



**REQUEST FOR INFORMATION
(NON-COMPETITIVE):**

ESKOM HOLDINGS SOC LTD

FOR

THE SOUTH AFRICAN NUCLEAR NEW BUILD PROGRAMME

RFI No. GEN3281

Deadline for submission: 31 January 2017 hours at 10:00AM (South African Standard Time)

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20 December 2016

Ref: GEN3281

1 LETTER OF INVITATION (REQUEST FOR INFORMATION)

Eskom Holdings SOC Ltd ("**Eskom**") invites you to submit:

- Information for the works/goods/services as stated in the cover letter.
- The Request for Information (RFI) shall be submitted as **an original and 1 (one) copies**

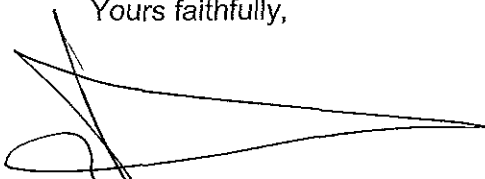
This RFI is a stand-alone information-gathering and market-testing exercise only, and is **NOT** a competitive tender. Therefore, the information provided will **not** be used as a basis for awarding a contract or order, or in any manner preclude a supplier's participation in future competitive tender / enquiry. Eskom encourages responses to this RFI to ensure information is sourced which may assist with the preparation of future competitive tender / enquiry relating to the NNBP.

As part of this RFI, information is requested from Respondents which also relates to the mandate of NECSA as the anchor for nuclear energy research, development and innovation in South Africa, which extends to fuel cycle facilities and a CPR (Commercial Production Reactor). Such information may be used by NECSA for purposes of developing the elements of the proposed NNBP procurement programme relating to its mandate. In responding to this RFI, the Respondent acknowledges that it understands, accepts and acknowledges that the information it submits will be used by both Eskom and NECSA. The information provided will not be construed as a financial commitment by parties.


If you intend on participating in this RFI process, you are requested to complete the attached Acknowledgement Form and return by e-mail to Nnbp.Rfi@eskom.co.za as indicated on the form by 31 January 2017. Any queries pertaining to this RFI should be e-mailed to Nnbp.Rfi@eskom.co.za

We look forward to receipt of your response.

Yours faithfully,



Mr D Nicholls
Chief Nuclear Officer


	Request for Information (RFI)	Unique Identifier	240-72663051
		Revision	Rev. 0
		Revision Date	Aug 2018
		Group Technology and Commercial	
		RFI no	GEN3271

DISCLAIMER

While all reasonable care has been taken in preparing this RFI, the information has been prepared by Eskom/NECSA in good faith, based on information obtained from various sources. However, neither Eskom/NECSA nor any of its advisors accept any liability or responsibility for the adequacy, accuracy or completeness of any of the information or views stated herein.

Save where expressly stipulated otherwise, no representation or warranty (whether express or implied) is or will be given by Eskom/NECSA or any of its officers, employees, servants, agents, advisors or any other person with respect to the information or opinions contained in this RFI, or in relation to this RFI and or the design of a potential procurement programme.

Eskom reserves the right to adopt any proposal made by any person responding to this RFI at any time and to include such proposal in any documents which may or may not be made available at any stage in the design of the potential procurement programme to any other persons responding to this RFI, without the obligation or liability to pay any compensation or reimbursement of any nature to any person pursuant to such adoption.

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ACKNOWLEDGEMENT FORM

TO	The ESKOM Representative	FROM	
	_____	M	_____
	_____	Sender	_____
Attention	_____	Fax	_____
E-mail	Nnbp.Rfi@eskom.co.za	No	_____

**RFI ENQUIRY NO. GEN3281:
 INTENTION TO RESPOND TO THE REQUEST FOR INFORMATION (RFI) FOR THE SOUTH AFRICAN
 NUCLEAR NEW BUILD PROGRAMME (THE WORKS).**

We are in receipt of the RFI from Eskom Holdings SOC Ltd dated **20 December 2016** We confirm that the documentation received by us is: *(delete / complete as applicable)*

Either: Correct as stated in the attached list of Contents, and that each document is complete.
[tick box if documentation complete]

Or: Incorrect or incomplete for the following reasons


Please select either statement 1 or 2 below and delete the other:

1. We have noted the *deadline for the RFI Response* and will be submitting our response before the closing date as requested
2. We do not intend to submit the information for this RFI Our reason for not wishing to submit the information is as follows

3. We have read and accepted the disclaimer set out above and accept the terms and conditions set out in this RFI

Yours faithfully

 for the *Supplier*

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2 DEFINITIONS

2.1 In this RFI, except as otherwise defined herein, the following terms shall have the following meanings-

2.1.1 "**CPR**" means Commercial Production Reactor (primarily for Isotope Production);

