additionality depends upon the implementation status of the portfolio on the one hand and the risk appetite of REPP and financial institutions for a specific project in a specific market on the other hand, an appropriate level of effort to analyse and review additionality in line with the size and diversity of the REPP portfolio is suggested.

They also suggested that BEIS and the ICF further examine if a direct link between the TA received and achieved results would be established once REPP’s due diligence support has been accepted by a REPP Partner as satisfying their internal requirements. This is because none of the larger scale REPP on-grid projects have achieved financial close yet. If pursued, a closer project-specific TA monitoring strategy could be put in place at BEIS and Camco in order to avoid the risk of double-counting results both within REPP and between REPP and other funder’s initiatives.

Finally, it was proposed that REPP review assumptions for power project finance indicators in various REPP countries to allow BEIS to gain a more holistic picture of the state of financial markets in various countries in Sub-Saharan Africa as well as project-specific conditions and assumptions to reach financial close in such markets subject to a cost-benefit analysis.

5. Summary of the Impact Evaluation Plan

The aim was to develop an Evaluation Plan with recommendations on methods that may be used for a potential follow-up impact evaluation (IE) or equivalent.⁹⁷ This was to include suggestions on an overall evaluation approach, recommended indicators, fieldwork activities, data collection methods and indicative timescales and resource required. The key objectives of any such evaluation were agreed with BEIS as being:

1. To learn more about whether intentional impacts (the crowding-in of financial investment for small-scale RE and transformational change of the RE market) and unintentional ones (the crowding out of private sector financing) are taking place;
2. To understand the mechanisms and contexts through which any observed outcomes and impacts have occurred; and
3. To gather further evidence (building on the MTE findings) as to whether and in which contexts REPP could or should be scaled up / replicated.

It was proposed that any future (impact) evaluation cover questions on: transformational impact; REPP project effectiveness in reaching financial close, REPP replicability in different contexts, the sustainability of REPP projects, their wider social and environmental impacts (e.g. energy access and job creation); energy and climate change impacts, and it proposed some questions accordingly.

The Plan includes discussion of data availability and possible (and appropriate) methods.

It recommends that any such evaluation commissioned is theory-based, ideally drawing upon principles of realist evaluation to develop and test theories of change on how programme supported mechanisms lead to different outcomes in different contexts. It suggests that contribution analysis provide a theoretical framework and that a mixed methods approach, combining evidence from case studies, QCA, outcome harvesting and analysis of secondary data sources be applied.

The Plan suggests that the evaluation be conducted over a 3 to 4 year staged period in order to enable investigation of post-financial-close outcomes / impacts and that the maximum budget be in the region of £400,000.

⁹⁷ Invitation to Tender For: Mid-Term Evaluation of the Renewable Energy Performance Platform. BEIS 2018

6. Conclusions

REPP plays an important and unique role in the ICF portfolio and – this evaluation has found – a fairly unique role in the market context it targets. The rationale for REPP was justified, and the delivery and governance structures through which it has operated during its first three years have been largely fit-for-purpose. This evaluation has found many positive attributes to the programme and concludes, overall, that there is good justification for the programme to be continued – and even scaled up – on the assumption that the findings of this evaluation will be considered and a clear strategy and approach developed for continuation / scale-up in accordance.

The remainder of this Section outlines our conclusions in relation to: REPP's strategy, REPP's organisational structure (delivery and governance) and its implementation. The Section closes with an overview of conclusions per evaluation question. Further information can be found in the evidence framework summary in Annex 3.

6.1 Conclusions on the REPP strategy

6.1.1 Consistency and clarity in REPP's strategy

REPP's strategy is ambitious. It works towards several intermediate and longer-term outcomes (additionality, demonstration effects, financial leverage, value for money and the achievement of development and climate benefits) which are often, in practice, challenging to achieve simultaneously and which may even be conflicting.

These competing objectives generate questions as to the composition of the REPP portfolio and the direction in which REPP should head if it intends to further finance a continuation or scale-up. Where do BEIS, and REPP's governors, want to focus their attentions and efforts?

Currently, this evaluation has found that REPP is highly additional in the contexts within which it works. REPP is not crowding out alternatives, because the REPP portfolio includes the kind of small-scale, risky projects which others (particularly commercial actors) do not target and is offering the type of support (early-stage TA) which others do not provide. In particular, the early-stage support being offered to on-grid projects offers strong additionality; however, these are also the projects which are risky and challenging to bring to financial close. Hence, as REPP moves towards a greater focus on later-stage support to projects, REPP risks losing some of this additionality; it risks moving into domains inhabited by other donor programmes, commercial funds and DFIs.⁹⁸ However, this evaluation has found one of the most positive aspects of the REPP approach (according to both stakeholders consulted and the judgement of the team) to be its gap-filling – i.e. its targeting of those (almost viable) projects which would struggle to receive support from anywhere else.

The extent to which REPP is focussed on demonstration has been less well-answered by this evaluation. This is partly because 'demonstration value' has not been well-defined in

⁹⁸ This may not be problematic in itself, as the needs remain sufficiently great and the number of actors addressing these small to render the risk of REPP overlap with these options low.

REPP's strategy. The REPP ToC seems to imply that 'demonstrability' refers to project effectiveness or bankability – i.e. demonstration of a project's commercial value and commercial thinking. It has been difficult for this project to assess the bankability of projects given the delays to financial close (which do *not* necessarily indicate that the project will *never* reach financial close). However, it is clear that REPP's strategy (as per its Business Case) is not purely focussed on bankability.⁹⁹ Indeed, findings from the Management Board consultations, in particular, suggest that demonstration also partly involves proof of concept and evidencing effectiveness through more than one project. For the pathway towards demonstration to be made testable and measurable this definition and criteria need to be fleshed out.

Financial leverage and value-for-money are complementary, and both also complement the objective of 'bankability'. All depend upon projects reaching financial close and where projects do not achieve financial close these objectives are threatened. Yet, if REPP is to pursue maximum additionality and/or support 'first of a kind' projects some of which may not succeed, it is less likely to optimise the achievement of these first three objectives. A similar, but less well-proven finding of this evaluation (discussed in the Review of REPP's Reporting System) is the potential conflict at portfolio level between the objective of financial leverage and development goals. Whilst larger-scale on-grid projects might generate a greater likelihood (and volume) of financial leverage, they may also have a lower impact on development – e.g. access to energy – amongst REPP's end beneficiaries (i.e. those based in localities dependent upon non-renewable off-grid sources of energy or with no energy at all). Another area for REPP / BEIS to consider is the relative cost-effectiveness of small vs large projects within the portfolio.

A big question remains in the strategy as to whether – and if so how – REPP intends to address the main outstanding barrier to project close and operation: the country-specific regulatory barrier. This barrier is currently outside of REPP's scope to act. However, if REPP is to bring projects to financial close, it may need to identify ways to address this remaining challenge, especially given its link to market transformation, as discussed in the next Section.

6.1.2 Alignment between REPP's strategy and implementation

REPP implementation is largely in line with the ToC. The pipeline and project development inputs and actions have remained the same. The target outputs, outcomes and impact of these actions have also remained the same and all internal REPP stakeholders are consistent in their understanding of these as the target outputs and outcomes. The assumptions underpinning actions supporting project developers, the Partner-focussed actions, and the later causal pathways from output through outcome to impact remain relevant. For example, in the June 2018 REPP Management Board meeting, members referred on several occasions to their understanding of REPP objectives, goals and strategy in a way which highly reflects the assumptions.

⁹⁹ A certain amount of failure is built into the original REPP model in the form of assumptions as to the proportion of the portfolio that will fail to reach financial close. Further, whilst most stakeholders judged REPP pricing 'about right' this was in consideration of the fact that REPP is a donor programme, which should not be setting its rates at the same level as commercial actors. REPP is not crowding out the private sector, because the private sector is not targeting REPP-type projects. This indirectly confirms that the IRRs that REPP can accept are lower – it can price its offer lower than the private sector can.

However, one area which is less consistent in terms of the ToC and actual implementation are the Partner-focussed actions. In reality, the strategy that REPP applies towards Partners, and its ultimate objective in working with them, is to increase their comfort, i.e. reduce their perception of risks, so as to secure finance and risk mitigation for RE projects, particularly within REPP's size target range. As REPP's strategy has evolved it has moved away from developing a pool of Partners that it can hypothetically call upon to targeting partners on a project by project as-needs basis. The actual implementation of the REPP Partner strategy is therefore much broader than the 'aligning due diligence procedures' indicated in the logframe. It is also interlinked with the project-development activities more than the current ToC suggests.

Additionally, there seem to be some key aspects of REPP's strategy which are absent from the ToC.

First, the ToC does not reflect the fact that REPP stakeholders identify different means – and differ in their opinions of the ways – through which the ultimate goal of 'transformational change' will be achieved. These discussions are particularly pertinent now as BEIS starts to design transition to an anticipated REPP Phase 2 and consider options for 'scaling up'. For some Board members, as mentioned above, it is best achieved through parallel work with those who have the power to scale up, i.e. national governments. For others, it is about funding multiple 'first of a kind' projects to increase the probability that one of these will have a transformational effect, for example via replication or policy change. Whilst for others, it is about funding several versions of the same project (i.e. same technology, same country, same model) to demonstrate with a stronger evidence-base the effectiveness of the RE approach. Thus, what is missing from the ToC is more detail around the causal pathway from outcome (demonstration effect) to impact (transformation). This could be reflected in more detailed assumptions, but the ToC would probably also benefit from more detail on this in the outcome and impact statements.

Second, the ToC does not cover some of the nuances in REPP's strategy that relate to their choice of support, particularly RBF support. The ToC is also absent of any 'alternative ToCs' and does not therefore identify any of the risks or potential adverse consequences of making one investment decision over another.

Third, the ToC does not reflect REPP thinking around portfolio composition. This may be because this is not fully determined.¹⁰⁰ Such information, whether illustrated in the assumptions or in the diagram directly, would make the ToC more accurate. The Board should establish a strategy that is more explicit about implications for the portfolio / project selection, and the ToC should reflect that.

6.1.3 The scalability of REPP's strategy

This evaluation has found that REPP is dynamic and responsive to internally-driven changes (e.g. in its short-term strategy(s)) and to changes in the market context. REPP is also –

¹⁰⁰ It was identified in the June 2018 REPP Management Board meeting that REPP would benefit from clear guidance as to preferred portfolio composition. Findings from Partner interviews have also highlighted the fact that REPP's Strategy is not clear (see Section 2.2).

overall – responsive to target groups’ needs.¹⁰¹ Stakeholders have converged overall in reporting this as positive and the evaluators would also judge this flexibility as positive, particularly in consideration of the fact that REPP has approached its first 2-3 years of implementation somewhat from a ‘proof of concept’ or piloting perspective.

However, as REPP nears its third year of operation, it has reached a position at which it can and should consolidate its strategy and direction. This evaluation has identified clear gaps in the strategy which need to be consolidated or made more specific if REPP is to operate more purposefully and clearly. This may mean that REPP will need to become somewhat less flexible / dynamic, or else it may mean that REPP defines its flexibility as a key feature – or mechanism – of the programme, whilst monitoring and managing associated costs. Overall, there are lessons for BEIS to capture in relation to the positive effects of this flexibility: on piloting, learning and (possibly) on demonstrability. It would be useful for BEIS to bear these in mind for future (new) programming.

Box 15. The extent to which the intervention has been managed and delivered against the Paris Declaration principles^{102,103}

Analysis of REPP’s alignment with the Paris Declaration principles was not an objective of this evaluation. Thus, such evidence was not sought out and the evaluators did not come across evidence that REPP was following these principles explicitly. Nonetheless, the evaluators consider that REPP delivers in line with the Declaration’s five principles in the following ways:

Ownership: The REPP works within the policy frameworks of developing countries and seeks to enhance these by catalysing the markets in countries. REPP works with predominantly private sector actors and other donors in developing countries to drive the growth and development of small-scale renewable energy (RE).

Alignment: As above, the REPP works within local systems and national RE objectives.

Harmonisation: Through REPP, BEIS works with a range of donors offering complementary services to project developers (e.g. late stage financing). There is potentially room for BEIS to further harmonise with other donors to further reduce country-specific barriers to projects reaching financial close (see Section 6.1.1).

Results: The REPP project has been specifically designed to achieve direct RE and emissions results and to reach the ultimate goal of transformative market change.

6.2 Conclusions on REPP’s organisational structures

6.2.1 The suitability of REPP’s organisational structures

Camco, the Management Board and Assessment Committee members appear overall well-suited for their roles. They have the right experience and skill-sets to operate at REPP’s present scale. They are dedicated and work, largely, in an efficient manner.

¹⁰¹ Evaluators note an unusually high degree of diversity in location/type/support permutations of REPP committed and pipeline projects. KIIs with Camco suggested that this can be an expected outcome of the word-of-mouth demand driven approach to solicit projects combined with the Board’s willingness to test different constructions.

¹⁰² This analysis was added to bring the Report into full alignment with the requirements of the DFID Evaluation Quality Assurance and Learning Services (EQuALS) Quality Assurance Evaluation Report template, which is often used by DFID and other UK Government departments spending Overseas Development Assistance to assess the quality of evaluations.

¹⁰³ For more information on the Paris Declaration and its principles, see: the OECD website: <http://www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm> [Accessed 26 October 2018]

6.2.2 The scalability of the organisational structures

The evaluators did not observe any inefficiencies which gave them great concern for this stage of the REPP. However, given the current level of effort being expended in REPP delivery, it is unlikely that it would have sufficient absorption capacity to manage a REPP scale-up without significant, strategic staffing increases. Similarly, the Management Board and Assessment Committee in their current form do not have in place the capacity, nor the procedures and processes that would allow them to perform their functions if REPP were to operate at larger scale.

Camco has a large workload and were this to increase further, it would place notable strain on the organisation. Camco has identified it would need to invest in both more back office functions (e.g. monitoring) and technical personnel (including those specialised in project execution) to cope if REPP were to scale up. Alternatively, REPP might consider more strategic partnering with other donors (even potentially a co-donor for REPP) and/or an expended remit / set of objectives for selecting REPP Partners to include this 'top down' objective.

6.3 Conclusions on REPP implementation

The evaluation's consultation with target stakeholders has revealed chiefly positive feedback and a high degree of satisfaction with REPP. However, these consultations also identified several areas of dissatisfaction / possible areas for improvement, even after accounting for bias, including in terms of:

- REPP's communication to contracted and pipeline project developers;
- REPP's clarity in and conveyance of its purpose and direction (i.e. its Strategy) and the Strategy's flexibility; and
- Delays in the project approval process.

The evaluators consider that these issues are to some extent inherently linked to the challenge of operating a new and relatively innovative programme. REPP's design involves activities and approaches that are new to both the market and the UK government; therefore, it is not unexpected to find some 'teething problems'.

Nonetheless, if REPP is to proceed towards scale-up (as the evaluators understand is the case) then it will need to identify solutions for these sticking points. Indeed, the evaluators have found that, in its current form, REPP is not scalable: the delivery and governance structures are too small and would need to broaden in terms of skills covered and the back-office systems supporting REPP (including tools such as the logframe and project selection guidelines) would need to improve.

Currently REPP is quite early in its implementation. In spite of estimates made in the REPP Business Case, only one quarter of REPP's contracted projects have yet reached financial close and these are only now beginning to produce electricity and related benefits. Project completion and operation are primarily being held back by forces currently out of their and REPP's control: mainly regulatory challenges. Unless REPP or a REPP Partner (or other actor) can address these remaining barriers, REPP might find it challenging to progress towards the achievement of its anticipated outcomes and impact.

6.4 Brief conclusions by evaluation question

The following sub-Sections provide some more detailed conclusions in response to the seven evaluation questions:

1. To what extent are REPP-sponsored activities likely to meet the needs of project developers and incentivise financial institutions whilst remaining relevant to the overarching objectives of REPP?

AND

7. Have REPP interventions met the expectations of the beneficiary projects and target groups?

- The evaluation uncovered plausible evidence of REPP offering the kind of support that would 'meet the needs of project developers' by bringing projects to financial close. Specifically, it found REPP's needs and risk analysis procedures to be thorough and its technical and financial understanding to be sound. Additionally, project developers project developers were satisfied with REPP's inputs and found their processes and eligibility criteria to be accessible.
- The evaluation did not uncover strong evidence of partner engagement by REPP, though – on the other hand – it did find verifiable evidence that REPP was able to identify partners when needed to support on specific projects. Overall then, the evaluation found that REPP has taken a different approach to using partners than initially planned. In contrast to its current ToC, we found no evidence of REPP taking steps to influence partners at a broader level than the REPP project.
- REPP activities related to project and to partner development appear largely consistent with REPP strategy; there is good body of plausible evidence to support this. However, REPP's strategy has flexed from its original state, and this needs to be captured better in REPP's planning.

2. Is the REPP strategy, and its processes, facilitating the achievement of the programme's desired outcomes in all countries? Are there preferable alternatives?

- The evaluation has only been able to find minimal evidence of REPP increasing project developer and market actor capacity in Sub-Saharan Africa. This is because of the fact that REPP is only early on in its implementation to be generating the results that would support such an analysis.
- It has also only found weak evidence of REPP's demonstrability and the likelihood of it achieving development benefits.
- It has found a strong body of plausible evidence that there are no or very few alternatives to REPP in respect of REPP's service offering and the types of projects it targets.
- It has also found strong evidence that REPP is not crowding out the private sector (due principally to the fact that it targets projects which generate too low an IRR or are considered still too risky for commercial actors), but only found weak evidence that REPP is crowding it in so far.

3. Is the REPP being implemented in line with its strategy? If not, are changes required to the ToC?

- As concluded above, REPP is being implemented *largely* in line with its strategy, but refinement of the REPP strategy is required which will entail changes to the ToC.

4. Is the REPP's delivery structure appropriate to REPP for achieving its desired impact and value for money within expected timeframes?

- REPP's delivery structure is appropriate to the achievement of impact, though only if adapted to enable programme scale-up.
- However, for impact to be achieved, aspects of REPP's strategy, including the mechanisms through which transformational change is expected to be achieved, need to be further developed and clarified.
- REPP demonstrates some inefficiencies, which represent a concern for the programme (e.g. the approval process which creates delays, inter alia).
- On the other hand, REPP also demonstrates some cost-efficiencies, such as the voluntary nature of the Board and Assessment Committee and the effectiveness with which Board and Assessment Committee meetings are conducted.

5. Are the REPP's outputs being achieved as planned? AND 6. What evidence is there to date that outcomes have been or are likely to be achieved and what are the factors that might explain these?

- There is mixed effectiveness in REPP's progress towards outputs and outcomes.
- Currently REPP is behind target on several of its logframe milestones, largely due to the delays in projects reaching financial close.
- The mix of different programme objectives (leverage, RE capacity, energy access, etc) makes achieving them all challenging and the portfolio is very diverse in terms of project size, RE type and geography. There have also been substantial shifts in REPP overall approach towards supporting RE projects which has affected milestones.

6.5 Summary of main lessons emerging from the evaluation

In answering the evaluation questions and, in particular, in reviewing the adequacy and effectiveness of REPP's strategy, delivery structures and processes and programme implementation, a number of lessons have emerged which REPP may wish to take on board in the final stages of implementation of REPP phase I, in designing, planning for and implementing a REPP phase II, and in designing and implementing future programmes. Some learning may also be relevant for other ICF / BEIS programmes.

6.5.1 Lessons relevant for the ongoing implementation of REPP phase I

In addition to those lessons outlined above in relation to gaps in REPP's strategy (6.1), the scalability of REPP (6.2) and improvements that should be made in relation to its approval processes and delivery agent fee structure (6.3), this evaluation has learned that:

REPP's partnering strategy no longer aligns with its original intentions. The current approach to partnering, which is specific to projects and project needs, is logical, but may be lacking in terms of REPP achieving the market influence it desires. In view of this, it would be useful for the REPP partnering strategy to be reviewed and refined.

Dissemination (of results, objectives, strategy) can be a crucial element to a programme's influence on the market / target audiences. This evaluation has found that REPP is currently lacking in this area. It should consider how it can quickly improve its marketing and communications, particularly in relation to communicating its strategy and scope to (future) REPP partners and market actors.

There are some shortcomings in REPP's current logframe which might be usefully addressed during REPP phase I, before the next reporting period. For example, REPP might consider deleting the indicator 'agreements signed with REPP Partners' as it doesn't reflect the true nature of REPP's engagement with these Partners. Instead indicators such as (i) financing leveraged (from these actors), (ii) REPP due diligence accepted and/or (iii) number of REPP support products (or packages) co-developed with them, are much more suitable.

6.5.2 Lessons relevant for the future implementation of REPP phase II

REPP support is not addressing the outstanding (country-specific) regulatory barriers. The lesson here then is that, the programme cannot have truly transformational impact without a regulatory/institutional environment to enable future projects. Nonetheless, this does not discount the fact that a demonstration project could help prompt policy makers to act. Therefore, REPP's strategy is still logical and achievable but needs some adaptation to account for the regulatory barrier.

REPP's progress towards attracting private sector investment has been minimal to non-existent. It is too soon to draw a solid conclusion on whether this means that the REPP model does not work for private sector leveraging, or whether it just needs more time (as this is a long-term goal). Ultimately, this is something that will need to be investigated through a later (e.g. impact) evaluation.

REPP's additionality seems to be one of the most positive achievements of the programme. This has been achieved by: (i) REPP targeting a recognised gap in the market: particularly early-stage development support for small-scale RE projects but also other kinds of support for 'risky' projects not attractive to other investors; (ii) by offering a range of products, tailored to the project's specific needs rather than a standard package of support; and (iii) by the REPP Board selecting a small investment company with notable market knowledge and sufficient flexibility and 'nimbleness' to read and respond rapidly to market changes, complemented by an equally small Assessment Committee and Management Board. Future programmes for whom additionality is a key concern could consider replicating some of these features of REPP.

It was not within the scope of this evaluation to consider the value for money of different portfolio compositions and services offerings. However, the evaluation has found that project size and the complexity of the offering (particularly in relation to RBF) can have notable implications for the value for money of the REPP's delivery. In developing a business case for any REPP future phase, value for money should be assessed in these terms.

6.5.3 Lessons relevant for future programmes of BEIS / other UK government departments

When designing future logframes, BEIS should consider better integrating indicators that monitor portfolio composition. This would facilitate more systematic assessment of the extent to which each project fits within the key parameters (e.g. transformational agenda, risk appetite, financial return) driving portfolio composition and project selection.

Where outputs and outcomes cannot be achieved within 1-2 years, BEIS should actively identify indicators on pipeline / portfolio development which will help it to identify potential challenges to reaching outputs / outcomes at an earlier stage.

REPP's design is logical, well-thought-through and is demonstrating effectiveness in some areas; its delivery structure has many positive features. However, REPP is still facing barriers in achieving its goals. In response, this evaluation does not recommend that REPP necessarily expand its remit and then try (possibly unsuccessfully) to cover a diverging range of necessary activities to address these barriers. Government programmes cannot achieve / cover 'everything'. Instead, it proposes that REPP address these through strategic partnering either at project partner, implementing partner, co-donor or donor level. In this way, more could be achieved with greater efficiency and impact.

In the first 2-3 years of implementation, REPP's flexibility in the types of projects supported has enabled REPP to 'learn-by-doing' and explore different options for implementation. This flexibility contrasts with the more standardised support that other programmes tend to offer project developers, which can exclude some of the most in-need, reduce additionality and restrict the potential for innovation. BEIS would therefore benefit from capturing lessons on both the positive and less positive effects of taking this highly tailored and responsive approach to supporting projects. A less positive effect of the approach is the administrative / management burden it places on the implementing partner and Board.

6.5.4 Lessons transferable to other (existing) ICF / BEIS programmes.

ICF guidance on KPI reporting is quite detailed and thorough. However, ICF programmes such as REPP still face challenges in converting the data they receive from their programme partners into KPI data due to quality issues, a lack of transparency around the data collection and analytical methods used by these partners, and time and capacity within BEIS to quality assure. It is hoped that the Results Reporting System Review conducted for this evaluation can generate lessons for BEIS in how to manage such partner data and develop tools that can facilitate reporting accuracy and efficiency.

ICF KPIs are highly sensitive to the nature of projects being funded and monitored within each ICF programme. More could be done to acknowledge this in KPI guidance and tools and to ensure that ICF programme managers account for this in the design of their reporting systems.

