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REPORT

ZA

2018

Energy

South Africa's nuclear new-build programme

The domestic requirements for nuclear energy procurement and public finance implications

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Cover photograph: Shutterstock.com

Citation: Prins, N (2018) South Africa's nuclear new-build programme: The domestic requirements for nuclear energy procurement and public finance implications, WWF South Africa, Cape Town

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Series overview

The World Wide Fund for Nature, with the generous funding of the Open Society Foundation, South Africa, launched a research initiative to unpack and understand the South African Governments strategy for the nuclear new build programme to date, its possible strategy going forward, and possible points of intervention for civil society groups and other stakeholders opposed to the nuclear new build programme.

This report is the first in the series which includes the following reports:

- *South Africa's nuclear new-build programme: Who are the players and what are the potential strategies for pushing the nuclear new-build programme?*
www.wwf.org.za/report/nuclear_new_build_programme_players_strategies
- *South Africa's nuclear new-build programme: The domestic requirements for nuclear energy procurement and public finance implications*
www.wwf.org.za/report/nuclear_new_build_programme_domestic_requirements

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ACRONYMS AND ABBREVIATIONS

BRICS	Brazil, Russia, India, China and South Africa
CIDB	Construction Industry Development Board
CPO	Chief Procurement Officer
CSP	Concentrated solar power
DBSA	Development Bank of Southern Africa
DG	Director General
DoE	Department of Energy
dti	Department of Trade and Industry
EIUG	Energy Intensive Users Group
ERA	Electricity Regulation Act
FLC	Fiscal Liability Committee
IAEA	International Atomic Energy Agency
IDC	Industrial Development Corporation
IGA	Intergovernmental agreement
IPAP	Industrial Policy Action Plan
IPP	Independent power producer
IRP	Integrated Resource Plan
NECSA	Nuclear Energy Corporation of South Africa
NERA	National Energy Regulator Act
NERSA	National Energy Regulator of South Africa
NDP	National Development Plan
NGO	Non-governmental organisation
PFMA	Public Finance Management Act
PPA	Power purchase agreements
PPP	Public Private Partnership
PPPFA	Preferential Procurement Policy Framework Act
RFI	Request for information
RFP	Request for proposal
SAA	South African Airways
SIPDM	Standard for Infrastructure Procurement and Delivery Management
SOE	State-owned enterprise
SPV	Special purpose vehicle



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The central hall of a Russian nuclear reactor showing the reactor lid during maintenance and replacement of the reactor fuel elements.

INTRODUCTION

The first report in this series¹ explored the various stakeholders in the nuclear energy debate and the South African government's strategy to push the nuclear new-build programme under the Zuma administration. It also explored possible strategies the current government could use to drive the nuclear new-build programme if it should choose to do so, and points of intervention for those seeking to oppose it.

This report builds on the previous one. It explores the domestic requirements for nuclear energy procurement, the public finance implications, as well as as further points of intervention for those seeking to oppose the programme. As such, it lays out the various domestic requirements governing the procurement of nuclear energy. These range from general procurement legislation, specific regulations related to infrastructure procurement and energy-sector regulations specific to nuclear and, finally, industrial policy considerations.

¹ Available online at wwf.org/report/nuclear_new_build_programme_players_strategies

NATIONAL PROCUREMENT REQUIREMENTS

National Procurement Requirements

1. Public Finance Management Act, 1999

2. Standard for Infrastructure Procurement and Delivery Management

3. Preferential Procurement Policy Framework Act, 2000

Public Finance Management Act, 1999

South Africa's public sector procurement rules (at national government or public entity level) are laid out in the Public Finance Management Act 29 of 1999 (PFMA).² All PMFA requirements and regulations associated with the PFMA³ that have subsequently been passed must be complied with.

The PFMA (and section 217 of the Constitution, which forms the foundation of the PFMA) requires all procurement to be 'fair, equitable, transparent, competitive and cost-effective'. This is known as the 'big five' of procurement. Competitive procurement, in particular, carries a lot of weight in both the Constitution and the PFMA.

Deviations from the PMFA can be granted by accounting officers, but only in specific cases such as emergencies resulting from natural disasters or life-threatening situations. Any deviations above R1 million must, according to an instruction issued by the National Treasury in 2007, be reported to the Treasury and the Auditor-General.⁴ Furthermore, extensions or variations on contracts above certain values (R15 million or 15% for goods and services and R20 million or 20% for construction works) must, according to an instruction issued by the Treasury in 2011, be approved by the Treasury.⁵ The following aspects of the PMFA are most pertinent to nuclear energy procurement.

