



Rigorous Verification of Results: Value for Money or Waste of Time?

EnDev's Results-Based Financing Facility –
Lessons from 7 Years of applying RBF in Energy Access Markets

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Acronyms and Abbreviations

BMZ	German Federal Ministry for Economic Cooperation and Development
CLASP	Collaborative Labeling and Appliance Standard Program
FCDO	UK Foreign, Commonwealth & Development Office
DGIS	Directorate General for International Cooperation
EnDev	Energising Development
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HIVOS	Humanistisch Instituut voor Ontwikkelingssamenwerking
IVA	Independent Verification Agent
NORAD	Norwegian Ministry of Foreign Affairs
RBF	Results-based Financing
RVO	Netherlands Enterprise Agency
SDC	Swiss Agency for Development and Cooperation
SDG	Sustainable Development Goal
SHS	Solar Home System
SIDA	Swedish International Development Cooperation Agency
SNV	Netherlands Development Organisation

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Results-based Financing for energy access

EnDev at a glance

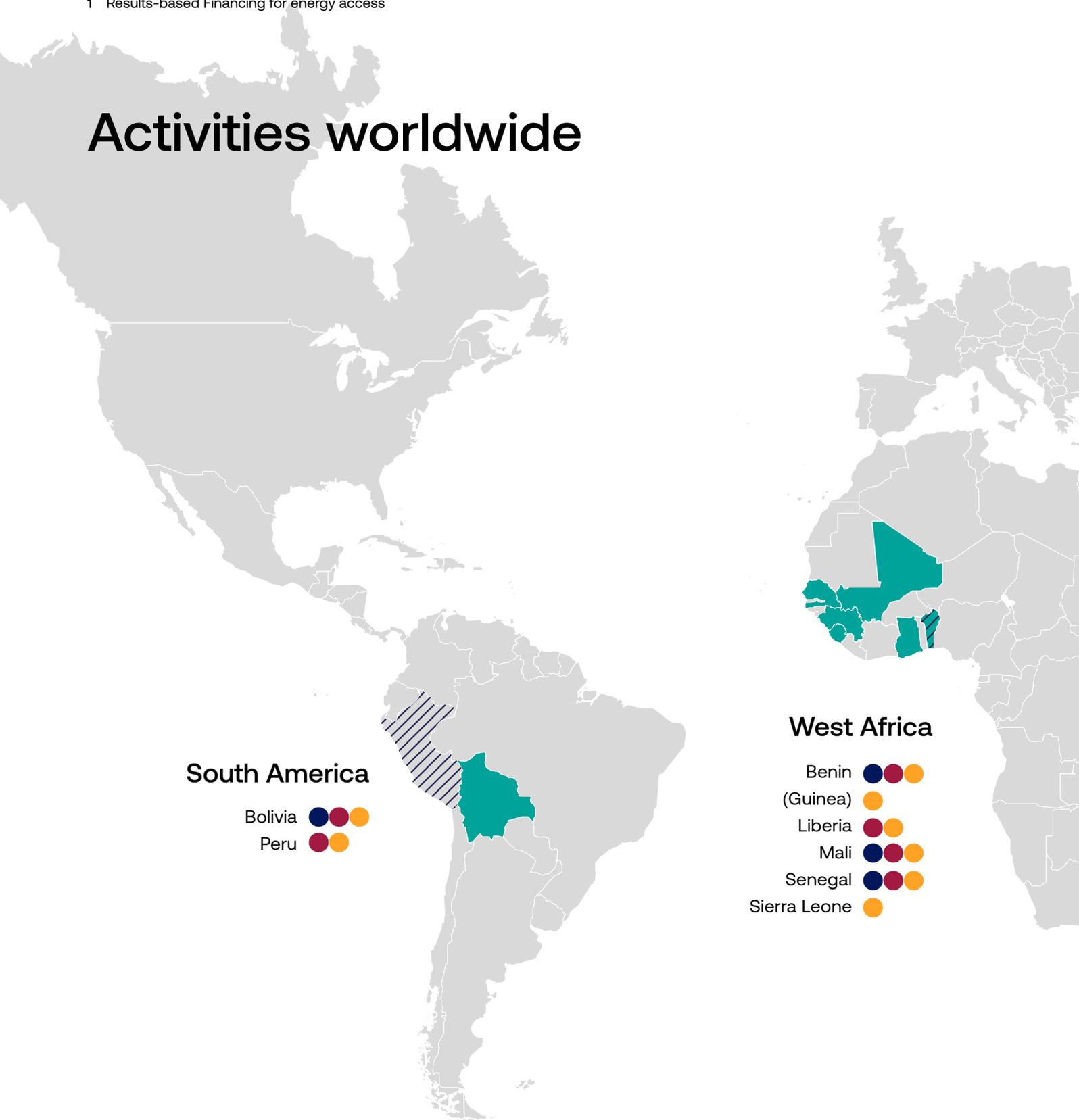
Approximately 3,6 billion people have no access to electricity or modern cooking technologies. This has a dramatic impact on quality of life, environment, health, education and income opportunities.

EnDev's involvement focuses on providing access to modern, renewable energy. This is a pivotal factor in strengthening socio-economic development and combatting climate change.

EnDev's drive is to improve the lives of the most vulnerable people; ensuring no one is left behind. Economic opportunities and green jobs are created by building markets for modern, renewable energy. EnDev contributes to reducing greenhouse gas emissions to protect our planet's climate. Its

approach is to empower structural, self-sustaining change; kickstarting market and sector development that evolves further without support from EnDev. EnDev is a strategic partnership. Dedicated donors, partners and individuals work together to support social development and economic development by providing access to modern, renewable energy in more than 20 countries around the globe. The driving force behind EnDev is the partnership comprised of Germany, the Netherlands, Norway, Switzerland, and the United Kingdom; donors who are committed to accelerating energy access and socio-economic development. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and the Netherlands Enterprise Agency (RVO.nl) act as the principal agencies for programme coordination.

