Global Energy Alliance for People and Planet
GEAPP

Alliancing in Action for Procurement of Battery Energy Storage System

A Case Study from the Malawi 20MW/30MWh BESS Project

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Executive Summary

Malawi experienced severe grid instability affecting nationwide electricity access following the loss of one-third of its hydropower capacity due to a cyclone in 2022, and the decommissioning of peaking diesel generators (about one-quarter of peak capacity), increasing penetration of intermittent solar power. To address the challenge, the country submitted a project proposal to the Global Energy Alliance for People and Planet (GEAPP) for a 20MW/30MWh Battery Energy Storage System (BESS) to stabilize the grid whilst enabling a higher renewable energy penetration.

Supported by GEAPP and implemented by Electricity Supply Corporation of Malawi (ESCOM), the BESS project employed a collaborative alliancing model involving key technical partners like Power Africa and delivery-focused institutions like the Presidential Delivery Unit to ensure efficient, transparent public procurement of the BESS within Malawi's legal framework. The procurement process included two phases—for Owner's Engineer (OE) and for Engineering Procurement and Construction contractor (EPC).

This paper shares lessons learned from the tendering methods, bidder requirements, and regulatory compliance from the two tenders which can benefit organizations working in Malawi and similar environments. Key outcomes included successful procurement within budget, timely contract award approvals, and valuable insights for replicating BESS tender processes, bidder requirements, and risk mitigation in developing countries, emphasizing the importance of collaboration, thorough planning, and the will for public institutions to do things right. The project demonstrated that public infrastructure procurement in developing countries can be efficient, transparent, and effective when guided by strong collaboration, legal knowledge, technical