The PFMA's insistence on competitiveness and implications for nuclear procurement

- **A government-to-government deal for the procurement of nuclear is not an option:** Given the PFMA's insistence on competitiveness, this is not an option for South Africa. Both the Department of Energy's (DoE's) legal reviewers and procurement authorities have confirmed this.
- **A closed bid will likely not be permitted:** It is unlikely that a closed bid (where only a few selected providers are invited to tender) will be permitted,

2 The PFMA can be downloaded from the National Treasury website: treasury.gov.za/legislation/PFMA/act.pdf

3 The latest set of Treasury Regulations can be downloaded at treasury.gov.za/legislation/pfma/regulations/gazette_22219.pdf

4 National Treasury. 1 April 2007. *Procurement of Goods and Services by Means Other than through invitation of Competitive Bids (National Treasury Practice Notes 6 of 2007/07)*. Pretoria: National Treasury.

5 National Treasury. 31 May 2011. *National Treasury Instruction Note on Enhancing Compliance Monitoring and Improving Transparency and Accountability in Supply Chain Management*. Pretoria: National Treasury.

because of the large and strategic nature of the nuclear fleet procurement and the PMFA's insistence on competitiveness.

The possibility for manipulation in an open bid process

Given the limitations imposed by the PMFA, the South African government's strategy appears to have been to pursue an open bid process, where any vendor can bid, and the documents are available to anyone on payment of a fee. While certainly more transparent than a closed bid process, an open bid process with competitive tenders can also be subject to manipulation. It is possible, for example, to design a tender document in such a way that it favours a preferred bidder. **Given this, it is important to watch for the specific details in the Terms of Reference, particularly the part known as the 'Evaluation Criteria'**.⁶ Examples of how the criteria might be manipulated to suit a particular outcome include the following:

- The criteria favour a particular technology or product, which only one vendor supplies.
- The criteria favour a certain number of years' experience, or breadth of experience across a number of areas, that only one vendor has.
- The criteria allocate bonus points for additional nuclear products and services (for example, supplying fuel at a discount rate or the removal of nuclear waste) that only one vendor is offering.

The possibility of vendors submitting unrealistic bids

Vendors may seek to make their bids more competitive by agreeing to unrealistic conditions, for example:

- **Unrealistic localisation promises:** The vendor might offer to achieve unrealistically high levels of localisation⁷ on the nuclear build. Globally, it is common practice for vendors to claim high levels of localisation to make their bids more competitive. Whether these localisation benefits actually materialise only becomes evident many years later (when it is too late to cancel the contract). Whether unrealistic localisation claims are picked up on and questioned by the bid evaluators will depend on the level of scrutiny (or bias) of the bid evaluators.
- **Unrealistic pricing:** A major focus of the competitive bidding process is price. It is possible that the estimates given are far too optimistic or could even amount to deliberate underpricing. Underpricing is not an irrational strategy from a vendor's perspective. With large, complex projects like nuclear builds, cost overruns are often only discovered late in the process. By that time it may be too late for the procurer to change contractors. Moreover, while contractors might legally be liable for the overruns under fixed-priced contracts, contractors can dispute that they are to blame for the overruns. This can result in a lengthy legal battle, which a client country would seek to avoid. In addition, it is possible that unless the client country shares some of the cost burden, the contractor may not be able to continue.

⁶ These itemised 'Evaluation Criteria' should always be presented in the tender document.

⁷ Localisation refers to the 'manufacturing in *South Africa* of goods and components and/or the assembly thereof' (Infrastructure Dialogues, 2014).

The pre-qualification and pre-engagement of bidders is not permitted

The PFMA does not allow for the pre-qualification of bidders through so-called ‘pre-engagement activities’ because pre-qualification does not meet the criteria of transparency and competitiveness. Therefore study tours, vendor parade workshops,

international agreements or any other engagements that take place before formalised tender proceedings commence cannot be used to pre-qualify bidders in South Africa. This does not mean that pre-engagement is illegal, provided it is only used to gather information from the market to better inform the procurer.

16A8.3 A supply chain management official or other role player–

- (a) must recognise and disclose any conflict of interest that may arise;
- (b) must treat all suppliers and potential suppliers equitably;
- (c) may not use their position for private gain or to improperly benefit another person;
- (d) must ensure that they do not compromise the credibility or integrity of the supply chain management system through the acceptance of gifts or hospitality or any other act;
- (e) must be scrupulous in their use of public property; and
- (f) must assist accounting officers or accounting authorities in combating corruption and fraud in the supply chain management system.