Activities worldwide

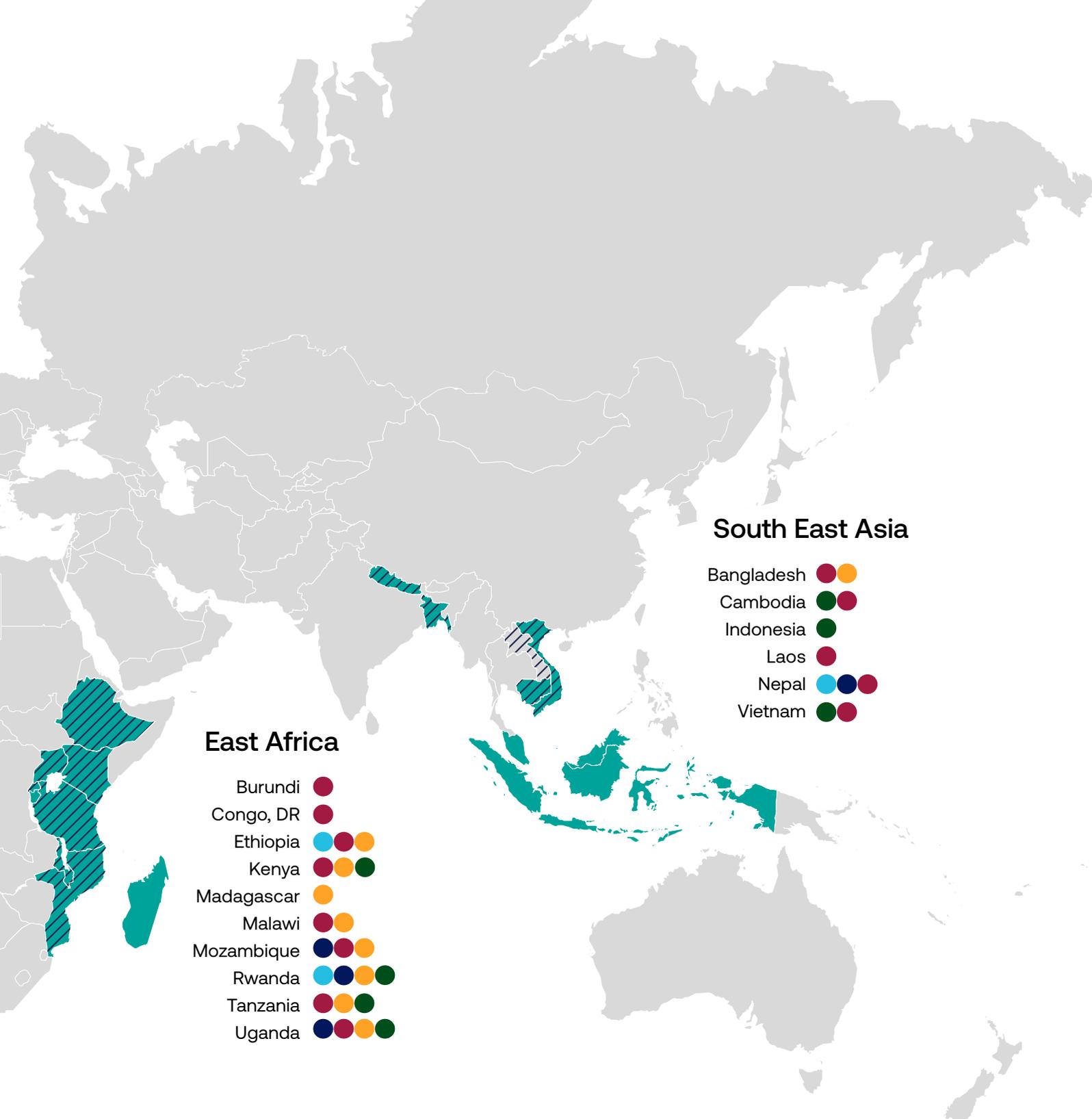


South America

- Bolivia ●●●
- Peru ●●

West Africa

- Benin ●●●
- (Guinea) ●
- Liberia ●●
- Mali ●●●
- Senegal ●●●
- Sierra Leone ●



Geographic portfolio

 EnDev country measure as of Dec. 2020

 EnDev country measure with RBF Facility project

Energy access portfolio

 Hydro power
  Grid
  Cooking energy
  Solar energy
  Biogas

Figure 1: Activities worldwide

EnDev's RBF Facility

From 2012 until 2020, EnDev's Results-based Financing Facility piloted 17 projects across 14 countries in Africa, Asia and Latin America covering a wide range of modern energy technologies to enhance energy access markets with funding provided by UK Aid through the Foreign, Commonwealth & Development Office (FCDO). Implementing agencies were GIZ, CLASP, HIVOS, Practical Action, and SNV.

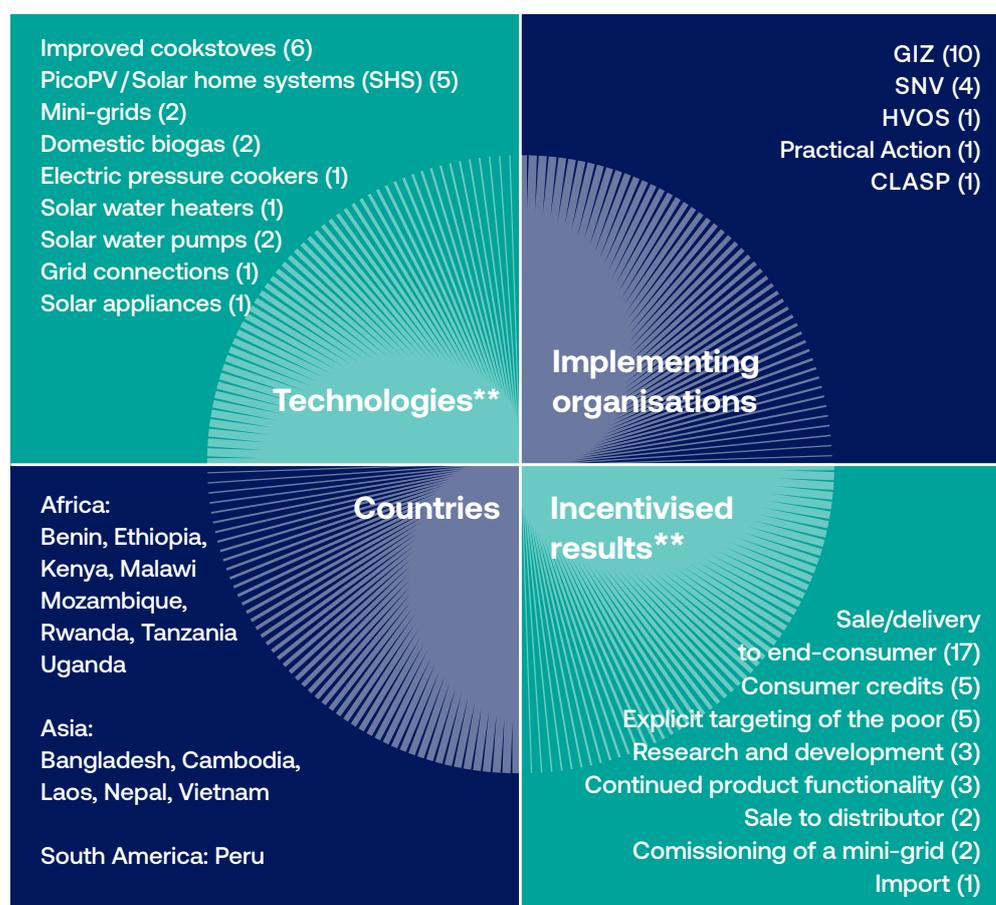
Results-based Financing (RBF) is a modality where a funder (this can be a donor, an implementing organisation, a national government or other institution) disburses funds to a recipient only once a pre-agreed set of results is achieved. This approach involves three key principles. Firstly, payments are made only after the results are achieved; secondly, the recipient may independently choose how to achieve these results; and lastly, independent verification of results is the trigger for disbursement.

