MINUTES OF THE SCOPE CLARIFICATION MEETING

TENDER NO: CTT25965 – POWER BLOCK TECHNICAL STUDY PROJECT

(Techno Economical evaluation for the selection of Gas Turbine for a Gas to Power Project *(PROJECT ALPHA)*)

Meeting No.:		**Date:**	07 July 2025 1:00 p.m.
Present:	***PetroSA:*** Saseka Sihlwayi, Peter Nelson, Bheki Nkalitshana, Leon Bezuidenhout, Craig Beautement, Wessel Kruger ***Tenderers***: Archibald Nkomo, Arno Bakker, Fernando Azevedo (Pretoria) Wiléne de Bruin, De Beer Cyril, Frank Gentle, Smit Dewan,Gerard du Plessis, Wessel Kruger, Conradie Eben, Ngwenya Phindile, Sikho Motsuminyane Onalenna (O.F.),Vernon Harding, Lee, Geoffrey, Govender, Vanesha, The Bridge Lifestyle, Vince Itsoene, Ian Boggon, Corne Welgemoed, Cebo Silinga		
Apologies:			
Copies to:	All Tenderers		
Chair	Saseka Sihlwai	**Scribe:**	Saseka Sihlwai

DISCUSSION

1.	**Welcome & Introduction** The meeting commenced at 1:00 pm. The Chairperson welcomed everyone present at the meeting. All attendees introduced themselves.
2.	**Scope of Work & Technical Clarifications** PetroSA team provided an overview of the project, scope of work and technical requirements.
3.	**Clarification of Scope and Technical Questions:** • The project is a techno-economic evaluation to select the gas turbine model and configuration. This selection will inform the main feasibility engineering study. • Cost estimates are for comparison only, not for final approval or business case development. The engineering consultant is expected to: • Conduct a techno-economic evaluation. • Recommend the optimum gas turbine selection for the plant

The selected gas turbine must:

- Comply with technical criteria, including:
  - Emissions legislation.
  - Gas composition and pressure (from the company's own fields).
- Be the most cost-effective in terms of levelized cost of electricity.
- The evaluation will feed into an economic model, but only for comparison, not final investment decisions.
- The primary deliverable is the techno-economic selection of a combined cycle gas turbine (CCGT).
- Other configurations (e.g., open cycle, gas engines) were eliminated during the pre-feasibility phase.
- The study is limited to CCGT options.
- The pre-feasibility study had limited vendor input, mostly from Siemens.
- Compared to the pre-feasibility selection This study aims to:
  - Widen the vendor net.
  - Gather more accurate and diverse data from multiple manufacturers.
  - Ensure the best-informed selection for the feasibility engineering phase.

Question 1
Can consultants perform in-house configuration modelling using their own software, or is the expectation that only suppliers (e.g., Siemens) will do this?

Answer
- In-house modelling by consultants is welcome.
- The intent is for manufacturers to provide 3–4 configuration options each, within the required power generation capacity range.
- However, consultants can help narrow down options internally before engaging suppliers, to avoid overwhelming them with too many requests.

Question 2
Does PetroSA have upfront information or data that can be shared with the consultants to help meet the four-month delivery timeline as full investigation from scratch would typically require more than four months?

Answer
PetroSA will provide key technical inputs, i.e Gas composition ranges and gas pressure.

Question 3
Does PetroSA have a full site footprint, including: General Arrangement (GA) drawings, site layout, sizing limitations for the gas turbine installation

Answer
- PetroSA will provide the site footprint .
- The available area is very large and not expected to be a constraint.
- Preliminary comparisons with gas turbine manufacturers' proposed footprints show that PetroSA's available space is approximately double the

required size.
- The intention of this study is not to conduct significant engineering, but rather to support techno-economic evaluation and configuration selection

Note:
- This study represents the first phase of the full feasibility study, focused on gas turbine equipment selection.

Question 4
With the full commercial and technical proposal, does it mean the power plant or just the turbines?

Answer
Only the gas turbine, not the entire power plant

Question 5
Is the focus solely on the gas turbine? Some suppliers either subcontract or do not handle the HRSG or condenser systems in-house, whether water-cooled or air-cooled. Is the Consultants scope limited for the commercial and technical proposal to just the gas turbine — excluding the HRSG, the air-cooled condenser, the cooling water system, and the steam cycle? Or are we considering the broader Power Island?