2.1.2 "**ERA**" means the Electricity Regulation Act No. 4 of 2006;

2.1.3 "**Minister**" means the Minister of Energy;

2.1.4 "**NECSA**" means the South African Nuclear Energy Corporation SOC Ltd, registration number 2000/003735/06, as incorporated pursuant to the Nuclear Energy Act, No 46 of 1999;

2.1.5 "**NEP**" means the Nuclear Energy Policy, 2008,

2.1.6 "**NNBP**" or "**Works**" means the South African Nuclear New Build Programme in respect of the following elements –

2.1.6.1 the NPP providing up to 9 600 MWe;

2.1.6.2 the CPR at a minimum of 20 MWe;


2.1.6.3 Nuclear Fuel Cycle – Front End, and

2.1.6.4 Nuclear Fuel Cycle – Back End;

2.1.7 "**NPP**" means Nuclear Power Plant, consisting of all Units of the same type of the Pressurised Water Reactor,

2.1.8 "**Pressurised Water Reactor**" means a nuclear reactor in which the temperature of the reactor is moderated by water at a high pressure;

2.1.9 "**Respondent**" means any entity or consortium that submits an RFI Response in response to this RFI;

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- 2.1.10 "RFI" means this request for information document relating to the NNBP;
- 2.1.11 "RFI Response" means the response to this RFI submitted together with all necessary supporting documentation, and
- 2.1.12 "RFP" means the request for qualification and proposals to be issued in respect of the Works

3 RFI DATA


Eskom's Standard Conditions of Tender makes several references to the Tender / Enquiry Data for details that apply specifically to this RFI. Each item of data provided below is cross-referenced in square brackets like these [] to the applicable clause in the Eskom Standard Conditions of Tender to which the data mainly applies.

a. General

- [1.1] The Eskom Representative is
 - Address: **Eskom Megawatt Park,
Maxwell Drive, Sunninghill, 2191**
 - E mail: **Nnbp.Rfi@eskom.co.za**

b. Respondent's obligations

- [2.9] The closing time for clarification of queries pertaining to this RFI is **10 (ten) days** before the deadline for submission
- [2.20] The submission shall be submitted as an original, 1 (one) hardcopy and 1 (one) electronic copy on CD/ DVD
- [2.22] The RFI enquiry number is **GEN3281**

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- [2.23] The submission shall be addressed to Eskom as follows:

RFI Submission Enquiry no.: GEN3281

Tender Receiving Office (Main Reception)
Eskom Megawatt Park
Maxwell Drive
Sunninghill, 2191, Sandton
Gauteng
REPUBLIC OF SOUTH AFRICA

- [2.25] The place for delivery of the submission is the Eskom Tender Box located at:

Tender Receiving Office (Main Reception)
Eskom Megawatt Park
Maxwell Drive
Sunninghill, 2191, Sandton
Gauteng
REPUBLIC OF SOUTH AFRICA


- [2.27 & 3.3] The *deadline for submission of the RFI Responses* is **10:00 AM on 28 April 2017** (South African Standard Time) RFI Responses received after the deadline can, in the sole discretion of Eskom, be rejected without consideration. RFI Responses can be received prior to the deadline; however only complete RFI Responses will be considered.

c. Commercial Process


RFI Timetable

The timetable for the RFI process is set out as follows

Item	Action	Date
1	RFI issue date	21 December 2016
2	Submission of the acknowledgement form confirming the intent to submit a response	31 January 2017

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Item	Action	Date
4	Closing date to submit queries for clarification	17 April 2017
5	RFI closing date and time	28 April 2017, 10:00 AM (South African Standard Time)

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d. Response Format

All submitted responses must be typed in English, should contain all the required information including all RFI forms and be duly completed in accordance with this request for information.

An original signed paper version together with one (1) hardcopy and one (1) electronic copy on CD/DVD to comprise a complete RFI. All copies of the RFI must be supplied in a sealed envelope(s)

e. Copy quality

All printed and electronic copies of each response shall be identical to the original save for identifying them as "Original", "Hard Copy 1 of 1" and "E-copy 1 of 1"

In the event there is a discrepancy between the original, copy of original document and electronic copy, the original will supersede the copy of the original and the electronic copy

f. Cost of RFI Response

Costs incurred by the Respondent in relation to the RFI Response are for the Respondents account and under no circumstances will they be borne by Eskom or NECSA

g. Use of Information

The information disclosed by the Respondent as part of this RFI Response will be used by Eskom and NECSA, including their respective advisors, contractors and/or agents for purposes of gaining updated market information relating to various elements of the proposed NNBP for potential future competitive tenders / enquiries.