However, once tender processes have commenced or are imminent, the procurement rules are very sensitive to pre-engagement. They prohibit the procurer from conferring any advantage to a bidder, such as the dissemination of useful information or the sharing of insights. This is viewed as providing the bidder with a competitive advantage, which circumvents the requirements of fairness and transparency. Any evidence of engagement with bidders once a tender process has begun usually leads to serious consequences for bidders and officials, such as the tender being cancelled, the bidders being disqualified and the public officials involved being disciplined.

Furthermore, as Treasury Regulation 16A8.3(b) states that ‘[a] supply chain management official or other role player must treat all suppliers and potential suppliers equitably’, pre-engagements that are done on an individual basis are not considered equitable. This is because there is no guarantee that all pre-engagements will be conducted in the same manner. Officials can therefore steer different suppliers in a particular direction, even in very subtle ways, which may favour a preferred candidate.

The legality of the vendor parades hosted by the DoE

The so-called ‘vendor parades’ held by the DoE with nuclear vendors a number of years ago raise a number of red flags because they were held individually and behind closed doors. To be compliant with the PFMA, they should have been held in open sessions, with all potential or interested parties allowed to attend. This is important, because not only does it ensure that all potential bidders are treated equitably but it also acts as a mechanism to prevent collusion, whether intentional or unintentional. **If the DoE hosts vendor parades in the future, check for compliance with procurement rules.**

Moreover, Treasury Regulation 16A8 ‘Compliance with ethical standards’ states in 16A8.1 that ‘[a]ll officials and other role players in a supply chain management system must comply with the highest ethical standards ...’ and must adhere to the National Treasury’s Code of Conduct for Supply Chain Management Practitioners (16A8.2). This means that any DoE official involved in the vendor parades can be held personally liable. **Complaints about non-compliance can be reported to the Director General (DG) of the DoE, the Chief Procurment Officer (CPO) at the National Treasury or the Public Protector. When the Treasury CPO receives a complaint, she or he is required to investigate it.**

A ‘procurement programme’ model does not align well with procurement rules

Pursuing a ‘procurement programme’ rather than procuring a specific project does not align well with South Africa’s procurement legislation. Regulations require that procurement be undertaken for specific goods or services. Therefore, everything being procured by a programme would have to be specified, quantified and listed as a deliverable in a final contract. Regulations prohibit deliverables from being vague or open-ended, which has a number of possible implications:

- **Detailed localisation requirements:** If there are localisation requirements, these must be specifically set out as requirements in the tender documents, including details as to what exactly is to be delivered. Once a tender is awarded, the contract must specify and quantify the deliverables in detail.
- **Clear commitments:** The tender cannot be vague as to whether 2.4 GW or 9.6 GW is being procured. For example, bidders cannot be asked to give a firm bid for two nuclear units, and then include a vague commitment to build the rest in future. All the deliverables concerning the units or MW capacity must show clearly what vendors are committing to.

A review of these documents by any procurement authority or expert would quickly reveal any omissions. This could form the basis of a legal challenge on the grounds of non-compliance with procurement rules.

The procurement entity must be the appropriate body for the job

The National Treasury’s regulations also require that the entity designated to procure infrastructure must be the appropriate body for the job. In particular, it requires the following:

- **A statutory body:** Any procurement process must have a clearly identified entity that is in charge of procurement, which must be a statutory body (i.e. a government department, constitutional institution or state-owned entity).⁸
- **Appropriate systems:** The entity must have an appropriate procurement system and a system for proper evaluation of all major capital projects prior to a final decision being taken on the project. It is unlikely that the DoE has any such system in place for the proper evaluation of major capital projects – see the section on the Standard for Infrastructure Procurement and Delivery Management on page 13 for more details).⁹
- **Procurement framework:** Either an entity procures for itself (and as such is an appropriate entity to fulfil the role of the responsible owner-operator) or it must have a procurement framework in place that allows it to procure on behalf of another entity in a way that is binding on them. If the DoE seeks to procure nuclear energy on behalf of another entity it must have this framework in place. **Whether the DoE has frameworks in place to allow it to procure on behalf of Eskom or even possibly NECSA needs to be investigated.**¹⁰

⁸ Treasury Regulations 16A2.1 to 16A4.1.

⁹ Treasury Regulation 16A6.6.

¹⁰ Treasury Regulations 16A6.6.

- **Bid committees:** The procuring entity will have to establish bid committees for both evaluation and adjudication. Once the bid specifications have been drawn up, the bid committees become responsible for driving the processes and as such decide how the process is to be run. This is important to note as their decision making cannot be superseded by other government committees, for example, cabinet subcommittees.