Answer
The full commercial and technical proposals are to be obtained only for the gas turbine.
For other components such as, HRSG, steam turbine, air-cooled or water-cooled condenser, consultants are expected to provide estimated costs for comparison purposes only either from gas turbine OEMs or the consultant's own benchmarking and modelling expertise.
We require the highest level of accuracy for the gas turbine in order to make the selection of this equipment that will be the basis for the project engineering development going forward.

Question 6
What level of cost accuracy is expected for components other than the gas turbine, such as the HRSG, steam turbine, condenser systems?

Answer
- These estimates are required only for comparison purposes. Consultants are expected to use In-house knowledge from previous projects or quotes, or budget quotes from manufacturers, if necessary.
- The estimates should reflect relative differences between configurations, not final investment-grade figures.
- An accuracy range of approximately ±30% is acceptable.
- The gas turbine remains the primary cost driver and focus of detailed commercial and technical proposals.

Question 7
The cost estimates for non-turbine components (e.g., HRSG, steam turbine,

condenser) should be standard costing, or levelized costs ?, and whether only the electricity output should be levelized, or if the costs of surrounding components (e.g., HRSG, condenser, steam cycle) should also be included in the levelized calculation.

***Answer*:**
Yes, we looking at the levelized cost of electricity and all the components should be included, as they form part of the total cost of generating electricity.

Question 8
Could you clarify the level of cost accuracy used in the techno-economic analysis, particularly for the gas turbine or power block? You mentioned a 30% accuracy for the combined cycle — what was the accuracy for the initial portion?, Specifically, the gas turbine.

Answer
For the gas turbine, we would typically request a fully costed commercial proposal directly from the manufacturer, that would be sufficient for purchasing the gas turbine. The costing needs to be accurate enough for us to confidently proceed with the gas turbine selection.

Question 9
Are the heat rate and availability factors mentioned, are those for the combined cycle configuration or just the gas turbine?

Answer
Heat rate should be provided for both open cycle (gas turbine only basis) and combined cycle., Similarly the availability factors should be provided for both gas turbine alone and with other combined cycle equipment i.e. HRSG and steam turbine. That said, certain elements like the HRSG (Heat Recovery Steam Generator) availability may not be relevant for comparison, as they're likely to be consistent across all options — we'd typically assume 100%.

Question 10
Regarding the balance of plant items, would an order-of-magnitude estimate based on historical data be acceptable for your purposes?

Answer
Yes, it will be acceptable.

Note +/-30% accuracy is required for the HRSG, steam turbine, condenser.

Question 11
Where it says the consultant shall supply the techno-economic model, does that refer to the actual model file, or just the outputs for input into your own model?

Answer

The output and the model would be the normal process. Also, as mentioned, the consultant will be provided with the necessary input data sheet for the PetroSA techno-economic model. There's a specific format for submitting this data, which

	is outlined in Appendix A **Question 12** Are bidders required to fill in the pricing information on the portal. **Answer** There is a section in the portal where bidders need to enter the lump sum price as well. **Question 13** Is the contract a lump sum or cost reimbursable? **Answer** This will be a cost-reimbursable contract. Consultants are expected to include in their proposal a schedule of hours and hourly rates for each team member, categorized by role and discipline. Based on this, the total estimated lump sum for the work should be provided. Tender valuation will be based on the total estimated lump sum price. Any cost overruns must be justified through a formal scope change order and approved by PetroSA.
5.	**General** • Tenderers to submit the tender in time to enable us to assist you should you require assistance. • Tenderers to comply with all instruction on Tender Document in order to make the evaluation process easier. • All companies that do business with PetroSA must be registered on the National Treasury's Database. • Tenderer must pay attention to detail as failure to provide any of the information requested in the technical questionnaire will result in the tender not scoring points for that question. • Tenderers to check the PetroSA website regularly for updates regarding the Tender, i.e. minutes, etc. • For all updates / additional information go to: http://www.procurement.petrosa.com/tenders/tenders/default.aspx It is the tenderer's responsibility to visit the site on a regular basis.
6.	**Closure**

	The meeting was closed at about 14:37

Annexure "A"

The following documents were updated and emailed to bidders:

1. **Scope of work – Update numbering and project title.**
2. **CBA**
3. **Reference Table to be completed**
4. **Draft Consultancy Agreement – Lump Sum table updated**