



## REQUEST FOR INFORMATION (RFI55/2024/25): BDA: BLOWDOWN AIR COMPRESSOR

### TO ASSESS THE MARKET AVAILABILITY FOR THE SUPPLY AND COMMISSIONING OF COMPRESSORS, AS WELL AS THE SUPPLY OF PARTS AND SERVICES FOR POST-COMMISSIONING MAINTENANCE FOR THE CITY OF CAPE TOWN'S GENERATION DEPARTMENT

#### 1. Purpose

- 1.1. This is a Request for Information (RFI) that relates to the Supply of new compressors, Commissioning of those supplied compressors, and supply of maintenance parts and services to maintain the compressors after commissioning.
- 1.2. The purpose is to determine if any companies are able to supply and commission the required equipment, and provide services and repairs on these units, within a timeous period as determined by the City of Cape Town Engineers.
- 1.3. Identify alternative options to current equipment, that are readily available as standard equipment "of the shelf", while still achieving the minimum required specifications.

#### 2. Background

- 2.1. Steenbras Power Station is a Pumped Storage Scheme situated in Gordons Bay Cape Town. The station consists of 4x 45 MW Francis Turbines.
- 2.2. Each unit includes a BDC: Blowdown Air Compressor, which comprises two compressors, one air accumulator/vessel per shaft, and the necessary valves and pipework. Each system services the two units per shaft. An interconnection between the two shafts ensures redundancy in the system, allowing the compressors and air accumulator to service the other shaft if required.
- 2.3. This request for information is directed at the supply of new compressors, and capability to maintain these compressors through maintenance and spare parts.
- 2.4. Further information is available on request.

#### 3. Request for Information

- 3.1. This Request for Information (RFI) is not a request for proposal, request for quotation, offer or invitation for bid, nor does its issuance restrict the City of Cape Town in its eventual implementation activities.

- 3.2. The responses to the Request for Information will provide the City of Cape Town with information about products currently available in the market to support its required business capabilities.
- 3.3. The City of Cape Town may request additional information from the respondents and may request demonstrations (proof of concepts) to be provided. It is therefore important that respondents provide accurate and honest information in their responses.
- 3.4. This Request for Information will be published with the aim to collect information on multiple products and solutions offerings.

**4. Timeline**

The City is currently conducting research on available companies / services in the market. Thereafter, a decision will be made whether to proceed with a Request for Quotation / Tender Process.

- 4.1. RFI Release date: 17 January 2025
- 4.2. RFI Closing date: 21 February 2025

**5. Product and Solution Offering Information**

5.1. Specifications of current Blow Down Compressors

The current compressors, displace between 3 to 3.5 bar per blowdown equating to 0.72 m3 of air and water respectively at 30 bar and 58cfm, consuming 21.3kW, rotating at 1450rpm. See Figure 1 for the performance range.

*Table 1 LMF compressor specification*

Model	Max Pressure	Max Pressure2	Power	Power Conversion Factor	Power2	Flow	Speed
	<i>psig</i>	<i>Bar</i>	<i>hp</i>	<i>K to HP</i>	<i>Kw</i>	<i>cfm</i>	<i>rpm</i>
V16/3410 L3	436.0	30.1	28.6	0.7	21.3	58.0	1450.0

The compressors and auxiliary equipment, i.e. cooling, etc. is mounted on a base inside a sound enclosure on the turbine level of the plant. The dimensions will need to be measured by the interested parties, to verify the compliance of suggested equipment to the spatial requirements.

5.2. Measured performance curves of the current BDC (blow down compressor)

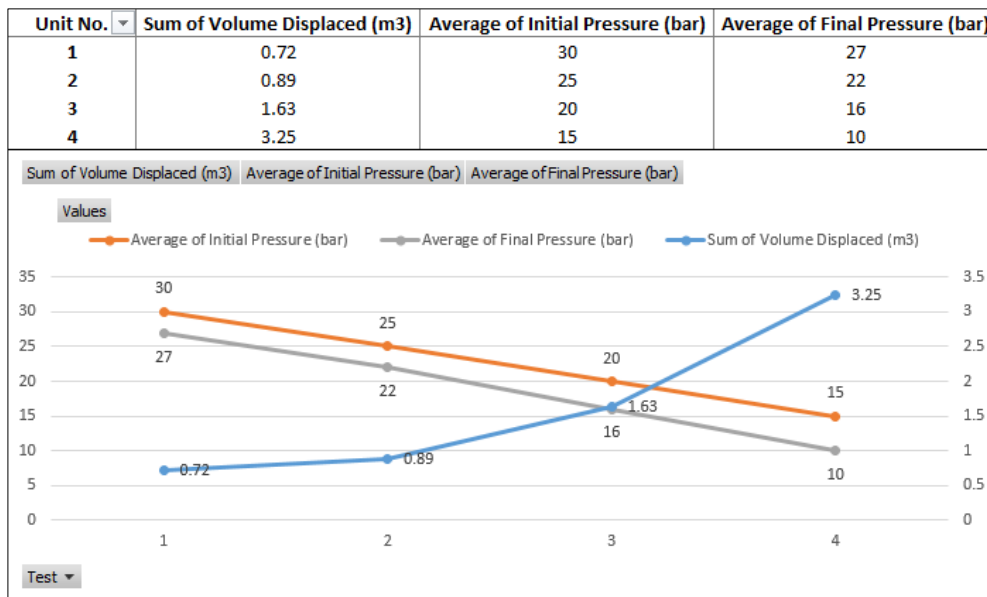


Figure 1 Combined performance and calculated data for LMF compressor

These curves suggest that the minimum requirement compressor pressure that will be considered is 20 bar, and the maximum is 30 bar (equivalent to current compressor).