Public Private Partnership regulations only apply to government departments

It is important to note that the Public Private Partnership (PPP) regulations apply to government departments only, and not to state-owned enterprises (SOEs) such as Eskom. Because the DoE has no legal mandate to run a power plant, it cannot procure on its own behalf. If it were to procure on behalf of Eskom, for example, then the PPP regulations would not apply because the DoE would be procuring on behalf of an SOE.

Who can be designated as the nuclear operator-owner?

South Africa's nuclear policy designates Eskom as the owner of any nuclear power generation plants. Even if this policy were to change, there would be significant regulatory obstacles to overcome. First, the individual mandate of the entity which is to become the operator-owner would need to stipulate that operating an electricity-producing plant falls within its scope of responsibility. Secondly, the entity would need to be constituted as the type of entity that can trade, and thus operate a business. Once it is allowed to do so and has an independent balance sheet of its own, then, depending on how it is classified, there are varying degrees to which it is allowed to raise its own finance.

So, for example, in the case of the DoE, not only does it not have the mandate to operate power plants, but it is also classified as a government department and as such has no borrowing power. The DoE therefore cannot trade, unless it establishes a trading agency (with all the necessary permissions). However, this trading agency would also not be permitted to operate a power plant, unless a legislative Act was passed that permitted it to do so. Even if this were the case, this trading agency would require a balance sheet large enough to enable it to operate the power plant.

Similarly, in the case of NECSA, although it is a major public entity that is permitted to trade, it also does not have a mandate to operate a power plant for the purposes of feeding into the grid. Furthermore, as with all public entities, there are limits on its foreign borrowing power in line with its current balance sheet. Therefore, in addition to a legislative Act allowing it to operate a power plant, it would also require Treasury approval to increase its borrowing power. In other words, NECSA, like the DoE, is not in a position, either legally or commercially, to take on the role of nuclear operator-owner.

The Standard for Infrastructure Procurement and Delivery Management

In terms of National Treasury Instruction 4 of 2015/2016, known as the Standard for Infrastructure Procurement and Delivery Management (SIPDM), **infrastructure procurement in the public sector in South Africa has to fulfil additional requirements over and above the normal procurement rules.**

This regulation seeks to ensure that large infrastructure procurement is undertaken in a manner that aligns with the particular needs of the project. Moreover, the Standard aims to ensure that particular attention is given to questions such as value for money and whether there is:

- a solid rationale for the infrastructure project
- sufficient funding in place
- sufficient capacity to adequately execute the project
- sufficient capacity to operate and maintain what has been built.

These requirements, which are relatively onerous, particularly for very large projects, were introduced as recently as 2016. They seek, in part, to prevent a repetition of the cost overruns and project delays that have become symptomatic of many of South Africa's large infrastructure projects.

The Standard takes a broad view of procurement, covering all the phases of the project development cycle, from concept design and planning to build execution and completion, as well as ongoing operation and maintenance. At the end of each stage there is a 'gate'. These gates can only be passed once all the requirements for that stage have been met. Two sets of gateways must be complied with: the gateways that govern the overall stages of the project cycle (Gates G0 to G9 – see Table 1) and the procurement gates that govern a specific acquisition phase (Gates PGO to PG8 – see Table 2). The contract is awarded at PG7. It is beyond the scope of this report to go into the detail of each of the requirements within a stage. However, Figure 1 and 2 and Table 1 and 2 give an indication of the extent of these requirements.

The whole Standard in itself constitutes a checklist against which compliance can be assessed. A legal team, or indeed Parliament, could be tasked with asking the DoE or National Treasury where the project is in the gateway systems, whether compliance with the Standard is being monitored, and whether there has been full compliance with every aspect.

Figure 1: Stages and gates associated with the control framework for infrastructure delivery management

