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| Template Term Sheet |
| Operating Services Agreement |
| This term sheet is published as part of the Open Source project by CrossBoundary Access, funded by Shell Foundation. This is an initiative to share the project financing tools used to structure and finance over $80m of mini-grid projects in Africa. Visit the [CrossBoundary Access Open Source page](https://crossboundary.com/access/open-source-tools-to-accelerate-universal-energy-access/) for more resources. |

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| January 2024 |

**TERM SHEET**

**for the**

**OPERATING SERVICES AGREEMENT**

**between**

**[INVESTOR] ASSETCO IN [COUNTRY] and [DEVELOPER]**

This Term Sheet sets out the key provisions and risk allocation in relation to the Operating Services Agreement(s) (the “**Agreement**” or “**OSA**”)to be entered into for theproposed project. They are not exhaustive.

The objective of the relationship is for [Developer] (“**OpCo**”) to provide operations, maintenance, and customer services to a portfolio of operational mini-grids (“**Sites**”) owned by [Investor] AssetCo in [Country](“**AssetCo**”) (the“**Project”**)*.* AssetCo and OpCo are each a “**Party**” and together the “**Parties**”. The structure of the Agreement assumes that the OpCo (or its Affiliate) has carried out the development and construction services under the PSA.

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| **Cl.** | **Heading** | **Description** |
|  | Services and Obligations | AssetCo engages OpCo to perform all services related to the continued operation of the Project (the “**Services**”) as detailed in Annexure A (the “**Scope of Services**”). |
|  | Term | The minimum Term of the Agreement shall be [•] years from the date of commissioning of the last batch of Sites in the Project. The Parties may agree to extend the Term.  |
|  | Standards of Performance | 1. OpCo shall carry out the Services and its obligations under this Agreement in accordance with Good Industry Practice[[1]](#footnote-1), acting as an experienced and diligent operator, and to ensure that the Sites are fit for the purpose for which they are intended and can be operated as planned.
2. OpCo shall at all times act in compliance with the terms of any OEM warranty, AssetCo’s HSES requirements, IFC’s environmental and social performance standards, any permits, consents or permissions obtained for the Project, any concession agreement related to the Sites, any other technical standard related to Project-specific grant, subsidy, or other public funding, all applicable laws (including the building and construction laws of [Country]), the operations manual as agreed between the Parties (**Operations Manual**), and all other applicable standards including those specified by AssetCo in the Agreement.
3. To the extent OpCo subcontracts any of the Services (which may be subject to AssetCo’s consent), OpCo shall have sole and absolute liability for a subcontractor’s compliance with these standards.
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|  | Fees and payment | 1. Each quarter, AssetCo shall pay OpCo for the provision of the Services as follows:
	1. a base fee of [•] per mini-grid site (“**Site**”); and
	2. a variable fee of [•]% of revenue,

