

Challenge #4

Seeking expertise and systems for integrated water management

Help Desk :

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Opportunity

Contract research, consulting engagement

Timelines

Phase 1 – Technology evaluation in 3-6 months

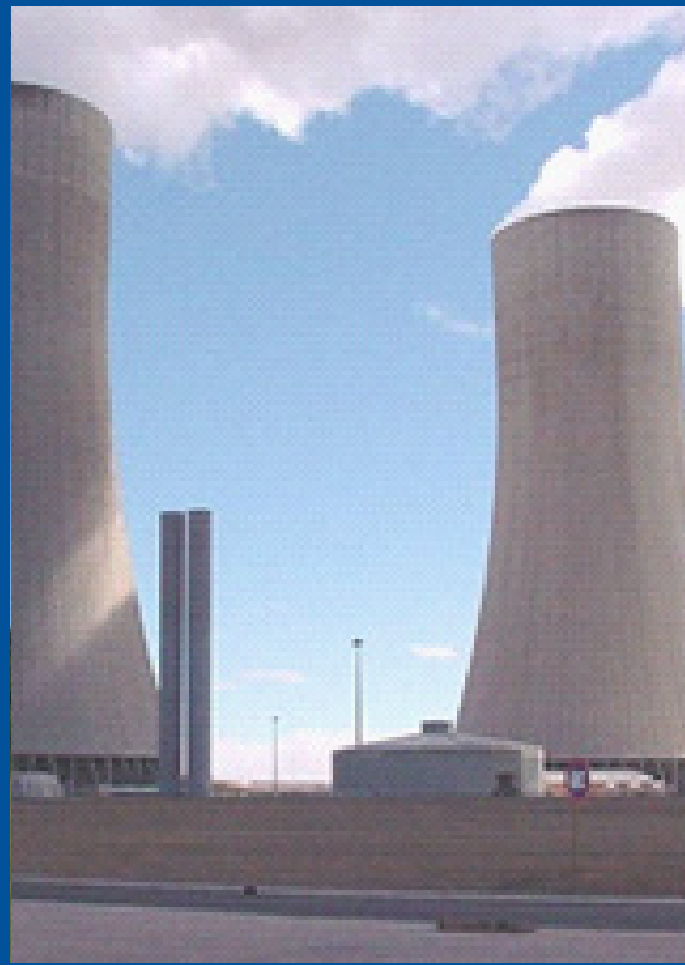
Phase 2 – Prototype development in 6-9 months

Phase 3 – Proof of concept in 3 months

Proposals may jump to advanced phase depending upon technology maturity

Financials

Phase 1 – Funding commensurate with proposed activity, according to sponsor's normal commercial agreement.



Challenge description

Eskom Holdings SOC Limited, a large scale electrical utility, seeks consultants and/or technology to address improved water utilization and management for industrial processes.

Ideal **consultants** will have:

- ❖ Expertise and experience in one or more of the following areas of interest:
 - o Integrated water management and accounting
 - o Environmentally sustainable water management
 - o Zero discharge water management
 - o Reducing water intake by closed loop water utilization
 - o Reducing waste generation from water treatment
 - o Brine utilization/neutralization/management
 - o Mine drainage recovery to cooling water
- ❖ Experience working with regulatory agencies
 - o Regulatory compliance and water account-

ing

- ❖ Willingness to serve on a Scientific Advisory Board with others who respond to this RFP

Successful **technology** will address one or more of the following:

- ❖ Optimize utilization of water resources
 - o Minimize the quantity of fresh water necessary to operate the industrial process
- ❖ Improve water quality while reducing or eliminating waste generation from water treatment
 - o Address presence of organic matter, microbiological control
- ❖ Render wastes from existing water treatment as benign material (RO Membranes)

Any **technology** must:

- ❖ Be compatible with harsh operating parameters including but not limited to:
 - o Large volume of water
 - o High cycle of concentration (Doubling effect on concentrations of elements with

evaporation)

- o Deteriorating initial water quality (hardness, organic matter, microbiological growth)

- o High evaporation rates due to climate

- ❖ Must be suitable for SA conditions and Eskom power stations volumes and size.