expertise, and political will. For Bidders, submission of complete and compliant bids including all required documents (valid bid security, warranties, powers of attorney, signed letters of bid) and local participation (and experts) where required is pivotal for a winning bid. We urge manufacturing firms to always provide bidding EPC contractors with authorized warranties on time. For procuring entities, advance public notifications of upcoming tenders, providing timely detailed responses to clarifications, and a long enough bidding period are key to a successful tender. We also discuss the value of a gap assessment of the preferred bidder's proposal in light of tender documents and respective grid code compliance for power projects. This case study offers a replicable playbook for similar projects across Africa and the Global South.

1.Introduction

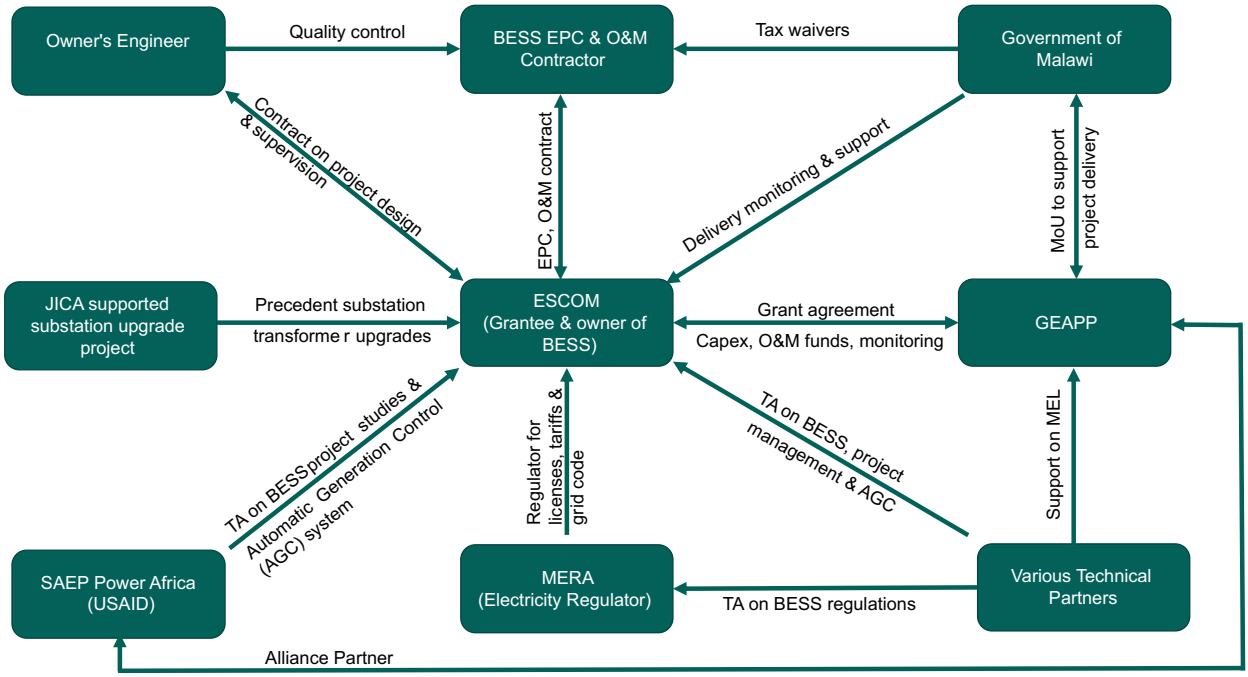
Malawi generally has a clean electricity generation mix comprising 73% hydropower, 18% solar PV, and 9% standby diesel generators in installed capacities. Over the years, Malawi has embraced renewable energy transition, decommissioning 78 MW of diesel generation (about one-quarter of its peak capacity) in 2022 and expanding solar PV capacity to 18% of its energy mix by 2025. However, a 2022 cyclone destroyed a third of hydropower capacity, causing significant grid instability due to high penetration of variable renewable energy (VRE), primarily solar PV, leading to unplanned system nationwide shutdowns affecting the country's electricity access and commercial activities. Grid resilience was further compromised as new firm capacity additions to meet the emerging needs were not timely planned. Grid assessment studies supported by GEAPP and USAID Power Africa indicated that deploying a utility-scale BESS is a technoeconomic optimal solution to replace diesel generators, stabilize the grid, and enable more renewables. ESCOM, Malawi's state-owned transmission and distribution utility, was selected as the delivery partner for a BESS project following their submission of a 20MW/30 MWh proposal to GEAPP. In June 2023, GEAPP granted USD 20.25 million to ESCOM for design, procurement, and installation of the BESS at Kanengo Substation in Lilongwe.