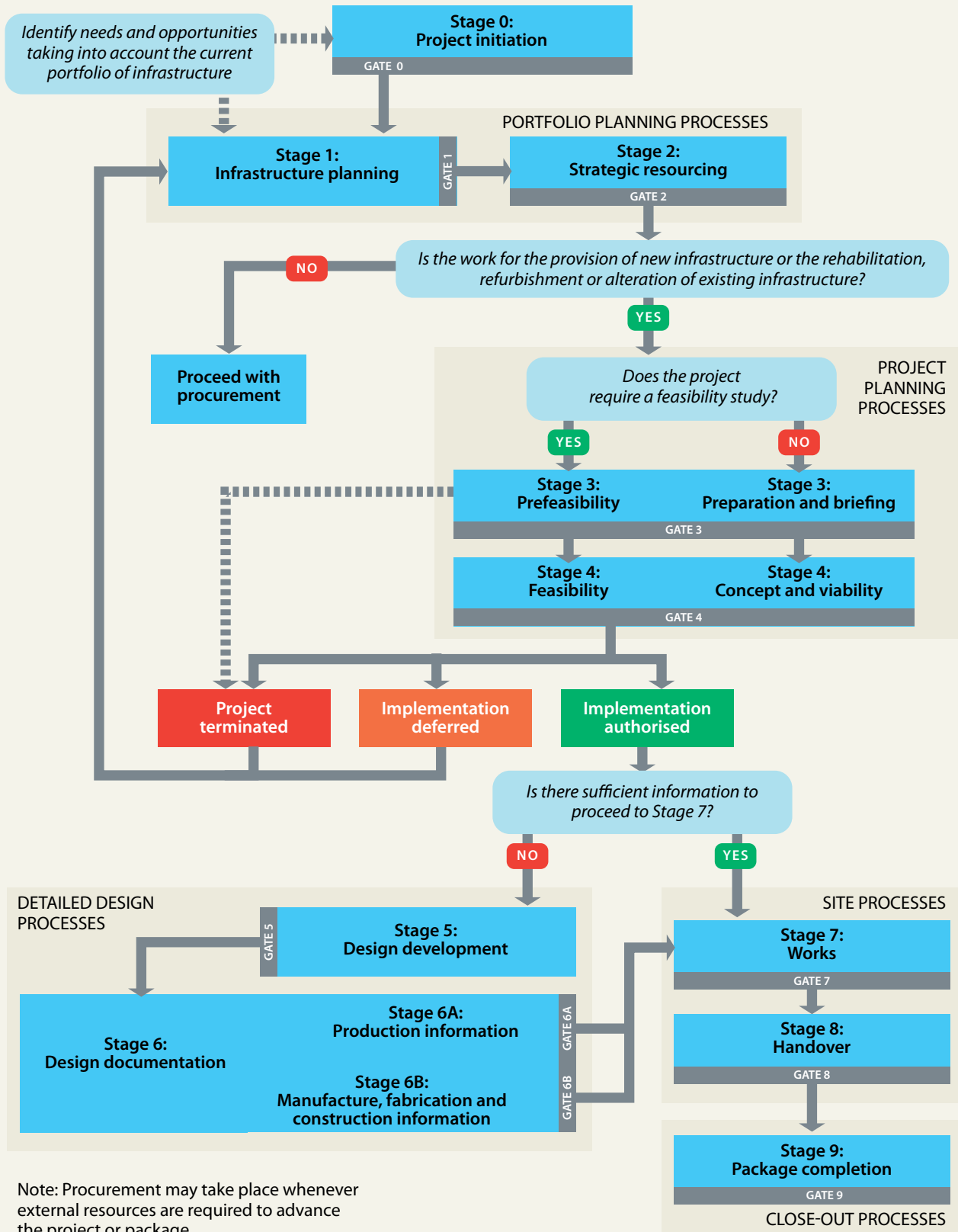
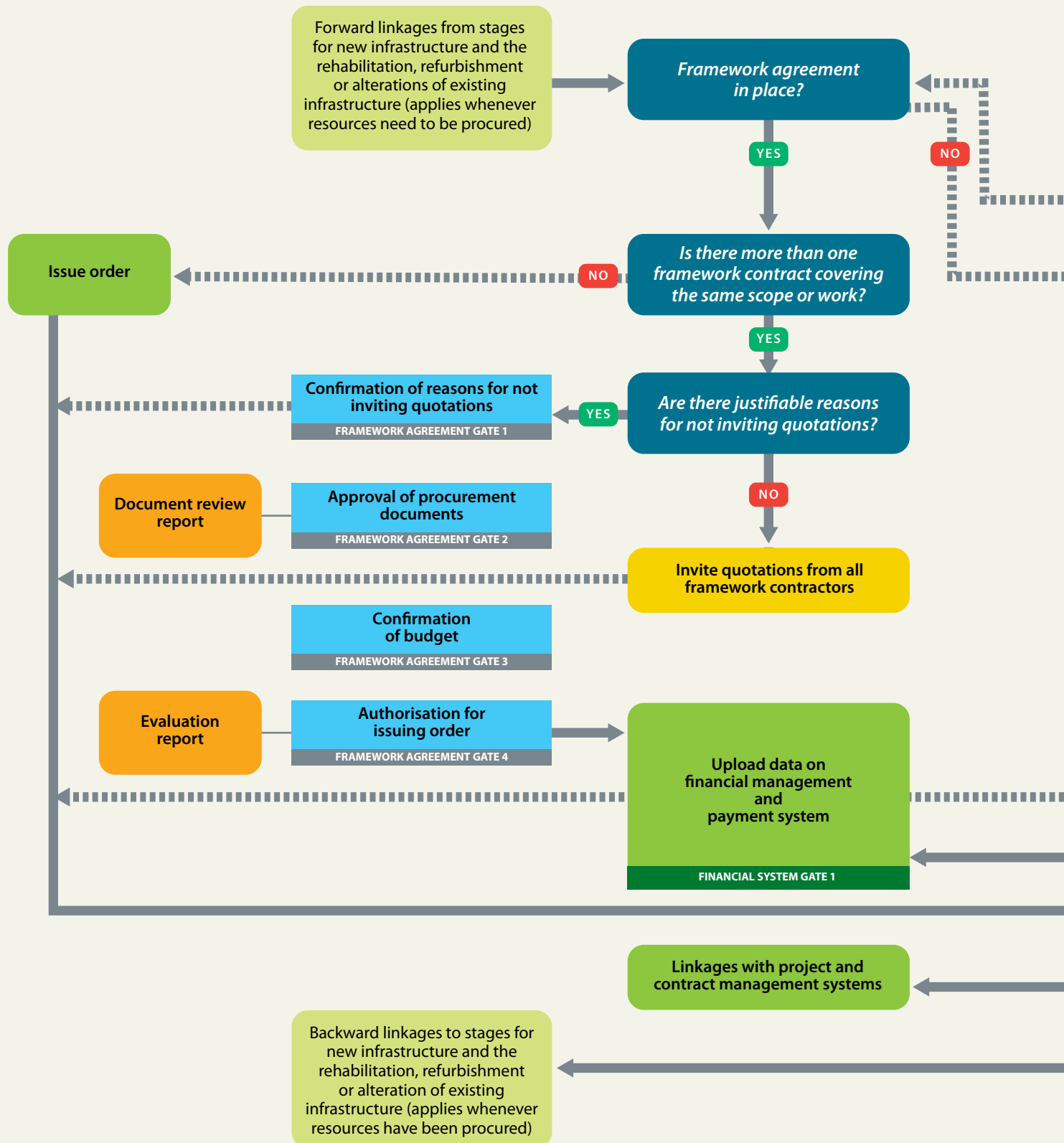