(such amounts being inclusive of all applicable taxes and together forming the “**Operating Fee**”). 1. The Operating Fee shall be paid quarterly in arrears and in the local currency of [Country].
2. The Operating Fee may be adjusted annually using a mechanism to be determined by the Parties, taking into account local inflation and share of risk in the Project.
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|  | Diesel | 1. The Parties agree and understand that the Project is supported and funded on the understanding that diesel should only be used as necessary, and cannot be used to compensate for poor planning or maintenance. OpCo will use all reasonable endeavors to minimize diesel use.
2. OpCo shall size each Site based on a “**Diesel Generation Threshold**”, which is the [•]% diesel generation share upon which the grids have been sized. OpCo is responsible for complying with this threshold and penalties may apply if the OpCo exceeds this threshold (subject to reasonable relief where unforeseeable, no-fault events occurred).
3. If the Project is forecast to exceed the Diesel Generation Threshold at the end of the next calendar year due to consumption growth, OpCo shall propose an expansion plan and AssetCo shall consider and fund such expansion.
4. The Parties will forecast diesel use annually and AssetCo will reimburse OpCo for diesel use within the forecast on a quarterly basis. Diesel beyond the forecast can only be recovered if it can be linked to a corresponding increase in demand/consumption.
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|  | Revenue Collection | 1. OpCo shall operate the Project such that customers are unable to access electricity unless they have paid in advance for the electricity.
2. As part of the Scope of Services, OpCo shall manage revenue collection from the sale of electricity and customer connections via mobile money or other payment methods. The cost of this service is included in the Operating Fee. Any external banking or mobile money transfer fees will be paid by AssetCo.
3. AssetCo will directly receive such revenue (from the sale of electricity and customer connection fees) in its bank account, according to the terms and conditions of the mobile money agreements AssetCo will enter into with the relevant mobile money operator.
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|  | Connection Uptime & Metering | 1. For the duration of the Agreement, OpCo guarantees an average connection uptime across the Sites of [•]% at the meter level (“**Guaranteed Average Connection Uptime**”) per quarter on a portfolio basis. Uptime will be measured at the smart meter level.
2. If the Guaranteed Average Connection Uptime is not achieved, and the OpCo fails to remedy within an agreed cure period, OpCo shall forfeit part of the Operating Fee in the next quarter as follows:
	1. [•]% of Operating Fee for every [•]% below the Guaranteed Average Connection Uptime until [•]% uptime (“**Minimum Guaranteed Average Connection Uptime**”); then
	2. [•]% of Operating Fee for every additional [•]% below the Minimum Guaranteed Average Connection Uptime.
3. However, if the OpCo can demonstrate that the loss of uptime was caused by factors outside the OpCo's control and that such losses could not have been avoided by OpCo applying the required Standards of Performance, such period of any loss of uptime shall not be taken into account in calculation of the actual Guaranteed Average Connection Uptime.
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|  | Major Capex Replacements | 1. Major capital items, including batteries, inverters, charge controllers, solar panels, diesel generators and large diesel generator components, poles, distribution network cables, energy management system, battery management system, solar structures and any other capital items specified in the Agreement (“**Major Capital Items**”), will require replacement throughout the Term of the Agreement.
2. OpCo will perform all procurement and installation of Major Capital Items on behalf of AssetCo as part of the Scope of Services. AssetCo will reimburse OpCo for the actual cost of the Major Capital Items (including shipping and third-party logistics)
 |
|  | New Connections and Expansion of the Sites | 1. As part of the Scope of Services, OpCo will perform all procurement and installation of any equipment required for expansions (i.e., new connections) on behalf of AssetCo.
2. AssetCo shall reimburse OpCo for actual costs incurred in making new connections (i.e., cost of materials / equipment).
 |
|  | Demand Stimulation Activities | As part of the Scope of Services:1. OpCo shall manage all productive loads distributed to the customers under the OSA, which shall include payment collection, customer service, (reverse) logistics, supplier communication and enacting warranties.
2. OpCo shall propose productive load and demand stimulation programs to be implemented with the AssetCo, targeting a number of Sites to implement electric-powered productive equipment to replace or reduce the use of diesel or fossil fuel-powered equipment and appliances.
 |
|  | Reporting and Audit | Market standard reporting and audit obligations will apply. Specific obligations may apply in relation to reporting HSES incidents.  |
|  | Anti-Bribery and AML Provisions | AssetCo and its parent organisations comply with the highest standards with respect to Anti Bribery and Anti Money Laundering (AML) obligations and will expect OpCo to comply with such standards and any other similar standards imposed by lenders or funders of the Project.  |
|  | Insurance, Liability and Exclusions | 1. Each Party shall have defined obligations with respect to insurance.
2. The liability of either Party under the OSA with respect to any liability related to the Services shall be limited to the liability cap (the “**Liability Cap**”). The Liability Cap for each year of the Agreement is an amount equal to the total Operating Fee earned by OpCo in the preceding 12 months plus any payments (e.g., for diesel, major capex replacements or otherwise) made by AssetCo to OpCo under this Agreement.
3. In respect of the Liability Cap, typical exclusions shall apply, including without limitation:
	* Bribery, corruption, fraud, and any dealings with sanctioned persons or countries (the “**Prohibited Acts**”)
	* Negligence
	* Events for which the OpCo is insured
4. Neither Party shall be liable to the other Party for any economic, indirect or consequential loss. However, exceptions shall apply (including liquidated damages, indemnities, Prohibited Acts, etc).