5.3. Additional Information

5.3.1. Photos / Images of compressors details



Figure 2 Current LMF compressor

Table 2 LMF Compressor specification summary

LMF Compressor	
Air Supply	99 m <sup>3</sup> /h
Working Pressure	30 bar
Power Requirement	21.3 kW at 380 V



Figure 3 Image of LMF compressor in sound enclosure, including modification of air infeed to reduce air temp at inlet.

Table 3 Tabulated specification of the air vessel which the compressor supplies.

Air Vessel	
Design Pressure	35 bar
Working Pressure	30 bar
Capacity	6.3 m <sup>3</sup>



Figure 4 Compressor sound enclosure and air vessel.

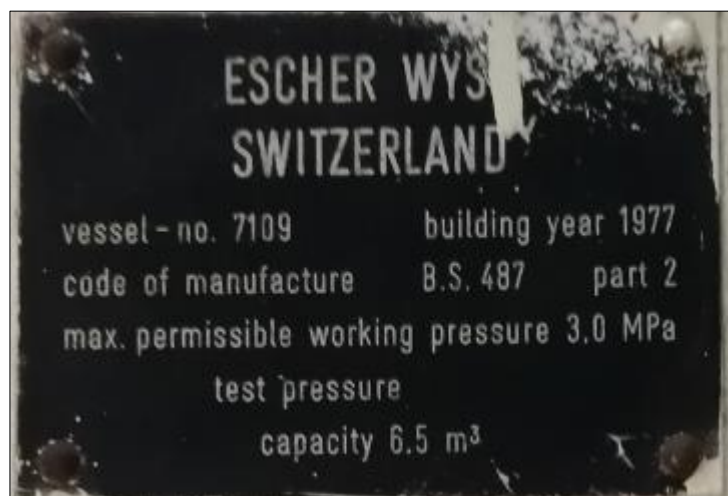


Figure 5 Nameplate on pressure vessel



Figure 6 Location of the compressor within the turbine shaft as viewed from ground level.



Figure 7 Positioning of the compressor as viewed from the turbine level.

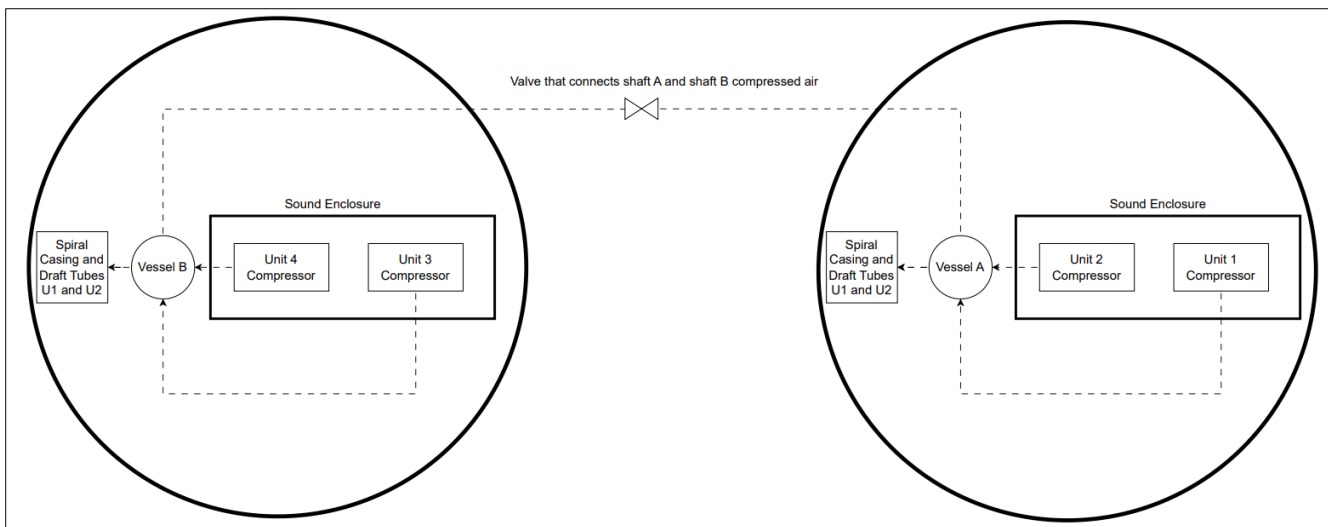


Figure 8 Diagram showing the system connections

This is only a diagrammatical representation of the system, further detail, and site visits may be requested to ascertain and verify.



