Assessing the impact of WeLight's anchor-business-community (ABC) model on digital inclusion and economic development outcomes

Terms of reference

December 2025

About the GSMA's Digital Utilities programme

The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry, and society thrive. Find more at gsma.com

The GSMA Mobile for Development (M4D) foundation operates at the intersection of the mobile ecosystem and the development sector. Our aim? To stimulate digital innovation and deliver both sustainable business and large-scale socio-economic impact. Our research and insights platform, in-market expertise and community of partners push forward digital innovations and implementations that empower underserved populations. Find out more at gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/

The Digital Utilities programme within M4D works to support climate resilience in low- and middle-income countries by enabling access to essential utility services through digital solutions and innovative partnerships. Our core sectors of focus include energy, water, sanitation, waste management, and transport. Find more at gsma.com/digitalutilities/

About WeLight

WeLight is an impact driven energy company that develops, finances and operates solar mini grids to bring reliable and affordable electricity to underserved rural areas. Through a vertically integrated model and long-term investment approach, WeLight enables productive uses of energy, supports community development and contributes to national electrification strategies in Madagascar and other African markets. More information can be found at welight-africa.com/.

Context: energy challenges and mobile services

As some of the largest private sector businesses across Africa, mobile operators are acutely sensitive to the region's energy challenges. A recent GSMA survey of operators highlighted that the key energy challenges facing the industry include frequent power outages, lack of grid access, high energy costs, and difficulties accessing renewable energy. Like other business and households in Africa, many mobile operators and tower companies rely on diesel generators as a source of reliable energy when the grid fails. According to a 2020 GSMA study, 80% of mobile towers across Africa located in off-grid and weak-grid areas are powered by diesel. But this reliance on diesel carries significant cost and operating disadvantages for mobile operators and tower companies across Africa:

- **High and volatile costs:** diesel generators typically costs three to four times more than grid-based electricity in the region, with even higher ratios in countries like the DRC, Ethiopia and Zambia. Prices also fluctuate depending on international price dynamics, countries' foreign exchange positions and government policies such as subsidies.

- **Poor reliability:** Multiple generators need to be installed to guarantee continuous energy supply for network uptime. Disruptions in network uptime can have significant economic consequences since mobile connectivity is the foundation for a range of essential services.

- **Regular maintenance visits required:** Diesel and filters need to be frequently replaced, which means remote sites have to be visited up to every 10 days. Generators themselves typically need to be replaced or rebuilt every 18-24 months because they are designed to provide back-up power when the grid fails rather than acting as a constant source of power.

- **Greenhouse gas emissions:** An average single-tenant telecom tower site powered 24/7 by a diesel generator consumes about 28,000 litres of diesel per year. Diesel generators generate 60% more CO2 than the average grid-based electricity in Africa.

- **Theft:** Up to 30% of diesel stolen according to estimates by tower companies. A GSMA study estimated that theft added 10-15% of diesel to the cost of supplying diesel to towers.

Beyond these issues, the energy challenges facing the mobile industry also discourage digital inclusion and the usage of mobile services. Sub-Saharan Africa is the region in the world with the largest gaps in both mobile coverage and usage. Around 180 million people in sub-Saharan Africa are not covered and not connected to mobile broadband (the coverage gap). But more importantly, 680 million people in the region are covered by mobile broadband but are not using it (the usage gap). Lack of affordable, reliable, and sustainable energy access affects the coverage and the usage gap through three main channels:

- **Limiting network deployments** – Some network deployments in rural areas can be prohibitive due to high energy costs. As mobile operators determine whether to invest in new deployments, high diesel costs can act as a strong deterrent.

- **High energy costs passed onto customers limit data affordability** – While data affordability has improved substantially, Sub-Saharan Africa is still the region with the least affordable data. Fewer than half of the countries in the region have met the UN Broadband Commission's target of 1GB costing less than 2% of average monthly income.

- **Customers' own energy access** – for both existing customers (in the case of the usage gap) or potential customers (in the case of the coverage gap), people's inability to regularly charge devices discourages mobile usage, and diminishes the commercial potential associated with mobile network extensions in more remote areas.

Far too often, debates on electrification in Africa neglect the complementarity of energy and connectivity – how digital connectivity and mobile platforms enable energy access, and how electricity sustains the tools for digital access. For policymakers and the donor community, it is critical that digital inclusion and energy access are no longer seen as isolated development goals, but as interdependent 'twin' transitions which can catalyse development impact at scale.