Other than enhancing Malawi's grid stability for improved electricity access millions accessing the grid, commercial activities and social services, GEAPP supported the BESS project to create a replicable BESS development, and project toolkits for Africa and the Global South. This case study provides learnings from procurements of an Owner's Engineer (OE), and Engineering Procurement and Construction (EPC) contractor.

2.Alliancing Model

The project leveraged an alliance among GEAPP (funding and technical support), ESCOM (owner and procuring entity), Power Africa (technical assistance), the Presidential Delivery Unit (ensuring accountability and timely delivery by public institutions) and other partners. This multi-stakeholder collaboration ensured alignment of objectives, on-time decision-making, and adherence to Malawi's Public Procurement and Disposal of Public Assets Act (2017). Figure below shows all the key stakeholders involved with defined roles as shown below:

Project Structure

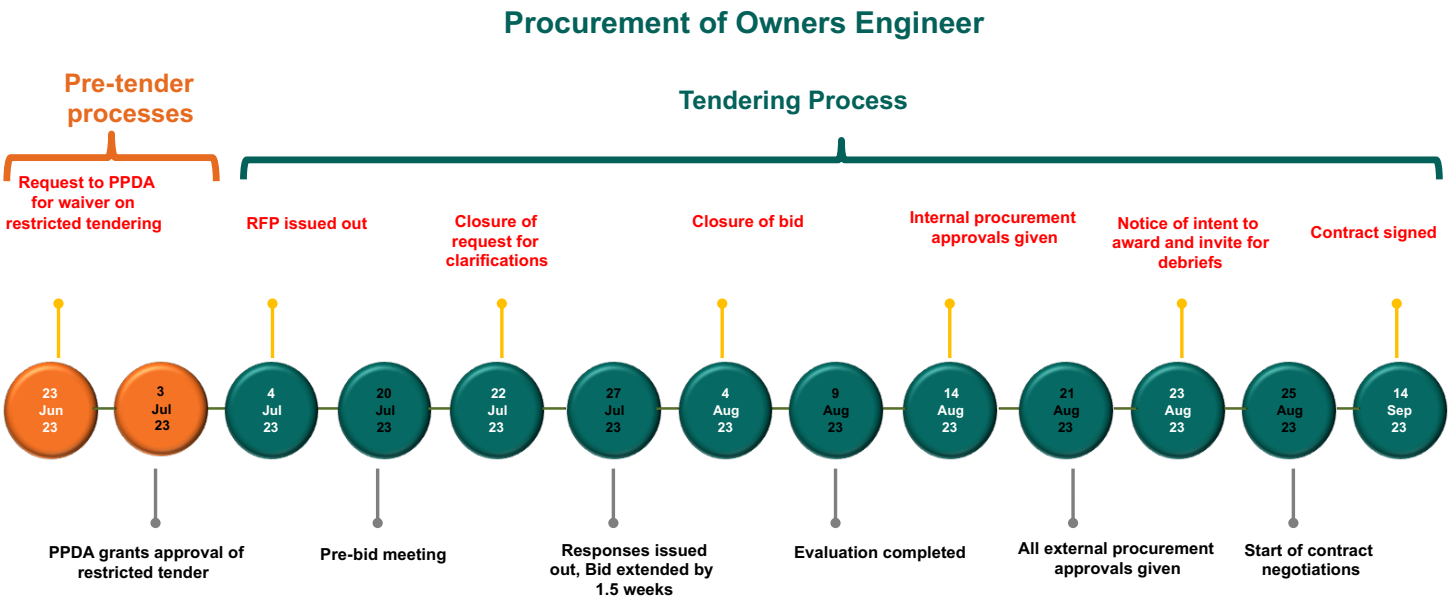


3.Procurement Journey

The procurement of both OE and EPC contractor were planned and conducted based on Malawi's Public Procurement and Disposal of Public Assets Act of 2017 because grant funds to a public institution like ESCOM fall within the definition of public funds. Under this Act, procurements by public institutions like ESCOM are monitored, regulated and overseen by the Public Procurement and Disposal Authority (PPDA).

3.1 Phase 1: Owner's Engineer Procurement

ESCOM needed an experienced Owner's Engineer (OE) to support management of EPC procurement and supervise construction. The procurement of this OE was conducted through a restricted tender to expedite delivery, given limited qualified firms in Africa and the drive to expedite the process (as opposed to open competitive tenders). ESCOM, with GEAPP technical advisory support, identified 13 potential OE firms and sought PPDA approval to 1) use a quality-based tender restricted to the pre-selected 13 firms, and 2) allow for e-procurement via email submissions instead of paper-based submissions as provided for in the PPDA Act. After issuing the RFP for 21 days, only four firms submitted proposals (30% response rate) despite extending the bid by 1.5 weeks following requests by potential bidders. The evaluation focused solely on technical proposals to prioritize quality over cost, resulting in one preferred bidder selected within budget after price negotiations. The chart below details the timeline for OE procurement.