The primary aim of the RBF Facility was to boost energy access market development. Based on an assessment of market potentials and barriers, financial incentives were designed to help strategic market actors to scale innovative business models offering quality energy access products and services at a competitive price. Where necessary and feasible, complementary technical assistance was provided ranging from market research and awareness raising to the provision of business development services.

The RBF Facility was designed right from the beginning with an accompanying learning agenda. The objective was to gather and analyse experiences from this large-scale pilot and share valuable insights into the success factors and challenges with implementers, practitioners and donors considering working with RBF approaches in the energy access sector.

Total volume:	GBP 40,000,000*
Overall duration:	07/2012 – 12/2020
Objective:	To overcome market failures constraining private sector delivery of distributed renewable energy systems providing modern energy services to the poor
Portfolio:	17 RBF projects selected in three competitive calls

Projects:



* Total funding committed by UK Aid amounts to approximately EUR 46,000,000

** In some projects more than one technology / type of result has been incentivized

Figure 2: The EnDev RBF portfolio

EnDev’s RBF approach

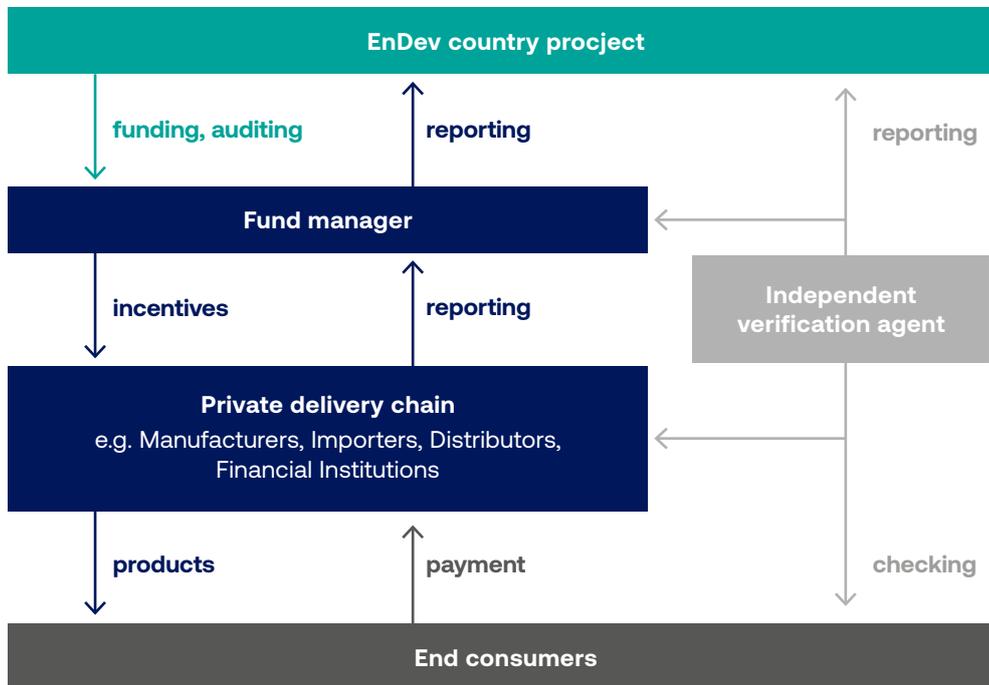


Figure 3: Typical set-up of an EnDev RBF Facility project

RBF contracts and disbursements with market actors were managed either by a fund manager or the EnDev country project itself. Depending on interest and capacity of the financial sector, sometimes a bank acted as the fund manager. Market actors were manufacturers, importers, or distributors of energy access products or services, as well as micro-finance institutions. While each of the 17 projects had its own design, Figure 3 depicts a typical set-up of an EnDev RBF Facility project.

One key success factor of an RBF project is knowing if and when to pay incentives for the results the market actors claim to have achieved – the value you get for your money. Without rigorous verification processes, it is impossible to know if they have really achieved results.

With this learning product, EnDev wants to share its experience in designing and implementing RBF verification systems in the energy access sector. It is important to highlight that the content solely builds on the experiences EnDev gathered under the RBF Facility. The individual RBF projects were given freedom to design and apply flexible approaches to address context- and country-specific energy market viability gaps. Thus, every project approach is individual and EnDev’s lessons learnt may not necessarily apply universally.

The insights provided in this document are based on practical experiences, lessons learned, and needs for adjustments gained over seven years of implementation. After providing a short introduction in the first chapter, the second chapter provides an overview on the overall structure of a verification system. Specific design options are discussed in Chapter 3.

Reading guide:

Illustrative examples
Turquoise boxes provide illustrative examples from the 17 RBF Facility projects

General recommendations
Blue boxes highlight general recommendations or critical success factors

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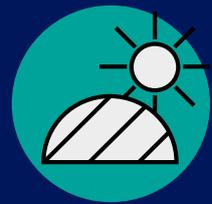
Verification of energy access results



Paper Trail Check



Phone Verification



Field Verification

2.1 Designing the verification process

Verification is a check to determine that reported results made by participating market actors are authentic. The objective is to ensure that Results-based Financing (RBF) incentives are only disbursed for real and sustainable improvements in energy access. In the simplest case, this could be the sale of a plug-and-play solar home system (SHS); but it might also be the commissioning of a mini-grid.

The RBF Facility's verification process usually consisted of three steps: (1) a desk-based check of claims and corresponding documentation, (2) phone verification and (3) verification in the field. These three steps are described in detail in subsequent sections. Independent verification agents (IVA) are used for phone and field verification, while the paper trail check is either done by the fund manager or the implementing agency.

In practice, the complexity and effort of the verification process was influenced by a number of factors:

1. Eligibility requirements:

These clearly defined the specific requirements for products, customer groups, targeted geographic areas, sales modalities, and quality standards of installation or after-sales services.

2. Targeted market actors:

Many RBF Facility projects targeted not only energy companies, but also other market actors such as micro-finance institutions, NGOs, or cooperatives, making the RBF design more complex, and the verification process more demanding.

3. Technology type:

A great variety of technologies could be supported. The specific characteristic (portable, fixed installed or infrastructure technologies) influenced the verification rationale, as shown in Table 1.