Context: the anchor-business-community (ABC) model

In these off-grid locations, there is an opportunity to deploy mini-grid systems with mobile operators and tower companies acting as the "anchor customer", while these systems also supply power to local businesses and households. For mini-grid providers such as WeLight, mobile towers as anchor clients ensure a source of constant demand, which helps balance energy loads, and improves the commercial viability of mini-grid deployments.

The ABC model has been considered for over a decade, but faced several challenges in implementation, financing, and stakeholder alignment. Key trends over the last decade have enabled the model to be scaled and replicated across more sites: the maturing mini-grid sector in Africa and the associated increase in financing, geo-spatial planning tools to identify optimal sites for deployments, growing mobile industry interest in Distributed Renewable Energy (DRE) solutions, and successful pilots and blueprints that can be replicated and scaled. ABC models have now been implemented across a range of contexts including Nigeria, the Democratic Republic of Congo, Madagascar, Nepal, and India. Through the GSMA Innovation Fund, ABC model projects have been supported in Nepal (Gham Power) and Madagascar (Électricité de Madagascar).

Scope and objectives

The purpose of this research project is to appraise the impact of joint and coordinated deployment of energy access and digital connectivity, and the impact of the ABC model on rural economic development, digital inclusion, and digital financial inclusion.

The GSMA initially supported WeLight to trial the ABC model across 4 sites in Madagascar. The company has since scaled to over 173 active mini-grid sites across Madagascar, with 37 sites operating under an ABC model working with tower companies such as Towers of Africa and Helios. WeLight is actively scaling the model in Madagascar and Mali and is interested in other markets such as the Democratic Republic of Congo. Their extensive experience with the ABC model and close partnerships with mobile operators and tower companies make it an excellent research partner to explore the impact of the ABC model.

The GSMA have previously conducted a study on the impact of pay-as-you-go solar on mobile operators analysing data points from mobile operators and pay-as-you-go solar companies (see here for Part 1 on the study and here for Part 2 on the study). This project intends to replicate a similar approach and analyse data from mobile operators in Madagascar (Yas and mVola), WeLight's internal database, and complement these insights with qualitative insights from interviews with end-users, business owners, mobile operators, and tower companies.

The terms of reference is structured around two distinct work packages, firms may bid on one or both of these but should make clear which they are bidding on in their proposals. Should a firm bid for only Work Package A they will be paired with a firm selected by the GSMA for Work Package B to complete the assignment.

Work Package A: Study design and quantitative and qualitative analysis

The key deliverables under this work package are to: design the study, conduct the quantitative analysis based on WeLight and mobile operator data, conduct interviews with national-level stakeholders, and to design the data collection tools and analyse the qualitative data from WeLight and comparison sites.

Work Package B: community-level primary data collection

The key deliverables under this work package are to recruit field researchers and conduct the primary qualitative data collection within select communities. The scope of this data collection is to conduct interviews and focus group discussions with business owners and community members at sites where WeLight have installed mini-grids and a selection of comparison sites. Data collection is intended to take place in 4 geographical clusters of 5 villages, giving a total of 20 sites in which data collection should be planned.

Responsibilities of the GSMA and WeLight

The GSMA and WeLight have secured agreements from Yas and mVola to participate in the study. The GSMA and WeLight will facilitate introductions to the relevant teams needed to access the mobile operator data for the quantitative analysis. Additionally, WeLight will supply monitoring data from their sites for the quantitative analysis. WeLight will support firms in the qualitative data collection through assisting with entry to community sites and identifying respondents. Both the GSMA and WeLight will provide comments on the study design, data collection tools, and final reports.

Key questions for the study and data sources

The study should seek to leverage both data analysis and stakeholder interviews to answer the following questions below. The key data sources for assessing these are highlighted.