7. Recommendations

7.1 Recommendations linked to REPP's strategy

1. The evaluators main recommendation is for **REPP to update its strategy and ToC** by:
 - Developing a more detailed outline of the mechanisms through which it expects to achieve transformational change;
 - Linked to this, to define specifically what it means by 'demonstration effect' and what implications this has for project selection and REPP's support to projects;
 - Consider the implications of this for the REPP portfolio (see also below); and
 - Consider whether (and if so how) it might try to address remaining barriers to financial close (which are mainly regulatory).
2. In implementing recommendation 1, REPP should consider operationalising one or more of the following three strategies in order to **ensure that the balance between REPP objectives / goals is not conflicting**; either:
 - Narrow down REPP ambitions and make the portfolio more targeted; or
 - Be transparent about the implications of different portfolio compositions and set soft targets for the proportion of the portfolio that will be composed of on-grid/off-grid, different technologies, early-stage and late-stage projects and the subsequent results that are expected to be produced as a result (including any aspects of the portfolio which may diminish or threaten goals); or
 - Consider whether it could work jointly in a more strategic way with existing and future project-specific partners and/or country-level partners (e.g. national regulators), as well as co-donors and, possibly, additional Delivery Agents, to apportion responsibility for the objectives in a more harmonious way.
3. In terms of REPP's offering, it should consider the **relative additionality of its RBF provision** over its TA provision. It may consider developing some type of framework or approach to justify clearly that there are no other investors capable or willing to provide such finance, particularly for markets with relatively more developed national capital markets such as Kenya and Ghana where the regulatory framework is already in place and hence investor interest has been quite high (as demonstrated by the case studies in Annex 5).
4. Once agreed, REPP should **clearly define and publicise REPP's scope, offering and direction** as well as any processes or plans for future (re)iteration.

7.2 Recommendations linked to REPP's organisational structures

5. **Increase the Management Board and Assessment Committee size and skill set:** As project numbers increase and become more financially complex, it will need to bring on additional investors to manage increased workload. An addition of around 2-3 members to increase the number of decision-makers (in the Board) and to cover skills arising in need, such as investment planning, would make a good start.
6. **Invest in developing tools to support project selection and decision-making:** *See the strategic recommendations in Section 7.1.*

7.3 Recommendations linked to implementation

7. **On the REPP logframe, consider:**
 - a. **Changing indicators on 'number agreements signed with REPP Partners'** to indicators such as (i) 'financing leveraged (from these actors)' and (ii) 'REPP due diligence accepted' iii) 'number of REPP support products (or packages) co-developed with REPP Partners' to better reflect REPP's actual desired outputs in this area.
 - b. **For future programmes, ensuring sufficient intermediate goals forecasting the likelihood of outputs (e.g. projects reaching financial close) are monitored through the logframe.**
 - c. **For future programmes, better integrating indicators that monitor portfolio composition.** This would facilitate more systematic assessment of progress towards different REPP outcomes (assuming that different portfolio compositions and project selections affect outcomes in different ways, as outlined in this evaluation's conclusions).

These changes could also be introduced into the REPP logframe if considered sufficiently relevant to do so at this stage of implementation.

8. **Improve the speed of the approval process:** This may involve REPP adjusting its current procedure of having two Board members sign approvals. Whilst the evaluators do not think this should be reduced or changed, in essence it considers that the Board should identify ways to prevent this from delaying approvals (e.g. by setting specific days each month/week on which approvals are made, which can be communicated to project developers). This could also be supported by Camco strengthening the skills-set or responsibilities of its champions to (better) cover loan monitoring, financial risk monitoring and project KPI monitoring.
9. **Consider limiting the number of projects to which RBF is offered / the complexity of the RBF offering:** Camco has begun presenting projects requiring more complex financial structuring, RBF support and new way of thinking. While this allows REPP to continue to remain flexible and innovative, it has implications on personnel time owing to the overtly complex legal agreements and financial models. Whilst such projects might work if REPP scales up and Camco hires additional staff, if the decision to scale is not made, Camco will need to step back from providing potential RBF to every project and

only extend support to selected ones (e.g. with high additionality benefits) where they can use standardised REPP RBF products.

10. **The REPP Management Board should improve its ‘back office’ systems to make them more efficient and effective:** This would include allowing project developers to upload documents, track project pipeline development and provide real time updates on KPIs onto ‘Camco’s project database management system’ to reduce email traffic (this is something Camco is planning already).

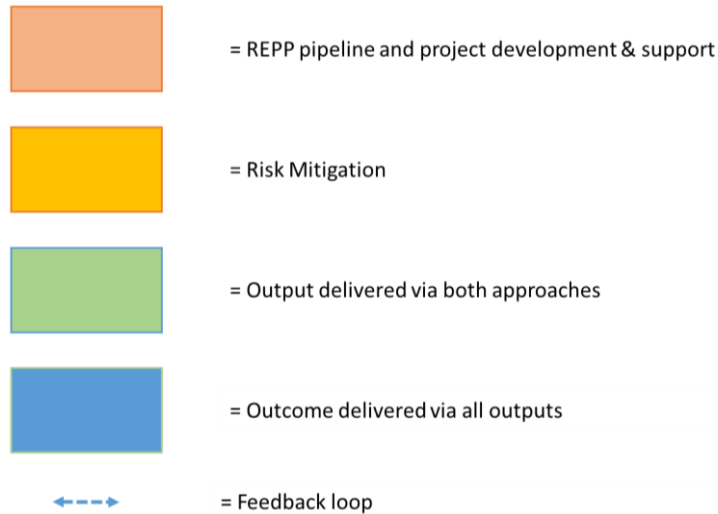
Annex 1: Terms of Reference



ITT Global
Evaluation Framework

Annex 2: REPP Theory of Change

TOC Key



REPP investments have a demonstration effect...: Assumptions

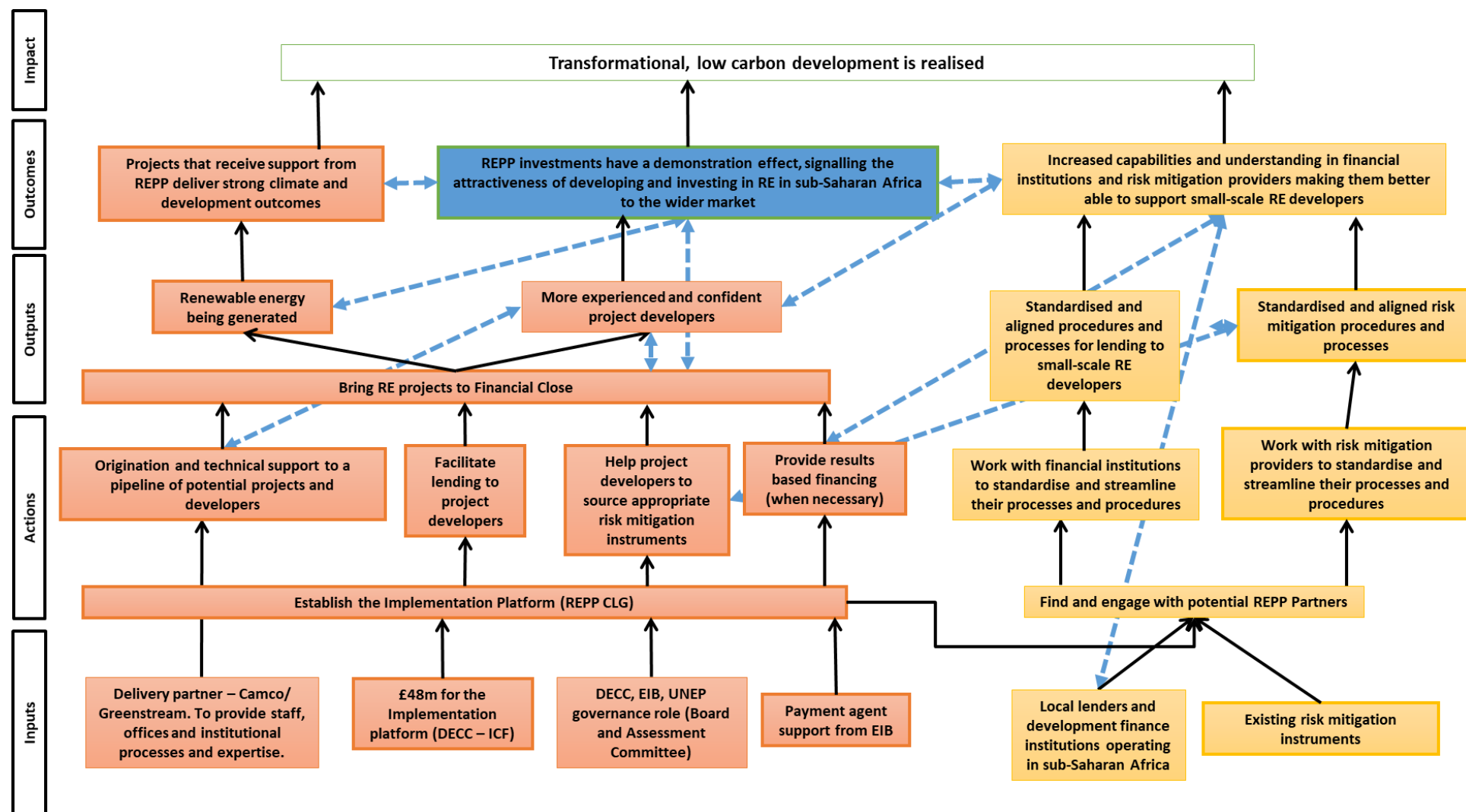
- The REPP will generate sustainable demonstration effects and will lead to a significantly enhanced ability of small-scale renewable energy projects to attract private sector finance on commercial terms in the future. (LF)
- Capacity building in investors and developers endures (BC)
- Success of REPP leads others to invest in RE (BC)
- Regulatory frameworks remain stable in target markets (BC)
- Projects engage in new initiatives after REPP funding has finished.

Risk Mitigation: Assumptions

- Risk mitigation/FIs suppliers have an interest in standardising.
- Risk mitigation suppliers/FIs can be incentivised to standardise.
- Risk mitigation suppliers/FIs will use common standards in the market.

Outcome to Impact/Transformational Change: Assumptions

- The REPP's outcomes will successfully align with and contribute to other external forces to deliver transformational change.
 - The international geopolitical & financial environments remain conducive to RE.
 - RE gains are not overtaken or undercut by other forms of energy generation or use.
- REPP pipeline and project development & support: Assumptions**
- Sound projects and developers exist, whose needs match what the REPP offers (BC)
 - Local actors can be identified and tasked to take over (BC)
 - Local actors continue to operate and deliver new projects (BC)
 - Potential energy customers are able to pay for energy (BC)
 - The Platform appeals to private investors and developers (BC)
 - Projects are able to deliver financial and climate returns and benefit.
 - The debt revolver facility is paid back, and reduces over time.



Annex 3: Evidence Framework

The evidence framework was developed during the inception period to:

- a. identify and structure the specific evidence we would be looking for to answer the seven evaluation questions;
- b. provide a basic structure (ex-ante) for the argumentation for answering each evaluation question; and
- c. evaluate (ex-ante) the likely strength of the evidence we would be able to gather through our data collection and analytical methods.

In this Annex, the evaluators present the original evidence framework, which breaks the evaluation questions down into hypotheses, for which a number of expected pieces of evidence have been proposed. It then maps against these evidence types the expected / planned source of the evidence. The evidence framework guided the development of data collection tools and also the structure of the evaluation's reporting and analysis without much deviation, therefore only some minor amendments have been made to the version presented below compared to the original submitted to BEIS during the inception period of the evaluation.

In the 'evidence weight' column, verifiable evidence refers to data that are both plausible and possible to verify. Such evidence generally describes quantifiable measures that can be physically counted. For example, the MW rating of installed capacity or the number of jobs in a company at a given time. Plausible evidence includes evidence which may make a plausible claim but may draw heavily on assumptions from secondary literature, for example those used to calculate greenhouse gas emissions avoided. Alternatively, it may refer to evidence which is the plausible conclusion drawn by an expert stakeholder or observer. There may be evidence presented to justify this view but no methodology against which the validity of the conclusion can be verified. Minimal evidence comprises that which simply claims an outcome but there may be no information about the data or methodology used to evidence this claim.

EQ1. To what extent are REPP-sponsored activities likely to meet the needs of project developers and incentivise financial institutions whilst remaining relevant to the overarching objectives of REPP?

Hypotheses tested by the EQ	Evidence if H is true	Sources of evidence ¹⁰⁴	Evidence weight	Evidence if H is not true	Sources of evidence	Evidence weight	Explanation for weighting
H1.1 REPP offers support that would help bring RE projects to financial close	E1. Camco targets (in its support package) the challenges that project developers identify as preventing them from reaching financial close.	<u>Evidence of project barriers / risks:</u> S2. Needs assessment / problem statement - project documentation S3. KIIs with PDs ¹⁰⁵ (on needs) <u>Evidence of REPP support package:</u> S2. Description of REPP targeting - project documentation S3. KIIs with Camco on design of and rationale for support	2	E5. Projects face barriers / risks to financial close not addressed by REPP support (nor other actor support).	As per column 3	2	Evidence is plausible, but not verifiable, as: - E1 require a counterfactual analysis not possible within the scope of this evaluation - E2, E3, E6 rely upon the evaluation team's judgement and logical reasoning rather than verifiable facts - E4 and E8 are self-reported evidence and can only be assessed for plausibility, not verified. - E5 and E7 however, are observable and therefore verifiable.
	E2. The rationale for REPP support is logical, transparent and justified.	<u>Evidence of Camco rationale:</u> S2. Project documentation S3. KIIs with Camco ##. Evaluation team's judgement	2	E6. REPP support is not appropriate to addressing the barriers to financial close faced by projects.	As per column 3	2	
	E3. REPP risk assessment is comprehensive and realistic	S2. Camco's risk assessment S6. Evaluation team's judgement S3. Views of other stakeholders	2	E7. Projects face barriers / risks to financial close not recognised by Camco (nor addressed by other actors).	As per column 3	2	
	E4. Project developers consider REPP's participation processes to be reasonable	S3. KIIs with project developers	2	E8. REPP's participation processes have deterred project developers	As per column 3	2	

¹⁰⁴ The numbering S1 – S7 refers to the different strands of analytical and data collection activity implemented under the Evaluation. These comprised: Strand 1 (S1): portfolio analysis; S2: in-depth programme and project review; S3: key informant interviews (KIIs); S4: results review; S5: market / context analysis; S6: Hypothesis-building and testing; S7: VfM analysis; and S8: case studies. ##. Indicates no relevant work strand.

¹⁰⁵ Project developers

H1.2 REPP finds and engages potential REPP partners	E9. REPP is actively identifying and contacting / engaging with potential partners.	S2. programme documentation (setting out the process for engagement) e.g. Management Board meeting minutes, SOPs	3	E.11 There are several useful potential partners that have not been identified or actively engaged by REPP (opportunity missed).	'S3. KIIs with other market actors S5. Market context analysis	3	The information is all verifiable.
	E10. Potential partners have been identified and agreed to work with REPP	S3. KIIs with Camco S3. KIIs with BEIS S3. KIIs with Management Board	3	E.12 There are several useful potential partners that have been identified, but not yet actively engaged by REPP (capacity issue).	S2. Programme documentation (e.g. meeting minutes) S3. KIIs with other market actors S5. Portfolio-level context analysis S3. KIIs with Camco	3	
				E.13 There are several useful potential partners that have been identified and engaged, but who have not agreed to work with REPP (lack of engagement effectiveness).	S2. programme documentation (e.g. meeting minutes) S3. KIIs with other market actors S5. Portfolio-level context analysis S3. KIIs with Camco	3	
H1.3 REPP can influence (i) financial institutions and (ii) risk mitigation providers to be willing to accept smaller, higher risk, projects within existing frameworks and procedures	E.14 Camco / BEIS have carried out activities which have had as aim to influence financial institutions and risk mitigation providers	S2. programme documentation (REPP logframe) S3. KIIs with Camco S3. KIIs with BEIS S3. KIIs with Management Board	3	E16. Camco / BEIS have not at this MT stage been able to carry out activities with REPP partners or other financial institutions and risk mitigation providers	As per column 3	3	E12 and E14 are verifiable, as they are observable evidence. E13 and E15 are only minimal / plausible, as they depend upon the credibility of the respondent.
	E15. Financial institutions and risk mitigation providers state / demonstrate that - following their interaction with REPP - they have / will / are likely to standardise and streamline their processes and procedures	'S3. KIIs with other market actors S7. Documentary evidence of a change in REPP Partners' procedures	1 / 2	E17. In spite of REPP activity, REPP partners state / demonstrate that they are not likely to adjust their processes / procedures to make them more accessible to small-scale RE developers	As per column 3	1 / 2	

H1.4 In trying to address the needs of developers / incentivising financial institutions, REPP remains consistent with its broader objectives ¹⁰⁶	E18. REPP project support packages (including REPP partners) have been selected in order to reach the 'sweet spot' of reaching its anticipated outcomes, even if this means not quite meeting the expectations of project developers.	S2. Programme documentation describing Camco's decision-making processes S3. Camco KIIs, describing Camco's decision-making processes S3. KIIs with REPP partners S3. Project developer KIIs describing the extent to which REPP meets their needs	2	E19. Through the work to support (some) projects, REPP risks compromising its broader objectives, e.g. by giving too great a focus to one project at the risk of the portfolio.	S2. In-depth project analysis S3. KIIs with REPP partners S7. Case studies	2	E16-E19 all rely upon the evaluation team's judgement and logical reasoning rather than verifiable facts.
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EQ2. Is the REPP strategy, and its processes, facilitating the achievement of the programme's desired outcomes in all countries?
Are there preferable alternatives?

Hypotheses tested by the EQ	Evidence if H is true	Sources of evidence	Evidence weight	Evidence if H is not true	Sources of evidence	Evidence weight	Explanation for weighting
H2.1 REPP activities as a whole (including projects and partnerships) increase the capacity / potential for developing and investing in RE in sub-Saharan Africa	E20. At least some projects are 'successful' - i.e. have reached, or look likely to reach, financial close (and remain operational for a sufficient period, technology-dependent)	S2. In-depth project review S2. Workshop with Camco S3. KIIs with project developers S4. Logframe review S4. Results mapping	3	E23. Projects are not reaching financial close / do not look close to reaching financial close in spite of REPP support	As per column 3	2	E20 and E21 are factual and therefore verifiable. E22 and E24 rely upon the assertion of stakeholders and are therefore not verifiable. Only the information about whether they are funding non-REPP small-scale RE projects is verifiable (but not the rationale behind this). E23: information about whether projects have reached financial close is verifiable, but it is not possible to verify whether they <i>will</i> reach financial close in the
	E21. At least some developers (including of dropped or unviable projects) have begun to develop, or made plans to develop, more projects in Sub-Saharan Africa	S3. KIIs with project developers	3				
	E22. Financial institutions and risk mitigation providers state that - following their interaction with REPP or REPP-supported projects - they have funded, or would be	S3. KIIs with REPP partners S3. KIIs with other market actors	1 / 2	E24. In spite of REPP activity, financial institutions and risk mitigation providers state / demonstrate that they are not likely to fund (other) small-scale RE projects	S3. KIIs with REPP partners S3. KIIs with other market actors	1 / 2	

¹⁰⁶ (i.e. of transforming the capacity of (i) financial institutions and (ii) risk mitigation providers to support small-scale RE developers; of demonstrating the attractiveness of developing and investing in RE in sub-Saharan Africa; and of climate and development outcomes).

	likely to fund, non-REPP small-scale RE projects						future, nor to be certain about the reasons for (not) reaching financial close.
H2.2 REPP activities as a whole (including projects and partnerships) demonstrate, or are likely to demonstrate, the attractiveness of and potential for developing and investing in RE in sub-Saharan Africa	E25. Camco identifies and selects projects to support that have high <u>demonstration value</u> (i.e. have sufficient potential as a concept but struggling to reach financial close for remediable reasons) and <u>replicability potential</u> (i.e. are not so unique as to not add value to transforming the market)	S2. In-depth project review S2. Workshop with Camco S3. KIIs with project developers S5. Portfolio context analysis + evaluation team judgement	2	E30. Projects identified (in pipeline) and selected do not have strong demonstrative power / replicability and there is not a clear rationale for this omission.	As per column 3	2	E25, E26, E27, E30, E31 and E32 require a judgement from the evaluation team, which is not objectively verifiable. E28, E33 and E34 are verifiable, as they rely upon an observation. E29 and E35 are not verifiable, and therefore not very reliable as sources of evidence, as they overly-dependent on the self-reporting of a single stakeholder.
	E26. Each contracted project is replicable (at least in theory) in a non-concessional / commercial way in the future (e.g. funded by the project developer or financiers would cover it under the right circumstances.	S3. KIIs with other market actors S5. Portfolio context analysis S7. Case studies + evaluation team judgement	2	E31. Projects identified (in pipeline) and selected present barriers to replicability / demonstration that makes them unsuitable candidates for REPP.	S2. In-depth project review S2. Analysis of REPP Strategy S2. Analysis of REPP implementation	2	
	E27. The 'solution' REPP provides is replicable (at least in theory) in a non-concessional / commercial way in the future (e.g. funded by the project developer or financiers would cover it under the right circumstances.	As per the cell above (for E26)	2	E32. The REPP solution is not replicable	As per column 3	2	
	E28. The REPP strategy / processes includes some type of dissemination component	S2. Analysis of REPP Strategy S2. Analysis of REPP implementation S3. KIIs with Camco S3. KIIs with BEIS S3. KIIs with REPP Management Board	3	E33. The REPP strategy / processes do not include any dissemination component	As per column 3	3	

	E29. Financial institutions and risk mitigation providers state that they have funded, or would be likely to fund, small-scale RE projects because they have seen it demonstrated through REPP or after engaging with a REPP supported project.	S3. KIIs with other market actors	1	E34. Low awareness of REPP amongst financial institutions and risk mitigation providers E35. Financial institutions and risk mitigation providers state that they have funded, or would be likely to fund, small-scale RE projects due to reasons other than REPP.	As per column 3	3 1	
H2.3 REPP activities as a whole (including projects and partnerships) deliver, or are likely to deliver, development and climate benefits		Not within scope of this evaluation					
H2.4 There are no - or few - preferable alternatives to REPP	E38. There are few / no other types of product / service available to REPP-contracted projects which offers the same potential for (a) reaching financial close whilst (b) enhancing commercial thinking and (c) mobilising private / public sector financing.	S3. KIIs with other market actors S5. Portfolio context analysis S7. Case studies + evaluation team judgement	2	E40. Alternatives to REPP support exist in the project context which have preferable terms and conditions to REPP and/or are more likely to bring the projects to financial close than REPP	As per column 3	2	All of these types of evidence (E38 to E42) can only be assessed for plausibility, but not completely verified, as it is not possible to compare REPP to <i>all</i> (nor even most) products / services available to developers in the context within the scope of this evaluation.
H2.5 The REPP strategy, and processes, at project level is not crowding out funding alternatives	E39. To the extent alternatives are available, REPP is priced competitively, compared to alternative offerings within the project developer's environment.	As per the cell above (for E38)	2	E41. REPP is 'cheap' compared to alternative offerings within the project developer's environment.	As per column 3	2	
				E42. Project developers state that they selected REPP, even though alternatives were available, because REPP was cheaper.	S3. KIIs with Project developers	2	

EQ4. Is the REPP's delivery structure appropriate to REPP for achieving its desired impact and value for money within expected timeframes?

Hypotheses tested by the EQ	Evidence if H is true	Sources of evidence	Evidence weight	Evidence if H is not true	Sources of evidence	Evidence weight	Explanation for weighting
H4.1 REPP's Delivery Agent has capacities (in project origination, selection/approval and providing support) which (a) facilitate the likelihood of transforming the market for financial and risk mitigation support to small-scale RE developers and (b) provide value for money.	E43. The rationale for selecting and maintaining Camco as delivery partner was logical, transparent and justified.	S2. Programme documentation S3. KIIs with BEIS S3. KIIs with Management Board + evaluation team judgement	2	E45. The rationale for selecting and maintaining Camco as delivery partner is not logical, transparent and justified.	As per column 3	2	All evidence is non-verifiable, only plausible, as it relies upon the evaluation team's judgement and logical reasoning rather than verifiable facts.
	E44. Camco has (unique) qualities which support efficiency and effectiveness in REPP delivery (e.g. flexibility, well-situated, skilled team members)	S2. Analysis of REPP implementation S2. Workshop with Camco S3. KIIs with BEIS S3. KIIs with Management Board + evaluation team judgement	2	E46. Camco has qualities which may prohibit it from an effective delivery of REPP (e.g. slow procedures, insufficient capacity, high risk profile)	As per column 3	2	
H4.2 The structures through which the Delivery Agent operates and is governed (e.g. contractual arrangements and conditions, and management and governance structures) provide value for money (i.e. they are effective, efficient and economical)	E47. The structures through which REPP operates and is governed (conditions, procedures, hierarchies) are designed to facilitate efficiency and effectiveness of delivery.	As per source for E43, particularly documentation on the conditions through which REPP operates.	2	E48. The structures through which REPP operates and is governed (conditions, procedures, hierarchies) introduce obstacles to efficiency and effectiveness of delivery.	As per column 3	2	All evidence is non-verifiable, only plausible, as it relies upon the evaluation team's judgement and logical reasoning rather than verifiable facts.
H4.3 The delivery structure is scalable, if REPP were to scale up in	E49. Camco has the procedures and processes in place that would allow it	As per source for E44, particularly documentation on the conditions through which REPP operates.	2	E52. There are aspects of Camco's procedures which are likely to prevent it from operating at scale.	As per column 3	2	For E49 to E54, the evidence is plausible only, as the evaluation team cannot be certain as to

order to achieve its expected impact.	to operate REPP at a larger scale.						what will happen in the future; they can only posit plausible scenarios based on evidence about how the delivery structures work now.
	E50. Camco has staff and staffing structures, or the ability to contract new staff, in order to operate REPP at a larger scale.	As per source for E44, particularly documentation on the conditions through which REPP operates.	2	E53. Camco does not have staff, staffing structures or the likely future capacity to staff a scaled-up REPP.	As per column 3	2	
	E51. The structures through which Camco operates and is governed are flexible enough to enable scaling up.	As per source for E44, particularly documentation on the conditions through which REPP operates.	2	E54. The structures through which Camco operates are insufficiently flexible (or present other barriers) to scale-up.	As per column 3	2	

EQ6 What evidence is there to date that outcomes have been or are likely to be achieved and what are the factors that might explain these?

