

Contents

List of Abbreviations	2
Definitions	2
General information	3
a. Brief information on the project	3
b. Context	3
d. The contractor shall provide the following work/service	4
Work Package 1: Analysis and review of South Africa's trade statistics for Lithium-Ion and Lead acid batteries for the period 2015 – current (10 Expert Days)	5
Work Package 2: Development of a shortlist of a minimum of 10 companies a questionnaire or interview guide and implement the interviewing process with shortlisted companies as well as an analysis of the results. (25 Expert Days)	6
Work Package 3: Preparation and publishing of the Battery Energy Storage System (BESS) Market Research study for Lithium-Ion and Lead Acid batteries (15 Expert Days)	7
Tender requirements	8
1.1. Expert 1: Specialist (Market/Data) Analyst	8
1.1.1. General qualifications	8
1.1.2. Experience in the region/knowledge of the country	8
1.1.3. Language skills	8
2. Appropriateness of proposed concept	8
3. Specification of inputs	9
4. Requirements on the format of the tender	10

List of Abbreviations

BES(S)	Battery Energy Storage (System)
CAGR	Compound Annual Growth Rate
kW	Kilo Watt
kWh	Kilo Watt-hour
MW	Mega Watt
MWh	Mega Watt-hour
OEM	Original Equipment Manufacturer
PV	Photovoltaic systems
RE	Renewable Energy
SAESA	South African Energy Storage Association
SAGEN	South African Germany Energy program
SARS	South African Revenue Services
(SS)EG	(Small-Scale) Embedded Generation
Wh	Watt-hour

Definitions

Battery Energy Storage System

Battery Energy Storage Systems are devices that enable electric energy from power-generating sources to be stored and then released when the power is needed the most

Primary Cell

A primary cell is a battery that is designed to be used once and discarded and not recharged with electricity.

Secondary Cell

A secondary cell is a type of electrical battery that can be charged, discharged into a load, and recharged many times.

Transmission Power Systems

The bulk movement of electrical energy from the generating site to an electrical substation

General information

a. Brief information on the project

The South African power industry continues to experience an increased amount of scheduled power outages known as loadshedding. In response to this crisis, the South African government has implemented policy changes to allow for more investment in privately and publicly owned distributed generation mainly from Renewable Energy (RE) sources. However, to increase energy security and manage intermittency by variable renewables (vRE), Battery Energy Storage Systems (BESS) will have to be introduced to allow for energy to be stored and delivered in usable form whenever it is needed. Battery Storage has been identified as a key element for reliable energy and the glue that holds together a renewable energy-dominated power mix. This can be seen as one of the contributing factors to the increase in the battery energy storage market in South Africa.

According to Eskom's most recent Transmission Development Plan (TDP)¹ by 2032 more than 6.5 GW of utility-scale BESS will be required to allow for the reliable and safe integration of new distributed generation capacities and the decommissioning of old coal power plants that reached the end of their commercial life.

In addition to utility-scale Eskom's Battery Storage projects, customers (residential, commercial, industrial, and agricultural) increasingly not only install (small-scale) embedded generation (SS)EG systems but combine these with batteries to mitigate the impacts of loadshedding. (SS)EG refers to power generation facilities, located at the customers' premises where electricity is consumed by customers or fed into the distribution grid.

However, Battery Energy Storage is not the only reason why the Battery Market continues to see an incline. Other contributing factors include a growth in Electric Vehicle interests, high volume sales of electronic equipment, and in some cases the declining price of battery technologies such as Lithium-ion. The price of Lithium-Ion batteries decreased by more than 85% in 2021 compared to 2010 which made the technology even more price competitive. It will be worth the while to determine using exact numbers such as quantity, revenue, and battery capacity to determine how the energy sector is capitalising on the Battery Energy Storage Technology to alleviate the current energy crisis.

b. Context

The South African Revenue Service through its Trade Statistics portal² indicates battery technologies imported into South Africa for cellphones, electrical equipment, and machinery. This data indicates imports for several cell technologies and among those are that for Lithium Ion and Lead Acid. Both these cell technologies play a vital role in the Energy Sector, but in the same breath for other applications such as Telecommunication, Consumer Electronics, Defence, and Automotive to name a few. The SARS Trade Statistics Data does not indicate which industry the listed quantities go to nor does it speak to storage capacity but only the customs value. Therefore it is hard to distinguish how much of the imports in South Africa are used for Battery Energy Storage Systems (BESS).