Although Table 1 is a simplification of the existing verification needs, which vary by country and intervention objectives, it gives an orientation on how the verification rationale differs by technology type. Broadly speaking, for small portable products (first column), verification by phone interviews with customers will take up a larger portion of overall effort than field verification. The latter is a must for infrastructure technologies like mini-grids (last column) and is also important for the quality check of products that require individual installation at the customer level (middle column). It goes without saying that every verification rationale requires a thorough paper trail check as an initial step of the verification process.

	Small portable products (improved cookstoves, picoPV, solar appliances)	Fixed installations at individual level (cookstoves, biodigester, SHS, water heaters & pumps, grid connections)	Infrastructure technologies at community level (mini-grids)
Sales numbers	high	medium	low
Incentive per sale	low	medium	high
Quality check	Use international or national quality labels and check at import or manufacturing sites	Verify quality of installation and end-user training, at least via samples	Make field verification part of mandatory technical commissioning (with project implementer participation)
Sustainability check	Verify long-term functionality	Verify long-term functionality	Verify reliability and quality of power supply needs
Verification rationale	Focus on phone verification, accompanied by field verification for reliability and additional insights	Equal focus on phone and field verification	Focus on field verification, optional phone verification for sustainability check

Table 1: Verification rationale for different technology types

It is advisable to develop a clear results framework upfront, categorizing verification results according to different criteria. Without such a framework it will later be difficult for projects to decide when to pass, reject, or partially reject a claim. Generally speaking, verification can arrive at following results:

1. Verification shows compliance

with core requirements (customers confirm having purchased the product from the claiming company; customer or product are eligible). In this case, the claim passes verification and triggers RBF incentive disbursement.

2. Verification shows some irregularities

with soft requirements (not all requirements on quality of product or service are fulfilled). Especially in the early phases of a project (i.e. in the early learning curve), the claim may be accepted but companies will be required to improve compliance (possibly checked at consecutive claims). Another solution would be to reject the claim, but offer the option to re-submit at a later point in time when the company has improved claim quality.

3. Verification reveals inconsistencies

with core requirements (e.g. customer denied having purchased the respective product from the claiming company; or company sells a product which does not meet core eligibility criteria). In this case, the claim is rejected; in severe cases of non-compliance (especially when detecting fraud or corruption), adequate measures need to be taken immediately.

There may be also the case in which results are non-verifiable (e.g. because customers are not reachable), please see Chapter 3.4. for a detailed discussion.

Consider feasibility and cost of verification in early RBF design stage

During the **design phase of an RBF project**, planners tend to define a great number of **eligibility criteria and other requirements**. Already in such early state it is recommended to **define SMART¹ indicators** for each such requirement, and to **reflect upon the necessary verification effort as well as the required capacity** of the RBF fund manager and independent verification agents.

¹ SMART stands for indicators that are Specific, Measurable, Achievable, Relevant and Time-bound.



2.2 Paper trail check

For each result claim, market actors had to submit customer lists providing contact data and specifications on the product or service delivered. Often additional information such as import papers, invoices, or guaranty cards had to be submitted or made available on request.

During the paper trail check, the fund manager or the implementing agency checked whether submitted documents included any incomplete data sets, obviously wrong or contradictory data entries, misspelling, or duplicates. Also, original RBF proposals and data of earlier claims were checked for consistency and coherence of the reported activities and sales.

In the case that data were inconsistent, or irregularities were detected, the fund manager or implementing agency first approached market actors with the request to improve the data quality of their claim, before proceeding to the next verification step. An alternative approach was to only accept claimed sales to customers for which there are no data issues. Sales to customers with data irregularities need to be improved before their re-submission with the next claim.

The following box includes some recommendations of how to deal with the challenge of traceability.

Importance of complete and coherent data sets

Traceability is only as good as the **quality of customers' data**. Especially in case of portable / small-scale products, results can be scattered over large regions and customers might have moved to another location.

- Invest time, upfront, in **raising market actors' awareness** on the importance of complete customer data, and provide instruction and training.
- Suggest market actors to **forward small incentives** to increase compliance of sales agents to collect data as well as customers' willingness to share data.
- Be creative in **finding alternative ways to increase traceability** (e.g. collect GIS codes, local landmarks, or phone contacts of neighbours or village leaders).
- Invest upfront in **building a robust digital data management system** (see Chapter 3.5 on digital data management).
- Include **data sets of customers, which could not be verified in a prior claim** (e.g. incomplete data sets or customers not reached by phone) in new verification cycles.



2.3 Phone verification

Once the paper trail check was completed, a random sample of customers was selected for phone verification (see Chapter 3.2 for details on sampling). Phone verification was the backbone of the verification system in most RBF Facility projects. Especially for small household technologies (e.g. solar systems, improved stoves, or appliances), which are sold in large numbers spread over a wide geographic area, sales can be verified at reasonable costs by phone. Phone verification also offers an efficient way to collect additional information on usage patterns, customer satisfaction, and even impacts of improved energy access.

Usually, customers were contacted and interviewed by an independent verification agent (IVA) following a standard questionnaire. In some cases, projects introduced an additional verification layer, where the

fund manager or the implementing agency cross-checked the IVA's results and conducted phone verification of a limited customer sample in parallel.

However, phone verification has one crucial challenge: the reachability of customers. Poor and rural households have the lowest phone ownership rate; some only own a SIM card and need to borrow a phone if they want to make a call. They suffer limited mobile network coverage and also switch more frequently to the cheapest provider, not carrying on their phone number. RBF Facility projects therefore refined their phone verification strategies over time: some included up to 5 calls on different days and times until a number is classified as “not-verifiable”. Others contacted the customer via text message, ahead of time, to schedule a day and time for a call.

Make phone verification work in your specific situation

- Consider the **rate of phone ownership and phone usage patterns** in your target market segment when defining thresholds and consequences for unreachable customers.
- When developing **phone questionnaires** make sure to perform a reality check prior to the first verification cycle to ensure phone verification is likely to be smoothly conducted when asking for e.g. specific product data, such as serial numbers.
- Decide between **call centres or technical consultancy** as the most qualified IVA.
- Consider **feedback mechanisms** (e.g. complaint hotlines) to directly forward customer complaints to companies and include the successful handling of complaints into the verification system.
- Consider the **additional collection of data on usage patterns, customer satisfaction, and even impacts** of improved energy access (but be aware that this will increase the required interview time and capacity of the IVA).
- Define **clear data interfaces** or consider full integration of phone verification data into the data management system (see Chapter 3.5 on digital data management).



2.4 Field verification

Field verification provides the highest certainty that results claimed have really been achieved. In other words – the RBF project has been effective in providing energy access to its target group. As opposed to phone interviews, the independent verification agent (IVA) does not only depend on customer statements, but can directly observe the quality of energy access products or services as well as compliance with eligibility requirements in the field.