h. Confidentiality

Any information disclosed as part of the RFI Response by any Respondent to this RFI process and any subsequent processes and/or engagement relating thereto will be treated as strictly private and confidential and will be used for the purposes contemplated in paragraph (g) above. The Respondents responding to this RFI process accept the terms and conditions under which this process is published and their respective RFI Response will be made.

i. Nuclear New Build Programme (NNBP) Scope of Work

Introduction

In order to effectively achieve the national objectives of the NNBP or nuclear programme as referred to under the section 34 Determination read with the NEP, Cabinet resolved that

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Eskom and NECSA are the only institutions in South Africa which have the ability to effectively deliver on the nuclear programme.

In light of that, on **14 December 2016** under Government Notice **GNR 1557** in Government Gazette **40494**, the Minister of Energy, in consultation with NERSA, acting under section 34(1) of the ERA published an amended determination designating Eskom or its subsidiary as the procurer of the nuclear programme ("**Amended Section 34 Determination**")


Eskom will be engaging with the relevant national authorities to obtain the requisite authorisations. NECSA will follow parallel approval processes to that of Eskom in order to obtain such approvals legally required for elements of the NNBP within its mandate

In terms of the NEP the following policy principles, among others, are driving the proposed NNBP process: -

- *"P2. Nuclear Energy shall contribute to economic growth and technology development in South Africa through investment in infrastructure, creation of jobs and the further development of skills workers."*
- *"P6. Nuclear energy shall be used only for peaceful purposes and in conformity with national and international legal obligations and commitments."*
- *"P10. South Africa shall strive to acquire technology know-how and skills to enable design, development, construction and marketing of its own nuclear reactor and fuel cycle systems. To this end the industrial support base for the nuclear sector shall be developed as appropriate, taking into account the scale of the national programmes Technology transfer shall be optimised in any procurement of nuclear and related equipment."*
- *"P16. Government shall endeavour to implement a fleet approach to power reactor procurement which is needed to optimize the industrial process and ensure economies of scale."; and*
- *"In order to implement a sustainable nuclear programme and obtain all the potential economic benefits South Africa shall endeavour to implement, or obtain interests in, the complete nuclear fuel cycle (..)"*

Overview of the NNBP with reference to the NEP

In terms of the reactor type, the Nuclear Energy Policy ("NEP") states that the power reactors to be used in South Africa will be of the Pressurised Water Reactors ("**PWRs**") type. It is Eskom's intent that the codes and standards adopted for the NNBP shall be based on those of the vendor country subject to any modifications required in meeting South African specific Eskom regulatory requirements

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The intention to create a South African full scope civil nuclear power program, as defined in the NEP and to meet the needs defined in the Integrated Resource Plan (IRP) 2010 (as updated), requires South Africa to have a long term partner to support the establishment of an associated industry, the design and construction of the NPPs, the establishment of a full scope nuclear fuel cycle as well as the construction of a CPR to replace the current SAFARI-1, the existing CPR. These would be underpinned by technology as well as skills transfer.


The NNBP may include, but is not limited to.

- a. The Engineering, Procurement and Construction (EPC) of NPP Units 1 and 2;
- b. Establishment of a framework agreement for orders of NPPs beyond those in (a),
- c. Fuel supply contract for the initial operation of NPPs,
- d. Supply of the training and engineering simulators for the NPPs;
- e. Licensing support for the NPPs
- f. Intellectual Property (IP) transfer of the NPP nuclear and conventional island design, licensing, manufacturing, construction, installation and commissioning;
- g. Supply of Intellectual Property (IP) and long lead items to support localisation of some components for the balance of the 9.6 gigawatts (GW)
- h. EPC and licensing support for the nuclear fuel cycle facilities
- i. IP transfer for NPP fuel cycle facilities;
- j. EPC and licensing support for the CPR;
- k. IP transfer for nuclear fuel fabrication for the CPR,
- l. Supply of training and engineering simulators for the CPR;
- m. Overall training and skills development for the South African nuclear programme; and
- n. IP transfer to local companies for the design, manufacturing; construction, installation, commissioning and servicing of components and systems.

j. Information Requested in respect of the proposed NNBP

Eskom and NECSA requests any and all entities or organisations that wish to submit a response to this RFI under the nuclear programme contemplated by the Amended Section 34 Determination to submit responses.

The RFI Response submitted should include the information set out below and such supporting documents in respect thereof.

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The following information is required from the Respondents.