Hypotheses tested by the EQ	Evidence if H is true	Sources of evidence	Evidence weight	Evidence if H is not true	Sources of evidence	Evidence weight	Explanation for weighting
H6.1 There is evidence that some outcomes have been (partly) achieved: i.e. project developers have improved capacity to develop projects attractive to financial institutions / risk mitigation providers; financial institutions and risk mitigation providers are more likely to fund small-scale RE projects; and climate and development outcomes have been achieved.	These two hypotheses overlap with hypotheses H1.1 to H1.4 (associated with EQ1 in this Framework) and so the same evidence, weighting and data sources apply here.						
H6.2 There is evidence that (further) outcomes will be achieved as a result of REPP: i.e. project developers are likely to improve their capacity to develop projects attractive to financial institutions / risk mitigation providers; financial institutions and risk mitigation providers are likely to fund small-scale RE projects; and climate and development outcomes are likely to be achieved.							
H6.3 It is possible to already discern some factors that contribute to, or hinder, the achievement of outcomes.	E55. Outcomes are being achieved and there is sufficient data within the portfolio to discern affective factors.	S1. Portfolio analysis S2. In-depth project review S2. Workshop with Camco S3. KIIs with project developers S4. Logframe review and results mapping S7. Case studies	3	E56. There is insufficient data within the portfolio to discern affective factors.	As per column + findings from the exercise to develop an impact evaluation.	3	The evidence here is factual information that can be observed.
H6.4. The REPP strategy, and its processes, facilitate the achievement of the programme's desired outcomes	This hypothesis overlaps with hypotheses H2.1 to H2.3 (associated with EQ2 in this Framework) and so the same evidence, weighting and data sources apply here. (For contracted project developer interviews, I will also look at evidence recorded for H2.5 and H4.1)						

EQ7 Have REPP interventions met the expectations of the beneficiary projects and target groups?

Hypotheses tested by the EQ	Evidence if H is true	Sources of evidence	Evidence weight	Evidence if H is not true	Sources of evidence	Evidence weight	Explanation for weighting
H6.1 There is evidence that some outcomes have been (partly) achieved: i.e. project developers have improved capacity to develop projects attractive to financial institutions / risk mitigation providers; financial institutions and risk mitigation providers are more likely to fund small-scale RE projects; and climate and development outcomes have been achieved.	This hypothesis overlaps with hypotheses H2.1 and H2.2 (associated with EQ2 in this Framework) and so the same evidence, weighting and data sources apply here.						

The hypotheses and evidence sources for EQ3 and EQ5 were not predefined at evaluation design / inception phase, as the evidence framework was designed to apply when addressing questions that required evidence to be synthesised across multiple sources and, for EQ3 and EQ5, it was considered that conclusions would be made primarily according to the results of 1-2 sources. However, to provide a comprehensive presentation, tables for these have been developed post-analysis to indicate the types of evidence considered and the weight of these.

EQ3. Is the REPP being implemented in line with its strategy? If not, are changes required to the ToC?

Hypotheses tested by the EQ	Evidence if H is true	Sources of evidence	Evidence weight	Evidence if H is not true	Sources of evidence	Evidence weight	Explanation for weighting
H3.1 REPP is overall being implemented in line with its strategy	E57. REPP activities and outputs align fully with those of the ToC	S1. Portfolio analysis S2. In-depth programme and project review S2. Workshop with Camco S3. KIIs with REPP internal stakeholders	3	E59. REPP activities and outputs do not align fully with those of the ToC – e.g. some activities cannot be observed or are observably different in reality	See sources for E57.		Strong body of evidence that is observable and thus verifiable
	E58. REPP internal stakeholders' understanding of REPP objectives and expected outcomes and impacts aligns with those of the ToC	S2. Programme documentation review (strategy documents) S2. Workshop with Camco S3. KIIs with REPP internal stakeholders		E60. REPP internal stakeholders' understanding of REPP objectives and expected outcomes and impacts does not align with those of the ToC	See sources for E59.		Strong body of evidence that is observable and thus verifiable

		<i>Observation of Assessment Committee and Management Board meetings.</i>					
H3.2 No changes are required to update the ToC	This hypothesis overlaps with slightly hypothesis H3.1 and so the same evidence, weighting and data sources apply here.						
	E61. All key aspects of REPP's strategy are reflected in the ToC	S2. Programme documentation review (strategy documents) S2. Workshop with Camco S3. KIIs with REPP internal stakeholders <i>Observation of Assessment Committee and Management Board meetings.</i>	3	E63. There are key aspects of REPP's strategy that are not reflected in the ToC	<i>See sources for E61.</i>	3	Strong body of evidence that is observable and thus verifiable
	E62. All REPP internal stakeholders (Board, BEIS, Canco) agree on the strategy as it is reflected in the ToC	S2. Workshop with Camco S3. KIIs with REPP internal stakeholders <i>Observation of Assessment Committee and Management Board meetings.</i>	3	E64. All REPP internal stakeholders (Board, BEIS, Canco) agree on the strategy as it is reflected in the ToC	<i>See sources for E62.</i>	3	Strong body of verifiable evidence (i.e. the perspectives of the different stakeholders can be compared against each other and the ToC)

EQ5. Are the REPP's outputs being achieved as planned?

Hypotheses tested by the EQ	Evidence if H is true	Sources of evidence	Evidence weight	Evidence if H is not true	Sources of evidence	Evidence weight	Explanation for weighting
H5.1 REPP's outputs are being achieved as planned	E65. REPP's outputs as per the logframe are being achieved to the milestones set each year in the logframe.	S4. Logframe review and results mapping	3	E68. REPP's outputs as per the logframe are not being achieved to the milestones set each year in the logframe.	<i>See sources for E65.</i>	3	Evidence is verifiable (either results have been achieved or they haven't).
	E66. Outputs not marked in the logframe are being achieved as per REPP's plans (as per programme documentation and/or reporting by REPP stakeholders)	S2. Workshop with Camco S3. KIIs with project developers S4. Logframe review and results mapping S7. Case studies	3	E69. Outputs not marked in the logframe are not being achieved as per REPP's plans (as per programme documentation and/or reporting by REPP stakeholders)	<i>See sources for E66.</i>	3	

	E67. REPP has realistic targets for achieving its outputs	See sources for E66.	2	E70. REPP's outputs are not realistic to achieve with REPP's model / approach		2	Not possible to verify whether or not (future) targets will be achieved, though can use logic to consider plausibility,
				E71. REPP's outputs are not realistic to achieve within the milestones / timeframes given		2	

Annex 4: REPP Project Country Profiles

Kenya

The Republic of Kenya is a country in East Africa.

Table A4. 1 – Kenya Facts

Country Facts	
Capital	Nairobi
Population	49.1 million
Electricity Generating Capacity (on-grid)	2.3 GW (2017) ¹⁰⁷
Electricity Generating Capacity (off-grid)	11.5 MW ¹⁰⁸
Electricity Generation	Geothermal (44%) [Renewables total: (>80%)] ¹⁰⁹ (2015)
% of Population with Access to Electricity	56% (2016) ¹¹⁰

Country Business Environment and Access-to-Finance Statistics

Table A4.2 provides a matrix for the country-specific indicators.¹¹¹

Table A4. 2 – Kenya Business Environment and Access-to-Finance¹¹²

Country	Country Business Environment and Access-to-Finance						
	Ease of doing business	CPIA financial sector rating	Domestic credit to private sector by banks	Interest rate spread	Firms using banks to finance investment (working capital)	Cost of business start-up procedures	Commercial bank branches
Kenya	80	3.5	32.8%	6%	43.2% (41.1%)	26.3%	5.4

¹⁰⁷ <https://eneken.ieej.or.jp/data/7463.pdf>

¹⁰⁸ https://www.usaid.gov/sites/default/files/documents/1860/Kenya_Power_Sector_report.pdf

¹⁰⁹ <https://www.iea.org/statistics/statisticssearch/report/?country=Kenya&product=electricityandheat>

¹¹⁰ <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?view=chart>

¹¹¹ The indicators used for this context analysis are taken from the same source to ensure comparability and consistency in results between different country contexts. 'Ease of doing business', 'Interest rate spread' and 'Cost of business start-up procedures' indicators are from the year 2017. 'Firms using banks to finance investment (working capital)' indicators are from 2013. The remaining indicators are quoted for 2016. 'Ease of doing business' is a ranking of all identified countries by the World Bank. 'CPIA financial sector rating' has a scoring scale from 1 (low) to 6 (high). 'Domestic credit to private sector by banks' is percentage of GDP. 'Interest rate spread' is lending rate minus deposit rate. 'Firms using banks to finance investment (working capital)' is percentage of firms. 'Cost of business start-up procedures' is percentage of GNI per capita. 'Commercial bank branches' is per 100,000 adults.

¹¹² <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>

Kenya Market Context

Roughly USD 1.1bn in finance is annually available for electricity projects in Kenya. So far, 180 projects have been financed. The share of finance coming from international sources is 76%, while national financing sources provide the remaining 24% (mostly public funding). The Government of Kenya, as an intermediary to all international finance, disburses the finance coming in from abroad. Around 51% of finance available goes into transmission and distribution projects, while 40% go to residential access projects. Less than 1% is put in off-grid solutions.¹¹³

Kenya's stable and lucrative feed-in tariff policy in the recent years has attracted a lot of interest from developers. However, few of these projects have been able to move forward owing to an oversupply of power generation relative to demand therefore reducing the incentives for the government to rush RE projects to commissioning.¹¹⁴ Furthermore, proposed policy changes may signal some uncertainty for new investors. Kenya intends to roll out an auction for wind and solar, to replace the ongoing feed-in tariff. The Energy Ministry was also exploring the idea of local-currency-denominated tariffs in a bid to encourage local commercial banks to participate in energy projects. Owing to recent elections in Kenya in August 2017, it is not clear if, and when, these policies will be implemented but given the generally lengthy planning and approval process, developers have started to target captive generation projects. This is because the approval process for on-site power generation up to 1MW is far simpler and all projects below 3MW do not require a generation permit.¹¹⁵

Mini-grid capacity is rapidly growing in Kenya, despite uncertainties around geographic territory clauses in distribution tariffs. The Kenyan market has in many ways led the region in developing innovative solutions featuring some of the most advanced pay-as-you-go (PAYG) solar home system companies and innovative business models for mini-grid development. The pay-as-you-go models of service provision are well established and the micro-financing institutions have begun to engage in supporting RE products.¹¹⁶ Care must be taken to encourage profitability and long-term sustainability of this market given the high pre-ponderance of donor programmes in the region that can inadvertently continue to subsidise the market.

Overall Assessment

Overall, Kenya has developed a lucrative framework for RE development (both on-grid and off-grid). The off-grid sector is one of the most mature in the world and though the on-grid sector has seen high developer interest, lengthy planning and approval processes have been a deterrent to its growth. Hence, there still seems to be a lack for early stage development support from investors who are more likely to come in once projects reach commercial bankability (see Virunga Kenya case study (Annex 5) for a detailed assessment of the RE finance landscape in Kenya). REPP's role therefore seems to be most needed in providing early stage support to projects to reach financial close and only cautiously providing RBF funding in cases where it is truly additional and innovative.

¹¹³ https://www.seforall.org/sites/default/files/2017_SEforall_FR4P.pdf

¹¹⁴ Climatescope 2017, <http://global-climatescope.org/en/country/kenya/#/enabling-framework>

¹¹⁵ *Ibid.*

¹¹⁶ Danish Energy Management & Esbensen, 2017. *Renewable Energy Market Landscape Study*, s.l.: Ministry for Foreign Affairs for Finland (MFA).

Nigeria

The Federal Republic of Nigeria is a country in West Africa.

Table A4.3 – Nigeria Facts

Country Facts	
Capital	Abuja
Population	186 million
Electricity Generating Capacity (on-grid)	10.4 GW (2018) ¹¹⁷
Electricity Generating Capacity (off-grid)	305 MW (2015) ¹¹⁸
Main Source of Electricity	Fossil fuels (81.3%) [Hydro: (18.6%)] (2018) ¹¹⁹
% of Population with Access to Electricity	59.3% (2016) ¹²⁰

Country Business Environment and Access-to-Finance Statistics

Table A4.4 provides a matrix for the country-specific indicators.

Table A4.4 – Nigeria Business Environment and Access-to-Finance¹²¹

Country	Country Business Environment and Access-to-Finance						
	Ease of doing business	CPIA financial sector rating	Domestic credit to private sector by banks	Interest rate spread	Firms using banks to finance investment (working capital)	Cost of business start-up procedures	Commercial bank branches
	145	3.0	15.7%	8%	6.9% (16.9%)	28.8%	5.4

Nigeria Market Context

Nigeria has one of the biggest populations without (reliable) access to energy in the world. At 80 million un(der)served electricity users, it is second to only India.¹²² In size, this alone marks a unique financing challenge for local and international market actors. Factor into this the national currency crisis of 2014 (when the Naira/USD exchange rate fell from 200 to 315¹²³) as well as security issues (e.g. Boko Haram activity in the North-East of the country¹²⁴), and it becomes evident that Nigeria is a much harder place to develop small-scale RE projects than, for example, Kenya.

¹¹⁷ <http://www.nercng.org/index.php/home/nesi/403-generation>

¹¹⁸ https://energypedia.info/wiki/Nigeria_Energy_Situation

¹¹⁹ <http://www.nercng.org/index.php/home/nesi/403-generation>

¹²⁰ <https://data.worldbank.org/indicator/EG.ELC.Assessment.CommitteeCS.ZS?view=chart>

¹²¹ <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>

¹²² <http://documents.worldbank.org/curated/en/704121518922836847/pdf/NIGERIA-PAD-01292018.pdf>

¹²³ <https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

¹²⁴ Where most of the population without access to energy resides.

Furthermore, the 2013 completion of the privatisation of generation and distribution companies has led to a wide range of inefficiencies on the Nigerian electricity market. Business owners see this as the second-most important impediment to their operations, as power outages are frequent. Finance in the on-grid space (e.g. from the World Bank) therefore seems to focus on fixing the distribution and transmission networks rather than investing into new RE generation solutions.¹²⁵ In general, interest from local and international private investors in Nigerian on-grid RE projects is negligible.¹²⁶ Furthermore, restrictions on foreign currency and uncertainty over the future of the Naira are causing investors to hold back from investing in the Nigerian power sector.

The situation is slightly better in the off-grid space. Most of (inter-)national RE finance in Nigeria seems to go to either mini-grid projects or SHS PAYG schemes. Interviews with local stakeholders also emphasised that <10MW off-grid projects are to be prioritised in Nigeria, as they are likely to be the most (cost-)effective, given the country's circumstances¹²⁷. But even here investors encounter problems: The depreciation of the Naira increased prices of equipment imports and, at the same time, decreased the purchasing power of the population. The resulting limited market size has made financiers warier of non-performing loans and negatively impacted their willingness to invest.¹²⁸

For the projects that do get financed, cost of capital can range from below 5% up to 25%. Debt financing is almost completely absent with a project average debt-equity-grant ratio of 3%-70%-27%¹²⁹. A more in-depth analysis of the country context and the status and availability of different types of financial instruments is presented in the PAS BBOX Nigeria case study.

Overall Assessment

Nigeria is ranked as the world's largest importer of diesel generators. Hence there is a significant need and opportunity particularly for off-grid developers owing to a large off- and unreliable-grid population across a spectrum of income levels, including many with high ability to pay. Despite a weak regulatory framework to support the growth of RE sector in Nigeria, the government is taking positive steps such as developing support frameworks, certifications, and skills-building programs that could accelerate markets. There is growing investor interest (predominantly in the off-grid market) in the country, particularly with more private equity players entering into the market. REPP's support to projects in this region therefore comes at an opportune time to demonstrate the investability potential for small-scale RE in Nigeria so as to unlock further public and private finance.

¹²⁵<http://documents.worldbank.org/curated/en/704121518922836847/pdf/NIGERIA-PAD-01292018.pdf>

¹²⁶<https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

¹²⁷ Information received from stakeholder interviews.

¹²⁸<https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

¹²⁹*Ibid*

Benin

The Republic of Benin is a country in West Africa.

Table A4.5 – Benin Facts

Country Facts	
Capital	Porto-Novo
Population	10.87 million
Electricity Generating Capacity	213 MW (2015) ¹³⁰
Main Source of Energy	Fossil fuels (97.2%) [Renewables: (2.3%)] ¹³¹ (2014)
% of Population with Access to Electricity	41.4% (2016) ¹³²

Country Business Environment and Access-to-Finance Statistics

Table A4.6 provides a matrix for the country-specific indicators.

Table A4.6 – Benin Business Environment and Access-to-Finance¹³³

Country	Country Business Environment and Access-to-Finance						
	Ease of doing business	CPIA financial sector rating	Domestic credit to private sector by banks	Interest rate spread	Firms using banks to finance investment (working capital)	Cost of business start-up procedures	Commercial bank branches
Benin	151	2.5	21.6%	-1.6%	12% (26%)	3.6%	3.6

Benin Market Context

Albeit the cost of starting a business being exceptionally low in Benin, it still scores very poorly on the ease of doing business scale (in worldwide comparison) and the Country Policy and Institutional Assessment financial sector rating (in African comparison). The cost of money for commercial financiers is higher than its lending rate in Benin (interest rate spread: -1.6%) which erodes investment appetite for, at least, national players. Commercial finance into small-scale RE projects is hence not to be expected, eliminating the threat of REPP support crowding-out that type of finance for its Benin project.

There is no institutional or legal framework for RE developers in Benin. As the first IPP RE concession signed in Benin, the REPP funded project has been a pioneer in

¹³⁰ https://www.indexmundi.com/benin/electricity_installed_generating_capacity.html

¹³¹ <https://www.worlddata.info/africa/benin/energy-consumption.php>

¹³² <https://data.worldbank.org/indicator/EG.ELC.Assessment.CommitteeCS.ZS?view=chart>

¹³³ <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>

working with the Benin government¹³⁴. The government's aim is to ultimately get the private sector to invest in RE, but the framework is, as mentioned, in a poor state.¹³⁵ As part of its efforts, the government has signed a compact agreement committing funds to reform the power sector and upgrade grid capacity. Momentum to enable the energy sector inside the Benin government is thus high.¹³⁶ However, despite these positive developments, access to finance for developers of RE projects is an issue. This is due to the perceived creditworthiness of the off-taker (Société Béninoise d'Energie Electrique – SBEE).

REPP financial structuring support will facilitate access to long-term debt, if required.

There is interest by international players to invest in Benin's RE sector (given the prospect of reform). REPP is currently in talks with two REPP Partners to provide long-term debt and/or equity to its Benin project¹³⁷ and one REPP Partner to provide risk mitigation instruments to reduce currency exposure risk and could also cover off-taker risk.¹³⁸ Given that the REPP Project's IRR is below 20%, however, it is likely that the time horizon for investment to crystallise will be long (given that e.g. international private equity requires IRR's for small-scale RE of at least 20% and upwards¹³⁹).

Overall Assessment

REPP has taken the role of an initiator, as no other private player has dared to invest in RE in Benin before. It is therefore likely that, by proving the viability of the project and bringing it to financial close, REPP can leverage this confidence to attract additional (international) finance for the project. For the (local) commercial financiers to get involved, however, the institutional framework and financial environment of Benin need to improve.

¹³⁴ Information obtained from project structure paper.

¹³⁵ Information obtained from stakeholder interviews.

¹³⁶ Information obtained from CAMCO workshop.

¹³⁷ Information obtained from project structure paper.

¹³⁸ Information obtained from stakeholder interviews.

¹³⁹ Information obtained from stakeholder interviews.

Burundi

The Republic of Burundi is a country in East Africa.

Table A4.7 – Burundi Facts

Country Facts	
Capital	Bujumbura
Population	10.52 million
Electricity Generating Capacity	68 MW (2015) ¹⁴⁰
Main Source of Electricity	Hydro (83.8%) [Renewables total: (86.8%)] (2015) ¹⁴¹
% of Population with Access to Electricity	7.6% (2016) ¹⁴²

Country Business Environment and Access-to-Finance Statistics

Table A4.8 provides a matrix for the country-specific indicators.

Table A4.8 – Burundi Business Environment and Access-to-Finance¹⁴³

Country	Country Business Environment and Access-to-Finance						
	Ease of doing business	CPIA financial sector rating	Domestic credit to private sector by banks	Interest rate spread	Firms using banks to finance investment (working capital)	Cost of business start-up procedures	Commercial bank branches
Burundi	164	3	16.4%	-	29.9% (57.9%)	33.9%	3.2

Burundi Market Context

In the Sub-Saharan African context, Burundi is one of the hardest places to do business in. This point was reiterated frequently in stakeholder interviews and coined as a reason for non-involvement in the country's financial landscape. Political risk, stemming from an intended coup in 2015 and the recent referendum granting President Nkurunziza 'eternal leadership', has kept international investment away. The unfavourable market environment and a lack of legislation has also crippled (local) commercial funding into RE projects.¹⁴⁴ The sector is therefore heavily reliant on international finance to develop projects. So far, the EU has been the only identifiable donor of a RE program in Burundi.¹⁴⁵ There is essentially no market for RE projects in Burundi.¹⁴⁶

¹⁴⁰ https://www.indexmundi.com/burundi/electricity_installed_generating_capacity.html

¹⁴¹ <https://www.worlddata.info/africa/burundi/energy-consumption.php>

¹⁴² <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=BI&view=chart>

¹⁴³ <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>

¹⁴⁴ https://eepafrica.org/wp-content/uploads/Volume_II_Market_Landscape_-_Study_-_EEP-SEA_CountryProfiles_StakeholderMaps-1.pdf

¹⁴⁵ Off-grid mini power plants for hospitals. See source in footnote 54.

¹⁴⁶ Information obtained from stakeholder interviews.

Access to long-term debt and risk mitigation instruments have therefore been an issue throughout the development process and remain a significant risk for financial close. REPP, as a pioneer IPP investor in Burundi, is providing 'green liquidity' to a sector where there is none currently available.¹⁴⁷ REPP financial structuring support will help to structure and secure risk mitigation instruments (demonstrated by engaging a REPP Partner¹⁴⁸) and local currency lending from regional commercial banking institutions.¹⁴⁹

Furthermore, by stepping in to provide additional RBF support towards a bridge finance construction loan needed to secure further investment from international debt and equity financiers involved in the project, REPP has demonstrated its flexibility and solution-oriented approach to assisting projects. Framing the endeavour as a collegiate effort has further led to a fruitful environment between the financing actors to push the project forward despite the complicated political environment it is operating in.¹⁵⁰

Overall Assessment

Given the lack of finance in Burundi and low interest of international donors to invest in the country, REPP is playing a crucial role in the development of RE capacity in the country. From that perspective, it is hitting the 'sweet spot' of trying to create a market where there essentially is none.

¹⁴⁷ Information obtained from stakeholder interviews.

¹⁴⁸ Information obtained from stakeholder interviews.

¹⁴⁹ Information obtained from the project structure paper.

¹⁵⁰ Information obtained from stakeholder interviews.

Cameroon

The Republic of Cameroon is a country in Central Africa.

Table A4.9 – Kenya Facts

Country Facts	
Capital	Yaoundé
Population	23.44 million
Electricity Generating Capacity	1.5 GW (2015) ¹⁵¹
Main Source of Electricity	Fossil fuels (52.9%) [Hydro: (46.7%)] (2015) ¹⁵²
% of Population with Access to Electricity	60.1% (2016) ¹⁵³

Country Business Environment and Access-to-Finance Statistics

Table A4.10 provides a matrix for the country-specific indicators.

Table A4.10 – Cameroon Business Environment and Access-to-Finance¹⁵⁴

Country	Country Business Environment and Access-to-Finance							
	Overall	Ease of doing business	CPIA financial sector rating	Domestic credit to private sector by banks	Interest rate spread	Firms using banks to finance investment (working capital)	Cost of business start-up procedures	Commercial bank branches
Cameroon	-	163	3	15.6%	-	15.8% (20.2%)	35.8%	2

Cameroon Market Context

There is relatively little capacity and expertise among local commercial lenders to finance RE projects in Cameroon. Ecobank is one of the few commercial banks that is active in the market and willing to provide senior debt. However, tenor requirements still tend to be too short for small-scale RE projects (e.g. REPP funded project in Cameroon) that are not expected to achieve profitability over that time period. According to REPP, international financial players (e.g. World Bank, Lereko Metier) are drawn towards the small-scale RE market in Cameroon via REPP's incubation of promising projects (two REPP projects)¹⁵⁵.