In the case of the promotion of high-investment products or infrastructure technologies, such as mini-grids, field verification can be integrated into the standard commissioning procedure. Phone verification is mostly used for later follow up with customers and operators to verify the reliability and quality of power supply over time, as well as customer satisfaction. As mentioned above, some RBF Facility projects also investigated the long-term sustainability of services by interviewing or visiting customers (e.g. after one year, about functionality, after-sales services and impacts).

However, if a larger number of verified technologies require individual installation service (large SHS, improved stoves or biodigesters), field verification might become unfeasible, even for a representative sample of installations. In this case, matching field

verification for a sample with phone verification can be considered. This approach permits verification of statistically relevant sample sizes (see Chapter 3.2) without having to sacrifice on the reliability and detail of the field observations.

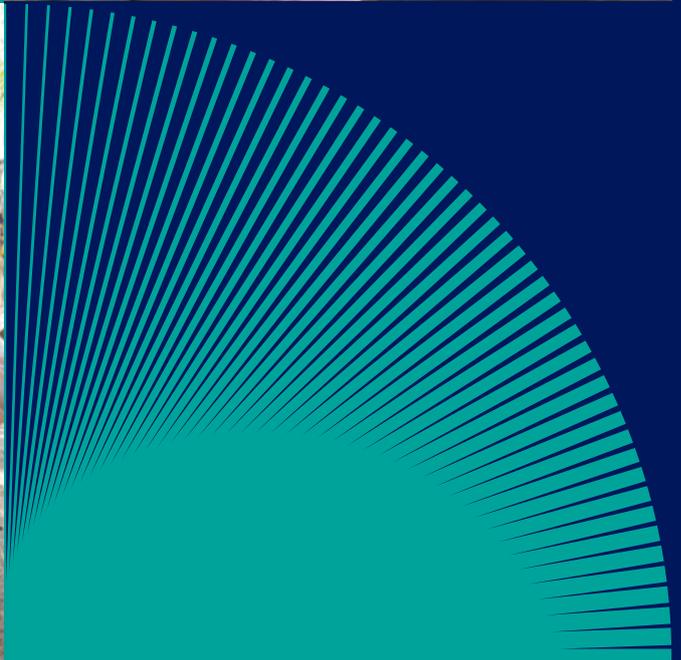
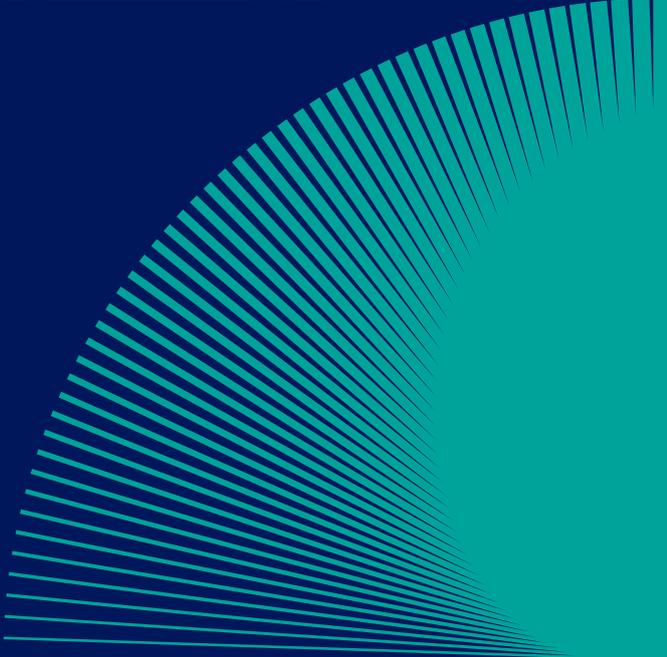
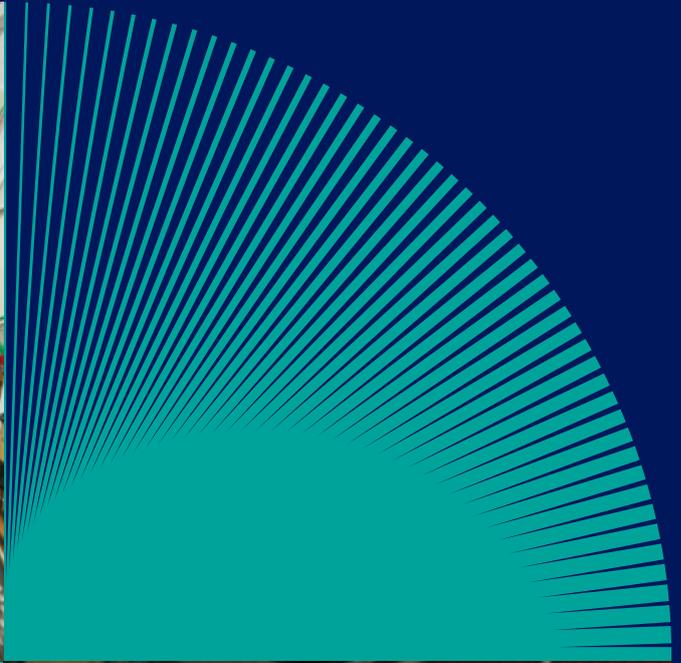
In the case of standardised portable technologies (improved cookstoves, picoPV, solar appliances) that do not need installation services, field verification is as well necessary to ensure results on the ground. Field verification also increases quality of verification by cross-checking content of company information and customer phone interviews. Furthermore, field visits can also be used to gather additional information on marked development and possible impacts of the improved energy access situation.

Especially in rural areas, customers are typically scattered over a wide geographic area characterised by poor road access, and the absence of systematic home addresses. Household heads might be difficult to meet as they work elsewhere in the fields. Poor contact data or households having moved to a different place pose additional challenges. Field visits are therefore cost- and time-intensive, and require detailed geographical and cultural knowledge of the region.

Manage effort of field verification

- Ask companies to submit **GPS data to facilitate localisation** of customers.
- Consider **collection of pictures** of installed systems and/or customers, to facilitate field verification.²
- Consider using **geographic clustering for a multi-stage sampling** to reduce the area to be covered during field verification, but be mindful to ensure that all regions are covered over subsequent verification cycles.
- Build a **track record of participating companies** that highlights reliable companies for which frequency or sample size of field visits might be reduced.

² There are some possible issues with privacy rights; this approach needs approval by the customer and they might refuse to agree. Respecting customers privacy rights shall always have highest priority. If this cannot be safeguarded, projects need to find alternative solutions to verifying results in the field.