I. Experiences in existing domestic and export PWR NPP projects in terms of:

- Installed capacity of NPP
- Overnight cost of construction, base year and base currency of project costs
- Contract price adjustments
- Contract type (e.g. fixed price, target price, cost plus, etc.)
- Project scope of supply
- Project schedule
- Construction staff numbers

II. Expected fleet and site learning in terms of:

The experience gained from nuclear construction programmes in the last 40 years has shown that there appears to be significant cost and time reductions on the NPP construction costs over the construction of a fleet of standardised NPP units. There has also been an identified reduction in costs and schedules over the units built upon a single site

- Provide detail cost savings, and any specific issues that improve or impair the expected reductions.

III. Impact of a multi-unit, site on cost (Opex and Capex):

Eskom has experience of operating a single, twin unit nuclear power station. It is understood that the overall costing of a larger number of units on a site reduces the specific costs related to each unit, both in capital and operating areas. This is seen to be because of shared facilities and resources.

- Provide detail of such cost savings, and any specific issues that improve or impair the expected reductions.

IV. Impact of time spacing of the construction of NPP units


The cost of mobilisation and demobilisation of construction resources has a clear impact on the cost of construction of NPPs.

- Provide detail in the impact of different sequencing of NPP construction, in terms of the period between commissioning of units, on the overall cost of construction.

V. Financing solutions and related conditions:

Please provide details of the following:

- Examples of financing solutions, financing sources and ownership structures of previous and current NPP build projects, including lessons learned, successes and failures on the above and the reasons therefore,
- Estimate of levelled cost of ownership, with an indication of the input parameters;

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- Estimate of sustaining capital,
- Estimate of decommission provisions
- Recommendations of the most optimal financing solution and financing sources for a nuclear plant as well as the envisaged nuclear fleet strategy, including the maximum ECA financing availability,
- Conditions, security and guarantees required by respective parties, including the vendor, financiers, host country and employer;
- Intention, capability and pre-conditions on providing financing for a nuclear plant as well as for the nuclear fleet strategy,
- Financing support, guarantees and other support available from your vendor consortium countries;
- Apportionment of the various nuclear plant risks during construction, operation and decommissioning,
- Impact of the build execution timing of the nuclear first plant and follow-on fleet on the funding cash flow requirements, financing risks and financing solutions.

VI. Localisation model:

The Nuclear Energy Policy expresses a desire to transform the local industry with IP transfer, skills development and industrial/ manufacturing capability. In this context please provide the following information:


- Examples of localisation that your organisation has implemented to a foreign country,
- Suggestions on a path to allow for deeper localisation in South Africa;
- Outlining key enablers towards meaningful localisation;
- Priority elements to localise in view of the state of the South African local industry;
- Maximum localisation percentage obtainable given South Africa's current legislation and associated cost and investment implications.

VII. Contracting approach

Contracting methodology for staged fleet contracting, vendor suggestions, view on forming joint ventures, phased partnership approach and unfolding of localisation.

Please provide:

- Contracting proposals to enable a fleet approach towards 9600+ MWe of nuclear power plants;
- Optimum number of units per site to leverage on localisation and skills;
- Optimum spacing of units constructed per site;
- Proposal of the intra- and inter-site learning rates,
- Examples of where joint ventures were used for localisation partnerships,
- Proposal of how the joint-ventures transform from predominantly vendor led and owned to majority domestically owned in line with domestic requirements and regulations,

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- Suggestions on risk mitigation

VIII. Nuclear fuel fabrication facility establishment

- Experience on the establishment of domestic nuclear fuel fabrication facilities,
- Experiences on domestic fuel cycle participation within the vendor supply chain and international market;


IX. Commercial Production Reactor

- Experience on the localisation of fabrication and systems for the establishment of CPR's as defined.

X. Further Information

Eskom and/or Necsa reserves the right to seek additional information from the Respondent regarding its RFI Response, as it may, in its sole discretion, determine, whether such information has been requested *under this RFI or otherwise in respect of its RFI Response* if so required by Eskom and/or Necsa

All or part of the information provided may be used in the development of solutions, preparation of feasibility studies and/or compilation of technical requirements/specifications for such potential tender invitations of the NNBP to ensure it is balanced and objective.

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PART A RESPONSE SHEET IN TERMS OF A REQUEST FOR INFORMATION <i>To be completed by the supplier</i>			
To	Eskom Holdings SOC Ltd	Date	
Attention			
Tel no		Fax no and /or e-mail address	
From <i>[insert the registered full legal name of the company]</i>		Address	
Address <i>(insert the physical address of the company)</i>			
Sender <i>[insert the full name of the sender at the company]</i>			
Description of the goods	THE SOUTH AFRICAN NUCLEAR NEW BUILD PROGRAMME		

Supplier:

Name	Designation	Signature	Date
Telephone number		e-mail address	