The fact that Cameroon is part of the CFA franc currency makes it a more habitable investment environment for international lenders that are scared away by a market's

¹⁵¹ https://www.indexmundi.com/cameroon/electricity_installed_generating_capacity.html

¹⁵² <https://www.worlddata.info/africa/cameroon/energy-consumption.php>

¹⁵³ <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=BI-CM&view=chart>

¹⁵⁴ <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>

¹⁵⁵ Information obtained from project structure paper.

inherent currency risk (as is the case, for example, in Nigeria).¹⁵⁶ Furthermore, Cameroon's government has displayed encouraging signs of promoting investor confidence such as by allowing independent power producers to legally sell power to clients with industrial loads and introducing VAT exemptions for RE equipment.¹⁵⁷

Overall Assessment

REPP is at the forefront for supporting IPP development in Cameroon¹⁵⁸ and hence takes on a similar role as in Benin and Burundi in terms of supporting first-mover projects in the region. However, Cameroon's investment climate is showing promising signs, but it seems unlikely that REP is going to be crowding-out any private financial players but rather crowding in potential investors eyeing this market.

¹⁵⁶ Information obtained from stakeholder interviews.

¹⁵⁷ Climatescope 2017: <http://global-climatescope.org/en/country/cameroon/#/enabling-framework>

¹⁵⁸ Information obtained from project structure paper.

Ghana

The Republic of Ghana is a country in West Africa.

Table A4.11 – Ghana Facts

Country Facts	
Capital	Accra
Population	28.31 million
Electricity Generating Capacity	2.84 GW (2015) ¹⁵⁹
Main Source of Electricity	Hydro (55.7%) [Renewables total: (56.7%)] (2015) ¹⁶⁰
% of Population with Access to Electricity	79.3% (2016) ¹⁶¹

Country Business Environment and Access-to-Finance Statistics

Table A4.12 provides a matrix for the country-specific indicators.

Table A4.12 – Ghana Business Environment and Access-to-Finance¹⁶²

Country	Country Business Environment and Access-to-Finance						
	Ease of doing business	CPIA financial sector rating	Domestic credit to private sector by banks	Interest rate spread	Firms using banks to finance investment (working capital)	Cost of business start-up procedures	Commercial bank branches
Ghana	120	3	18.4%	-	21.2% (25.3%)	17.5%	7.1

Ghana Market Context

Ghana has put in place a favourable institutional RE framework that has facilitated interest and active involvement of the (local) private sector in RE projects.¹⁶³ Furthermore, a REPP project developer operating in Ghana indicated that the state utility currently has the provision for more supply than there is demand. This is owing to two reasons: i) development of gas power plants in the last year (2017) to provide much of the baseload power ii) raise in electricity tariffs to the end-consumer resulting in a drop-in consumption. As a result, the utility's requirement for getting more PPA's signed with IPPs is quite low. Also, at present interest rates of local commercial financiers still tend to be too high to be viable options for small-scale RE project developers.¹⁶⁴

Another important consideration is that Ghana is currently still under the IMF bailout programme for the restoration of debt sustainability and macroeconomic stability. The country was stopped from guaranteeing PPAs but has since reached a form of

¹⁵⁹ https://www.indexmundi.com/ghana/electricity_installed_generating_capacity.html

¹⁶⁰ <https://www.worlddata.info/africa/ghana/energy-consumption.php>

¹⁶¹ <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=BI-CM-GH&view=chart>

¹⁶² <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>

¹⁶³ Information obtained from stakeholder interviews.

¹⁶⁴ Information obtained from 'Gaia' project structure paper.

agreement called a Put-Call Option Agreement (PCOA). This agreement still restricts (and seriously slows down) the Ghanaian government's processes to write guarantees for investment. The process of getting a PCOA from the government as a financier can hence be a tedious and uncertain one. This seems to be a critical reason why international institutional and commercial players are cautious to invest in (RE) projects in the country, as this situation induces additional costs (mainly due to long lead times).¹⁶⁵

Overall Assessment

Ghana's situation unlike the high immature markets supported by REPP (such as Benin, Burundi, Cameroon) is quite different as it has a comprehensive institutional framework for RE in place. Its financial predicaments have, nonetheless, caused investors to reconsider putting their money in Ghanaian RE projects. Relevant market actors interviewed still consider that investors still see Ghana as a lucrative place to do business in but will not do so without an entity in place to manage the complicated current PPA environment. REPP can supply the patience and on-the-ground support in this phase, maintain a funding pipeline, and later be in a pole position to unlock ('crowd-in') large amounts of finance.

¹⁶⁵ Information obtained from project structure paper.

Tanzania

The United Republic of Tanzania is a country in East Africa.

Table A4.13 – Tanzania Facts

Country Facts	
Capital	Dodoma
Population	55.57 million
Electricity Generating Capacity	1.19 GW (2015) ¹⁶⁶
Main Source of Electricity	Hydro (47.3%) [Renewables total: (54.1%)] (2015) ¹⁶⁷
% of Population with Access to Electricity	32.8% (2016) ¹⁶⁸

Country Business Environment and Access-to-Finance Statistics

Table A4.14 provides a matrix for the country-specific indicators.

Table A4.14 – Tanzania Business Environment and Access-to-Finance¹⁶⁹

Country	Country Business Environment and Access-to-Finance						
	Ease of doing business	CPIA financial sector rating	Domestic credit to private sector by banks	Interest rate spread	Firms using banks to finance investment (working capital)	Cost of business start-up procedures	Commercial bank branches
Tanzania	137	3.5	14.2%	5.5%	18.5% (14.7%)	42.9%	2.5

Tanzania Market Context

The Tanzanian regulatory and legal framework for (small-scale on-grid) RE although considered favourable¹⁷⁰ has recently been a cause for concern to developers and investors alike. This is owing to recent election related changes that have introduced unfavourable regulatory changes such as revisions in the Power Purchase Agreement down from US 12¢ to 9¢ given the off-taker (Tanzania Electric Supply Company (TANESCO)) is selling the power for.¹⁷¹ Furthermore, TANESCO is currently considered un-bankable and this serves as a major deterrent for (inter-)national investors to put their money in small-scale RE on-grid solutions.¹⁷²

¹⁶⁶ https://www.indexmundi.com/tanzania/electricity_installed_generating_capacity.html

¹⁶⁷ <https://www.worlddata.info/africa/tanzania/energy-consumption.php>

¹⁶⁸ <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=BI-CM-GH-TZ&view=chart>

¹⁶⁹ <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators>

¹⁷⁰ Information obtained from Camco Tanzania Memo.

¹⁷¹ Information obtained from KIIs with Camco and a Project Developer

¹⁷² Information obtained from Kitewaka project structure paper

On the other hand, the government's off-grid policies are however still attractive to private sector investment and seek to attract increased attention from large DFIs.¹⁷³ However, there are a few fundamental problems that still hinder financial close for these endeavours in the country. The financing of a micro/mini-grid expansion project is different from a typical IPP (Independent Power Producer) project finance deal in that the off-take risk is based on a multitude of small retail off-takers (end customers) rather than on a single company. Therefore, the credit risk of a micro/mini-grid project is perceived by lenders as higher (although this perception is yet to be validated). Thus, debt is unlikely to be available at this stage or debt terms are likely to be less favourable than usually seen in the African IPP market. Potential lenders such as OPIC have indicated that they could provide loans with amounts representing as much as 50% leverage, with tenors as low as 10 years, and DSCR (Debt Service Cover Ratio) requirements as high as 1.6x.¹⁷⁴

Generally, off-grid project developers complain that access to finance (and especially debt) is difficult. Another factor for this is the widespread lack of capacity among project developers to develop a bankable project case.¹⁷⁵ According to a REPP project developer, the sector therefore doesn't seem to be ready for concessional debt finance as of yet, which keeps financiers hesitant.¹⁷⁶

Overall Assessment

Given the current state of TANESCO, REPP support in the on-grid space is critical but unlikely to be fruitful until the ongoing regulatory problems are resolved. On the other hand, considering the off-grid market, given the high off-taker risk and the general lack of concessional/commercial finance, REPP support can play an important role in developing such projects helping them become more attractive for debt investors. For instance, the expected IRR of the mini-grid project that REPP is supporting in Tanzania is around 25%. Therefore, if the developer is able to reach a bankable number of operational projects then (international) private debt and equity investors are likely to further invest in the project.

¹⁷³ https://eepafrica.org/wp-content/uploads/Volume_II_Market_Landscape_-_Study_-_EEP-SEA_CountryProfiles_StakeholderMaps-1.pdf

¹⁷⁴ Information obtained from PowerGen project structure paper.

¹⁷⁵ https://eepafrica.org/wp-content/uploads/Volume_II_Market_Landscape_-_Study_-_EEP-SEA_CountryProfiles_StakeholderMaps-1.pdf

¹⁷⁶ Information obtained from PowerGen structure paper.

Annex 5: Case studies

Two case studies were shortlisted in accordance with the selection criteria outlined in Annex 8. These were:

- PAS BBOX (PBX) – Nigeria: 1.0 MW total installed capacity, comprising at least 20,000 small-scale 50Wp solar home systems
- Virunga Power – Kenya: 10 MW total installed capacity comprising of two grid-connected run-of-the river small hydropower power projects (6MW and 4 MW)

The purpose of these case studies was to evaluate in more depth the technical, market and financial *context* in which the REPP project is implemented. This was to assist the client verify if REPP support is in line with its expected strategy and more specifically if it is addressing the ‘sweet spot’¹⁷⁷ of:

- Being additional (i.e. no viable alternatives and adding value projects); and
- Not crowding out private sector.

Both case studies are structured as follows:

- Assessment of the overall country and market position in the context of the technologies supported by REPP.
- Detailed analysis of the RE project finance landscape in the country including the type and accessibility of various financial instruments available to the project.
- Project description and an assessment of the rationale for REPP support and its pricing strategy.¹⁷⁸
- Sweet spot assessment.
- Conformance to REPP Theory of Change (ToC).
- Conclusion.

A summary is provided below. These case studies appear in Annex 11.

PAS BBOX: Summary

There is significant potential and opportunity for off-grid-solar in Nigeria. The challenges plaguing the sector and this project relate to the poor mobile money infrastructure, fiscal and regulatory challenges, foreign currency risk, low rates of financial inclusion, low market awareness and poor access to both consumer and

¹⁷⁷ Here ‘sweet spot’ refers to REPP’s strategy to price its products and services effectively to support almost viable projects just enough without distorting the market. That is, the premium charged by REPP must be low enough to attract RE project developers requiring that extra ‘push’ to make their projects financially viable. Yet it must not be so low as to crowd out private sector financiers offering their own financial products (debt finance, loan guarantees, construction finance, etc.)

¹⁷⁸ Given such projects can sometimes deviate away from their intended targets for a variety of reasons, the project related information presented here is true as of May 2018 and any subsequent intended changes to project support are not captured here.

project finance. The RE project finance landscape indicates that there are very few private and commercial options for early stage debt financing of RE. Although there seems to be interest growing from regional and national banks to finance such projects, this is mostly limited to more established PAYG players in the market. Private equity is more promising and a number of project preparation facilities (PPFs) and funds are also operating in the region. According to the developer, what is different or unique about REPP is its ability to provide very tailored solutions to help de-risk the project by addressing what the project really needs.

PBX is a young start-up but is backed by two well-known entities with significant depth and breadth of experience in Africa. The REPP rationale for support (some TA but mainly RBF as scale up finance) is therefore justified in terms of helping the company grow from a seed funding stage to venture stage so as to unlock access to longer term debt capital from large development banks and institutions investors. The pricing of the REPP support seems to be fair and modest, placed at a level that ensured appropriate developer risk without burdening the project or undercutting any potential investors (which seemed negligible if not none) at this early stage. Furthermore, REPP is trying to develop a relatively innovative financing structure (off-balance sheet ready, securitisation ready financing models) that will enable off-grid projects such as this improve their bankability to become more attractive to commercial investors.

Virunga Power: Summary

Kenya's small hydro power potential is currently largely untapped (less than 1% installed of total potential capacity) owing mainly to regulatory delays and access to early stage finance. PPA risks do not appear as a significant challenge owing to the credit worthiness of the off-taker (Kenya Power). Looking at the RE finance landscape, private debt finance is negligibly low in the region, with local commercial banks quoting unfavourable terms to such developers. Similar to the Nigeria case, private equity availability for small grid-connected projects is growing and there seem to be a good number of project preparation facilities (PPFs) and RE funds available to such projects with REPP's key differentiating factor, the same as in Nigeria.

Virunga is a young entity backed by an experience developer with significant experience in Kenya. REPP's rationale to support the project is justified in terms of providing crucial early stage finance to enable the developer to reach financial close. At this point, given the project's expected Internal Rate of Return (IRR), the developer should be in a good position to attract long-term finance. Hence overall, REPP's TA support is well warranted but given the market's maturity and the availability of long-term debt capital in the region, any REPP future RBF support should be considered only if it is critical or innovative to prevent subsidising a commercially viable business and thus crowding out potential investors.

Key lessons from the two MTE Case Studies

The two case studies prepared by the MTE team comprise very different technologies in two different regions of Africa. One is a utility-type, grid connected project (small hydro) supported in a relatively mature and investor friendly market (Kenya). The other is a distributed standalone off-grid project where sales of product (solar home

systems) will be made over time in a still nascent country with promising signs of growth in this sector (Nigeria).

They therefore have associated contrasting characteristics in terms of the policy environment, project planning and business model. The range of expected development and climate outcomes of grid-connected small hydro projects also contrasts with those of a distributed off-grid solar offering.

However, there are a range of common themes arising from these case studies that are important to consider in the context of the MTE overall.

1. Each has a number of active and interested private developers within a market that has huge potential to expand if the investment conditions are right. They are not quite first-of-kind investments but are looking to achieve deals in early stage markets with good demonstration value.
2. Each case study project has also seen early stage seed funding in advance of REPP involvement. In addition, both projects face similar core challenges in the sense that there are high project development costs, with limited seed and growth funding available, in particular a lack of local, affordable lenders. There are also foreign currency risks for each, although this is much more pronounced in the case of Nigeria.
3. REPP's approach to pipeline and project development is very similar in each case, with the REPP manager taking on a known capable project developer and tailoring appropriate REPP deals with a strong mutual interest in project goals (although not tied to an incentive structure for Camco).
4. Finally, the approach to setting the terms of the repayment process is fairly similar involving Camco's initial internal verification of plausible and agreeable expected IRRs, negotiations with the project developer and a joint agreement of the final terms and conditions with a fairness in approach quoted by both developers.

Annex 6: Review of REPP's Reporting System

The Review of REPP's Reporting System has been submitted as a separate Report, which is available from BEIS.

Annex 7: Impact Evaluation Plan

The REPP future (Impact) Evaluation Plan has been submitted as a separate Report, which is available from BEIS.

Annex 8: Evaluation methodology

A8.1 Overall evaluation approach

As outlined in Section 1.4, the REPP MTE was theory-based: the evaluation questions and evaluation framework were focussed on collecting evidence to test the (plausibility of) the programme ToC and its assumptions. It makes use mainly of qualitative data and qualitative analysis of the data.

In order to increase the transparency, quality and robustness of the evaluation's analysis, the team devised an "evidence framework" during the inception period (see Annex 3). For each evaluation question, several hypotheses underpinning these questions were identified, then – for each hypothesis – the evidence that the evaluators would expect to see if 'true' or if 'not true' was listed. This framework was then used to (i) identify which data collection and analytical methods would be used to answer each of the evaluation questions; (ii) what lines of inquiry the evaluators would take, and the evidence they expected to uncover; (iii) how 'strong' or 'weak' this evidence could be judged to be; and (iv) review iterative findings after each main data collection strand (desk-based review, consultation with REPP-internal stakeholders, consultation with external stakeholders and case studies).

A8.2 Evaluation questions and DAC evaluation criteria

The evaluation assessed three DAC evaluation criteria: relevance, effectiveness and efficiency, as set out in Table A8.1 below alongside the seven evaluation questions answered. Given the early stage of REPP's implementation, it was not feasible to assess its impact and sustainability at this stage; instead, these DAC criteria are better answered through a (later) impact evaluation, such as the one discussed in the Impact Evaluation Plan submitted as workstream 2 of this evaluation assignment (see Section 5).

Table A8.1 Evaluation criteria, as mapped against the evaluation questions

Evaluation Question (EQ)	Criteria
1. To what extent are REPP-sponsored activities likely to meet the needs of project developers and incentivise financial institutions whilst remaining relevant to the overarching objectives of REPP?	Relevance
2. Is the REPP strategy, and its processes, facilitating the achievement of the programme's desired outcomes in all countries? Are there preferable alternatives?	Relevance
	Effectiveness
3. Is the REPP being implemented in line with its strategy? If not, are changes required to the ToC?	Relevance
4. Is the REPP's delivery structure appropriate to REPP for achieving its desired impact and value for money within expected timeframes?	Effectiveness
	Efficiency

Evaluation Question (EQ)	Criteria
5. Are the REPP's outputs being achieved as planned?	Effectiveness
6. What evidence is there to date that outcomes have been or are likely to be achieved and what are the factors that might explain these?	Effectiveness
7. Have REPP interventions met the expectations of the beneficiary projects and target groups?	Effectiveness

A8.3 Sampling approach

A8.3.1 Stakeholder consultation

As outlined in Sections A8.2 and A8.3, for most stakeholder groups, the aim was to reach either all (in the case of BEIS, Camco, the Management Board and Assessment Committee, and contracted project developers) or as many representatives of the group as could be reached (for developers of pipeline and dropped projects).

For market actors, it was only feasible to interview a selection of all actors operating in REPP countries (in the RE context), due to the time constraints of the evaluation and the amount of time and effort required to identify, find the right contact details for and secure an interview with market actors (who may not be linked to REPP).

During the inception phase, the evaluators decided that a maximum of 18 interviews with market actors, including REPP Partners and other direct project supporters, would be both feasible to deliver and sufficient in number to cover all of the evaluation topics and main perspectives of interest to the evaluation within the market (see Table A8.2).

Market actors were therefore selected purposively (to cover these topics / perspectives, as outlined in Table A8.2) and through convenience (in order to identify them within the time available) by identifying actors or organisations known to the evaluators. BEIS staff were given an opportunity to review the list of primary and alternative targets before stakeholders were contacted.

A8.3.2 Case studies

Two projects out of the 11 active committed projects were selected for case studies. At the time of case study selection, none of the 11 active committed projects had been reported as having reached financial close and many were still quite early in the development process.

Round 1. We first conducted an 'evaluability assessment' of case study candidates to determine: (1) which projects had sufficient data available, but also data *gaps* warranting further – in depth – investigation; and (2) which could add the most value in addressing the evaluation questions. Our criteria for selection comprised:

1. The project was 'sufficiently far along' – i.e. at a stage where it was feasible to assess whether REPP was pricing its services effectively.
2. There was sufficient information available to review.
3. The information available was reasonably clear and manageable within the timeframe of the evaluation (e.g. not overly complex).

4. The remaining gaps in our understanding relating to pricing effectiveness would be likely to be filled through case-study investigation (i.e. telephone/web interviews with Camco project champions, project developers, REPP Partners or other direct project supporter, and/or broader market actors).
5. The project had demonstration/innovation/replicability potential, e.g. was an interesting case to test yet not so unique as to result in limited lessons learned.

The evaluability assessment ruled out seven projects, leaving four available for further consideration.

Round 2: Next, we reviewed the four projects to identify which two would reflect different characteristics of the portfolio along the following dimensions: country, technology type, grid connection type, and (different) Camco champions supporting them. We wanted at least one project, preferably both, to be already receiving, or actively considering, RBF. We were aware of BEIS preferences to include at least one mini grid. We ultimately selected two projects for case studies (see Annexes 5 and 11 for the summary and full case studies).

A8.4 Data collection methods

A8.4.1 Overview

Data was collected through the following methods and sources:

1. A portfolio review of all REPP contracted and pipeline projects;
2. Documentation review, comprising:
 - a. An in-depth analysis of documentation for each of the 11 contracted projects,
 - b. All REPP programme-level documentation related to REPP's strategy (e.g. Management Board and Assessment Committee minutes, REPP policies and strategy documents),
 - c. All REPP programme-level documentation related to REPP's implementation (i.e. contracts and meeting minutes),
 - d. Camco internal documentation on protocols and processes (e.g. REPP Support Policy and Guidelines, Operations Manual and monitoring and reporting guidelines.
 - e. Logframe and reporting documentation and Camco databases (Rhino)
3. Stakeholder consultations (for details see below);
4. Observations of one Assessment Committee and one Management Board meeting; and a
5. Literature review focussed on understanding the RE and financial / market contexts in countries where REPP has contracted projects.

A8.4.2 Stakeholders consulted¹⁷⁹

We used four methods for consulting stakeholders: meetings, semi-structured interviews (either face-to-face or – *mainly* – telephone), online survey and workshop.

¹⁷⁹ This refers to REPP's donor agency (BEIS), members of the REPP entity i.e. the Management Board, Assessment Committee, REPP Manager and the REPP direct beneficiaries i.e. contracted, pipeline, on-hold and dropped project developers.

The stakeholder groups consulted, the number (per group) consulted and the modality are outlined below. In many cases, as the evaluation needed to identify specific information, different questions were posed to different groups. However, to enable the collection of comparative data that could be analysed and disaggregated to show differences between groups, some of the same questions (e.g. on the effectiveness and efficiency of REPP) were posed to all / multiple stakeholders.

Table A8.2 Stakeholders consulted

Stakeholder group	Persons consulted	Target #	Actual #	Modality
BEIS stakeholders	- REPP Policy Manager (former and present) (2) - REPP M&E leads (2) - REPP ICF Reporting Lead (1) - REPP Commercial Advisor (1)	4	6	Semi-structured interviews (scoping and follow-up) and meetings, all conducted face-to-face.
Camco stakeholders	- REPP Manager (1) - Legal Advisor (1) - Camco champions (4) - M&E manager (former) (1)	7	7	Semi-structured interviews (scoping and follow-up) and two workshops (focussed on REPP processes and on project details), all conducted face-to-face, except for two of the champion interview (completed by telephone). Also in-depth interviews with the relevant Camco staff ('champions') for the two case studies selected.
Management Board	Members representing: - BEIS - EIB - UNEP	3	3	Consulted during the Management Board meeting observed and follow-up with semi-structured telephone interview.
Assessment Committee		3	3	Consulted during the Assessment Committee meeting observed.
Contracted PDs	All 11 contracted at the time of the evaluation	11	11	Semi-structured interviews by telephone. Also in-depth interviews with project developers for the two case studies selected.
PDs of pipeline projects	The number in the left-hand column here are the	47	20	Online survey sent in English and French. A link

Stakeholder group	Persons consulted	Target #	Actual #	Modality
PDs of pipeline projects 'dropped' by REPP	numbers reached. In total 47 developers of on-hold projects and 21 developers of dropped projects / dropouts were invited to the survey. This means there was a response rate of 30% and 14% respectively for these groups. ¹⁸⁰	21	2	to the survey was sent by email to developers of all projects which are currently or had previously been in the REPP pipeline, this included 'dropped' projects. After two weeks, a reminder was sent to those with dropped projects who had not yet responded, but this only led to a further two responses being received.
PDs of pipeline projects who dropped out of REPP of their own accord			1	
REPP Partners	As per the inception report, we planned to reach up to 4 REPP Partners, up to 4 project supporters and up to 10 other market actors	Up to 4	5	Semi-structured interviews by telephone. Further information on these interviews is provided in A8.2.3 below.
Project Supporters		Up to 4	2	
Other market actors		Up to 10	6	

A8.4.3 Further detail on the market actor consultation

Interviews with market actors was a primary source of data for this evaluation for answering the evaluation question on REPP's additionality and its influence on financiers and service providers in the market necessary for project success (and REPP outcomes). Table A8.3 below describes the sample of interviewees reached by profile and compares this to the target and 'alternate' profiles set out during the inception phase.

¹⁸⁰ It is not possible to distinguish between those no longer in the pipeline who were dropped by REPP vs who dropped out independently. We have only been able to differentiate here in terms of the respondents, due to the responses they gave.