Table 1: End-of-stage deliverables

Stage			End-of-stage deliverable
No.	Name		
0	Project initiation		An initiation report which outlines the high-level business case together with the estimated project cost and proposed schedule for a single project or a group of projects having a similar high-level scope
1	Infrastructure planning		An infrastructure plan which identifies and prioritises projects and packages against a forecast budget over a period of at least five years
2	Strategic resourcing		A delivery and/or procurement strategy which, for a portfolio of projects, identifies the delivery strategy in respect of each project or package and, where needs are met through own procurement system, a procurement strategy
3	Prefeasibility		A prefeasibility report which determines whether or not it is worthwhile to proceed to the feasibility stage
	Preparation and briefing		A strategic brief which defines project objectives, needs, acceptance criteria and client priorities and aspirations, and which sets out the basis for the development of the concept report for one or more packages
4	Feasibility		A feasibility report which presents sufficient information to determine whether or not the project should be implemented
	Concept and viability		A concept report which establishes the detailed brief, scope, scale, form and control budget, and sets out the integrated concept for one or more packages
5	Design development		A design development report which develops in detail the approved concept to finalise the design and definition criteria, sets out the integrated development design, and contains the cost plan and schedule for one or more packages
6	Design documentation	6A Production information	Production information which provides the detailing, performance definition, specification, sizing and positioning of all systems and components enabling either construction (where the constructor is able to build directly from the information prepared) or the production of manufacturing and installation information for construction
		6B Manufacture, fabrication and construction information	Manufacture, fabrication and construction information produced by or on behalf of the constructor, based on the production information provided for a package which enables manufacture, fabrication or construction to take place
7	Works		Completed works that are capable of being occupied or used
8	Handover		Works that have been taken over by the user or owner complete with record information
9	Package completion		Works with notified defects corrected, final account settled and the close-out report issued

Figure 2: Control framework for procurement (acquisition and contract management processes)