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|  | Force Majeure and Termination | 1. Market standard provisions on events of force majeure and termination and the relevant consequences will apply. Termination for force majeure shall be subject to specific time periods and controls.
2. Such events may occur in relation to a Site, a batch of Sites, or the whole Project.
 |
|  | Indemnities | The Agreement will include customary indemnities including:1. liabilities to third parties for death, personal injury and damage to property related to the Services;
2. breaches of any [Country] laws, Prohibited Acts, or other compliance requirements under the Agreement (by OpCo or its personnel, which include subcontractors); and
3. any direct losses to AssetCo as a result of not being able to recover under its insurance policies as a result of any fraud, Prohibited Acts, material misrepresentation, or non-disclosure by OpCo (or its personnel, which include subcontractors).
 |
|  | Governing Law and Dispute Resolution | 1. The Agreement will be governed by the laws of England and Wales.
2. Arbitration will be seated in London and administered by the London Court of International Arbitration. There shall be three arbitrators, unless otherwise agreed. Any hearing shall be conducted in London, England.
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ANNEXURE A: SCOPE OF SERVICES

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|  | **Service Area / Item Description** |
|  |  **HSES** |
|  | * 1. Develop Site safety rules and ensure they are implemented at all Sites and training is provided to all employees.
	2. Provide HSES training highlighting the dangers of electricity to all, particularly additional connections.
	3. Apply a systematic approach to HSES management designed to ensure compliance with applicable law and to achieve continuous performance improvement.
	4. Apply a commitment to conduct all operations in a safe and diligent manner, and a continuous objective to reduce HSES risks associated with the operations,
	5. Arrange and maintain any necessary measures or plans to address emergency events.
	6. Regular target setting for improvement and regular performance measurement, appraisal, and reporting (e.g., monthly, quarterly, etc.).
	7. Require subcontractors to manage HSES risks in line with the HSES standards of AssetCo/OpCo.
	8. Ensure that HSES is the responsibility of all managers, teams and individuals.
	9. Conduct regular HSES audits of the operations.
	10. Retain records of relevant HSES audits.
	11. Ensure there is a system available and operational that enables HSES incident reporting within 24 hours (including any fatalities, serious illnesses, environmental impact or harm, damage to AssetCo assets over US$[•], detrimental impact to the neighbouring community, other significant HSES incidents).
	12. Report data and statistics on greenhouse gas emissions from operations and total product, incidents, and other HSES statistics.
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|  | **General Site Cleanliness** |
|  | * 1. Check and ensure general Site cleanliness and take corrective action, as required.
	2. Conduct visual inspection of the roadways, alley ways and facility access areas and take corrective action, as required.
 |
|  | **Structural Checks** |
|  | * 1. Visually inspect structure of PV frame and power system and take corrective action for, as a minimum, water ingress, scouring, insect & rodent infestation, rust/corrosion, exterior damage and structural integrity.
 |
|  | **Monitoring**   |
|  | * 1. Perform the continuous monitoring of the Project using remote and local monitoring systems, including any asset monitoring platform where made available by AssetCo. The Project should be monitored in such a way that any failure or incidents that could reduce or interrupt operations are brought to the attention of OpCo without delay following such failures or incidents occurring.