Table A8.3 Profile of market actors interviewed as compared to the profile of the group targeted

		Primary targets		Alternative targets		Final sample (made up of primary targets + alternates)		Comment
Primary vs alternative target	Primary	18	100%	0	0%	9	69%	Almost 70% of primary targets were reached
	Alternative	0	0%	9	100%	4	31%	
Interviewee relationship to REPP	REPP Partner,	4	22%	2	22%	5	38%	Fewer other market actors reached than wanted, though slightly more REPP Partners reached than hoped
	Project supporter	4	22%	5	56%	2	15%	
	Other market actor (no formal relationship, but awareness and in many cases, previous communication with REPP)	10	56%	5	56%	6	46%	
Type of service provided (note some of the interviewees provided more than one of these services)	Debt provider	8	44%	4	44%	6	46%	Largely proportional to the original mix targeted, though more grant providers reached (which is positive) and no currency hedging representatives reached, though the risks associated with currency were well-
	RMI provider	3	17%	1	11%	2	15%	
	Equity provider	7	39%	2	22%	3	23%	
	Guarantee provider	3	17%	0	0%	1	8%	
	Grant provider	1	6%	2	22%	2	15%	

	Currency hedging	1	6%	1	11%	0	0%	covered by other market actors consulted, so this was not a problematic gap.
	Market advisor	5	28%	2	22%	3	23%	
Technology	On-grid	6	33%	1	13%	6	46%	Largely proportional to the original mix targeted
	Off-grid	6	33%	3	38%	3	23%	
	On-grid and off-grid	6	33%	4	50%	4	31%	

A8.4.4 Further information on the consultation methods

- **Interviewers:** all interviews (as well as the survey and workshops) were conducted by core team members who were skilled and experienced in data collection.
- **Invitation to interview:** All interviewees were contacted and invited to interview by the evaluators directly. To facilitate a response, an authorisation letter from BEIS was attached.
- **Method of recording:** For interviews with BEIS and Camco HQ-based staff, notes were taken by the interviewees. These were not verified with the interviewees, but we are confident of the accuracy of these, especially since all but one were conducted by two team members together, and notes were compared internally afterwards. In addition, there was remarkable consistency across BEIS and Camco staff when describing key elements. The majority of the remaining interviews were audio-recorded and transcribed by a professional transcription service so as to create efficiencies for the team when conducting multiple evaluations over a short time period and to enhance recording accuracy.
- **Respondent consent:** Consent to record the interviews was sought from all interviewees. Two to three respondents refused to be audio-recorded, but notes were taken with consent.
- **Respondent anonymity:** Respondents have been anonymised, as far as possible. When referring to some factual information BEIS and Camco have been identified by stakeholder group.

A8.5 Data analysis methods

The evaluation team employed several types of analytical methods. The purpose, timing, outputs and descriptions of these are described in Table A8.4 alongside further commentary where relevant.

Table A8.4 Analytical methods used in the evaluation

Method	Timing	Purpose / application of method	Relevant EQ	Description of the method
Theory of Change analysis	During inception and in developing answers to the EQs in Final Report.	• To understand whether the ToC was 'evaluable'; • To assess whether the ToC was consistently understood amongst all stakeholders; • To assess whether implementation is in line with the ToC.	EQ2, EQ3	• As per Mayne (2017),¹⁸¹ during inception: assessment of specific criteria expected of an 'evaluable' ToC. • Pre-Final Report: comparing the ToC to evidence of (i) stakeholders' interpretation of the ToC; and (ii) actual implementation.
Portfolio analysis	During inception	• To scope the nature of the REPP and its projects; • To support sampling;¹⁸² • To understand how REPP is being 'implemented' in terms of its resulting pipeline and portfolio, in order to compare this to its strategy and original (Business Case) intentions.	EQ1, EQ2, EQ5, EQ6	Extracted from project documentation: • Project description (country, technology, grid connection status, MW capacity) • Key terms of REPP support (TA committed, TA type, structuring support type, RBF committed) • Project stakeholders (developer, sponsor, other) • Project preparation and approval status • (Camco's) project risk profile
Thematic analysis of programme documentation	First activity post-inception	• To identify existing or potential implementation challenges; • To identify common themes related to REPP's strategy.	EQ1, EQ2, EQ3, EQ4, EQ7	Review of all programme documentation to shortlist relevant documents then to extract and cumulatively organise the information into emerging themes. The themes were arranged in a matrix (in Word) and findings either summarised or quotes mapped alongside clear references to the source and page number.
Thematic analysis of interview transcripts	On completion of the transcriptions	• To organise findings from the interviews in an easily accessible and logically-organised way.	EQ1, EQ2, EQ4, EQ5, EQ6, EQ7	Review of transcripts to extract quotes that mapped as evidence for different hypotheses outlined in the evidence framework. The quotes were mapped into an Excel 'annotation' matrix.

¹⁸¹ Mayne (2017) 'Theory of Change Analysis: Building Robust Theories of Change' in *Canadian Journal of Program Evaluation*.

¹⁸² See A8.4.

Method	Timing	Purpose / application of method	Relevant EQ	Description of the method
Descriptive analysis of the survey	On completion of the survey	To review findings of the survey per survey question.	EQ1, EQ2, EQ4, EQ5, EQ6, EQ7	As only 23 responses were received, the evaluators simply downloaded the responses into an Excel document which would also for the easy searching and organisation / analysis of results.
Comparative analysis of the logframe	Prior to the main stakeholder consultation phase	- To assess the logic and robustness of the logframe indicators (as indicators of the outputs and outcomes identified in the logframe) and their measurability. - To compare REPP outputs and outcomes as per the logframe to other iterations of output/outcome (e.g. in the ToC) to assess for consistency. - To understand REPP progress on reaching logframe targets. - To assess the credibility and utility of the reporting system (assumptions and methodology) as part of the Results Reporting System Review.	EQ5, EQ6	Using a method previously applied in another BEIS evaluation,¹⁸³ the evaluators discussed (in a note in Word) each indicator, considering whether it logically measures the output/outcome it was assigned, whether there appears to be data available to measure it, whether it remained constant or had changed (either in wording or milestone) from 2016 to 2017 (and the reasons for any changes), plus progress towards milestones (and any reasons for non-progress). The analysis depended not only on the review of the logframe and supporting material on REPP reporting, but also on information from interviews with BESI and Camco.
Project fiche preparation	Prior to the main stakeholder consultation phase	- To consolidate all known and relevant project information in one location. - To identify gaps in understanding of to be followed up / structure and prepare for stakeholder consultations. - A key source of information for context analysis and case studies.	EQ1, EQ2, EQ5, EQ6	- Conducted for projects that had progressed past the approval of the structure paper stage as of April 2018. - Based on project documentation and findings from interviews. Versions of the fiche were 'controlled' by the date being added each time it was amended. - Includes more detail, as well as commentary / judgements from the evaluators on: project

¹⁸³ LTS (2018) Formative Evaluation of the Carbon Markets Finance Programme.

Method	Timing	Purpose / application of method	Relevant EQ	Description of the method
				stakeholders, project progress, rationale for REPP support, commercial terms of and rationale for TA and RBF support, risk analysis, KPI progress, and financial, technical, environmental / social, regulatory, legal and M&E studies.
Context analysis	Post-stakeholder consultation	To understand the market context in each REPP country: the regulatory environment / ease of investment in RE, market actors and their service offerings and the extent of RE implementation (by scale).	EQ2, EQ3	- Made use of secondary data and information collected through market actor interviews. - Information was organised under specific headings in Word. - A more in-depth analysis was conducted for case study countries.
Case studies		To delve into key questions (REPP 'sweet spot' and progress towards outcomes) for 2 out of the 11 contracted projects (see A8.4 on sampling approach).	EQ2, EQ4, EQ6	- Priority topics for the case studies was developed and the outline shared with BEIS for approval. - A structure was developed and information from: the in-depth context analysis; interviews (including more in-depth case study interviews and follow-up interviews).
Completion of evidence framework	Post documentation-review, post consultation of BEIS, REPP and PDs and post context analysis	To gather and summarise all data collected into the headings of the framework.	All EQs	- Team members responsible for different data collection summarised their findings (with data sources clearly marked) against the 'evidence' cells of the evidence framework in Excel (see Annex 3). - This evidence was reviewed by the TL and Evaluation Manager and requests for clarification made / gaps identified. - The team in a half-day meeting (3 in total) discussed the findings (though see limitations in A8.6) to identify emerging hypotheses to be tested through the next round of data collection.
Cumulative hypothesis building and testing		To assess where we had strong volumes of evidence and where we needed to target the next stage of collection.	All EQs	

A8.6 Triangulation

Triangulation was designed into this evaluation to help mitigate potential bias and improve the reliability of the evidence collected and was ensured through the following means:

- In the evidence framework, for every piece of evidence supporting / refuting each hypotheses (aligned with an evaluation question), we identified several sources of data which would provide evidence that could be cross-validated.
- When consulting stakeholders, there was a set number of issues (e.g. pertaining to REPP efficiency, effectiveness, additionality, etc.) which we covered with all stakeholder groups to enable the triangulation of views / perceptions.
- We aimed to collect evidence which was verifiable though (as is clear from the evidence framework), this was challenging and the majority of evidence collected can only be tested for plausibility / logic rather than verified.

A8.7 Quality assurance

A dedicated quality assurance team supported this evaluation. This comprised:

1. The evaluation manager, who managed methodological rigour, quality and match to client needs;
2. The team leader, who managed methodological rigour and technical accuracy;
3. A dedicated advisory panel who monitored technical accuracy and quality; and
4. The project manager (IMC) and project director (LTS) who proofread the language and checked for formatting and presentation.

Both internal and interim outputs, as well as the two main deliverables, were quality assured, as outlined in Table A8.5.

Table A8.5 Quality assurance of outputs

Output	Submission BEIS?	to Reviewers
Inception Report	Yes	• All – in the order indicated above
Methodological notes (on case studies and market actor selection)	Yes	• Evaluation manager • Team leader
Research tools (portfolio analysis and fiche templates, topic guides and survey questionnaire) ¹⁸⁴	Yes	• Evaluation manager • Team leader • Advisory panel
Notes from Camco workshops and observations of the Assessment Committee and Management Board meetings	No	• Evaluation manager • Team leader
Interview notes and transcripts	No	• Evaluation manager • Team leader

¹⁸⁴ See Annex 9 for topic guides and survey questionnaire.

Output	Submission BEIS?	to Reviewers
Final Report outline	No	• Team leader • Core team members • Advisory panel
Draft Final Report	Yes	• All – in the order indicated above
PowerPoint presentations for client and stakeholder meetings	Yes	• Team leader • Core team members

As described in Annex 3, all evidence reviewed was assessed for its ‘strength’ using a rating system adapted from the *Evaluation of the Climate Public Private Partnership-CP3*.¹⁸⁵

Table A8.6. Strength of Evidence categories

“Strength of Evidence” Assessment for each evidence collected		
3	Verifiable evidence	Refers to data that are both plausible and possible to verify. Such evidence generally describes quantifiable measures that can be physically counted. For example, the MW rating of installed capacity or the number of jobs in a company at a given time.
2	Plausible evidence	This includes evidence which may make a plausible claim but may draw heavily on assumptions from secondary literature, for example those used to calculate greenhouse gas emissions avoided. Alternatively, it may refer to evidence which is the plausible conclusion drawn by an expert stakeholder or observer. There may be evidence presented to justify this view but no methodology against which the validity of the conclusion can be verified.
1	Minimal evidence	Some documents may simply claim an outcome but there may be no information about the data or methodology used to evidence this claim.

A8.8 Alignment with the Terms of Reference

During the inception phase, several changes were made to the evaluation design which deviated from the original evaluation Terms of Reference (ToR):

1. The number of evaluation questions were significantly reduced. This was undertaken through a joint process between the evaluation team and the REPP evaluation managers in BEIS. This was due to overlap between the ToR questions and a need to make the evaluation questions more precise and concise in nature to align with the evaluation timeframe and needs. Further, given the stage of implementation of REPP, some of the questions were found to be not yet answerable in their present form.
2. No site visits for case studies were undertaken.¹⁸⁶ This was because the key stakeholders we would interview for case studies were based largely in towns and cities and (based on our team’s own experience and on consultation with Camco) we were confident that we would be able to speak to these actors by telephone. As few

¹⁸⁵ Source: Climate Public Private Partnership (PPP) Monitoring and Evaluation Inception Report

¹⁸⁶ This was not a requirement of the ToR, but it was something proposed in the response to the invitation to tender.

project outputs / outcomes had yet been achieved there was no need to visit project sites to observe these.

3. A process tracing approach (suggested in the ToR and proposed in the evaluation team's response to the invitation to tender) was not finally taken, because it is a resource intensive approach and is more commonly used as part of an *impact* evaluation where the central questions for this evaluation were around assessing the causal drivers behind programme outcomes. Instead, to ensure robust and transparent data collection and analysis, the evidence framework was developed.

A8.9 Limitations and mitigation steps

A8.9.1 Limitations and mitigation steps

There are several limitations to the evaluation, discussed below alongside the steps taken to mitigate them.

Limitation (1): Ambitious evaluation schedule with a hard deadline.

This evaluation was designed to gather as much in-depth and triangulated information as was feasible in the timeframe specified in the ToR. BEIS confirmed during the inception phase that, if necessary, compromises in the evaluation approach should be made to meet deliverable deadlines. For example, a key side effect of this issue was the necessity to stop follow-up solicitation of targeted market actors or project developers from dropped projects, who had not responded to the first few contact attempts.

There were also some delays in responses to data requests¹⁸⁷ and in finalisation of the inception report, which resulted in delays to the start of data collection. To the extent practical, data collection strands were conducted in parallel and/or overlapping to mitigate the impact of these dynamics.

However, in spite of these schedule challenges, the evaluation team was able to obtain feedback from a variety of stakeholders representing all targeted stakeholder groups, as discussed above. The draft final report was completed on schedule as agreed. The delays and tight deadlines did not affect quality, as we were still able to follow our quality assurance processes as designed and were in close contact with BEIS to discuss challenges and mitigation measures on a weekly basis.

Limitation (2): Early stage of implementation of targeted projects.

Project data provided during the inception phase indicated that no projects had yet reached financial close, which limited the evaluation team's ability to fully address most evaluation questions, especially those relating to effectiveness and efficiency. The relevance questions could be addressed relating to activities to date, with the caveat that the relevance and appropriateness of activities that will only occur at the financial close stage will need to be addressed in a future evaluation. Remedies to this limitation were incorporated into the proposed impact evaluation design to the extent feasible.

¹⁸⁷ Generally internal stakeholders were responsive and willing to have us observe meetings and share relevant documentation. Some project-level documentation initially requested was narrowed to only reflect projects selected for case studies to minimise the burden on Camco.

Limitation (3): We have more views represented from those who are likely to have – or express – positive opinions about REPP than those who are more likely to have neutral or negative perspectives

This evaluation was designed to consult a balanced group of REPP stakeholders. However, whilst we were able to consult all / a high number of stakeholders supported by REPP, who would be more likely to present it in a positive light, given their personal investment, we consulted a smaller number of project developers dropped from the pipeline (who might be more inclined towards negative views) and non-REPP-involved market actors (who might be more likely to have ‘neutral’ views, though see limitation 4 below). The result is a potentially skewed data set.

Box A8.1. Reasons for low response rates amongst developers or dropped projects and non-REPP affiliated other market actors

For developers of dropped projects, there was little incentive to participate in the evaluation, and given the short timeframe available for data collection there was only limited possibility to follow up with non-respondents thus only two representatives from this group responded to the survey. It is possible that, had the evaluators randomly sampled a set number or proportion of this group and asked them in a more targeted /personalised way to contribute (rather than mass-mailing a survey link), that they may have felt more compelled to respond, but we consider that the lack of incentive would still have resulted in a low response rate. Artificial incentives (such as money) were considered unethical within the context of the evaluation, as they may have constrained the developers from answering honestly.

For other market actors, it was time-consuming to identify, find contact details for and recruit for interview entities which had no existing link to REPP. Again, these actors had little incentive to contribute. We framed interview invitations as an opportunity to contribute to learning around the commercialisation of small-scale RE in Sub-Saharan Africa and succeeded in interviewing six (out of a target of 10) of these actors within the timeframe available. With the budget and timescale available we were not able to dedicate more than a couple of days to chasing potential further respondents. However, we are confident that the number of people consulted still enabled us to build a robust picture of the market context.

However, we do not consider that this has negatively affected the credibility / robustness of the evaluation, because:

- The feedback obtained from the different stakeholder groups to address the evaluation questions was remarkably consistent. Also, as REPP is essentially still in a pilot mode, there is limited/no familiarity in the market place in groups not already reached in this evaluation.
- The primary purpose for consulting market actors for this evaluation was not so much to gather views on REPP, but rather to gather cumulative information about the market and (in particular) the existence of services which might act as ‘alternatives’ to REPP (which REPP might inadvertently crowd out) and services which REPP could target / crowd in. The evaluators considered that this information could be gathered from a small number of actors, reaching ‘saturation’ in terms of number, once they covered all relevant financial services in the market (as outlined in Table

A8.3). It is possible that this group could have expressed more negative views than they actually did. However, if we had reached more market actors, who were then not familiar with REPP, any feedback they would not have been especially meaningful to reduce bias due to their lack of familiarity on specific characteristics important to address evaluation questions.

- We have consciously taken bias and representation into account in analysing our findings and developing conclusions. The evidence framework was also set up in such a way as to give different ‘strengths’ to evidence derived from different stakeholders / sources, depending on the EQ / hypothesis.
- We have contextualised the views of the different stakeholders consulted based on our own scoping of the landscape and the needs and drivers of those actors involved in it, and also triangulated the primary data gathered from these stakeholders with the evaluation team’s own knowledge of the market and evidence from literature. The published studies and databases reviewed provided information consistent with that provided by the market actors.

Further, dropped projects were not an original target of the evaluation per the ITT, but were added to increase robustness, and therefore the evaluation was adding value by consulting them.

Limitation (4): Linked to the above, *all stakeholders consulted (including ‘neutral’ market actors), as well as the evaluators themselves, brought their own bias to the evaluation*

Bias in data derived from any human source is inevitable. For example, in this evaluation, every stakeholder’s view on REPP’s strategy (present and future) were influenced by the stakeholder’s own experience of the RE market and the financing options available. For this reason, the evaluators targeted a specific profile of actor within each stakeholder group. Additionally, to support robust analysis, all interviewers were asked to annotate their interview transcripts and to consider the credibility of the interviewee and factors influencing their responses.

To counter any bias within the evaluation team itself (i.e. based on past experiences of and with small-scale RE projects and the market context), we held regular internal meetings and involved all team members in the development of conclusions and recommendations, which were also independently reviewed by the advisory panel.

Limitation (5): By its nature, this is a theory-based (generative causal) evaluation, i.e. is lacking ‘counter-factual’ evidence

A counterfactual would have been ideal for the evaluators in answering questions about progress towards outcomes, REPP’s influence on market actors, and the existence of alternatives to REPP.

However, it was not possible within the scope of this evaluation or the circumstances of REPP to conduct a full counterfactual analysis. No counterfactual or baseline locations or cases have been established. Also, the programme has not been running for enough time to generate any results. Therefore, it is not possible to observe ‘what has happened *with* REPP’ to compare it to a ‘without REPP’ scenario, experimental or modelled.

A8.9.2 Further modifications to increase robustness

In addition to the mitigation steps to address the limitations discussed above, the evaluation team made a few other adjustments from the proposal phase to increase the robustness of our approach.

- **Outreach to more pipeline projects.** In consultation with BEIS, the evaluation team shifted the mode of reaching pipeline projects from interviews of a small subset to a survey reaching the population of pipeline projects, for which we received a quite significant response, reaching 23 instead of the originally-planned four (for interview).
- **Added dropped projects.** The evaluation team also sent a survey link to the population¹⁸⁸ of dropped projects though dropped projects were not included in the ITT. Though, as discussed above, we only received two responses during the data collection window.
- **Core staff conducted all interviews.** For both project developers and market actors we shifted to having core staff conducting phone interviews rather than less familiar staff or enumerators doing in-person interviews. This change was made after it was clarified in the inception phase that all targeted respondents would be accessible via telephone or web-conference. It also helped ensure we would reach the targeted number of respondents during the limited time available for data collection. While the overall length of interview remained the same at about 1 hour, the quality of the feedback obtained is expected to be significantly higher due to the ability of the more experienced staff being able to effectively rephrase any questions that were not clear to respondents, follow up with highly relevant and targeted probes, etc.
- **Significantly more time in-person with Camco** than initially proposed. Instead of up to 7 telephone interviews as initially proposed, the evaluation team conducted two 1-day workshops in-person at Camco HQ, and in addition conducted 8 one-on-one interviews (telephone or in-person) with Camco HQ staff and project champions. Given the early stage of implementation and limited information yet available on projects, this allowed the evaluation team to focus on understanding the REPP strategy and Camco's internal processes which has resulted in gaining much deeper insights into issues relevant for the evaluation questions. The team was also able to observe meetings, and review the databases and files onsite and have a much more interactive engagement than would have been possible with the initial proposal.
- **Observation of Board and Assessment Committee meetings.** The evaluation team was able to observe a REPP Board and Assessment Committee meeting, which provided deeper insights in to the activities and dynamics. The evaluation team also conducted interviews with the Board and selected Assessment Committee members.

¹⁸⁸ BEIS requested that we not contact 1 dropped project due to the known dynamic resulting from the project failing due diligence rather than for a project-related reason.

Annex 9: Topic guides and survey questionnaire

The evaluation team developed the following topic guides and questionnaire to ensure a standard and common approach to the data collection process. This is organised as follows:

- Project Champion specific topic guide
- Project Developer specific topic guide
- Market Actor related topic guide
- Dropped/Pipeline projects survey questionnaire
- BEIS/Management Board specific topic guide

Data collection tools were rigorously quality-assured internally (by the team's evaluation methods and sectoral experts) as well as by BEIS before it was shared with the interviewees. After the first interviews an internal meeting was held to discuss whether the topic guides needed any adaptation. Prompts or slight modifications to the topic guide questions were incorporated to address instances where the interviewees were unclear or asked for further clarifications. The survey questionnaire survey was tested for any technical issues by having the team test it prior to its release.

Project Champion Topic Guide

Number of planned interviews	Number of completed interviews	Interview Period
General Project Champion -4 Case Study specific-2	General Project Champion -4 Case Study specific-2	April 2018 to May 2018

Interviewee background	
1.	Any change in roles or expectations as the programme has evolved?
General REPP experiences incl. project origination and implementation support	
Pipeline development: general	
2.	Approach/process followed to identify project opportunities?
3.	Apart from the eligibility checklist, what factors are looked at when scouting for projects?
4.	Most challenging part about identifying and vetting projects?
5.	Any changes/improvements to the pipeline development process?

Project approval: general	
6.	Any changes to project approval process specifically and why?
Project support: general	
7.	What role in the project once it is contracted?
8.	REPP's offer: (a) What process is used to determine the most appropriate offering, the sweet spot? (b) How easy or challenging is this to do? (What affects this?) (c) What support from the rest of the team on your activities?
9.	Project developer feedback: Feedback from project developers? What (else) do they want?
10.	Results: (a) How realistic is the expectation of 'paying back' the TA? (b) How confident that (most of) 'your' projects will reach financial close?
Project support: REPP Partners	
11.	How relevant or useful are the REPP Partners so far?
12.	How frequently do you engage with the REPP Partners or keep them abreast with the project progress?
13.	Any increase in interest owing to REPP's activities?
14.	Other organizations you'd like to see become REPP Partners or otherwise more closely involved?
M&E	
15.	How do you monitor and report on projects? What tools and processes are you using?
16.	Is there any evidence from M&E that REPP is or is not on track to meeting its objectives?
Lessons and scale up potential	
17.	Scale up potential (a) What role do you see yourself playing in a REPP scale up? (b) Any things that need to change to accommodate this?
Market Context	
18.	Any projects dropped from REPP that have found support elsewhere and reached financial close perhaps? Any idea as to the reason for this?

19.	What type of role will REPP play in the market if there is a potential scale up?
20.	Any demonstration value or effect REPP has already had on the market?
Deeper Questions for the case study projects (the need for the specific question will depend on what we already know from previous interviews)	
1.	[how was the project originated and who are its main supporters/drivers]
2.	[how appropriate/well suited is the developer for this (type of) project?]
3.	[what is interesting about this particular project/ how good of a fit is it for what REPP is trying to do]
4.	[specific market context, and any evolution in it since concept note]
5.	[how was the type and level of support calculated]
6.	[how unique is this type of support, is it something that could translate to other projects?]
7.	[how did the proposal approval process go? Any highlights? Feedback from the Assessment Committee or Board?]
8.	[current status/how is it going]
9.	[what is the current funding situation, how interested are any relevant REPP Partners or other market actors]
10.	[what other alternatives to REPP does this project have?]
11.	[what are the most challenging risks?]
12.	[M&E process for this project?]
13.	[any highlights as part of the case study for this project?]
14.	[seen any changes in project developer behaviour over time, e.g. that might demonstrate learning]
15.	[in what ways could this project serve as a demonstration or otherwise stimulate other projects?]
16.	[who else should we interview to help us better understand the context for this project, besides the developer]
FINAL THOUGHTS & THANKS	

Project Developer Topic Guide

Number of planned interviews	Number of completed interviews	Interview Period
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11	11	April 2018 to May 2018
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Interviewee background	
1.	Role in organisation and project
2.	Prior experience with similar projects in the African context?
General project information	
3.	Motivation for developing this project and reasons for engaging with REPP?
4.	How far has your project progressed in the project cycle? What are major next steps? • [on-grid projects]: When do you foresee your project reaching financial close? • [off-grid PAYGO projects]: When do you foresee your project reaching pre-defined sales targets to attract new investors?
5.	What are the key risks or challenges for this project?
6.	Please provide an overview of the financial partners or other supporters, either current or expected.
7.	Have any partnerships [discussed in the previous question] evolved or perhaps developed because of REPP?
REPP Partners	
8.	Has REPP put you in touch with any other relevant REPP partners? If so, how helpful has that been?
Market Context/Alternatives	
9.	What (realistic private commercial and/or public finance) alternatives does your project have – apart from REPP support (REPP TA and/or REPP RBF)?
10.	Are there <u>more private commercial funding options</u> for small-scale RE projects compared to two years ago? (new funders or funders more open to small scale RE) Are there <u>more public funding options</u> for small-scale RE projects compared to two years ago? (new and / or scaled-up programmes of “traditional” public financial institutions)
Market transformation	
11.	Do you have any upcoming similar projects in your country, region or Africa? If so, have your experiences so far with REPP changed your approach for other projects in any way?