	WeLight database	Mobile operator data	Qualitative / purposive data
1. What is the impact of WeLight's ABC model on mobile money usage among WeLight's customer base?	✓	✓	
2. What is the impact of WeLight's ABC model on voice/sms and data usage among WeLight's customer base?	✓	✓	
3. What is the impact of WeLight's ABC model on the productivity of small businesses within the settlement of implementation?	✓		✓
4. What is the impact of the ABC model on site-level energy cost for mobile operators/tower companies?	✓		✓
5. How does the ABC model improve WeLight's own unit economics?	✓		✓
6. What are the key implementation challenges to the ABC model and how has WeLight been able to address them? What does this mean for other markets such as DRC, Nigeria, or Mali where WeLight also seeks to implement the model?			✓

Note: ✓ is for the emphasis of the data collection for the question and is not intended as exhaustive

Anticipated limitations

The approach proposed by this ToR involves a post-hoc assessment of the changes in community outcomes, this poses serious methodological challenges for the construction of a quantitative counterfactual. During the Work Package A inception phase it is anticipated the consultants will identify and propose the *most robust available* method for addressing the research questions above. The GSMA and WeLight acknowledge this may be limited to descriptive or case-comparison analyses should quasi-experimental methods not be feasible within the constraints of the data.

Work Package A: key activities and deliverables

Phase	Activities and deliverables	Timeline
Phase 1: Inception and evaluability assessment	**Key activities** – Kick off call to discuss methodology, scope, timelines and approach (remote) – Literature/desk review – including development of case study long list based on a use case mapping – Review of relevant data sets from WeLight and mobile operators – Design of quantitative approach – Interviews with sector stakeholders as required – Finalisation of research framework and tools (KII templates, and identified secondary data)	By 13th February 2026
	Deliverables – Inception report (.doc), including: An evaluability assessment for the analysis of secondary data Draft research tools An annotated bibliography of key literature identified and reviewed	
Phase 2: Quantitative analysis	**Key activities** – Weekly or bi-weekly debriefs with GSMA team – Collation and analysis of WeLight and mobile operator data	By 20th March 2026
	Deliverables – Preliminary quantitative analysis (.doc)	
Phase 3: researcher training	**Key activities** – Attend and deliver parts of field researcher training	By 27th March 2026
	Deliverables – Field researcher training materials	
Phase 4: community-level primary data collection	*To be completed under Work Package B - see separate table below*	
Phase 5: Analysis, validation and reporting	**Key activities** – Presentation of initial data analysis outcomes to GSMA – Interviews with sector stakeholders as required	By 17th July 2026

	Key deliverables – Final report (.doc) – Final data analysis (.xls) Final deliverables are expected in .doc format only. Deliverables should be developed in line with GSMA house style, details of which will be shared at inception. Where deliverables include data or graphics, editable versions of these or the underlying data should be shared with the final deliverables. The consultants are not required to budget for design or copyediting; this will be borne by the GSMA in the production of a public-facing version of the report delivered by the consultants.	

Work Package B: key activities and deliverables

Phase	Activities and deliverables	Timeline
Phase 4.1 – Researcher recruitment and fieldwork planning	**Key activities** – Development of a detailed fieldwork plan based on site selection – Recruitment of suitable researchers (based upon skills and relevant languages) – Preparation of field researcher training logistics	By 20th March 2026
	Deliverables – Detailed fieldwork plan (.doc or as appropriate)	
Phase 4.2: Quantitative data collection	**Key activities** – Data collection from 20 WeLight and comparison sites in 4 geographical clusters. Data collection is intended to include: IDIs, Group Interviews or focus groups. The scope of this data collection will be refined at inception, but should be budgeted around one team of researchers 3-4 people, spending one day per site. – Daily debriefs with GSMA and WeLight during fieldwork	Completed by 17th May 2026
	Deliverables – Summary notes per community and per day (.doc)	
Phase 4.3: transcription and translation	**Key activities** – Transcription of all interviews conducted – Translation into English of all transcriptions	By 22nd May 2026
	Deliverables – Detailed fieldwork report (.doc) – Transcribed and translated interviews (.doc)	

Division of reimbursable expenses if bidding for separate work packages

In the case that a firm wishes to bid for just one of the two work packages please see below for the expected division of reimbursable expenses. There are no reimbursable expenses expected for Phases 1, 2, and 5.

Phase	Work Package A	Work Package B
Phase 3	– Costs associated with Work Package A staff attending training	– All costs associated with venue hire – All costs associated with field researchers attending training
Phase 4	– DSA costs associated with Work Package A staff participating in fieldwork	– All logistics costs associated with the fieldwork (cars, fuel, field researcher subsistence) – The transport logistics should be sufficient for x1 additional person to join per cluster.