Notify AssetCo of any material incidents or interruptions to the service within [•] calendar days of their occurrence.Ensure that the monitoring and sensing components of each mini-grid are functioning properly and capable of transmitting necessary information to the asset monitoring platform. |
|  | **Preventative Maintenance – PV Inspections** |
|  | * 1. Visually inspect panels for dust and animal droppings and clean panels if necessary.
	2. Visually inspect cabling and fastening of nuts and bolts of PV panels and ground connections. Fix any improper cabling and fasten loose nuts and bolts.
	3. Maintain and provide access to AssetCo to an activity log for maintenance and a maintenance specification log recording all monitoring reports and a listing of all required maintenance, indication of the performance of the required maintenance, indication of the performance of other maintenance and a record of all repairs and replacements made to each mini-grid and its associated equipment.
	4. Test the performance of the PV panels and power system against manufacturer’s specifications and to take corrective action if outside of the specifications.
 |
|  | **Preventative Maintenance – Low Voltage and PV Equipment** |
|  | * 1. Inspect cabling, fastening of nuts and bolts, and surface temperature of the charge controller and its breakers. Fix minor issues during inspection and raise a ticket for major issues.
	2. Inspect cabling, fastening of nuts and bolts, and surface temperature of the inverter terminals and inverter breakers terminals. Fix minor issues during inspection and raise a ticket for major issues.
	3. Measure VMP, VOC, and IMP string voltages and currents to identify faulty strings. In case of faulty strings, raise a ticket for and ensure replacement.
	4. For sensors and meters, including pyranometers where applicable, and tilt sensors:
		1. Record meter readings as available
		2. Clean pyranometers
		3. Turn off and on to ensure they are communicating
		4. Calibrate units per manufacturer's instructions
 |
|  | **Battery Bank Check** |
|  | * 1. Measure battery bank voltages and temperatures. In case of abnormal reading, troubleshoot and if necessary, raise a ticket and ensure replacement of the faulty battery.
	2. Measure cell voltages and temperatures. In case of abnormal reading, troubleshoot and if necessary, raise a ticket and ensure replacement of the faulty battery.
 |
|  | **Poles** |
|  | * 1. Inspect pole and pole number and confirm pole hardware is not damaged. In case of faulty pole or hardware, raise ticket for and ensure replacement of the faulty pole or hardware. Relabel pole if pole number is illegible or missing.
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|  | **Reticulation Cables** |
|  | * 1. Inspect reticulation cables and, if necessary, repair loose hanging cables or scathed insulation.
 |
|  | **Meters** |
|  | * 1. Apply a meter seal to any meters found missing a seal. Inspect, investigate and report any meters that are found to be missing a seal for evidence of tampering or other damage.
	2. Repair or replace faulty meters.
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|  | **Generators on Site** |
|  | * 1. Visually inspect and, if necessary, repair fixing, belts, connections, fan, battery, and exhaust guard in accordance with the manufacturer’s recommendations as a minimum.
	2. Inspect generator for cleanliness, dust level, and leakages and repair if needed.
	3. Record generator engine temperature while in operation and take corrective action if readings are outside the manufacturer's recommended parameters.
	4. Replace the coolant, oil, filter and fuel.
 |
|  | **Other items** |
|  | * 1. Inspect and, if necessary, fix cooling fans, floodlights and timer.
	2. Inspect and, if necessary, repair or replace worn out cables, breakers, hanging cables.
	3. Inspect pressure level of fire extinguisher and replace if needed.
	4. Maintain the security of the Sites.
	5. Secure the power system against damage from rodents and insects.
	6. Vegetation control including mowing and trimming of trees and bushes that may impact the performance of the generation and distribution system.
	7. Check structures of perimeter fences and gates.
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|  | **Diesel** |
|  | * 1. Handle procurement, transport and logistics of diesel to Sites.
 |
|  | **Standard checks** |
|  | * 1. Confirm that data from inverter and meters can be accessed through relevant portals. Raise a ticket and remedy if necessary.
	2. Confirm that the power system controller can be accessed remotely. Raise a ticket and remedy if necessary.
	3. Confirm that meters are syncing. Raise a ticket and remedy if necessary.
	4. Confirm that the relevant power system breakers are on. Turn on relevant breakers if necessary.
	5. Confirm generator is set to automatically turn on and off and if necessary, adjust the generator to its automatic setting for starting and stopping.
	6. Confirm that various doors are locked, including the power system and the fence, when applicable. Lock the doors if necessary.
 |
|  | **Critical Spare Parts** |
|  | * 1. Maintain and manage an inventory and a store of critical spare parts on behalf of AssetCo.
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|  | **Major Maintenance** |