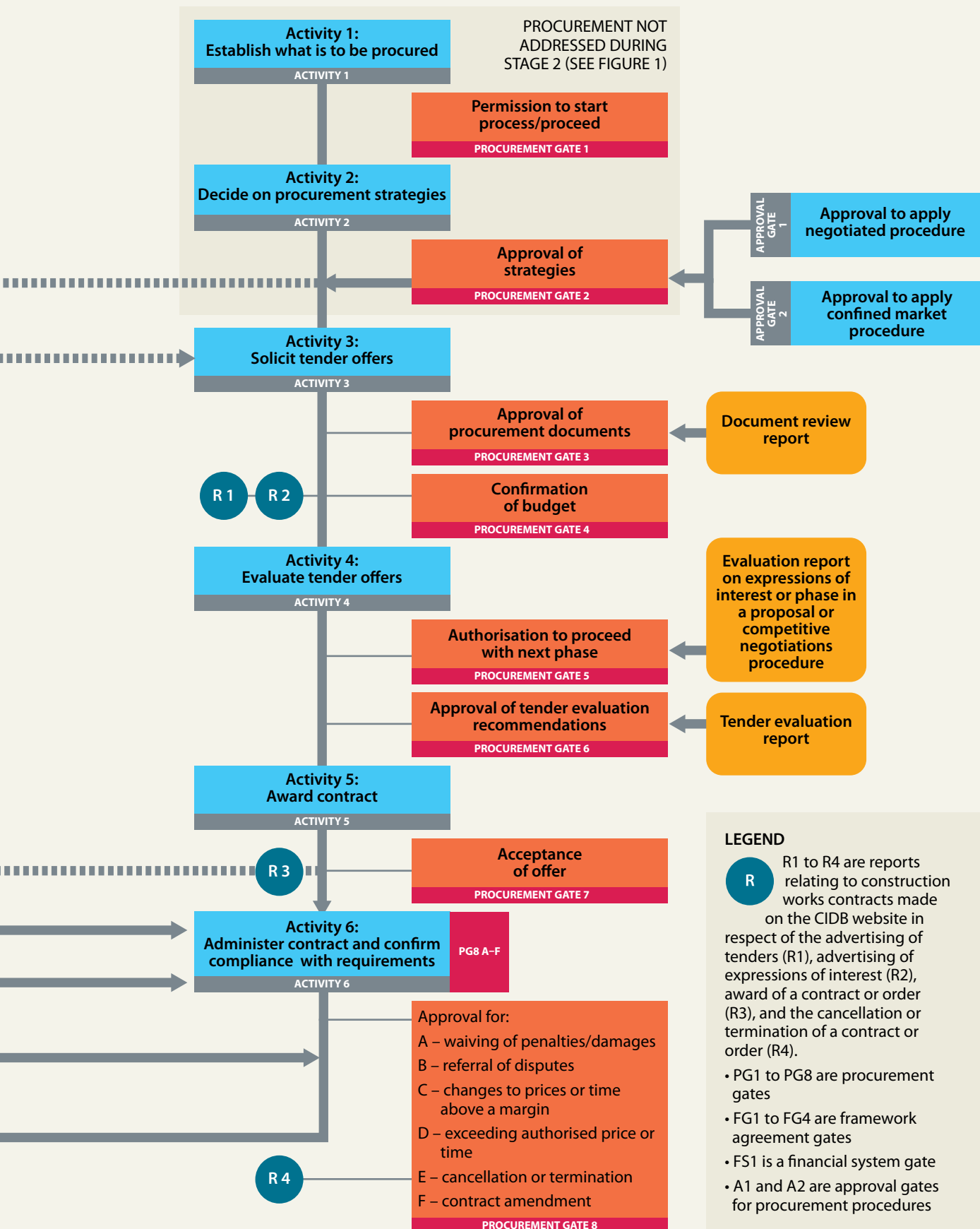


Table 2: Procurement activities and gates associated with the formation and conclusion of contracts above the threshold for the quotation procedure