Figure 9 Performance monitoring on current compressor.

Multiple gauges, and other data collection connections are integrated to the compressors. Respondents to advise if the proposed compressors have such functionalities.

**5.4. Company Offering**

5.4.1. Supply and commissioning

5.4.1.1. Is your company able to supply a minimum of 1, and a maximum of 4 Blow down Compressors that achieves a minimum of 20bar compressed air?

Yes	No
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5.4.1.2. If yes to above, please provide a brief description of your offerings.



5.4.1.3. Is the equipment referred to above considered to be standard / "off the shelf" equipment?

 Yes No

5.4.1.4. If yes to above, please provide a brief description of your offerings.


5.4.1.5. Is your company able to supply compressors that have "like for like" performance specifications, but may be considered "alternative options"?

 Yes No

5.4.1.6. If yes to above, please provide a brief description of your offerings.


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5.4.1.7. Is your company able to provide general repairs and maintenance on Blow down Compressors similar to the above specification?

 Yes

 No

5.4.1.8. If yes to above, please provide a brief description of your repair and service offerings / previous repairs done on the above mentioned plant.


5.4.1.9. If above answers was "yes", please provide an estimate price to manufacture and supply a minimum of 1, and a maximum of 4 compressors which could achieve the specifications as indicated above in Table 1, and in Figure 1.

Estimate Price	Manufacturing and Delivery Time

5.4.1.10. Are you able to install and commission this equipment and discussed above in Table 1, and in Figure 1.

 Yes

 No

5.4.1.11. If above answer was "yes", please provide an estimate price install and commission the discussed equipment, as per Table 1, and in Figure 1.



Estimate Price	Manufacturing and Delivery Time

5.4.1.12. How many years' experience does your company have in repairing / installing Compressors utilized in this manner in power stations?

0
  1≤5
  5≤10
  >10

5.4.1.13. Are you able to supply any of the spares and parts for the proposed compressor?

Yes
  No

5.4.1.13.1. If so, please list the spares that you can supply for the proposed compressors, include those which cannot be supplied by you.

Description	Yes	No

## 6. Interaction with Respondents

- 6.1. Respondents are advised that the City of Cape Town reserves the right not to utilise information gathered during the request for information process in order to complete a specification, which is to be put forth for tendering.
- 6.2. Send any questions to [BrettR.Syster@capetown.gov.za](mailto:BrettR.Syster@capetown.gov.za) should you have any queries.

## 7. Proof of Concept

- 7.1. The City of Cape Town reserves the right to engage respondents to look at different methods to validate and test information provided in response to this RFI. This may include a request for a proof of concept or a demo. This will not result in any financial contribution towards proofing the respondent(s) concepts but will allow the City of Cape Town to engage after the conclusion of this RFI with the aim to ensure the information provided is validated and tested.

## 8. No Obligation

- 8.1. This RFI places no obligation on the City of Cape Town to embark on any subsequent process to obtain any product or solution offering listed herein and respondents hereto shall obtain no preference or favour by responding to the Request for Information.
- 8.2. Responses to this RFI are voluntary. Do not include any proprietary, classified, confidential, trade secret, or sensitive information in your response. The responses will be reviewed by City staff, and individual feedback will not be provided to any respondent. The City of Cape Town will use information submitted in response to this Request for Information at its discretion. The City of Cape Town reserves the right to use any submitted information on its public websites, in reports, in summaries, in any possible resultant solicitation(s), grant(s), or cooperative agreement(s), or in the future development regarding this subject.
- 8.3. This RFI is for information and planning purposes only and shall not be construed as a solicitation, grant, or cooperative agreement, or as an obligation on the part of the City of Cape Town. The City of Cape Town will not pay for the preparation of any information submitted or for the use of such information. No basis for claims against the City of Cape Town shall arise as a result of a response to this request for information or from the use of such information.
- 8.4. The research obtained from this RFI will inform the technical and functional specification of the proposed goods and services to be obtained, which may then follow an open competitive bidding process, should the City of Cape Town opt to implement such a system (Viability and Feasibility assessment, budgetary provisions, etc.). The City of Cape Town reserves the right not to proceed with any further process, should the research/technology indicates it is not viable and feasible. The City of Cape Town reserve the right to applied

different procurement strategies, while exploring different methods to validate and test information provided in response to this RFI.

#### 9. **Submission Requirements**

- 9.1. Please provide all inputs electronically on or before **21 February 2025**.
- 9.2. All responses to be sent: [BrettR.Syster@capetown.gov.za](mailto:BrettR.Syster@capetown.gov.za)
- 9.3. Email subject line: RFI55/2024/25 response from [Insert company name]
- 9.4. Response format: PDF or MS Word

Thank you

#### **Demand Management**

Directorate of Finance

Department of Supply Chain Management