3

How to make verification a success

3.1 Keep it simple

What makes Results-based Financing (RBF) attractive to the private sector are clear, transparent, performance-based, and quickly-disbursed incentives that leave maximum flexibility on business model and marketing strategies to the companies.

Obviously, a complex RBF set-up and verification process will at some point contradict this aim. Thus, the most important question to keep in mind, while designing an RBF project and its verification system is: “can it be done even simpler?”. In any case, it is important to note that the verification system must be set up, documented and transparently communicated to participating companies before implementation starts. When applying for RBF incentives

companies must be fully aware of the project’s requirements and their responsibilities within the verification process.

The first step when setting up a verification system is to determine precisely what data is required to verify results (e.g. if the sales numbers claimed by companies are correct AND if all additional requirements have been met). It is helpful to distinguish between “core data” and “nice to have” data required to conduct verification. For all data, sources and traceability need to be clarified. Results are deemed traceable when linking them to a concrete customer is possible (e.g. a SHS to an individual client and location).

Use existing quality assurance systems



One option of simplifying procedures is to make use of existing quality assurance systems. The RBF Facility's projects promoting **solar home systems (SHS)** built up on quality testing services from Lighting Global (now provided by VeraSol, which also conducts quality checks for appliances and component-based SHS). The regional EnDev project on **off-grid solar appliances** implemented by CLASP in **Bangladesh** and **Kenya** relied on testing results of the Global LEAP competitions for off-grid TVs, fridges, fans, and solar water pumps. Relying on external, internationally recognised quality assurance providers can help to safeguard technical quality. While this works well for over-the-counter products, field visits by IVAs are necessary to cross-check quality aspects of fixed installations, and technical commissioning is mandatory for mini-grids (see Table 1).

Data demand should also consider the current management practices and capacity of targeted companies. While most PAYGo companies can easily comply with high data requirements, such requests might exclude more traditional retail com-

panies. But a moderate challenge can also be beneficial to companies. In several cases, companies appreciated the positive impact of RBF reporting requirements on the professionalisation of their management practices.

Identify synergies and co-benefits when setting up a verification system

Setting up a new verification system from scratch is a complex process and it is worthwhile to consider exploiting the **potential of combining verification activities with monitoring and impact evaluation work packages**. Minor additions to standard RBF verification procedures (e.g. adding impact-related questions to phone and field interviews) can reveal relevant insights on:

- **customer needs and market environments** (e.g. on customer satisfaction, usage patterns, product durability)
- **broader development impacts** beyond the direct results of the project (e.g. quality of life, poverty alleviation, health, productivity, income generation).

3.2 Balance rigour and feasibility

Over the seven-year implementation of the EnDev RBF Facility consisting of 17 RBF projects, companies claimed more than 1.4 million sales. RBF projects therefore developed lean verification procedures adapting claim size and frequency as well as sampling parameters to maximise process efficiency, while ensuring a high level of certainty about the achieved results.

Verification is most efficient with a low frequency (e.g. once per year) of high-volume claims. In this situation, the relative sample size greatly decreases with higher numbers, increasing customer density. Travel logistics required for field verification are thus, greatly reduced. But most RBF projects need a higher claim frequency for close monitoring of market uptake and quick adaptation of incentive levels and requirements.

Since companies need to pre-finance their business investments, their interest is to claim RBF incentives at the earliest opportunity, which results in lower claim volume at a higher frequency. To find a balance between these aspects, RBF Facility projects therefore experimented with quarterly, bi-annual or on-demand claim submission, (increasing) minimum claim volume thresholds, limiting the number of claims per year, as well as combinations thereof.

With market development as the overall objective, RBF Facility projects needed to keep track of market dynamics and always be ready to adjust their strategies flexibly. On the other hand, projects needed clear guidance documents on procedures that make risks calculable for companies. For this reason, most RBF project guidelines were 'living documents' that

Geographic clustering



Multistage sampling, using geographic clustering in combination with random sampling, as applied by some RBF projects, is one way of keeping the verification efforts justifiable for very remote sites. For example, the improved **cookstove** RBF project in **Malawi** had first randomly selected a specific number of local communities to ensure that the final stove users to be verified were not so far from each other. Afterwards, the villages within those communities with at-least 20 beneficiaries were randomly selected. Then, all beneficiaries in the sampled villages were visited. To cover the full project area, different geographic regions were visited in subsequent claims. It is important to be aware that geographic clustering might increase the risk of non-compliance, as companies might believe that very remote and dispersed households are by default not covered by the verification process that is selected.

In order to make verification visits less predictable if geographical clustering is applied, the two RBF Facility projects in **Peru** additionally sent their IVAs to randomly selected remote households.

were adjusted while moving ahead. To avoid uncertainty, annual reviews were performed and transparently communicated to all the participating companies. Here, a steering group decided about necessary adjustments based on market trends, customer feedback and company performance.

The rationale of statistical sampling in RBF Facility projects was to randomly select a number of data sets from a claim to allow the verification findings for the sample to be generalised for the whole claim. With a high level of ambition, EnDev encouraged RBF projects to select sample sizes with ambitious parameters that are normally only used for scientific studies, thereby aiming for a 95% confidence interval and 5% error margin.

In the kick-off phase, and especially for their first claim, RBF Facility projects faced the challenge of very small claim sizes resulting in costly full claim verification or significant deviation from EnDev's ambitious sampling targets. But once the claim volumes grew with the development of the market, verification became more efficient and most projects were able to limit the error margin to between 5% and 10%.³

³ With an error margin of 10%, the required sample size for a claim of 250, 500, or 1,000 sales would be 70 (28%), 81 (16%), or 88 (9%) respectively.

What is feasible is context specific – find your own balance

- **Balance claim sizes and frequency** to reach a good cost-benefit-ratio for verification, while ensuring quick and predictable disbursement of incentives to the companies.
- **Accept higher initial verification costs** as robust information on the reality on the ground is crucial in the first year of operation.
- **Aim for scientific sampling standards**, but consider higher error margins (e.g. up to 10%) if time and cost effort are unfeasible in your project context.
- In any case, **require full documentation on sampling rationale and method** to avoid arbitrary decisions.
- **Consider opportunities to digitize data management for claim submission and sampling** (see Chapter 3.5 on digital data management).

3.3 Avoid conflicts of interest

In EnDev's RBF Facility, the involvement of a third party in the verification process was set as a quality standard to ensure independency and transparency. So-called independent verification agents (IVA) were contracted to carry out the verification of all claimed results. Their mandate focussed on conducting phone and field verification.

While each implementing agency has its own processes to avoid conflicts of interest, a verification agent is generally considered to be independent, if there is:

- no other involvement in the management or implementation of the project,
- no relation (especially no financial involvement, but also no family ties) with the participating companies,
- no financial interest beyond the remuneration for the verification itself,
- no other influence, pressure or interference of any other party, be it internal or external to the project (in particular, the IVA should not be a direct competitor of participating companies as he/she has access to sensitive business data and needs to be trusted).