Experiences with REPP	
12.	How satisfied have you been with your interactions with the REPP staff?
13.	Comments do you have on the [REPP] application/approval process?
14.	How reasonable do you find REPP's eligibility and participation requirements?
15.	How satisfied are you with the support REPP is providing? Anything that you find exclusive/unique – that is currently not available through other such programmes ?
16.	What else do you wish REPP would or could do to support projects like yours?
17.	[If needed:] Do you think this REPP approach of paying back the 'Technical Assistance' after financial close is suitable for projects of your nature under the current project finance environment? (probe: if not, then how can it be done differently)
18.	For projects at a later development stage and seeking/receiving RBF: - How did the RBF discussion with REPP come about? - How does REPP's financial products and services compare to other financial institutions and their products and services you approached towards this? Time permitting: How was the RBF instrument designed and negotiated for your project?
Case studies	
19.	Which indicators / benchmarks can characterise the role RBF support plays for your project?
20.	How was the RBF instrument designed and negotiated for your project?
21.	How do you assess the requirements of funders to invest in your business model, after REPP RBF support?
22.	What are main competitors? What's your niche in the market?
FINAL THOUGHTS & THANKS	

Market Actor Topic Guide

Number of planned interviews	Number of completed interviews	Interview Period
REPP Partner: 4 Primary and 2 Alternative Other Market Actors: 10 Primary and 5 Alternative	REPP Partner: 4 Primary and 1 Alternative Other Market Actors: 3 Primary and 3 Alternative	May 2018 to June 2018

Project Supporter¹⁸⁹: 3	Project Supporter: 2	
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Interviewee background	
1.	What is their role / what are their day to day activities
2.	[If needed:] General experience with small RE projects in Sub-Saharan Africa
3.	[As relevant:] what type(s) of RE projects (i.e. technologies) is your (organisation) supporting? Any which type(s) of financing models/structures
General REPP experiences	
4.	Familiar with REPP?
5.	[If familiar:] Level of engagement with REPP generally/REPP projects
6.	[If familiar:] What are your opinions of REPP so far?
7.	[If familiar:] REPP's position within the landscape of available RE project preparation facilities and RBF providers in Sub-Saharan Africa?
8.	Where could (a programme like) REPP most add value?
For REPP Partners	
9.	What were the main reasons to become a REPP Partner?
10.	What is your opinion of the projects you are seeing from REPP? [If needed:] Are they candidates for your organisation to support?
Experiences with REPP projects	
11.	[Qs specific for Nigeria PAS BBOX]
12.	[Qs specific for Kenya Virunga]
13.	[Qs specific for other REPP project]
Assessing project viability	
14.	Advice to programmes like REPP on identifying which projects are worthy of support?
15.	Advice to programmes like REPP on identifying what type and/or level of support to provide?
16.	How REPP could differentiate itself from other initiatives?
Market Context [may need to ask by country]	

¹⁸⁹ Overlaps between some of the intended project supporters with REPP Partners and other market actors, the project supporter specific questions were covered in the same interview.

17.	What support do small RE developers need to reach financial close?
18.	Characterise the interest of commercial financiers in supporting small RE in Sub-Saharan Africa? [If needed:] for regional commercial financiers specifically?
19.	How has this shifted in the past few years?
20.	How can REPP avoid pricing out competitors?
21.	How can REPP crowd-in more commercial funding?
22.	Other programmes or initiatives that offer similar services as REPP?
FINAL THOUGHTS & THANKS	

Deeper Questions for the case study projects – actual or HYPOTHETICAL to preserve confidentiality	
23.	[Specific market context for this (type of) project?]
24.	[what is interesting about this particular project/ potential for demonstration effect?]
25.	[what would you be most concerned about for this (type of) project?]
26.	[specific Qs on funding structure/needs e.g. what is a reasonable IRR?]
27.	[how unique is the type of support being provided (by REPP), is it something that could help other projects?]
28.	[what other alternatives to REPP might this (type of) project have?]

Pipeline/Dropped Projects Survey Questionnaire

Number of survey respondents contacted	Number of survey respondents responded	Survey period
Active pipeline projects-12 On hold-47 Dropped-21	Active pipeline/On hold projects-22 Dropped projects-2	May 2018 to June 2018

Introduction

This survey is targeted to developers of small scale RE projects in Africa. It is intended to facilitate input into the evaluation of the Renewable Energy Performance Platform (REPP) requested by the UK Government. It is designed to take a maximum of 10 minutes of your time. All responses are anonymous, unless you choose to provide your contact information at the end. Regardless, all responses are confidential. Thank you for your participation!

Company Information

First, please tell us what type(s) of RE projects you develop? (Please check all that apply.)

☐ biogas (up to 25 MW)
☐ biomass (up to 25 MW)
☐ hydropower: micro / small scale to medium scale (up to 25 MW)
☐ solar PV of any type(s) (up to 25 MW), including solar lights, solar home systems, solar PV mini-grids, grid-connected solar PV power plants
☐ onshore wind (up to 50 MW)
☐ hybrid (renewable + conventional) projects (up to 25 MW), including any RE technology listed above
☐ RE projects with storage (up to 25 MW), various storage technologies, including any RE technology listed above
☐ RE (up to 25 MW) + energy efficiency projects
☐ other RE projects for types and sizes above 25 MW, not listed above
☐ other non-RE projects, including conventional fossil energy projects, stand-alone energy-efficiency projects, stand-alone energy storage projects, any other infrastructure projects

Where is your company active in developing RE projects of any type? (Please check all that apply.)

Sub-Saharan Africa

☐ ANGOLA	☐ GABON	☐ NIGERIA
☐ BENIN	☐ GAMBIA, THE	☐ RWANDA
☐ BOTSWANA	☐ GHANA	☐ SAO TOME AND PRINCIPE
☐ BURKINA FASO	☐ GUINEA	☐ SENEGAL
☐ BURUNDI	☐ GUINEA-BISSAU	☐ SEYCHELLES
☐ CABO VERDE	☐ KENYA	☐ SIERRA LEONE
☐ CAMEROON	☐ LESOTHO	☐ SOMALIA
☐ CENTRAL AFRICAN REPUBLIC	☐ LIBERIA	☐ SOUTH AFRICA
☐ CHAD	☐ MADAGASCAR	☐ SOUTH SUDAN
☐ COMOROS	☐ MALAWI	☐ SUDAN
☐ CONGO, DEM. REP.	☐ MALI	☐ SWAZILAND

☐ CONGO, REP.	☐ MAURITANIA	☐ TANZANIA
☐ COTE D'IVOIRE	☐ MAURITIUS	☐ TOGO
☐ EQUATORIAL GUINEA	☐ MOZAMBIQUE	☐ UGANDA
☐ ERITREA	☐ NAMIBIA	☐ ZAMBIA
☐ ETHIOPIA	☐ NIGER	☐ ZIMBABWE
☐ Northern Africa		
☐ Outside of Africa		

How many small to medium scale (below 25 MW) RE projects have you completed, or are currently in the process of developing, in Sub-Saharan Africa?

☐ None
☐ 1
☐ 2-4
☐ 5+
☐ Don't know/Decline to state

Is your company planning the development of new small to medium scale (below 25 MW) RE projects in Sub-Saharan Africa in the next 1-2 years (not already included in the figures above)? (Please pick the closest to your view.)

☐ Yes, definitely
☐ Maybe, considering it
☐ No or unlikely
☐ Don't know/decline to state

[Optional:] Please share why you are likely or unlikely to develop (more) such RE projects in Sub-Saharan Africa in the future.

[text box]

Initial engagement with the REPP

Have you talked with the REPP team regarding one of your RE projects? (Please pick the closest to your view.)

☐ Yes
☐ No IF NO, SKIP TO BROADER CONTEXT

☐ I don't know or never heard of REPP before today IF NO, SKIP TO BROADER CONTEXT

What made your company decide to consider REPP for your project originally?

[text box]

What is the current status of those discussions with the REPP for your project?
(Please pick the closest to your view.)

☐ We are still in discussions about the possibility of REPP supporting my project. SKIP TO EXPERIENCES WITH REPP

☐ We are still considering whether to pursue REPP support, and the project is progressing. SKIP TO EXPERIENCES WITH REPP

☐ We decided not to pursue REPP support, as the project experiencing significant issues or delays outside of our control or has been cancelled. SKIP TO EXPERIENCES WITH REPP

☐ We decided not to pursue REPP support, as we found other options that better suited our needs, and the project is progressing toward financial close. SKIP TO EXPERIENCES WITH REPP

☐ We decided not to pursue REPP support, as we found other options that better suited our needs, and the project has reached financial close. SKIP TO EXPERIENCES WITH REPP

☐ REPP declined to support our project.

☐ Don't know/decline to state SKIP TO EXPERIENCES WITH REPP

[Optional:] **Why did the REPP decline to support your project?**

[text box]

[Optional:] **Do you understand the REPP's reasoning to decline to support your project?**

☐ Yes

☐ No

☐ Don't know/decline to state

Experiences with the REPP

We'd like to ask you a few questions regarding the project for which you have applied for REPP assistance.

Overall, how satisfied are you with your interactions with the REPP, using a scale of 0-5, with 0 = not at all satisfied and 5=extremely satisfied?
[provide scale]
☐ Don't know/decline to state

[Optional:] Please share the reasons for the score you provided.
[text box]

How reasonable do you find the REPP eligibility and participation requirements, using a scale of 0-5, with 0 = not at all satisfied and 5=extremely satisfied?
[provide scale]
☐ Don't know/decline to state

[Optional:] Please share the reasons for the score you provided.
[text box]

What other technical assistance, advisory and structuring support options could the REPP provide projects like yours that would help to develop small-scale RE projects in Sub-Saharan Africa?
[text box]

REPP provides technical assistance at concessional terms and rates, which is paid back after financial close. Do you think the REPP model of paying back the 'Technical Assistance' is suitable for projects of your nature under the current project finance environment in Africa?
☐ Yes
☐ No
☐ Don't know/decline to state

What other financial support options could the REPP provide projects like yours that would help to develop RE projects in Sub-Saharan Africa?

[text box]

Broader Context

Now, we would like to ask a few questions about the broader context for doing RE projects in Sub-Saharan Africa.

[Optional:] **Besides REPP; what other public sources of financing does a project like yours have in the market today?** (please check all that apply)

- ☐ grants, including technical assistance, from various public sources
- ☐ grants, output- and/or results-based (to be paid after achieving pre-defined milestones), from various public sources
- ☐ loans and credits from public, state-owned banks in my country
- ☐ loans and credits, directly from bi-/multi-lateral institutions and multi-donor partnerships
- ☐ other loans and credits from national, non-financial institutions, including national RE support programs in collaboration between national and international institutions
- ☐ none of the above

[Optional:] **What other private commercial sources of financing does a project like yours have in the market today?** (please check all that apply)

- ☐ funding from micro-finance institutions in my country
- ☐ crowdfunding
- ☐ funding from private banks in my country
- ☐ funding from export credit agencies
- ☐ private equity funding, mezzanine funding and/or venture capital from private equity funds
- ☐ any other combinations of private commercial funding, guarantees and insurances
- ☐ none of the above

Are you seeing more or fewer private commercial funding options for small-scale RE projects compared to two years ago, or is it about the same? (new funders or funders more open to small scale RE investments)

- ☐ Yes, there are more options than before

☐ It is about the same as before
☐ There are fewer options than before
☐ Don't know/decline to state

[Optional:] What other sources of technical assistance does a project like yours have in the market today?

If so, kindly explain the financial conditions for such technical assistance that apply for your project. For example:

Is it a technical assistance grant that is output- / results-based?

Is the technical assistance non-financial, limited to mentoring and advisory support?

Are you required to pay this technical assistance (partly) back under certain conditions, including an interest rate, thus it is a loan?

Is it a technical assistance loan that can be converted into a grant under certain conditions?

[text box]

Wrap up

[Optional:] Is there any other feedback you would like to share regarding your experiences with the REPP or developing RE projects before finishing with the survey?

[text box]

[Optional:] If you choose, you can provide your name and contact information so that we may follow up with you in case there is a need to clarify any of your responses.

[text box]

Thank you for your participation!

BEIS/Management Board related topic guide

Number of planned interviews	Number of completed interviews	Interview Period
BEIS- Management Board Member-	BEIS-2 Management Board Member-2	June 2018

ON REPP PARTNERS/MARKET ASSESSMENT COMMITTEES	
1.	BEIS / REPP's current expectations for partnership building – role of REPP Partners in REPP success?
2.	What other stakeholders are key to REPP's success?
3.	Successes and challenges in getting private sector market actors interested in REPP?
ON CAMCO	
4.	Camco's strategy when bringing on board projects? Follow on Q: How has this evolved? What direction has the Board given Camco on this?
5.	Happy with Camco's approach? Anything you would change in the process? Any Camco qualities which prohibit it from effective delivery?
6.	Any concerns about the systems and safeguards Camco has in place for financial management and fraud prevention?
ON REPP STRATEGY	
7.	How well is the REPP strategy balanced in terms of addressing the needs of developers / incentivising financial institutions, whilst remaining consistent with its broader objectives?
8.	Are the REPP TA and RBF support packages optimally replicable, or could more be done? Assessment of the emerging need for combined TA and RBF for many REPP projects to advance to financial close?
9.	Is REPP pricing itself well / 'correctly'? Where does REPP fit within the markets in its target countries?
10.	Any evidence of REPP crowding out other investors in any of the project contexts? of crowding in? of alternatives to REPP?
11.	REPP's scale of impact on the market? What type of market transformation is feasible, and under what circumstances?
12.	How has REPP's strategy evolved / is evolving? How should it evolve in the future? Any major changes in the market place that may influence the REPP's positioning?
ON REPP IMPLEMENTATION	
12.	Anything you worry about? Anything you are not seeing that you would expect to see?
13.	How effective and efficient are REPP's governance structures (<i>Management Board and Assessment Committee</i>)? Any elements you would change? If so, why?

14.	Impression regarding the cost-efficiency of CAMCO's operations? And of REPP's more widely?
15.	Impression of the quality of CAMCO's support at the project level, and the resulting likelihood for REPP projects reaching financial close?
16.	What do you think REPP's biggest achievement to date is?
17.	What would a REPP 'scale up' look like in terms of scope and timeline?
18.	What would a REPP 'scale up' look like operationally? Impact on the other levels of governance? Are there any current challenges to scale-up?
FINAL THOUGHTS & THANKS	

Annex 10: Contracted Project names

(confidential annex to be removed before publication)

- 1 Virunga
- 2 Kitewaka
- 3 Mubuga
- 4 Atacora
- 5 Tilli
- 6 GaiaGhana
- 7 Kilosa
- 8 SETA
- 9 GVE
- 10 PowerGen
- 11 SHS Nigeria (PAS BBOX)

Annex 11: Full case studies

PAS BBOX (PBX)- Nigeria

1. Country Context

Overview of current status, potential and challenges of off-grid Solar Home Systems (SHS) in Nigeria

Current Status

Nigeria has the largest economy in Sub-Saharan Africa (GDP of \$405 billion). A significant amount of the economy is powered largely by small-scale generators (10–15 GW) with an alarming 80% of consumers with electricity connections still reliant on these generators.¹⁹⁰ Not surprisingly, Nigeria is ranked as the world's largest importer of diesel generators.

Almost 50% of the population have limited or no access to the grid with in cases where grid electricity is available, 82% of households experience power outages as frequently as 2-5 times per day.¹⁹¹ Mini-grids and solar home systems therefore creates \$9.2B/year (₦3.2T/year) market opportunity that will save \$4.4B/year (₦1.5T/year) for Nigerian homes and businesses resulting from potential fuel savings.¹⁹²

In a 2018 GOGLA report¹⁹³, the cumulative sale of off-grid solar (OGS) products in Nigeria was around 1.7 million between 2014-16 with total sales in 2016 of 820,000. This represented a growth rate of 36%. The trend toward growth however has fluctuated due to drought as well as well as the economic crisis, which led to a foreign exchange shortage, devaluation of the naira and inhibited purchasing power. The impacts of this crisis has waned since second half of 2017 and although the overall market is still quite nascent compared to the mature East African markets the overall growth prospects are promising. This is owing to a large off- and unreliable-grid population across a spectrum of income levels, including many with high ability to pay. Interestingly, in the case of Nigeria, Plug-and-Play (PnP) SHS companies have reported fast growing sales driven by effective distribution partnerships, and a high-concentration of customers that are used to having a high-powered energy system at home via generators.

In terms of active businesses in the Nigeria market, there were nine suppliers of quality verified equipment in the country in 2016. This includes major international brands. Examples of progress include Greenlight Planet, which established a local office in 2017 with Total as the importer. D.Light and Lumos are active as well as others such as Anergy

¹⁹⁰ The Off-Grid Opportunity in Nigeria, Rural Electrification Agency, 2017.

¹⁹¹ PAS BBOX Structure Paper, REPP.

¹⁹² The Off-Grid Opportunity in Nigeria, Rural Electrification Agency, 2017.

¹⁹³ Off-Grid Solar Market Trends Report 2018, GOGLA, 2018.

and Rensource, which are focusing on larger systems for the urban/peri-urban domestic and SME market.¹⁹⁴

Prospects for SHS in Nigeria

Nigeria has one of the most underdeveloped OGS-enabling environments. The framing and prioritization of the OGS sector needs further definition and clarification reflecting its status as a relatively nascent OGS market. Positively, however, the Nigerian government has recognised the potential of OGS and solar mini-grids.¹⁹⁵ The Nigerian Rural Electrification Agency (REA) has developed an Off-Grid Electrification Strategy with a primary objective to increase electricity access to rural and underserved clusters in Nigeria. Part of this strategy is to fast track development initiatives toward achieving the overall objective of the government's Economic and Recovery Growth Plan and the Power Sector Recovery Programme (PSRP).¹⁹⁶ It is in partnership with multilateral development agencies—notably the World Bank Group—and it is in the process of developing support frameworks, certifications, and skills-building programs that could accelerate markets.

Challenges for Solar Home Systems market in Nigeria

Notwithstanding the huge untapped market potential and keen interest of investors and developers alike in the region, there are some key barriers hindering the growth of the SHS market in Nigeria:

- The **uptake of mobile money** has been typically low (<0.1% of Nigerian adults), making cash collection a challenge.¹⁹⁷ However, this trend seems to be rapidly changing with indications that Nigeria is demonstrating promising trends in growth and scale up of digital finance and payments (including mobile money payments).¹⁹⁸ In the case of PBX, the developer has reported that there are 3-4 mobile money operators in the Kano region which are able to process payments for PBX.¹⁹⁹
- **Fiscal and regulatory barriers:** Solar equipment components such as batteries are subject to a minimum of 20% import tariff and additional 5% VAT.²⁰⁰ In an interview with a mini-grids developer in Nigeria and other industry reports²⁰¹, further concerns were raised over the revision of the previous solar module tariff structure, with solar module importation which was usually duty-free now being subject to 5% VAT and 5% import duty tax. Such a change can potentially thwart the growth the market is witnessing.
- **Low access to capital due to low rates of financial inclusion.** Only 2% of adults have received loans from financial institutions and only 14% of SMEs have access to a loan

¹⁹⁴ DFID (2017) - Study To Investigate The Market For Solar Home Systems In Sub-Saharan Africa – Final Report, (unpublished).

¹⁹⁵ Ibid.

¹⁹⁶ The Off-Grid Opportunity in Nigeria, Rural Electrification Agency, 2017.

¹⁹⁷ Accelerating access to electricity in Africa with off-grid solar, Off-grid solar country briefing, Nigeria; ODI, GOGLA, Solar Aid and Practical Action; 2016.

¹⁹⁸ Off-Grid Solar Market Trends Report 2018, GOGLA, 2018.

¹⁹⁹ PAS BBOX Structure Paper, REPP.

²⁰⁰ Nigeria: Energy Needs Assessment and Value Chain Analysis, All On, 2017.

²⁰¹ Off Grid Solar In Nigeria: Enablers and Hurdles, Solar Plaza, 2018. Accessible at: <https://nigeria.thesolarfuture.com/news-source/2018/4/5/off-grid-solar-in-nigeria-enablers-and-hurdles>

or overdraft account, according to the World Bank.²⁰² Furthermore 86% of rural Nigerian adults are unbanked.²⁰³ High initial upfront costs for SHS have therefore been prohibitive for poorer consumers, despite economies over diesel over the longer term. PBX's rental model, mitigates this issue by financing the purchase of these systems thus allowing affordable pay-off terms over 20 years. This however means robust credit risk verification and control mechanisms are required to minimise defaults.

- There is **low market awareness** of solar products especially in rural areas, with close to 40% of the population unaware of solar power.²⁰⁴ The lack of information, a bitter and failed implementation history and the prevalence low-quality/counterfeit products discourages market acceptance and penetration.
- **Accessing finance** has been a major challenge with most Nigerian companies quoting little success in raising finance from local financial institutions. Apart from a few PAYGO players (Lumos, Arnergy, Azuri), raising finance has been difficult particularly due to the highly volatile nature of the country's foreign exchange rate.

2. RE Project Finance landscape of Nigeria

The project and climate finance landscape for RE support in Nigeria is analysed based on the support category (public versus private) and type of financial instruments offered by these institutions. This is further explained in the Section below.

Private RE Finance and Finance Instruments

i) Commercial Loans/Credits (including Export Credits)

Commercial debt for small-scale RE in Nigeria is very scarce although the situation is slightly better in the off-grid space. Most of (inter-)national RE finance in Nigeria seems to go to either mini-grid projects or SHS PAYG schemes.²⁰⁵ Interviews with local stakeholders emphasised that <10MW off-grid projects are to be prioritised in Nigeria, as they are likely to be the most (cost-)effective, given the country's circumstances.²⁰⁶ But even here investors encounter barriers and uncertainty in making investments owing to the depreciation of the Naira resulting in increased prices of equipment imports and foreign exchange currency risk. Most international investors are largely taking a wait-and-see approach until currency, economic and political risks dissipate further with the potential exception of one project likely to conclude a deal with a US lender at an affordable price.²⁰⁷

²⁰² Accelerating access to electricity in Africa with off-grid solar, Off-grid solar country briefing, Nigeria; ODI, GOGLA, Solar Aid and Practical Action; 2016

²⁰³ PAS BBOX Structure Paper, REPP

²⁰⁴ Accelerating access to electricity in Africa with off-grid solar, Off-grid solar country briefing, Nigeria; ODI, GOGLA, Solar Aid and Practical Action; 2016

²⁰⁵ <https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

²⁰⁶ Information received from stakeholder interviews.

²⁰⁷ <https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

There are various regional and national commercial players such as EcoBank , Bank of Industry (BoI) and The Infrastructure Bank (TIB) that are known to have shown an interest in (small-scale) RE projects in Nigeria.

Ecobank, a traditional investor in Nigeria's fossil fuel sector, has only recently considered RE investments for incorporation in the bank's portfolio.²⁰⁸ Awareness of RE potential and its importance for the Nigerian market still needs to be raised among its employees.

BoI on the other hand has been more active with a \$1.1M funding (2015-16) to 6 off-grid projects in partnership with GVE and Arnergy. In 2017, BoI launched a 1 billion naira Solar Energy Fund for micro, small, and medium enterprises. BoI is supporting eight solar energy project developers with the aim to reduce energy costs for micro-businesses by providing concessional loans with a 7% interest rate, half the national 14% benchmark.²⁰⁹ However, respondents to a recent study²¹⁰, noted that the facility was hard to access and, despite its purpose to support SMEs, collateral and other requirements meant that it was generally perceived as only appropriate for larger, more established companies.

In general, national commercial banks do not invest in projects below certain IRR levels with most local financing priced in the range of 25-35% per annum.^{211,212} Furthermore, high collateral requirements by commercial financiers that cannot be met by project initiators and in the case of women entrepreneurs, the inability to own land are frequently encountered obstacles to loan disbursement. As against Kenya, crowd financing initiatives supporting small-scale (off-grid) RE are absent from the Nigerian market.²¹³

ii) Equity/Mezzanine

In general, Pay-as-you-go solar companies continued to dominate the energy access investments in Africa, with more than \$223m of funds announced in 2016. This puts the sector well above last year's \$158m with this growth mainly driven by a four fold increase in equity.

In Nigeria, over 70% of finance in (off-grid) RE projects in Nigeria is equity but this tends to be corporate equity owing to the recent price volatility in the market.²¹⁴ However this trend seems to be reversing across SSA and in Nigeria in particular with international investors beginning to show more interest to establish a presence in the market. For instance, the largest Pay-as-you-go player in Nigeria, Lumos Global, locked in over \$60m in equity from Pembani Remgro Infrastructure Fund, an African focused private-equity firm. This indicates a break in the previous trend of transactions being driven primarily by impact investors and donor capital.²¹⁵ Although it remains to be seen how much of an impact this has on funding early stage investments in smaller, less established companies.