¹ https://www.eskom.co.za/wp-content/uploads/2023/01/Transmission_Development_Plan_2023%E2%80%932032_Rev1.pdf

² South African Revenue Service Trade Portal [Trade Stats \(sars.gov.za\)](https://www.sars.gov.za/Trade-Stats)

Some assumptions potentially could be made, such as the Customs Value (which is in Rands) below a certain threshold will likely represent a cell that is most likely to be used in electronics, and imports with high unit values will likely represent battery systems. To determine such thresholds and draw conclusions about the distribution of imports to different industries, will require a detailed study of the data and talks with key role players whose trades are recorded on the SARS trade statistics data, such as Original Equipment Manufacturers (OEMs), suppliers, buyers and resellers.

Therefore, this tender request is for a consultant to perform a detailed analysis of the Lithium-Ion and Lead Acid (other than starter batteries) battery cell technologies imports to distinguish which industries the trade of these technologies goes to and how much of that quantity contributes to the Energy Sector. The Market research aims to provide the overall battery capacity (Watt-hour) of imports that are used in the South African Power Industry as well as the customs value that is represented by that capacity. The consultant will need to be familiar with the industry, identify key role players, establish a methodology to produce the outcome, and prepare a report that presents the results. The findings and recommendations of the study will be made available to the policy development processes such as the SAREM and the review of the 2019 Integrated Resource Plan

c. GIZ in collaboration with the South African Energy Storage Association (SAESA) shall hire the contractor for the anticipated contract term, from 01 November 2023 to 30 April 2024.

d. The contractor shall provide the following work/service

Work Packages/Tasks		Expert days (up to)	(Tentative) timeline
Work Package 1: Analysis and review of South Africa’s trade statistics for Lithium-Ion and Lead Acid Batteries for the period 2015 - Current			
1.1	Perform desktop research to familiarise with the trade statistics of Lithium-Ion and Lead Acid in South Africa. Then identify key role players such as Original Equipment Manufacturers (OEM), Suppliers, Buyers, and Resellers of Battery Energy Storage Systems	7	November 2023
1.2	Identify potential companies that can participate in the trading of secondary cells, particularly large-scale energy storage systems.	3	December 2023
Work Package 2: Development of a shortlist of a minimum of 10 companies a questionnaire or interview guide and implement the interviewing process with shortlisted companies as well as an analysis of the results.			
2.1	Develop a short-list of a minimum of 10 companies that can be OEMs, suppliers, buyers, and resellers to participate in interviews and provide justification why short-listed candidates were selected as well as a detailed questionnaire or interview guide to be used in the process	5	January 2024
2.2	Executing interviews with shortlisted companies including organising introductions.	12	February 2024

2.3	Perform a detailed analysis of the interview results and deduce the outcome of the study from the results	8	February 2024
Work Package 3: Preparation and publishing of the Battery Energy Storage System (BESS) market research report for Lithium-Ion and Lead Acid			
3.1	Preparation and presentation of results for the Battery Energy Storage System Market Research.	10	March 2024
3.2	Publishing of market research report on the South African German Energy Program (SAGEN) website and South Africa Energy Storage Association (SAESA) website and presentation of the findings at a SAESA event.	5	April 2024

Work Package 1: Analysis and review of South Africa’s trade statistics for Lithium-Ion and Lead acid batteries for the period 2015 – current (10 Expert Days)

In this work package, the consultants will need to familiarise themselves with the import trade statistics of Lithium-Ion and Lead acid batteries in South Africa. This means the consultant will have to have a clear understanding of the volume, sale revenue, and data related to import statistics of the two technologies and identify key role players who participate in the trading of Battery Energy Storage Systems (BESS). The work package is broken down into two tasks, which are:

Task 1.1: Perform desktop research to become familiar with the trade statistics of Lithium Ion and Lead Acid battery imports in South Africa. Then identify key role players such as Original Equipment Manufacturers(OEM), Suppliers, Buyers, and Resellers of Battery Energy Storage Systems (7 Expert Days)

The intended outcome of this task is to develop a list of Original Equipment Manufacturers (OEM), suppliers, buyers, and resellers contributing to the South African Revenue Service (SARS) import data and other credible trade statistics data sources which the consultant must mention and cite in the report. The consultant needs to distinguish between companies that participate in trading large quantities intended for battery energy storage and those that trade small volumes intended for other applications outside battery energy storage. This can be achieved (but not explicitly limited to), by familiarising themselves with the South African Revenue Services (SARS) trade statistics data portal for the import of cellphones, electrical equipment, machinery for only Lithium Ion (85076000), and Lead Acid (8507600) battery technologies, for trade during the period 2015 – current date ³. The analysis by the consultant needs to be able to take out the following:

- Identify South African trade statistics data source portals for Lithium Ion and Lead Acid and mention the sources in the final report.
- An identification of OEM, suppliers, buyers, and resellers that contribute to the import data for Lithium Ion and Lead Acid batteries.

³ South African Revenue Service Trade Statistics: [Trade Stats \(sars.gov.za\)](https://sars.gov.za/Trade-Stats)

Task 1.2: Identify potential companies that can participate in the trading of secondary cells, particularly large-scale energy storage systems (3 Expert Days).

The outcome of this task is to identify potential OEMs, suppliers, buyers, and resellers that can participate in the Battery Energy Storage Market Research Interviews. This task is intended to identify which companies participate in the trade of secondary cells, specifically large quantities of secondary cells that are intended for BESS applications. From this task, the consultant needs to:

- Establish OEM, suppliers, buyers, and resellers who participated in trading secondary cells between 2015 - current date, for Lithium-Ion and Lead Acid technology.

Work Package 2: Development of a shortlist of a minimum of 10 companies a questionnaire or interview guide and implement the interviewing process with shortlisted companies as well as an analysis of the results. (25 Expert Days)

In this work package, the consultant has to prepare a short list of candidate OEMs, suppliers, buyers, and resellers that can participate in the Market Research interviews. The consultant needs to decide on several companies to be short-listed but needs to ensure the intended outcome of the research can be deduced from the identified companies. The consultant will also develop a questionnaire or interview guide that can deduce outcomes related to the project objective. The consultant has three main milestones to accomplish in this work package, which include:

Task 2.1: Develop a short-list of a minimum of 10 companies that can be OEMs, suppliers, buyers, and resellers to participate in interviews and provide justification why short-listed candidates were selected as well as a detailed questionnaire or interview guide to be used in the process (5 Expert Days)

The consultant will in this task, develop a shortlist of companies that can participate in the Market Research interviews. The interviews need to deduce from the import data for Lithium Ion and Lead Acid technology, how much of it; is intended for battery energy storage in power generation. The consultant is to provide a justification as to why the companies are selected and will submit the shortlist and justification to GIZ and SAESA for reviewing and approval. The short-list maybe subject to change but a justification will be provided by GIZ and/or SAESA in that regard. The consultant can also provide tentative dates when they intend to schedule the interviews with respective companies. Should the consultant not be able to identify 10 companies to interview, they must in writing provide reason/s, this will be subject to approval by GIZ and SAESA. The consultant will furthermore prepare a draft questionnaire or interview guide for review to GIZ and SAESA.

Deliverables:

- Shortlist of a minimum of 10 companies selected to participate in the BESS Market Research Interviews.
- Justification to the companies selected to participate in the BESS Market Research Interviews.
- Questionnaire or interview guide to be used for the interviews

Task 2.2: Executing interviews with shortlisted companies including organise introductions (12 Expert Days)

Through this task and with the support of SAESA, the consultant will introduce the BESS Market Research study to shortlisted companies, schedule dates for interviews with the companies, and execute the actual interviews.