Background

Eskom is a vertically integrated electricity business consisting of generation, transmission and distribution underpinned by a strong customer focus capability. Furthermore Eskom is the dominant electricity generation business in South Africa and is a significant electricity supplier for the mining sector and municipalities in South Africa. Eskom has a very strong focus on customer satisfaction, environmental, health and safety performance and delivery of a reliable product to the end customers.

Eskom uses a substantial quantity of water in the generation of electricity for South Africa. Processes include cooling, steam generation dust control, potable water production and sewage treatment

Eskom recognizes that water is a precious resource and that they need to play a leading role in managing its use.

While Eskom has made good progress to reduce water use, they recognize that the need to further develop a water demand management strategy to enhance water quality and security and promote efficient usage and conservation.

Possible approaches

Possible technology approaches may include, but are not limited to:

- ❖ Non-chemical water treatment
- ❖ Waste neutralization methods
- ❖ Effective treatment of cooling water
- ❖ Waste management and minimization

Approaches not of interest

The following approaches are not of interest:

- ❖ Systems that not designed for harsh operating conditions
- ❖ UV or ozone for cooling water treatment.

Anticipated project phases or project plan

Phase 1 – Proof of concept

Demonsrate technology at client site using client’s water stream

Phase 2 – Optimization

Pilot scale system to optimize operation parameters and performance

Appropriate responses to this challenge

Responses from **companies** (small to large), **academic researchers**, other **research institutes**, **consultants**, **venture capitalists**, **entrepreneurs**, or **inventors** are welcome. For example:

I am a **representative** from a **company or academia** with deep understanding of water management issues and technology, and I am available for consulting.

I am a **representative** from a **company or academia** focused on technology for water management, water quality, or waste neutralization.

I am a **representative** from a **company or academia** that can provide a partial solution that will permit development of a robust system.

I am a **representative** from a **company or academia** with technology which should provide a solution ready for testing and transfer to commercial use.

I am a **representative** from a **company or academia** with technology which should provide a solution but that requires further research and development to ready it for transfer to commercial use.

Responding to this challenge

Appropriate responses will use the appropriate response template and address the following:

For **consulting**, individuals and organizations are asked to provide a one-page synopsis of their expertise and work history. This should include examples, and where applicable, experience in working with industry or regulatory/authoritative bodies, as well as a list of languages spoken.

In addition to this one-page document, please provide (via the Response Template):

- ❖ Name and contact information
- ❖ CV
- ❖ Areas of expertise
- ❖ Organization’s background
- ❖ Industry associations and affiliations
- ❖ Restrictions on time allowed for consulting
- ❖ Willingness to work with 3rd parties

For **technology**, individuals and organizations should provide (via the Response Template):

- ❖ High level description of proposed technology including:
 - o Working principle
 - o Availability of technical data such as specifications.
 - o Technology maturity (concept, prototype, ready to commercialize, commercialized)
- ❖ Pathway to commercial or industrial scale including timing and estimated budget
- ❖ Estimated return on investment
- ❖ Position on intellectual property including patent references
- ❖ Desired relationship with sponsor
- ❖ Willingness to work with third parties
- ❖ Team description and related experience

RESPONSE EVALUATION

Eskom Holdings SOC Limited will evaluate the response using the following criteria:

- ❖ Overall scientific and technical merit of the proposed approach
- ❖ Approach to proof of concept or performance
- ❖ Potential for proprietary position (i.e., is the technology novel or protectable)
- ❖ Economic potential of concept
- ❖ Respondent’s capabilities and related experience
- ❖ Realism of the proposed plan and cost estimates

Eskom Holdings SOC Limited will contact respondents with highly responsive proposals for next steps

Non-confidential disclosure

By submitting a Response you represent that the Response does not and will not be deemed to contain any confidential information of any kind whatsoever.

By submitting a Response, you acknowledge that Eskom reserves the sole and absolute right and discretion to select for award all, some, or none of the Responses received for this announcement. Eskom also may choose to select only specific tasks within a proposal for award. Eskom has the sole and absolute discretion to determine all award amounts.