²⁰⁸ Based on information received from other market actor interviews.

²⁰⁹ <http://global-climatescope.org/en/off-grid-quarterly/q2-2017/>

²¹⁰ <https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

²¹¹ <https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

²¹² Based on information received from other market actor interviews.

²¹³ <https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

²¹⁴ <https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

²¹⁵ Q1 2017 Off-Grid and Mini-Grid Market Outlook, Bloomberg New Energy Finance, January 2017

RE Risk Mitigation Instruments

Amongst the suite of available risk mitigation instruments, there is a specific need for hedging against currency risk in Nigeria, given the recent volatility of the Naira's value. Various options for currency risk mitigation are available such as currency hedging (IFC currency swaps), currency risk guarantee (GuarantCo) or local currency lending instruments (TCX). In general, the cost of these various currency risk options can be so high that it offsets the lower cost advantage of foreign debt. For instance, TCX is a currency Fund, which offers local currency lending for developing markets. TCX was approached by the project developer to discuss possible collaborations on the project, but given the scale and size of the fund, TCX were not keen to engage at this stage. According to the developer, risk mitigation providers such as TCX are only interested if the project value does not surpass at least USD 20 million.²¹⁶ Also the 25% interest rate against this insurance is unaffordable for small developers at early to mid stages of their development restricting their ability to access such instruments. Reflecting how important local currency challenges are in this sector generally, the UK's CDC has a new off-grid solar strategy in 2017 (of deploying \$150 million over the next 3-4 years). The main aim is to facilitate address the local currency financing gap for PAYG companies with one closed deal (with M-KOPA) and 3-4 direct deals expected to close in 2018.²¹⁷ However, given the focus is on the top tier companies with a demonstrated track record, strong equity base and credit culture, it is unlikely that start-up firms such as PBX will receive any share of this funding.

Public RE Finance and Financial Instruments: Loans/Credits/Grants/Equity

Numerous Project Preparation Facilities (PPF) have been operating pan Sub-Saharan Africa including Nigeria with some funds and programmes setup to work exclusively in Nigeria. For the purpose of this case study analysis, a shortlist of the funds focused on providing support and catalysing investment specifically relating to off-grid and small-scale energy solutions were taken. The purpose of this *soft* benchmarking exercise is to understand how REPP figures with respect to other similar programmes operating in the region in order to understand better, the usefulness and need for REPP. This selection was based on the evaluation team's expertise and knowledge of the region and suggestions from interviewees of comparable programmes operating in Nigeria.

Table A11.1: PPF Comparison Matrix

Project Preparation Facility	Technical Assistance		Structuring Advisory	Long term project finance support		Technology size (small-medium scale i.e <25 MW)
	Grant	Concessional loans/Convertible Grants		RBF (repayable)	Debt, Equity or Mezzanine	
DFID Solar Nigeria Programme ²¹⁸	x		x			x
All On ²¹⁹	x*		x	x	x	x

²¹⁶ Information received from project developer interviews.

²¹⁷ CDC OGS Strategy and Market Update, Energy Africa, 23-April-2018

²¹⁸ Solar Nigeria Programme (SNP)- <http://www.solar-ng.com/>

²¹⁹ All On- <https://www.all-on.com/>

Private Financing Advisory Network (PFAN) ²²⁰	x**		x			x
EU Electrifi ²²¹		x***			x	
USAID Power Africa- Beyond the Grid Initiative ²²²	x		x		x****	x

* All On operates an 'Innovation Hub' with an aim to provide risk capital and business development support to develop, prove and scale successful business models.

** A success fee is negotiable for an investment facilitated by PFAN, effectively payable out of the financing or investment secured.

*** Electrifi doesn't fund technical assistance activities directly, but rather comes in at advanced stages of project development to provide suitable financial instruments that assist projects reach financial close.

**** Not directly but via the suite of other tools and resources (USTDA, OPIC etc) to mobilise finance to small-scale projects

As observed from the table 1 above, apart from Electrifi, the remainder four facilities (SNP, All On, PFAN and PA-Beyond the Grid) are set up to provide early-stage, catalytic grant funding support to small SHS and micro-grid enterprises in Nigeria for scaling up the off-grid energy market by providing technical assistance. Some of the facilities such as SNP and PA-Beyond the Grid Initiative have an additional component of improving the country's regulatory and enabling environment for energy access which is not covered under REPP.

PPFs such as All On, Electrifi and Beyond the Grid Initiative (through its partners) provide investment capital to early stage enterprises to enable scale up operations. All On, a Nigeria focused fund backed by the Shell Foundation, seems to demonstrate a similar level of flexibility that REPP does in its financial products by providing various forms of financial instruments such as seed equity, growth equity, results-based finance and working capital. However as against REPP, All On has a focus only on Nigeria and the energy access market in particular. Both All On and Electrifi are in discussions with the project developer to provide the next round of equity finance to support further scale up. There are indications also that Electrifi are keen to set up a country focused fund called 'Energy Access Nigeria' and AfDB in collaboration with other developers are also keen to set up a country focused fund²²³ reflecting an increasing interest from public sector funded DFIs to enter into the Nigerian Market. These trends are all indicative of promising growth of the off-grid sector in Nigeria. However, the project developer is viewing this increasing attention and influx of soft grant money into the off-grid sector in Nigeria with caution. This is because, large programmes such as those by the World Bank can undermine the market by subsidising the sector and also potentially by giving money to the wrong projects that can lead to market spoilage. The project developer has therefore lauded the approach REPP takes in building in commercial discipline from an early stage while ensuring sufficient margin to the developer.

Overall, REPP is not the only player in the market but what seems to separate REPP from other facilities (perhaps besides All On and CDC) is its ability to use its expertise to come up with smart financial products that can swiftly de-risk projects so as to facilitate entrance of additional financiers. This is reflective in its ability to design a financial instrument such

²²⁰ Private Finance Advisory Network (PFAN)- <http://pfan.net/about/>

²²¹ Electrification Finance Initiative (Electrifi)- <http://electrifi.eu/>

²²² Power Africa (PA)- Beyond the grid initiative- <https://www.usaid.gov/powerafrica/beyondthegrid>

²²³ Based on interview with GVE Project developer

as the revolving trade facility to suit the needs and requirements of a developer operating in a volatile financial environment.

3. Project Background and Assessment

This Section provides an overview of the project followed by a detailed assessment of the REPP rationale for supporting this project and its approach to pricing support.

Project Fact-Sheet

Table A11.2: Project details

Item	Description
Technology	Rental Pay-as-you-go (PAYG) Solar Home Systems, including small-scale solar PV power units and household appliances (including TVs, radios and flashlights) that use smart metering and mobile money technology for making monitoring, troubleshooting and payments.
Installed Capacity ²²⁴	1.0 MW in total composed of multiple small-scale 50Wp solar home systems with targeted sales of at least 20,000 SHS units.
Project Type	Off-grid. Customers are mainly household level residential users.
Project Country	Nigeria with project sites limited to Kano in northern Nigeria.

Project Description

PAS BBOX Ltd. Nigeria (PBX) is a Solar Home Systems (SHS) business in Northern Nigeria. As a franchisor, BBOXX will provide support (tools, business process development), process sales orders for stock and spares, manage warranties and provide software and technical support, as well as ongoing technical training to PBX.

Rationale for REPP Support

The project company PBX is set up as a franchisee arrangement with BBOXX Ltd. Hence despite Pan Africa HoldCo UK Ltd's experience in Africa (via its utility scale solar business called Pan Africa Solar), this is essentially a new business venture with operations having begun only 20 months ago.²²⁵

The company was ready to move from the seed stage to the more genuine operations stage but owing to capital constraints it struggled to attract traditional finance facilities and according to the developer and various market actors interviewed, the funding market for businesses at such a small scale is still fairly immature. REPP therefore stepped in to provide the business with two forms of funding:

- RBF funding to assist the business funds current operations and incremental growth by achieving an aggregate sale target of 20,000 units (loosely deemed to represent financial close in this context) to attract further private sector finance.

²²⁴ When discussing 'installed capacity' in the case of small SHS systems, it is important to note that the life of these systems are typically between 2-5 years and hence not comparable in the same vein as installing a 1 MW grid connected solar project that typically has a design life of 20+ years.

²²⁵ From interview with PBX project developer

- TA funding to assist the business finalise legal documentation, ensure compliance with IFC performance standards for an ESIA, and conduct lender's due diligence assessments.

The REPP Project Manager was familiar with the developer on previous other engagements and felt that the business demonstrated strong prospects for commercial viability at scale. This judgement was based on REPP's confidence in the project team formed by two competent players (Pan Africa Solar and BBOX Ltd) and its ability to leverage further private sector finance on the back of this early stage support and strong financial model. Furthermore, REPP's RBF funding was specifically designed to facilitate the development of a structure for the financing SPV (PAB) to allow for refinancing and general capital market development around this type of asset class. This was based on Camco's assessment that current grant based funding landscape is not financially sustainable approach.²²⁶ Although such a grant based approach will support projects in addressing the much needed working capital constraints, it will not necessarily result in better economics to provide sufficient confidence to private sector investors. The structure of this type of financing vehicle is discussed in the following Sections.

REPP Pricing Strategy

The REPP offer to this project had to be structured differently given this project didn't fall under the same ambit as grid-connected projects. Hence the support timeframes and the definition of financial close as applicable in standard RE project development finance didn't apply directly to this type of project. REPP and the project developer jointly agreed that they would consider an achievement of aggregate sales (performing customers) of 20,000 solar kits, as a reasonable estimate of comparable financial close, sufficient to demonstrate commercial viability and strong business economics to attract further funding.²²⁷ As discussed above, REPP's support to the project was via two channels: technical assistance to support the business complete the necessary technical and legal compliance requirements and RBF to fund the actual procurement and installation of the first tranche of solar products.

According to the developer, the initial terms of the RBF repayment tenor suggested by the REPP Manager was according to standard project finance thinking i.e expected payback period of the customers.

With regards to the pricing of the RBF offer, REPP followed a standard in-house approach of using its theoretical financial model as a first input to the benchmarking process. The remainder of the process is to utilise its networks of consultants and associates across SSA to collect information on how other similar projects are priced to arrive at an indicative benchmark price for negotiation.²²⁸ The evaluation team separately assessed these rates to those available via public sources and other market actors interviews.

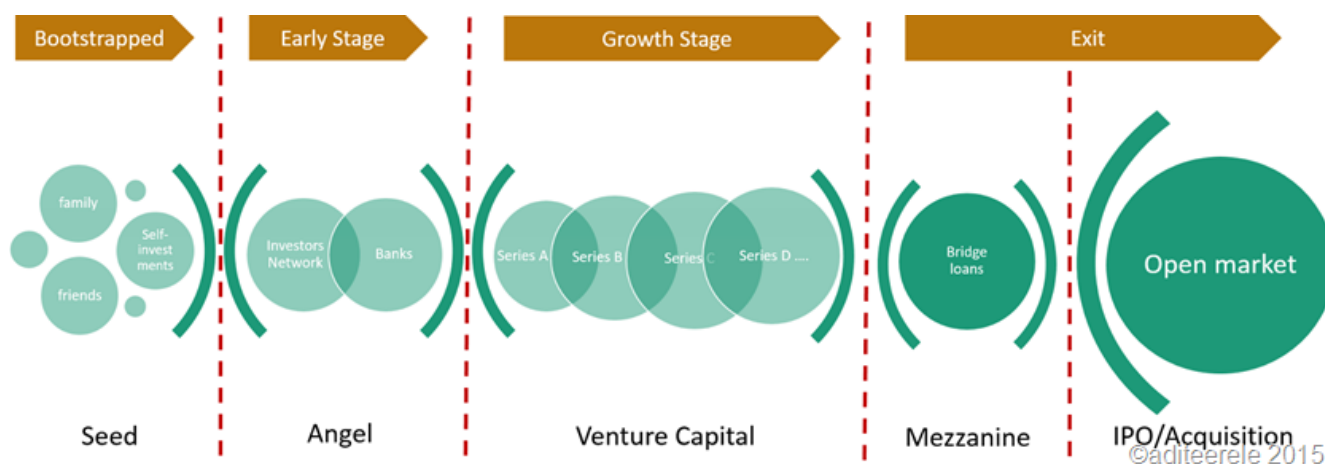
²²⁶ REPP_2018 Mini Grid Strategy Paper_180314

²²⁷ PAS BBOX Structure Paper, REPP

²²⁸ Based on interview with the concerned REPP Project Manager

Sweet Spot Assessment

Given REPP support is provided for both its TA and RBF facility, the sweet spot assessment covers both these aspects. To get a better sense of different stages of venture finance, Figure 1 provides a brief overview of the funding cycle a typical small scale venture such as PAS BBOX would go through to become commercially viable



A11.Figure 1: General model for different stages of Start-up fund raising (Source: aditeerele 2015)²²⁹

With respect to the TA financing provided by REPP akin to funding towards the early stage of the project, an analysis of Nigeria's financing landscape shows that there is little to almost no interest from commercial investors or banks to support such a project. Hence REPP is unlikely to be crowding any of these players out. The only other players active at this stage are other PPFs (such as SNP in the case of PAS BBOX) offering grant funding as seed or early stage capital to help such enterprises formalise their ideas into a commercially attractive business product by testing its viability with few customers.

Regarding REPP's RBF support, the project developer felt there was little risk appetite to raise finance for Series A to B type funding (that REPP is providing) from capital markets and commercial banks, owing to its small ticket size. The developer is continuously exploring options to borrow locally in Naira from national banks but has the view that the quality of banking sector in Nigeria coupled with its poor credit rating (B+) means that the funding they provide is still very expensive to afford. Even DFIs such as OPIC, AfDB, FMO step in when such businesses are well established and sufficiently de-risked. The financial landscape analysis shows that there are other venture capital equity financiers entering into the Nigerian market (All On, ElectriFi) and a lot of hype about future DFI investment in Nigeria (eg. CDC). REPP therefore doesn't seem to be crowding out any commercial investor and its intervention seems to be crucial to helping 'bridge the gap' to attract additional financial investors for further stages of funding. There is evidence from the project developer and REPP PM interviews that they are already in talks with other equity providers (All On and ElectrFI) for next stage of equity finance (series B-C) with potential interest from FMO and other lenders to come in at a later stage (series E and onwards). REPP has been consulted

²²⁹<https://blogs.msdn.microsoft.com/aditeerele/2015/07/01/de-mystifying-start-up-growth-stages-and-terminology/>

by these potential investors about their experience with the developer and therefore feel their presence has motivated additional financial support.

Another important aspect of REPP's RBF instrument and more generally its mini-grid strategy²³⁰ is based on their observation that the general SHS and mini-grids market is extremely underdeveloped with limited capital availability owing to a lack of secondary market for such an asset class. Part of REPP's strategy is therefore to develop **off-balance sheet ready financing structures**²³¹ that could ultimately be **commoditised by securitisation**²³² or **syndication**, making possible the creation of a secondary market (a more detailed explanation of how these financial instruments work is available from the links provided to the related footnotes).

Until recently, off-balance-sheet structures were funded by DFIs and impact investors with a higher risk tolerance than typical commercial investors. However, as companies improve their credit risk assessment capabilities, commercial uptake could increase quickly.²³³ Segmenting customers into different risk pools and raising funding by securitisation of its assets could become feasible once off-balance-sheet structures prove effective in fundraising. The project developer was confident that there would be other takers for this type of financial products and REPP confirmed that they were in talks with two other developers, one of which was BBOX who was keen to apply this same model to other regions they are investing in. There are examples of such off-balance sheet financing models being set-up by other investors and SHS companies in Africa indicating that there is interest in this approach towards financing the off-grid solar market (OGS).

However, the OGS industry offers a complex environment for this kind of financing with success of such a potential securitization incumbent upon the proper assessment and pricing of the risk associated with a particular pool of assets.²³⁴ Furthermore, several legal and administrative hurdles will need to be resolved before these off-balance-sheet financing models can deliver their potential. Thus, although it is too early to verify the viability of such an approach, a successful implementation of such a financing structure by REPP can have significant demonstration effects across the market.

Conformance to REPP Theory of Change

Based on the in-depth analysis provided in the preceding Sections, this case study will serve as a useful test case to demonstrate whether REPP is achieving or on track to

²³⁰ Based on the review of the REPP_2018 Minigrid strategy_180314 and KIIs with Camco

²³¹ It refers to a form of financing that does not appear on a company's balance sheet because it is not strictly debt (so liabilities and associated assets are excluded from the balance sheet). Available at: <https://ppp.worldbank.org/public-private-partnership/financing/project-finance-concepts>

²³² Asset securitization is the structured process whereby interests in loans and other receivables are packaged, underwritten, and sold in the form of "asset backed" securities. Available at: <https://www.occ.treas.gov/publications/publications-by-type/comptrollers-handbook/asset-securitization/pub-ch-asset-securitization.pdf>

²³³ Off-Grid Solar Market Trends Report 2018, GOGILA, 2018.

²³⁴ <https://medium.com/energy-access-india/off-grid-solar-financing-failing-in-india-e0881f298a7a>

achieving some of its outputs and outcomes as described in the ToC. A summary of this analysis is provided in the table below.

Table A11.5: Summary of whether PAS BBOX is performing and progressing towards expected outcomes in line with REPP's ToC

ToC Category	Output/Outcome statement	Commentary	Progress Status
Outputs	1. Renewable energy being generated	Logistical delays (issues with customs clearance) has resulted in a delay in rollouts meaning no RE is generated yet.	Delayed but on track to be achieved
	2. More experienced and confident project developers	REPP's technical expertise appreciated by the developer. The developer has expansion plans both in-country and regionally and they hope to apply this experience with REPP when going into new territories.	Partially achieved and on track to being fully achieved
	3. Standardised and aligned procedures and processes for lending to small-scale RE developers	REPP off-balance sheet financing model aims to attract future investors. However, there is no evidence to suggest that any investors have or are willing to change their procedures for lending to small-scale RE developers.	Not achieved. Likelihood is very low with respect to large DFIs lenders, but possible in the case of smaller equity providers.
	4. Standardised and aligned risk mitigation procedures and processes	No evidence of this is available	Not achieved. Unlikely to be achieved as RMI providers are unlikely to change their procedures for such small ticket sizes.
Outcomes	1. Projects that receive support from REPP deliver strong climate and development outcomes	Expected target ²³⁵ : i) GHG emissions avoided- 3,420 tCO ₂ eq/year ii) New connections: 22,800 iii) Direct jobs created- Operations Phase: 286 Given no installations have taken place, this is not yet demonstrable. Apart from delivering clean energy to rural households, the developer is also keen to have a recycling policy or even KPI in place to remove faulty or damaged products from the field, something not many other companies do currently,	Delayed but on track to be achieved
	2. REPP investments have a demonstration effect, signalling the	Some evidence that the REPP financial structuring model applied to this project has attracted interest	Partly achieved

²³⁵ Source: PAS BOXX TA Support Agreement Signed

ToC Category	Output/Outcome statement	Commentary	Progress Status
	attractiveness of developing and investing in RE in sub-Saharan Africa to the wider market	from other developers. There is no evidence that any investors have shown interest in the uptake of this model due to REPP.	
	3. Increased capabilities and understanding in financial institutions and risk mitigation providers making them better able to support small-scale RE developers	No concrete evidence of this is available. REPP's presence in the project was beneficial to other investors in terms of their understanding of the developer	Not achieved. Likelihood of achievement depends on the success of such a financial structuring model.

In summary, the project has still not achieved completion on any of its outputs or objectives. There are signs that it is on track to achieve outputs 1 and 2 and possibly outcome 1 and 2 which relates more generally to assisting the project reach its indicative milestone of selling 20,000 SHS units to unlock more private finance with potential demonstration impacts in the market. However, achievement towards outputs 3 and 4 and outcome 3 is extremely slow or unlikely given there is no concrete evidence of particular support activities REPP has carried out in the context of this project. REPP's general outlook and approach to working with its REPP Partners is explained in more detail in Section 3.3.2 of the main report.

Conclusion

The country assessment validated the high potential and requirement for supporting the growth of the off-grid solar market in Nigeria. The challenges currently plaguing the sector are applicable to this project and much of the Nigerian economy generally, but it seems like reasonable risk mitigation strategies have been put in place to counter them.²³⁶ An analysis of the RE project finance landscape indicates that there are very few private and commercial options for early stage debt financing of RE. Although there seems to be interest growing from regional and national banks to finance such projects, it is still currently limited and where available, it is largely restricted to more established players in the market. On the other hand, private equity finance is growing rapidly across SSA with evidenced penetration in Nigeria as well. There seem to be numerous public (backed) funds and organisations operating in the region, with the key difference being the overtly commercial and flexible approach that REPP takes to de-risk projects by providing financing support tailored to the needs of the project.

Overall the rationale for REPP support is well justified and the project developer felt that the REPP pricing of its TA and RBF products was fair and justified. The evaluation team's assessment was also that the REPP pricing seemed modest and fair, placed at a level that ensured appropriate developer risk without burdening the project or undercutting any potential investors (which anyways didn't seem to be the case for the stage at which REPP

²³⁶ Based on the review of Project Structure Paper

engaged with the project). Furthermore, REPP is trying to develop a relatively innovative financing structure (off-balance sheet ready, securitisation ready financing models) that will enable off-grid projects such as this improve their bankability to become more attractive to commercial investors.

If successful, it can prove a strong case for such an approach which is increasingly being explored as an option for long-term financial stability of such off-grid companies. Finally, with respect to the project's conformance to the REPP ToC, given this project only came into the pipeline in 2017, it is too early to comment on the achievement of most of the intended outputs and outcomes which can be better measured at an impact stage. However, in general, REPP seems on track to meeting its intended outputs and outcomes with a caution to consider more strategically how REPP envisions building the capacity of its Partners to support its projects.

VIRUNGA- Kenya

1. Country Context

Overview of current status, potential and challenges of small-scale hydropower in Kenya

Current Status

The potential for small hydro power (SHP) is estimated at 3,000MW nationwide.²³⁷ However, only approximately 1% of this potential (32 MW) is currently installed, with only 15% supplying to the grid.²³⁸ According to a recent UNIDO study,²³⁹ the potential capacity has remained the same while installed capacity has decreased slightly by 1 MW due to the decommissioning of one hydro plant. Some of the small hydro schemes that are currently online are connected to the national grid supply. Others are stand-alone systems for agro-industrial establishments or missionary facilities.²⁴⁰

The 29 (or thereabouts) SHP plants installed in Kenya as of 2016²⁴¹ indicates varying ownership structures. This includes private, community or public ownership models. Figure 1 clearly indicates majority ownership by the state utility or by private enterprises (mainly tea sector). In terms of capacity (Figure A11.2), this is less diverse with Kenya Electricity Generating Company holding 80% of the installed capacity.

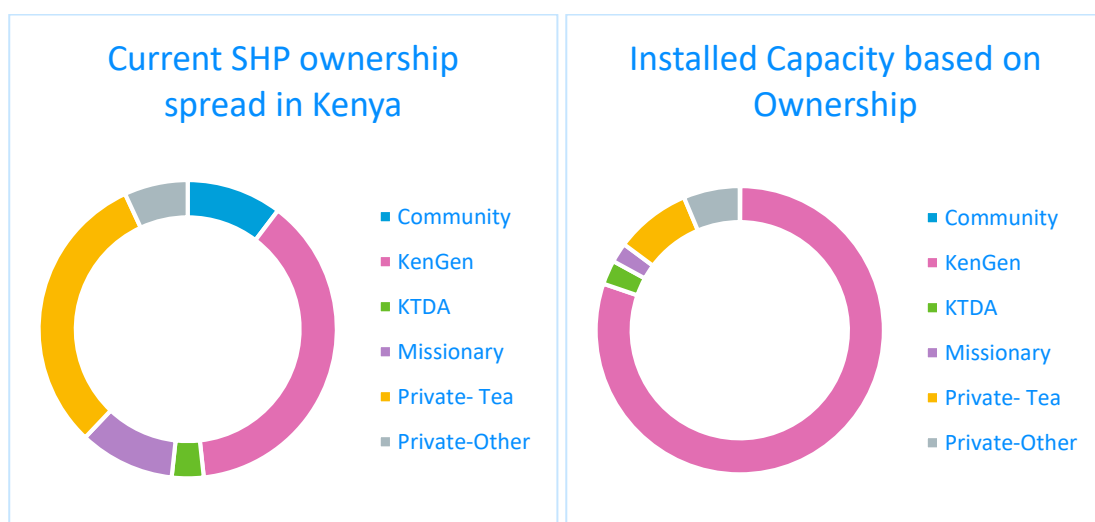


Figure A11.2: Current SHP ownership spread Figure A11.3: Installed Capacity based on Ownership

Most of the commercial and public plants are operational and generally in good condition while most of the community schemes are in need of significant refurbishment.²⁴²

²³⁷ SMALL HYDROPOWER DEVELOPMENT IN KENYA, Ministry of Energy. Available at <http://energy.go.ke/hydro-power/>

²³⁸ J. G. Mbaka et al. / JREE: Vol. 3, No. 4, (Fall 2016) 20-26

²³⁹ UNIDO, 2016. World Small Hydropower Development Report 2016, s.l.:UNIDO

²⁴⁰ Energy Regulatory Commission, Annual Report, 2014-15

²⁴¹ UNIDO, 2016. World Small Hydropower Development Report 2016, s.l.:UNIDO

²⁴² UNIDO, 2016. World Small Hydropower Development Report 2016, s.l.:UNIDO

Prospects for SHP in Kenya

The Government of Kenya is keen to increase the share of RE sources in the country's generation mix. The Energy Act of 2006 laid out a clear strategy towards achieving this, which resulted in the in the formulation of the Feed-in-Tariffs (FiT) in 2008. The FiTs have since been revised twice with the latest tariffs approved in 2012.²⁴³ According to the Energy Regulatory Commission, a total of 44 proposals for development of SHP projects under the FiT scheme with a total capacity of 194 MW had been approved by June 2014 with many more still under consideration.²⁴⁴ Only two small hydropower projects, Imenti (0.3MW) and Gikira (0.5MW) were found to be operational under the feed in tariff program for projects under 20MW.²⁴⁵ 10 years since the introduction of the FiT system in Kenya, the government is currently considering replacing it with an auction based system with an intention to drive down electricity tariffs.²⁴⁶

The government had also commissioned national resource assessment for SHP together with phased feasibility studies for potential sites in order to attract more private sector participation. Amongst the public led initiatives, Kenya Tea Development Association (KTDA) plans to install more than 10 SHP generating more than 25 MW and Tana River Development Authority is installing 7 SHP with a capacity of 3 MW.²⁴⁷ Interestingly there is growing presence and interest from private investors such as Virunga Power, Responsibility Africa, Frontier, VS Hydro and Gulf Energy in hydro power in Kenya.²⁴⁸

Challenges for Small-Hydro development in Kenya

Despite this apparent push from the government and growing interest from private sector developers, the following challenges hinder the success of SHP in Kenya:²⁴⁹

1. Access to finance owing to limited investment flows from private sector to SHP projects in Kenya. While initiatives have been put in place to spur interest from local banks, this evidently has not taken root given the limited number of projects accessing long-term financing by local banks.
2. Lengthy planning and approval process coupled with a current oversupply of generation relative to the demand thus disincentivising the government from moving quickly on closing deals.²⁵⁰
3. Lack of available local technical skills and capacity in developing and executing SHP projects.
4. Vulnerability to variations in rainfall and climate change in Kenya thus proving a big challenge to deployment of hydro power.