Task 2.3: Perform a detailed analysis of the interview results and deduce the outcome of the study from the results (8 Expert Days)

Through this task, the consultant will do a detailed analysis of the results, which should be able to deduce the following outcomes:

- An indication of storage capacity (watt-hour) that is represented by Customs Value (rands) and Statistical Quantity for Lithium Ion and Lead Acid battery imports in South Africa between the period 2015 – current date.
- Identification of volumes of import volumes intended for BESSs in the power sector
- Disaggregated revenue estimate between sectors and an identification of how much revenue went towards BESS in the power sector
- Disaggregated storage capacity(watt-hour) estimate between sectors and identification of storage capacity(watt-hour) that went towards BESS in the power sector.

Work Package 3: Preparation and publishing of the Battery Energy Storage System (BESS) Market Research study for Lithium-Ion and Lead Acid batteries (15 Expert Days)

This work activity will involve the preparation and presentation of the findings through a report and public presentation at a SAESA event. The first activity involves preparing a detailed Market Research study that outlines the results. The second activity will include publishing the study on the SAGEN and SAESA websites and presenting the findings at a SAESA event.

3.1. Preparation and presentation of results for the Battery Energy Storage System Market Research

The consultants must prepare a study that outlines the objective of the Market Research, the process undertaken to conduct the Market Research, assumptions, methodology, and the key results. The report shall present results in the form of tables, graphs, and diagrams; but not explicitly limited to this list. Results must be demonstrated in monthly/annual values.

Deliverables:

- Battery Energy Storage System (BESS) Market Research Report for Lithium Ion and Lead Acid technology in A4 format submitted to GIZ and SAESA. Please note that GIZ will be responsible for the layout and design of the report)

3.2. Publishing of market research report on the South African German Energy Program (SAGEN) website and South Africa Energy Storage Association (SAESA) website and presentation of the findings at a SAESA event.

The report developed under Task 3.1 will be published on the SAGEN and SAESA websites. In addition to that, the consultant will present the findings of the study at a SAESA event.

Tender requirements

The below qualifications represent the personnel who are suited to accomplish the objections as outlined in Section C.

1.1. Expert 1: Specialist (Market/Data) Analyst

1.1.1. General qualifications

Education: Degree/Masters in either Market Research, Data Science, Statistics, Economics, Maths, Business Administration, or Finance. Other related analytical qualifications will also be considered such as Computer Science and Engineering

Professional experience: 10 years experience in proven Market Research Analysis. Demonstrated working experience in data collection. Ability to interpret data and use statistical techniques to derive insights. Adequate knowledge of data collection methods. Strong analytical and critical thinking. Demonstrated experience in project management and team leading. Experience in Energy and/or Battery Energy Storage related projects.

1.1.2. Experience in the region/knowledge of the country

3+ years in carrying out Market Research Studies in South Africa

1.1.3. Language skills

Business fluency in English

2+ years in carrying out Market Research Studies in South Africa

2. Appropriateness of the proposed concept

The consultant must explicitly state in the proposal how the following objectives will be met:

Strategy:

The consultant is expected to consider the tasks outlined as per Section C and provide a detailed description and justification of the strategy in which they will implement for the delivery of the services.

Cooperation:

As the project involves several stakeholders, the consultant must explain how they intend to manage the interaction between relevant actors in the contractors' area of responsibility. Furthermore, provides information on strategies for establishing cooperation and then cooperating with the relevant actors.

Processes:

The consultant must explicitly present and explain the implementation plan, work steps, milestones, and schedule to meet the objectives stated in Section C.

Project Management of the Contractor:

The project management requirement for the objectives outlined in Section C must be specified. Furthermore, the consultant must state their approach to coordination.

Personal Concept:

The proposal must include CVs of personnel who are proposed to fulfill the positions described per qualifications listed under 1.1 and **Error! Reference source not found.**, the range of tasks involved, and the responsibility of each expert.