Use of generative AI

Generative AI presents powerful opportunities for improving the research process and research products, and it is expected that firms will likely use tools in the production of the research. However, text generated by AI forming a large part of deliverables has little to no value-add for the GSMA project. Additionally, while these tools are improving rapidly, they are still prone to making factual errors and fabrication. Finally, at present many generative AI tools may produce material that infringes upon copyright, with few adequate safeguards in place in a rapidly evolving regulatory environment. As such, on the proposal and all deliverables firms are required to include a disclosure statement regarding the use of AI in the production of the work. This disclosure statement should identify which tools were used and how, and indicate which parts of the work are based on these results. The GSMA's standard terms and conditions include clauses requiring that suppliers warrant that the deliverables are the original work of this supplier; breach of this, including through the use of AI, is considered grounds for termination.

Work Package A: firm and proposal requirements

Firm requirements

- A demonstrable track record of completing similar assignments;
- Thematic expertise in energy access and mini grids, digital inclusion, digital payments;
- Experience of quantitative impact evaluation design;
- Familiarity with mobile operator data sets and indicators;
- Thematic expertise and strong stakeholder networks in Madagascar;
- Physical presence in Madagascar among the team; and
- Full working proficiency in English writing to publication quality, and working proficiency in French and Malagasy among the team.

Proposal requirements

Technical proposal should:

1. Include an AI disclosure statement
2. Include a short statement/ cover letter expressing interest and outlining suitability;
3. Include a short (2-6 pages) approach section discussing any initial proposals on any assessment frameworks or methodologies to be used;
4. Demonstrate a clear understanding of the SoW and any proposed changes to the SoW;
5. Provide details of relevant firm project experience (2-4 pages);
6. Include a Gantt chart outlining major project stages and timelines; and
7. Include CVs, and location of team members.

Financial proposal should include:

8. Level of effort (person-day) by activity.
9. Fee rates (per person per day in GBP).
10. Reimbursable expenses (unit, quantity, and costs in GBP)
11. Total project cost (GBP), inclusive of all applicable taxes

Proposals that do not include all the elements of financial proposal as outlined above will be rejected.

The GSMA estimate Work Package A will require between 70-80 person-days, depending on team composition, experience, and location. Selection will be made on a quality/cost basis with a 70:30 weighting. The technical component will be scored against the criteria above. The financial element will be scored by dividing the points available (30) by the firms submitted costs divided by the lowest cost proposal.

Proposals should be presented in English.

Proposals are to be submitted no later than **17:00 GMT 07 January 2026.**

Proposals should be submitted to zwhite@gsma.com and hbowes@gsma.com in copy. Clarification questions may be sent to zwhite@gsma.com.

Work Package B: firm and proposal requirements

Firm requirements

- A demonstrable track record of completing similar assignments;
- A strong track record of delivering high quality data collection projects in Madagascar;
- The ability to recruit suitable fieldworkers for selected sites; and
- Working proficiency in English, French, and Malagasy.

Proposal requirements

Technical proposal should:

1. Include an AI disclosure statement
2. Include a short statement/ cover letter expressing interest and outlining suitability;
3. Include a short (2-4 pages) approach section outlining the firms approach to primary data collection;
4. Demonstrate a clear understanding of the SoW and any proposed changes to the SoW;
5. Provide details of relevant firm project experience (2-4 pages);
6. Include a Gantt chart outlining major project stages and timelines; and
7. Include CVs, and location of core team members.

Financial proposal should include:

8. Level of effort (person-day) by activity.
9. Fee rates (per person per day in GBP).
10. Reimbursable expenses (unit, quantity, and costs in GBP)
11. Total project cost (GBP), inclusive of all applicable taxes

Proposals that do not include all the elements of financial proposal as outlined above will be rejected.

Selection will be made on a quality/cost basis with a 70:30 weighting. The technical component (70) will be scored against the criteria above. The financial element will be scored by dividing the points available (30) by the firms submitted costs divided by the lowest cost proposal.

Proposals should be presented in English.

Proposals are to be submitted no later than **17:00 GMT 07 January 2026.**

Proposals should be submitted to zwhite@gsma.com and hbowes@gsma.com in copy. Clarification questions may be sent to zwhite@gsma.com.