While most criteria are straight forward, some aspects such as family ties and even financial involvement are not easy to assess. And in some smaller countries with a limited amount of market participants, it can be a challenge to identify qualified IVAs. In some cases, IVAs needed to be changed at some point during implementation as IVAs entered new business relations or activities, which then created potential conflict of interests.

Contracting a call centre for verification calls and customer complaints



The Africa **Biogas Partnership Programme (ABPP)**, implemented amongst East African countries including **Kenya**, created good experiences with outsourcing phone verification to a local call centre. For phone verification, the call centre conducted outbound phone calls to customers at least three times during the first year after installation to check whether the digester functioned properly, and the customer is satisfied with the after-sales services of the biogas enterprise. Collaborating with a call centre for phone verification may be beneficial not only due to their competitive fees, but also due to their expertise in following interview protocols, and their experience in convincing people to participate in phone interviews.

The RBF biogas project also offered a customer complaint hotline in selected countries. In this case, the central telephone number of the hotline was shared with all biogas customers to lodge concerns or complaints; the call centre received their inbound calls; and channelled complaints to the responsible biogas enterprise. The involvement of the call centre has improved the companies' after-sales services considerably, because the call centre functioned like a third-party check by passing on customer complaints collectively and verifying their resolution. This way the enterprises participating in the RBF project were able to reduce the share of unsatisfactory results detected during the verification of their claims.



Field verification in Kenya

Select Independent Verification Agents (IVAs) carefully and build up their capacities

- Depending on the country-specific context, it can be necessary to first **build capacity of potential verification agents on the ground**. Stay flexible and look for suitable partners in the private sector, among civil society organisations, or academia.
- Consider **updating conflict of interest statements** in the case of long-running contracts or with contract extensions.
- Include **probing for IVA bias in your quality assurance system**: observe verification, and cross-check results (e.g. by conducting parallel phone interviews and field checks).

3.4 Define clear thresholds and be clear on consequences

The results of the verification are far more complex than a simple binary “pass or fail” decision. In the three consecutive verification steps (see Chapter 2) a number of criteria need to be assessed and results need to be linked to clear consequences. On page 13 different verification result categories have been introduced. Zooming into the two categories of results that fail verification, one can find three typical clusters:

1. Non-verifiable results

A specific claim cannot be verified if core data (customer data, product or service provided) is incomplete, the customer cannot be reached by phone or found in the field. Usually, only the incomplete data sets are rejected during the paper trail check, but may be resubmitted in subsequent claims. Thresholds for unreachable customers trigger either intensified verification procedures or the (partial) rejection of the claim.

2. Unsatisfactory results

Successful phone or field interviews might observe that an energy access product or service is provided, but that quality requirements on installation or after-sale service are not fully met for a number of customers beyond a set threshold. In such cases, the claim might be (partially) rejected, but companies may resubmit once the service has been improved.

3. Non-compliant results

If phone or field interviews reveal that for customers beyond a set threshold, no energy access product or service has been provided or that core requirements were not met, the claim is permanently rejected. Typical core requirements are that only products with a valid quality label are supported (e.g. solar home products need Lighting Global Certification). Any claims for non-certified products are permanently rejected. Similarly, claims are rejected if requirements for specific geographic regions or for specific customer groups (e.g. poor or women-led households) are not met.

Turn verification into valuable feedback for companies



Often companies see the data submission requirements of RBF projects as a necessary evil: it burdens their administrative processes, but is necessary for receiving RBF incentives. That this does not have to be the case was proven by some RBF Facility projects, which successfully turned verification into a valuable feedback mechanism for the companies.

The RBF project for Rural Market Development of **Off-Grid Solar in Tanzania** used the Lean Data approach of the impact measurement company 60 Decibels to collect information from end-users on topics including customer satisfaction. These customer surveys provided useful hints to companies on how to adjust their strategies and customer services. Also, this newly generated market intelligence encouraged them to engage in riskier markets (e.g. regions which are less populated and where poverty levels are higher). Another feature was a benchmarking exercise, which compared their performance with the performance of a comparable off-grid companies in East Africa. This helped RBF companies to finetune their marketing strategies vis-à-vis competitors, and it provided EnDev with first insights about the pro-poor impacts of the intervention.



Paper trail check in Cambodia

As Results-based Financing (RBF) is a new concept that shifts risks from the public to the private sector, one has to find a good balance between strict and transparent enforcement and room for learning and improving. The implementer needs to ensure that all participants clearly understand the requirements and are trained on how to comply.

Especially in the beginning, non-compliant results may occur due to misunderstandings about requirements, low management capacities, or even

low reporting capacities of field staff. While some irregularities are acceptable, there needs to be a clear threshold defined and communicated that – once reached – has consequences. Consequences may include a request for resubmission of the claim with better data quality, a correction of technical installation issues, or improvements in the companies' after-sales services. With regards to cases of non-compliance, all RBF Facility projects communicated clear consequences, and a zero-tolerance policy towards fraud or corruption.

Support companies to comply with your set standards

- **Communicate clearly and transparently to all companies on your rules and regulations**, quality standards and consequences for cases of non-compliance.
- **Establish a feedback mechanism and consider providing capacity building** on proper data collection and compilation for the companies to improve data quality of claims.
- Especially **for the first claim(s), do pre-checks or request companies for immediate resubmission** of incomplete data sets to trigger a learning for companies.
- **Define thresholds for some errors, but penalise larger submissions of unverifiable results.**
- **Avoid setting unfulfillable standards** that cause high numbers of rejections of results after verification. This demotivates companies from participating in the RBF project.



App-based data management in Peru

3.5 Streamline documentation and digital data management

RBF projects are characterised by an intensive preparation phase (frontloaded work intensity) of which the verification system is an important part. Verification rules and procedures need to be defined with a clear definition of tasks, responsibilities and workflows for the involved stakeholders (project implementer, fund manager, IVA and companies).