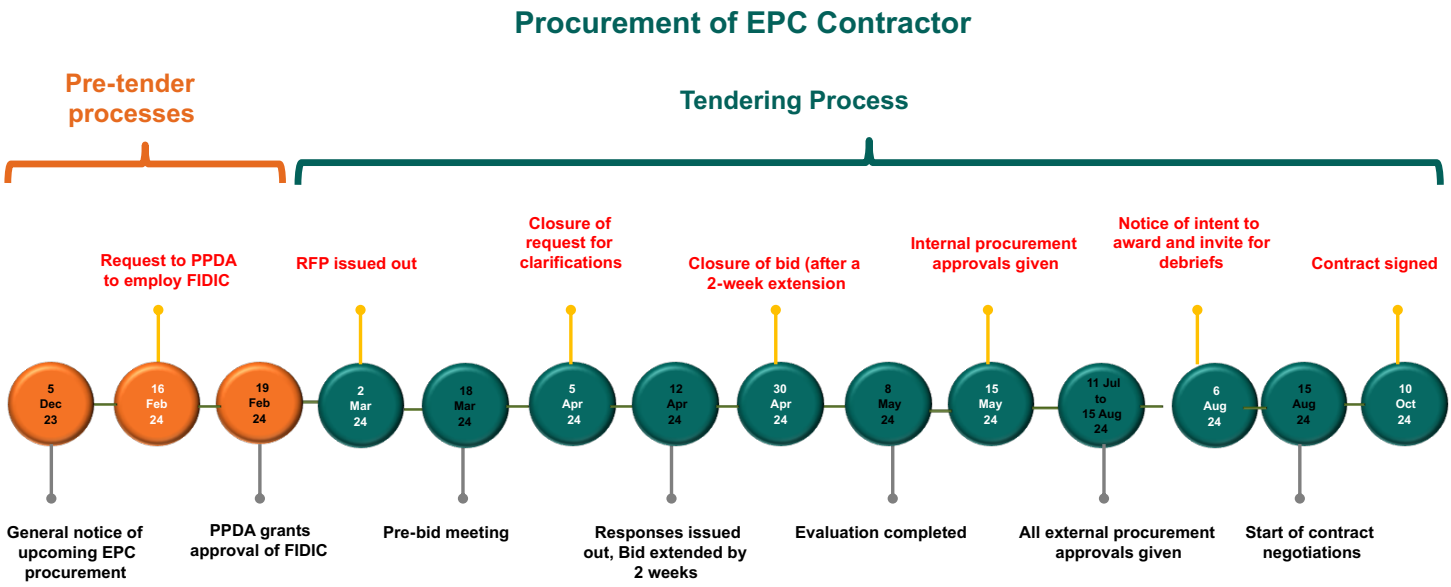


External Approval institutions

1. Public Procurement and Disposal of Assets Authority of Malawi (PPDA); for vetting the procurement in line with public procure ment regulations
2. The Government Contracting Unit (GCU), for vetting all public construction contracts
3. Anti-Corruption Bureau of Malawi (ACB); for vetting that the procurement is free of irregularities or fraud and corruption
4. Ministry of Justice (MoJ); for vetting the contract

3.2 Phase 2: EPC Contractor Procurement

The OE reviewed existing grid studies and identified gaps requiring additional analysis, which Power Africa quickly helped to address. With OE advisement, the EPC procurement process followed an international competitive bidding using FIDIC contracting documents which had to first be approved by PPDA as there was no explicit local provision for FIDIC in PPDA procurement guidelines. ESCOM issued a general procurement notice to alert potential bidders in December 2023 and launched the tender in March 2024 with a 45-day bidding period, later extended by two weeks due to numerous bidder requests. The figure below shows the timelines.



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Over 30 potential bidders attended the pre-bid meeting and 124 requests for clarifications were made on such issues as system sizing, O&M responsibilities, tax provisions, bid security, and extensions of the bidding period. At bid closure, twelve bids were received on time, but seven were disqualified during preliminary screening for missing key documents like bid security, manufacturer's authorization, power of attorney. Further technical evaluation eliminated three more bids for material deviations from requirements and incomplete submissions. The lowest-priced (~USD 15.9 million) technically compliant bid was recommended for award. Approvals were obtained internally in ESCOM and externally with PDU facilitation to meet the 180-day bid validity period. No unsuccessful bidders requested debriefs, indicating potential trust in the process or awareness of bid shortcomings. Throughout, collaboration with partners, clear communication, adherence to procurement laws, and support from the PDU ensured timely approvals and contract signing by October 2024.

Bid Submission Summary

Bidder #	Bid Price (USD)	Bid Security Provided?	Notes
1	18,500,000.00	Yes	
2	15,923,610.00	Yes	Lowest compliant bid
3	21,313,907.16	Yes	
4	17,870,519.46	Yes	
5	17,000,000.00	No	Disqualified
6	17,462,360.76	Yes	
7	14,385,786.00	Yes	
8	11,280,394.00	Yes	
9	23,100,000.00	No	Disqualified
10	16,676,970.46	Yes	
11	18,966,326.29	No	Disqualified

12	18,500,000.00 + 3MW add-on	No	Disqualified

Note: Only one local firm participated.

4.Key Outcomes and Lessons

The key outcomes of the procurement include successful and timely procurement of both the Owner's Engineer and EPC contractors within budget whilst aligning with Malawi's public procurement laws. The project demonstrated effective collaboration among partners (GEAPP, ESCOM, Power Africa), strong political will through the Presidential Delivery Unit to expedite delivery, and optimization of the provisions of the Malawi Public Procurement and Disposal Act to utilize e-procurement, FIDIC contracting, and quality-based evaluation. Despite the low bidder response rates for OE and disqualified EPC bids due to incomplete documentation, transparency and fairness were maintained throughout.