²⁴³ FiT Policy on Wind, Biomass, Small-Hydro, Geothermal, Biogas and Solar Resource Generated Electricity, Ministry of Energy, 2nd Revision, 2012

²⁴⁴ UNIDO, 2016. World Small Hydropower Development Report 2016, s.l.:UNIDO

²⁴⁵ Virunga Power Structure Paper, Renewable Energy Performance Platform

²⁴⁶ <http://www.thinkgeoenergy.com/kenya-considering-auction-system-to-replace-feed-in-tariffs/>

²⁴⁷ J. G. Mbaka et al. / JREE: Vol. 3, No. 4, (Fall 2016) 20-26

²⁴⁸ UNIDO, 2016. World Small Hydropower Development Report 2016, s.l.:UNIDO

²⁴⁹ *Ibis*

²⁵⁰ Climatescope 2017, <http://global-climatescope.org/en/country/kenya/#/enabling-framework>

2. RE Project Finance landscape of Kenya

The project finance landscape for RE support in Kenya is analysed in this Section based on the support category (public versus private) and type of financial instruments offered by these types of institutions.

Private RE Finance and Finance Instruments

i) Commercial Loans/Credits (including Export Credits)

Private debt and local currency financing are only sparsely available for small and medium-sized RE projects in Kenya.²⁵¹ Two factors play a significant role in this:

- i) Commercial debt providers seek to invest only into projects above a USD 30-100 million threshold.²⁵²
- ii) Transaction costs for smaller projects (i.e. <USD 30 million) tend to be too high for commercial banks, rendering the investment non-bankable.²⁵³

Smaller projects also do not tend to catch the attention of larger (international) financial institutions, thus leaving the burden of risk to commercial financiers. Furthermore, in 2016, the Central Bank of Kenya set a cap on lending rates for commercial loans (effectively 14.5% per annum). Experts assume that this stunned private debt finance owing to the high risk returns expected from such RE projects which were no longer possible with this cap.²⁵⁴

Many local financial institutions lack the experience or information necessary to finance RE projects. Structuring term sheets and developing screening criteria to assess the bankability of Power Purchase Agreements (PPAs) and credit risks requires an understanding of financial as well as technical aspects of renewables.²⁵⁵ As a result, local banks either demand a track record with clients or high collateral – both are generally hard to provide for developers of smaller RE projects.²⁵⁶ Loan syndication is seen as a bridging step wherein a local bank co-lends with a known Development Finance Institution (DFI). This not only limits each bank's risk but also allows the local bank to piggyback on the development bank's experience of RE project finance.²⁵⁷ For instance, facilities like SUNREF²⁵⁸ seek to leverage more commercial loans provided by local banks into the financing of smaller RE projects. Up until now, however, the programme has only achieved one RE focused loan provision in Kenya, to agro-industry business via the AFD-Chase Bank SUNREF credit line.^{259, 260}

²⁵¹ https://www.seforall.org/sites/default/files/2017_SEforALL_FR4P.pdf

²⁵² <https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

²⁵³ Based on interview with a market actor.

²⁵⁴ <https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

²⁵⁵ Unlocking Renewable Energy Investment: The role of risk mitigation and structured finance, IRENA, 2016

²⁵⁶ https://www.ndf.fi/sites/ndf.fi/files/news_attach/volume_ii_market_landscape_study_eep-sea_countryprofiles_stakeholdermaps.pdf

²⁵⁷ Unlocking Renewable Energy Investment: The role of risk mitigation and structured finance, IRENA, 2016

²⁵⁸ <https://www.sunref.org/>

²⁵⁹ <https://www.sunref.org/en/projet/impacting-lives-by-turning-avocado-waste-into-green-energy/>

²⁶⁰ SUNREF involvement with another REPP hydro-power project (Rupingazi) in Kenya was observed during the documentation review, but given this is not confirmed, it is not officially published on their website.

ii) Equity/Mezzanine

Although the private equity industry has been a significant investor in the green/cleantech sector globally, cleantech has attracted relatively little capital from fund managers in Africa to date. There is no commercial private equity fund manager with an explicit green inclusive mandate in Kenya or the East African region.²⁶¹ But there are a number of commercial cleantech/RE funds with a pan-African mandate, including Inspired Evolution Investment Management, the recently closed Actis pan-emerging market energy fund and Lereko Metier's Sustainable Capital Fund.

Impact investment is gathering increasing interest among investors across Africa. ResponsAbility, Acumen, and LeapFrog Investments are examples of such funds with investments in Kenya. These funds aim to attract private sector equity investors to participate at an early investment stage by helping improve the financial viability and commercial attractiveness of such projects. For Kenya in particular, one of the main reasons behind the heavy influx of those financiers to the country is the relative stability of the Kenyan Shilling over the past 5 years.²⁶² Despite these developments, barriers such as the lack of understanding of the asset class and structure, and preference for more familiar and low-risk/high-return government bonds and equities are still restricting investment in private equity by institutional investors.²⁶³

RE Risk Mitigation Instruments

Risk mitigation and currency hedging instruments for RE projects in Kenya is provided mainly via international government-backed agencies. In a 2016 IRENA study²⁶⁴ that surveyed 16 international institutions²⁶⁵ providing some form of risk mitigation instrument to developers in Sub-Saharan Africa, the key highlights emerging were:

- i) Use of guarantee instruments for renewables remains limited and where guarantees have been issued, these were mainly for larger-scale projects
- ii) Political risk insurance was the most common form of support followed by export credit insurance, partial risk guarantees and partial credit guarantees
- iii) Lack of demand for these instruments from users owing to a lack of product awareness, long processing times, high due diligence requirements and high transaction costs.

This indicates that while options for such risk mitigation instruments exist, its viability for small-scale RE is still quite poor. Regarding the Virunga project there were indications that

²⁶¹ Aligning Kenya's Financial System with Inclusive Green Investment, IFC, Oct 2015

²⁶² <https://www.seforall.org/content/taking-pulse-understanding-energy-access-market-needs-five-high-impact-countries-2017>

²⁶³ Aligning Kenya's Financial System with Inclusive Green Investment, IFC, Oct 2015

²⁶⁴ Unlocking Renewable Energy Investment: The role of risk mitigation and structured finance, IRENA, 2016

²⁶⁵ ADB, AfDB, Africa Trade Insurance Agency, Development Bank of Southern Africa, UK Export Credits Guarantee Department, Export Development Canada, EBRD, GuarantCo, International Bank for Reconstruction and Development, Islamic Corporation for the Insurance of Investments and Export Credit, IDA, IFC, Korea EximBank, MIGA, OPIC and Swiss Export Risk Insurance.

REPP could help support the developer in accessing political risk insurance. This was because although Kenya Power is regarded as creditworthy, senior lenders might still require protection against default risk as well as late payment (liquidity risk) owing to the lack of sovereign guarantee. Given the project is not close enough to financial close, any conversations around the need for risk insurance are still yet to formalise.

Public RE Finance and Financial Instruments: Loans/Credits/Grants/Equity

In comparison to private sources of debt or equity finance, our research showed that there are numerous public sector funded Project Preparation facilities (PPF) in Kenya²⁶⁶ assisting the development of renewables in the country. For the purpose of this case study analysis, a shortlist of the most comparable facilities was taken to understand how REPP figures with respect to other similar programmes operating in the region in order to understand better, the usefulness and need for REPP. This selection was based on the evaluation team's expertise and knowledge of the region and suggestions from interviewees of comparable programmes operating in Kenya.

Table A11.6: Project Preparation facilities (PPF) Comparison Matrix

PPF	Technical Assistance		Structuring Advisory	Long term project finance support		Broad technology focus	Technology size (small-medium scale i.e <25 MW)
	Grant	Concessional loans		RBF (repayable)	Debt, Equity or Mezzanine		
InfraCo Africa ²⁶⁷	x		x		x*	x	
Energy and Environment Partnership Trust Fund Africa ²⁶⁸	x**		x		x	x	x
Private Finance Advisory Network ²⁶⁹	x*		x			x	x
Sustainable Energy Fund for Africa ²⁷⁰	x		x		x****	x	x
Electrification Finance Initiative ²⁷¹		x*****			x	x	

* Not directly but as part of the Private Infrastructure Development Group (PIDG)

**Any amount of financing exceeding EUR 500,000 will automatically be considered as a repayable grant and require a minimum 50% co-financing share

*** A success fee is negotiable for an investment facilitated by PFAN, effectively payable out of the financing or investment secured.

²⁶⁶ <https://www.sida.se/globalassets/sida/sve/sa-arbetar-vi/utvecklingsfinansiering/analysis-of-project-preparation-facilities-in-sub-saharan-africa.pdf>

https://www.usaid.gov/sites/default/files/documents/1860/PA_Partners_Toolbox_2.0_27.03.17_1.pdf

²⁶⁷ InfraCo Africa- <http://www.infracoafrica.com/>

²⁶⁸ Energy and Environment Partnership Trust Fund (EEP) <https://eepafrica.org>

²⁶⁹ Private Finance Advisory Network (PFAN)- <http://pfan.net/about/>

²⁷⁰ Sustainable Energy Fund for Africa (SEFA)- <https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/sustainable-energy-fund-for-africa/>

²⁷¹ Electrification Finance Initiative (ELECTrifi)- <http://electrifi.eu/>

**** Not directly but via oversight of a [SEFA co-sponsored Africa Renewable Energy Fund \(AREF\)](#), a pan-African Private Equity Fund which is currently not active in Kenya

***** ElectriFi doesn't fund technical assistance activities directly, but rather comes in at advanced stages of project development to provide suitable financial instruments that assist projects reach financial close.

As observed from the table 1 above, three of the five comparator facilities (EEP, PFAN and SEFA) are set up to provide almost similar services as REPP. All these facilities provide technical assistance mainly through grant-based mechanisms. However, facilities such as EEP have evolved from this original thinking to making its grants repayable beyond a certain funding amount and others such as ElectriFi are taking a fully commercially oriented approach to supporting projects. This is indicative of a shift in thinking of some development institutions to providing development support to financially viable projects in a more commercially-oriented way.

Apart from InfraCo, none of the other comparator PPFs seem to have a very project specific approach that is designed to offer tailor-made solutions to supporting the project at every step of the way, as REPP does. Furthermore, an evolving REPP RBF strategy confirms that REPP is trying to do this by designing more creative ways of financing projects requiring additional capital to reach Financial Close and COD. This was evidenced in interviews with other market actors and REPP partners who mentioned the **high expertise, large network, and proactive approach** of Camco as a **strong differentiating factor from other funds** operating in the region. Overall, although the REPP Manager is invested in maintaining this model of providing very tailored support, owing to a lack of any projects reaching financial close, it is not easy to immediately justify the effectiveness of this approach vis-à-vis resource intensiveness of the process.

A feature noted across a few of the comparator facilities was provisioning of additional capacity building initiatives of the wider community of stakeholders such as knowledge exchange forums (EEP) or enabling environment development support (SEFA) which is not part of the REPP mandate.

3. Project Background and Assessment

This Section provides an overview of the project followed by a detailed assessment of the REPP rationale for supporting this project and its approach to pricing support.

Project Fact-Sheet

Table A11.7: Project Details

Item	Description
Technology	Run-of-the-river Hydropower
Installed Capacity	10 MW
Project Type	Grid-Connected
Project Country	Kenya
Project Developer	Virunga Power Kenya Ltd.

Project Description

The project is developed by Virunga Power Kenya Ltd. (Virunga Power), a rural utility development firm based in Nairobi, focused on developing, owning and operating 1–10 MW grid connected and off-grid RE projects in the East Africa region. Virunga will achieve this through direct community ownership and development of projects, as well as through innovative buy-in, ownership and transfer mechanisms. The project specifically supported by REPP entails two run-of-river small hydropower projects: Sahkala (6 MW) and Mathiotya (4 MW) in Kenya. Both projects are being developed under the Small-Scale Renewable Energy Feed-in-Tariff programme²⁷² in Kenya in collaboration with community-based organisations (CBO) who have an agreed shareholding in the project and eventual transfer of ownership back to the community.

Rationale for REPP Support

Virunga was REPP's first pipeline project to be contracted and both sub-projects were at an early stage of development at the time of applying for REPP support. The project had completed a pre-feasibility assessment and received an approval from the Ministry of Energy and Petroleum for Virunga's Expression of Interest to develop the projects. However, the project was unable to proceed owing to a lack of development capital either from public or private sector. Virunga Power's investors (Virunga Power International LLC) provided start-up capital and some capital for other projects in the development pipeline. OPIC provided a one-off grant to cover some development costs for Virunga's first two projects. According to the project developer,²⁷³ despite extensive efforts to attract finance to fund further development costs, no other sources of development capital could be secured.

Late-stage equity investors the developer approached also indicated an unwillingness to fund development costs and preferred to come in once Virunga could present a bankable feasibility study.²⁷⁴ With respect to debt providers, OPIC expressed interest in providing debt finance post financial close. According to the developer, lending rates and terms offered by commercial lending institutions, especially local banks, were considered unaffordable. This was also cited in the market actor interviews that owing to the high transaction costs, commercial banks are simply not attracted to such small-ticket projects and the terms therefore required (track record, high collateral) are too onerous for projects to fulfil.

In summary, there is growing intent from private developers to execute small hydro projects in Kenya such as those developed by Virunga. But limited technical expertise in design and execution and timing risks owing to delayed and/or slow government approval process (such as Power Purchase Agreement approval) coupled with a lack of funding at both the development and construction phases have made it difficult to bring such projects to financial close and commercial operation. However, despite the project developer's lack of experience in completing any projects in the region, REPP had confidence in the knowledge and expertise of the project development team.²⁷⁵

Overall, REPP's rationale for supporting the project was that, if successful, the 2 projects would be the first (and Sakhala the largest) privately owned grid-connected small

²⁷² This is a state managed programme run by the Kenya Government.

²⁷³ Interview [03/05/2018]

²⁷⁴ *Ibis* (**Note:** given this evidence is quoted by the developer, the strength of this argument is not very strong)

²⁷⁵ Project Structure Paper

hydropower installations in Kenya. While SHP is not a new technology and its implementation is not innovative, successful implementation would potentially validate the FIT rate and demonstrate the case for small hydro-power projects' bankability with its strong socio-economic benefits to local communities.²⁷⁶ This could potentially have strong demonstration effects not just within Kenya but across the East African region.

REPP Pricing and strategy

REPP support to the project has been in the form of funding for various technical assistance activities that are needed to reach fully bankability status.²⁷⁷

According to the Camco project champion,²⁷⁸ the approach taken to estimating the pricing strategy was to first determine an expected benchmark project and equity Internal Rate of Return (IRR) for the project based on the provisional feed-in tariffs approved by the Ministry of Energy and Petroleum. The indicative Levelised Cost of Electricity (LCOE) is typically verified by Camco based on the regional manager's local market knowledge in each country and across the region as well as industry benchmarks, where available. One market actor confirmed that this was approximately the expected IRR range of such small scale RE projects in Kenya and other cited that investors look for an equity IRR rate of 20% and debt-providers seldom go below an interest rate of 20%. The resulting terms of the TA repayment were therefore calculated to ensure that the project was still financially viable whilst ensuring sufficient developer risk (i.e. personal equity/investment) and returns.

The developer confirmed during the interview that setting up the final price for support was a firm negotiation process. Overall, the developer felt that REPP's approach to making the TA repayable at financial close was "*more than fair and appropriate*". It is fair to conclude that REPP is not distorting the market for commercial investors by pricing its products too cheaply.

Sweet Spot Assessment

This assessment of the RE financing landscape in Kenya suggests that REPP's flexible and solution-oriented approach has been a key factor in helping the project developer secure early stage development finance for its project. This form of development assistance is almost non-existent from commercial funding sources and hence it seems that REPP is unlikely to be crowding any of these players out. According to market actors interviewed:

- DFIs and local commercial banks are generally more likely to focus on larger projects in the Kenyan market, given the market's size and maturity for RE (most investments by these actors focus on USD 30-100M projects in Kenya); and

²⁷⁶ Based on a review of the Project Champion interview [Date: 15-05-2018]

²⁷⁷ The full list of technical activities supported by REPP and other forms of potential structuring support (access to debt finance, risk mitigation instruments, financing structuring of the project) are available for review in the Virunga project proposal

²⁷⁸ Project Champion interview: [03-05-2018]

- The high transaction cost burden for commercial financiers make small-scale RE projects unattractive before (and even after) financial close.

Incidences of crowding-out additional finance could only become an issue at a later (post-financial-close) stage, i.e. if / when REPP provides RBF. This could have two counteracting effects. Positively, it would make sure that the IRR is maintained at the anticipated level and crowding-in of finance is facilitated. Less positively, according to a potential debt provider, it could lead to REPP subsidising the business model; this might not only create continued dependencies on softer forms of funding, but also lead to investors questioning financial sustainability of the project. This is particularly important in the case of Kenya which is one of the more mature markets in Africa with evidenced interest from institutional investors in bankable projects.

With respect to REPP crowding in further finance, the developer already seems to be well networked in attracting other public investors on his own to invest in corporate equity and also project equity for Virunga's other projects. However, the REPP project manager indicated that these potential partnerships are coming to fruition owing to REPP's engagement in the Virunga project which provided these investors with additional confidence in the project developer.

Whether the TA will engage purely private debt and equity as much as sources of public debt and equity remains less straightforward. Feedback from interviews stated that the willingness to invest by these parties is strong. But the IRRs of small RE projects (in Kenya) do not currently meet their minimum requirements to invest. Despite this evident gap in expectation from private investors, the general feedback from most of the market actors interviewed was that REPP is doing important work in helping small RE projects become bankable and investment-friendly, crucial to the development of RE not only in Kenya but more widely across Sub-Saharan Africa.

Conformance to REPP Theory of Change (ToC)

Based on the in-depth analysis provided in the preceding Sections, this case study will serve as a useful test case to demonstrate whether REPP is achieving or on track to achieving some of its outputs and outcomes as described in the ToC. A summary of this analysis is provided in the table below.

Table A11.9 Summary of whether Virunga is performing and progressing towards expected outcomes in line with REPP's ToC

ToC Category	Output/Outcome statement	Commentary	Progress Status
Outputs	1. Renewable energy being generated	Given the project approached REPP at an early development stage, and owing to delays in provisioning support due to misalignment in expectation on the ToR agreement, FC for this project is expected in Q1 or Q2 2019.	Delayed but on track to be achieved

ToC Category	Output/Outcome statement	Commentary	Progress Status
	2. More experienced and confident project developers	REPP's technical expertise and solutions-oriented approach appreciated by the developer. The developer seems to be already planning and executing expansion and hence this outcome cannot be directly attributed to REPP	To be confirmed during impact evaluation stage
	3. Standardised and aligned procedures and processes for lending to small-scale RE developers	Not achieved given REPP has not needed to engage with any REPP Partner or other financial institution.	To be confirmed during impact evaluation stage
	4. Standardised and aligned risk mitigation procedures and processes	Not achieved given REPP has not needed to engage with any REPP Partner or other financial institution.	To be confirmed during impact evaluation stage
Outcomes	1. Projects that receive support from REPP deliver strong climate and development outcomes	Expected target²⁷⁹: i) GHG emissions avoided- 33,580 tCO₂eq/year ii) New connections: 55,250 iii) Via existing grid: 283,937 iv) Direct jobs created: Construction (FTE)-600 v) Direct jobs created: Construction (FTE/yr)-30 Given project construction has not yet begun, climate and development benefits not yet demonstrable. However development benefits are inherent in the project's business model as it encourages the community to take up shareholding in the project with a goal for eventual transfer of ownership to them.	Delayed but on track to be achieved. The project has already set up partnerships with the two community organisations involved in each of the two sub-projects. Too early to judge the success of this model.
	2. REPP investments have a demonstration effect, signalling the attractiveness of developing and investing in RE in sub-Saharan Africa to the wider market	No evidence of this is available	To be confirmed during impact evaluation stage
	3. Increased capabilities and understanding in financial institutions and risk mitigation	No concrete evidence of this is available. REPP's presence in the project was beneficial to other investors in terms of their understanding of the developer	Not achieved. To be confirmed during impact evaluation stage

²⁷⁹ Source: PAS BOXX TA Support Agreement_Signed

ToC Category	Output/Outcome statement	Commentary	Progress Status
	providers making them better able to support small-scale RE developers		

In summary, the project has still not achieved completion on any of its outputs or objectives. Given the project is not yet close to reaching financial close, concrete evidence to verify progress against the intended ToC objectives is not available. However, overall there seem to be positive signs towards achieving if not all but most of its outputs and outcomes and this can only be properly verified during the impact evaluation stage.

Conclusion

The country context analysis validated the high unexploited potential and need for supporting the growth of small-scale hydro power in Kenya. Of the challenges currently plaguing the sector, lengthy and often delayed regulatory approval processes, access to finance and vulnerability owing to climate change induced rainfall are quite applicable to this project as well. Although PPA risks were not cited as a concern owing to the creditworthiness of the off-taker Kenya Power²⁸⁰, a drop in the PPA prices agreed or a move to the proposed auction-based system could mean higher LCOEs particularly if private sector lending is used. The developer also mentioned delays in completing necessary land acquisitions for site construction is another challenge they generally face on their projects. The developer however seems to have a competent team with depth of experience to tackle these types of challenges effectively.

An analysis of the RE project finance landscape indicates that the availability of private commercial debt is almost non-existent given international banks are willing to fund projects with large project costs (USD 30 m at least) owing mainly to the high transaction costs that are not easily justifiable for smaller projects. Even local commercial banks lack the necessary experience or information to finance small RE projects. Private equity on the other hand is however increasingly become more accessible in the region with evidence of commercial equity funds and impact investors entering the market. While there are other similar PPFs operating in the region, most of them providing early stage support similar to REPP do so in the form of grants with some also demonstrating interest in more commercially oriented thinking towards financing viable projects. REPP's differentiating factor, similar to the Nigeria case study, is their tailored solution-oriented approach that is not evident with most of the other facilities.

Overall the rationale for REPP support is well justified and the project developer felt that the REPP pricing of its TA products was fair and justified. The evaluation team's assessment was also that the REPP pricing seemed modest and fair, placed at a level that ensured sufficient developer risk and returns without burdening the project or undercutting any

²⁸⁰ <https://www.usaid.gov/powerafrica/kenya>

potential investors (which anyways didn't seem to be the case for the stage at which REPP engaged with the project).

However, given the availability of other market players willing to finance the project upon financial close, REPP needs to be cautious that it plays a catalytic role in attracting these investors and only provisioning RBF support as a last resort to close any justifiable funding gap (such as an unfavourably low PPA resulting in lower than expected return to investors). Finally, with respect to the project's conformance to the REPP ToC, given this project has not yet reached financial close, it is too early to comment on the achievement of most of the intended outputs and outcomes which can be better measured at an impact stage. However, in general, REPP seems on track to fully or partially meeting its intended outputs and outcomes for this project.