|  | * 1. Manage all OEM warranties on behalf of AssetCo and manage all claims against the warranties.
	2. Provide a [•]-year major maintenance replacement schedule including detailed budget.
	3. Manage major maintenance, equipment teardowns, equipment overhauls and capital improvements.
	4. Manage procurement, logistics, or transport for any major capital item expenditure regardless of whether it falls within its warranty
	5. Promptly notify AssetCo of any such teardowns and overhauls of major equipment or capital improvements that OpCo believes are necessary or advisable together with a proposed schedule for completing such repairs or improvements.
	6. Provide installation services in relation to replacement of major capital expenditures.
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|  | **Expand Generation and Storage Capacity of Projects** |
|  | * 1. Identify and alert AssetCo of need for additional generation and storage capacity.
	2. Present business case for expansion of generation and storage capacity to AssetCo.
	3. Coordinate, execute, contract and oversee expansion of generation and storage capacity.
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|  | **Customer Service and Revenue Collection** |
|  | * 1. Engage with customers to inform them of the details of the electricity tariff and correct use of the equipment including the meter. This can be done through various channels, which may include: SMS, phone, USSD, mobile applications, local agent and physically in-person.
	2. Operate a coordinated system of people, processes, and technologies to administer incoming support enquiries from customers.
	3. Maintain a call center from Monday - Friday, excluding holidays, for the Sites.
* Call center representatives will address customer enquiries, including but not limited to: payment issues, tariff questions, balance checks, power issues, appliance questions, account changes, and general information requests.
* Call center representatives will make all reasonable efforts to address enquiries as quickly and effectively as possible.
	1. Maintain an emergency out-of-hours telephone number that will be available from 7am-10pm initially (and work towards a 24-hour service once technically/commercially feasible), 365 days a year. All emergency calls shall be managed by OpCo.
	2. Ensure that customer payments are collected on behalf of AssetCo and deposited into AssetCo’s collection account, and reconcile the funds collected via mobile money or other payment methods against the number of credits sold using data from OpCo’s database on a quarterly basis.
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|  | **Connecting New Customers** |
|  | * 1. Identify and plan connections for new customers.
	2. Coordinate, execute, contract and oversee installation of additional connections and execution of customer agreements for customers that are expected to increase grid profitability.
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|  | **Maintaining Permits, Licenses and Concession Agreements** |
|  | * 1. Apply for and maintain all AssetCo approvals for the Project and duly obtain renewal of any AssetCo approvals required during the Term.
	2. Apply and maintain all OpCo approvals for the Project and duly obtain renewal of any OpCo approvals required during the Term.
	3. Manage contracting, updating and execution of customer agreements and any other Project-related agreements required with the community members.
 |
|  | **Demand stimulation**  |
|  | * 1. Manage all productive loads distributed to the customers, which shall include payment collection, customer service, (reverse) logistics, supplier communication and enacting warranties.
	2. Propose additional productive load and demand stimulation programs to be implemented.
	3. Present plans for tariff discounts and promotions to AssetCo for approval.
	4. Implement approved tariff discounts and promotions.
	5. Run appliance financing programs.
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**DISCLAIMER**

The transaction contemplated by this Term Sheet is subject to due diligence by the Parties and agreement and execution of binding legal documentation satisfactorily reflecting the transaction. Accordingly, and except as specifically set out below, these Term Sheet are not intended to be legally binding, or to create legally binding obligations between the Parties.

This Term Sheet are confidential and remain the sole property of [Investor] notwithstanding disclosure or subsequent negotiation of terms between the Parties. The disclosure of this document is subject to the terms of the Non-Disclosure Agreement already in existence between the Parties.

1. “**Good Industry Practice**” means, without limiting or prejudicing any higher standards or higher requirements under the Agreement, compliance with local country grid codes as applicable (to be defined in final OSA Agreement), and generally accepted regional standards of skill, care and diligence, and the exercise of that degree of skill, diligence, prudence and foresight that would reasonably and ordinarily be expected to be observed by a skilled, experienced and highly qualified private developer engaged in carrying out activities the same as or similar to the Services under the same or similar circumstances. [↑](#footnote-ref-1)