3. Specification of inputs

Fee days	Number of experts	Number of days per expert	Comments
• Preparation/debriefing	1	2	
• Implementation	1	48	
Travel expenses	Number of experts	Number of days/nights per experts	Comments
• Per-diem allowance in the country of assignment	1	10	
• Accommodation	1	10	
• Car Hire	1	10	
• Car Travel for own vehicle use	1	Determined by consultant	A total of 500km is anticipated
Flights	Number of experts	Number of flights per experts	Comments
• Domestic flights	1	10	
Other costs	Number of experts	Amount per experts	Comments
<ul style="list-style-type: none"> Flexible remuneration <p><i>In the case of a contract for work, the requirements for the assignment of personnel, travel, consumables, workshops/training do not apply.</i></p>	1	ZAR 34 060.00	<p>A budget of 34060 to contract value is foreseen for flexible remuneration. Please take this budget into account in your price schedule.</p> <p>Use of the flexible remuneration item requires prior written approval from GIZ.</p>

4. Requirements on the format of the tender

The proposal must be in English, legible, and must not exceed more than five pages. If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in the assessment. External content (e.g. links to websites) will also not be considered.

The CV in accordance to Section 1.1 and **Error! Reference source not found.**, must be in English and must not exceed four pages. They must clearly show the position and job position the proposed personnels hold and the duration they have been in those positions.

The contractor is not expected to use the days and budget in full, the number of days and budget will contractually agreed as maximum limits.

5. Other Requirements

- Please submit your proposal (technical and price proposal) in separate files/folder to ZA_Quotation@giz.de no later than 27th **October 2023** all documents must be in PDF. **Reference 83449944 in your subject line.**
- **Submission to any other email address may invalidate your bid.**
- Please do not mention any price for this measure on your cover letter/Technical proposal.
- Please submit your tax clearance certificate with the bidding documents.
- Please submit your price proposal in **ZAR**.
- Our General Terms of Conditions (attached) shall not be changed/amended should you be the winner of this tender. These General Terms and Conditions will form part of the contract should you be awarded this contract. By submitting your proposal, we will conclude that you have read and accepted these terms and conditions.
- Participating more than once in same tender is not allowed and it will lead to your proposal as well as that of the company where you appear more than once being disqualified. The responsibility rests with the companies to ensure that their partners/experts are not bidding/participating more than once in same tender.
- **Bidders are not allowed to communicate directly with any other person regarding this bid other than the procurement official/s. Failure to comply with this requirement may lead to your bid being disqualified.**
- Bidders must strictly avoid conflicts with other assignments or their own interests. Bidders found to have a conflict of interest shall be disqualified. Without limitation on the generality of the above, Bidders, and any of their affiliates, shall be considered to have a conflict of interest with one or more parties in this EOI and tender process, if they:
 - a) are or have been associated in the past, with a firm or any of its affiliates which have been engaged by GIZ or the Interim Supply Chain Management Council to provide services for the preparation of the design, specifications, Terms of Reference, cost analysis/estimation, and other documents to be used for the procurement of the services in this selection process;

- b) were involved in the preparation and/or design of the programme/project related to the services requested under this EOI and tender;
- c) are serving or have been serving in the past three months in the structures of the Interim Supply Chain Management; or
- d) are found to be in conflict for any other reason, as may be established by, or at the discretion of GIZ.

Scientific data

In the event of any uncertainty in the interpretation of a potential conflict of interest, Bidders must disclose to GIZ, and seek GIZ's confirmation on whether or not such a conflict exists.

- Similarly, the Bidders must disclose in their proposal their knowledge of the following:
 - a) if the owners, part-owners, officers, directors, controlling shareholders, of the bidding entity or key personnel are family members of GIZ staff involved in the procurement functions and/or the Interim SCM Council or any Implementing partner receiving services under this EOI or tender; and
 - b) all other circumstances that could potentially lead to actual or perceived conflict of interest, collusion or unfair competition practices.
- **Failure to disclose such an information may result in the rejection of the proposal or proposals affected by the non-disclosure.**
- **Bids sent via Dropbox and WeTransfer will not be accepted.**