The key procurement lessons from the Malawi BESS project are:

Category	Key Lessons
Early familiarity plus understanding of local procurement laws	Financing institutions and procuring entities must understand local public procurement frameworks from project inception to ensure compliance and smooth processes. GEAPP and ESCOM achieved high levels of success because of this.
Procurement flexibility & process adaptation	Seeking flexibility in procurement methods (e.g., provision for restricted tendering, e-procurement, FIDIC contracting documents) can expedite urgent projects as demonstrated by PPDA's approval of electronic bid submissions and limited bidder invitations.
Advance public notifications	Early alerts about upcoming tenders help attract well-prepared bidders and improve competition. Such alerts helped the BESS pre-bid meeting attract over 30 bidders.
Adequate bidding periods	Allowing sufficient time for bidders to prepare quality proposals and respond to clarifications is essential; short bidding periods can limit participation and proposal quality. Approval of bidding period extensions helped secure more bids.
Bid preparation & tendering	Provide clear and detailed tender documents. Ensure you have direct contacts for bidders if pursuing a tender restricted to few respondents. Addressing all potential bidder questions upfront and providing comprehensive information reduces ambiguities and improves bid responsiveness. These steps improved the bidding process in the tenders.
Thorough bid evaluation & pre-screening	Thorough bid evaluation and pre-screening ensures completeness and compliance. Strict adherence to submission requirements (bid security, warranties, powers of attorney, signed letters), local participation, prevents disqualification and ensures fairness. In this tender, through evaluation ensured transparency and bidders who met requirements succeeded. ESCOM also conducted a visit to verify a sample of the preferred bidder's key projects.

Institutional support for timely approvals	Engagement of delivery-focused bodies like the PDU helps enforce service charter timelines for stage-gate approvals in public institutions, preventing delays that risk bid validity expiry. The PDU's efforts to facilitate progress expedited the procurement process.
Gap assessments before contract signing	A detailed review of the preferred bidder's proposal against tender documents and grid codes before finalizing contracts helps identify and address deviations that should be factored in the contract early. This proved helpful even at the detailed design stage.
Local participation requirements	Enforcing inclusion of local experts or partnerships strengthens capacity building and aligns with regulatory expectations.
Effective communication & debriefing	Providing feedback to unsuccessful bidders maintains transparency and trust in the procurement process.

5.Conclusion

Procurement of energy infrastructure projects in developing country public utilities require adequate planning to minimize delays and realize efficiency, transparency, accountability and effectiveness for value-for-money. The Malawi BESS procurement case study demonstrates that well-planned, intentional collaboration combined with adaptive procurement strategies can overcome challenges inherent in public infrastructure projects in developing countries. Policymakers should adopt alliancing models for urgent infrastructure needs. Utilities must pre-assess bidder readiness to minimize non-responsive bids. Funders are encouraged to fund preparatory studies and capacity building to accelerate project delivery. Together, these actions plus the identified common pitfalls in bidder submissions can inform future tender improvements and help replicate Malawi's success across Africa and the Global South, advancing resilient, clean energy transitions.

Call to Action

The Malawi BESS project demonstrates that well-structured alliancing models combining technical expertise, political will, and legal compliance can successfully deliver complex energy infrastructure in developing countries. To replicate this success, the authors recommend:

- For Policymakers: Adopt alliancing models to accelerate urgent infrastructure development, and enable flexibility in procurement methods e.g., adapt e-procurement, restricted tenders when required to judiciously balance speed and competitiveness.
- For Procuring Entities: Understand and align with local procurement laws, engage potential bidders early with advance notices, allow sufficient bidding periods, provide clear tender documents, respond promptly and comprehensively to queries, thoroughly review bids and verify experience, leverage and engage delivery-focused political units to avoid bureaucratic delays, and conduct a mandatory thorough gap assessment of winning bids against tender documents and grid codes pre-contract signing.

- For Funders: Support preparatory grid and feasibility studies to reduce delays, get familiar with local procurement laws early, facilitate knowledge sharing and technical assistance, promote alliancing models to pool expertise and resources, fund capacity building, and leverage provisions in procurement legislations to accelerate urgent infrastructure delivery and minimize risks.
- For Bidders: Submit complete and compliant bids including all required documents (valid bid security, warranties, powers of attorney, signed letters of bid), avoid material deviations or alternate designs without justification, align technical proposals with specifications, include local participation (and experts), respect deadlines, and ensure representatives with knowledge of the bid-package attend bid openings.
- For Manufacturers: Support EPC contractors with timely provision of warranties and technical documentation.