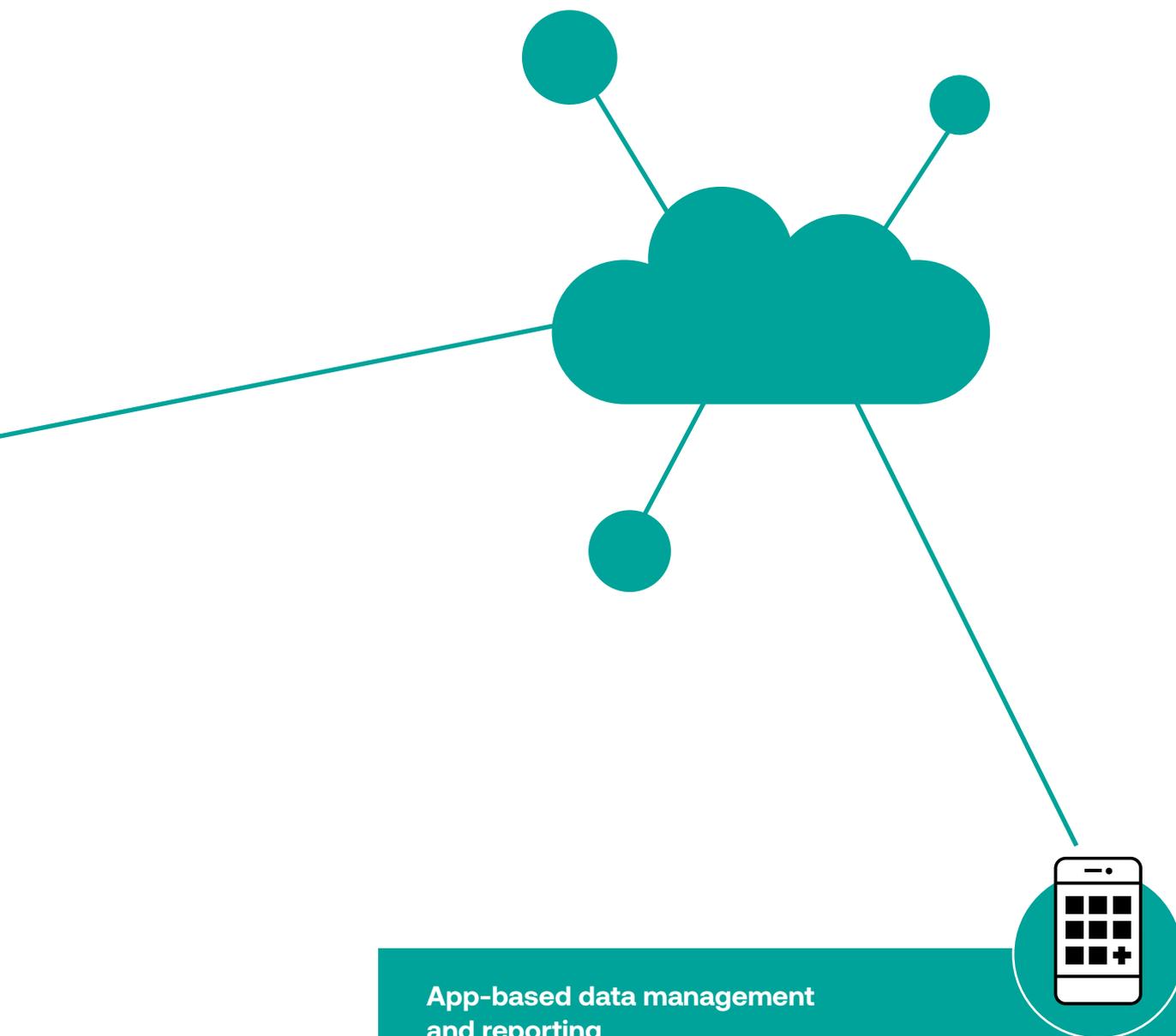
RBF Facility projects developed detailed Verification Guidelines (possibly part of a general RBF Operations Manual), which were continuously updated to document any changes of the verification system to ensure transparency and continuous flow of information among the involved stakeholders. While IVAs were provided with detailed workflow descriptions for phone and field verification (sometimes implemented as separate IVA guides), companies received key information on RBF requirements and verification thresholds as part of the call for proposal or contract documents.

During the verification process, not only the claims data and interview results need to be documented, but also any decisions taken concerning the approval or rejection of claims based on the verification criteria

and thresholds applied. Systematic and comprehensive documentation ensures transparency and accountability for all parties involved. It facilitates the analysis and continuous improvement of workflows, as well as the onboarding of new staff members (be it project implementer, fund manager, IVA or company staff).

The massive amount of data and paper trails involved in the verification process prompted RBF Facility projects to develop digital data management tools and systems. Some implemented online data interfaces to submit and manage claims, draw samples, as well as tablet-based phone and field verification. While the set-up of such systems significantly adds to the frontload work intensity, it quickly pays back over time and can greatly simplify and accelerate data management once sales reach hundreds or even thousands of customers.

For the set-up of such a system, implementers should inform themselves early in the project preparation phase about their organisation's internal rules and procedures on data protection, file keeping, auditing and evaluation requirements.



App-based data management and reporting

Several RBF Facility projects used digital applications. The **biogas** RBF project in **Vietnam** showcased how digital tools can improve data management. On the one hand, an app was used by the IVAs on their smart phones during field verification to directly upload e.g. responses to interview questions, GPS location data, or pictures. This data could be analysed right-away on a web interface (e.g. the location of all products that were verified in the field are marked on a map and by clicking on or hovering over a marker, pictures of the product can be seen).

On the other hand, the 200 biogas enterprises were asked to use the app for self-reporting their progress of biogas digester construction. This included sharing pictures of the construction work and GPS data on the construction site. Thus, EnDev was able to not only track the construction progress, but to detect installation issues early in the process – and to solve them jointly with the construction company. Some entrepreneurs had to be trained first on the usage of the digital data submission format, but eventually the app reduced costs and the possibilities for errors in contrast to paper-based systems.



Diligent data management is a core element of efficient and effective RBF verification

- Develop and **document the detailed verification system in the early preparation phase** including roles and responsibilities, product and technical specifications, standard format for checklists, templates for questionnaires and claims, as well as example agreements or contracts.
- Put an emphasis on **transparent, secure and efficient documentation of verification processes**, results and decisions taken **using digital / online tools**. For example, a “living” online-based document ensures access for all to the most recent version, increases transparency and mitigates the risk of having various versions in use.
- Consider setting up a **master database system with all customer data received in claims** – fulfilling all data protection requirements – to facilitate, for example, the detection of customers already submitted in previous claims and allow for trend analysis in the sales numbers and outreach of participating companies.
- Keep yourself up to speed regarding the latest **digital solutions** for diligent data management, but be cautious with data protection rules and regulations.
- Do not shy away from **higher investments that seem to be unproportionable in the beginning, but pay off in the long run**, especially for projects that have to deal with large data volumes.
- Assess and, if necessary, address **capacity building needs for companies and IVAs** before introducing digital tools.



For further information on EnDev’s RBF Facility visit [EnDev’s web presence](#).

Funded by:



Coordinated and implemented by:



Imprint

Published by

Deutsche Gesellschaft
für Internationale Zusammenarbeit (GIZ) GmbH
Registered offices Bonn and Eschborn, Germany

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Version 1.0, December 2020

Photos

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Designed by: DITHO Design GmbH