Activity		Subactivity	
1	Establish what is to be procured (Applies only to goods and services not addressed in a procurement strategy developed in terms of 4.1)	1.1	Prepare broad scope of work for procurement
		1.2	Estimate financial value of proposed procurement
		1.3 PG1	Obtain permission to start with the procurement process
2	Decide on procurement strategy (Applies only to goods and services not included in a procurement strategy developed in terms of 4.1)	2.1	Establish opportunities for using procurement to promote developmental procurement policies, if any
		2.2	Establish contracting and pricing strategy
		2.3	Establish targeting strategy
		2.4	Establish procurement procedure
		2.5 PG2	Obtain approval for procurement strategies that are to be adopted, including specific approvals to approach a confined market or the use of the negotiation procedure
3	Solicit tender offers	3.1	Prepare procurement documents
		3.2 PG3	Obtain approval for procurement documents
		3.3 PG4	Confirm that budgets are in place
		3.4	Invite: <ul style="list-style-type: none"> tender offers; or expressions of interest (qualified procedure or restricted competitive negotiations procedure)
		3.5	Receive submissions
		3.6	Open and record submissions received
4	Evaluate tender offers	4.1	Qualified procedure, proposal procedure or competitive negotiations procedure only
		4.2 PG5	Evaluate and prepare evaluation report on submissions received
		4.3	Obtain authorisation to proceed with next phase of tender process
		4.4	Invite tender offers from qualified respondents or selected tenderers
		4.4	Open and record submissions received and, if necessary, repeat 4.1 to 4.4
		4.5	Evaluate tender offers and prepare a tender evaluation report
5	Award contract	4.6 PG6	Confirm recommendations contained in the tender evaluation report
		5.1	Notify unsuccessful tenderers of outcome
		5.2	Compile contract document
		5.3 PG7	Award contract
		5.4	Capture contract award data on management systems
		5.5 GF1	Upload data in financial management and payment system

Activity		Subactivity	
6	Administer contracts and confirm compliance with requirements	6.1	Administer contract in accordance with the terms and provisions of the contract
		6.2	Confirm compliance with requirements
		6.3	Capture contract completion/termination data
		6.4 PG8A	Obtain approval to waive penalties or low performance damages
		6.5 PG8B	Obtain approval to notify and refer a dispute to an adjudicator, or for final settlement to an arbitrator or court of law
		6.6 PG8C	Obtain approval to increase the total of prices, excluding contingencies and price adjustment for inflation, or the time for completion at the award of a contract or the issuing of an order up to a specified percentage
		6.7 PG8D	Obtain approval to increase the total of prices, excluding contingencies and price adjustment for inflation, or the time for completion at the award of a contract or the issuing of an order by more than 20% and 30%, respectively
		6.8 PG8E	Obtain approval to cancel and terminate a contract
		6.9 PG8F	Obtain approval to amend a contract
		6.10	Close out the contract

In essence, the Standard sets out a checklist for the end-to-end procurement process, as is evident from Table 2. Regarding nuclear procurement, the following key features should be kept in mind:

Compliance with all the gateways

- ☐ The gates must be passed in the order in which they are set out.
- ☐ If the DoE seeks to procure on behalf of another entity, e.g. Eskom or NECSA, those entities must first produce a Delivery and Procurement Strategy, which sets out what they require and what it is that the DoE is procuring on their behalf.
- ☐ The gateway system is designed to be fully auditable. This means that all records must be kept, including records of each approval, how it was arrived at, and what documents were considered.

If the DoE were to pursue the nuclear build programme, it would have to restart its procurement process. This means that it would now have to comply with the entire Standard. It could not argue that because procurement had started before the Standard was introduced that the Standard is not applicable or is only partially applicable.

Critical approvals and reviews

In terms of the Standard, large projects must meet additional requirements, such as undertaking extra studies, reviews and approvals. Nuclear builds, because of their high value, will always have to meet these requirements. Some of these key requirements are:

- ☐ Cabinet must approve a concept report at the outset (Gate 0).
- ☐ National Treasury must be supplied with and comment on the pre-feasibility and feasibility reports (at Gates 3 and 4), and its feedback must be considered.
- ☐ A gateway review of the feasibility study must be undertaken in Stage 4, before Gate 4 can be passed. This is more onerous than simply checking a box. It relates to the quality of the studies produced and requires that aspects of deliverability, affordability and value for money must be assessed. The review must also be carried out by stipulated professionals who have not been involved in producing the original studies or putting the documents together. The National Treasury must be notified when projects are due for a gateway review and may participate in the review process. Any critical shortcomings identified have to be addressed before the project can gain approval to pass through Gate 4.
- ☐ The National Treasury can at any stage institute a gateway review on any project.
- ☐ Cabinet must approve the full feasibility report (Gate 4).
- ☐ Should the procurement process succeed in getting to the contract awarding stage, then a specific set of evaluations must be conducted by professionals stipulated in the Standard.

Estimating cost and checking affordability

- ☐ The cost of the project must be estimated at a very early stage (from Stage 0) and then repeatedly at every gate (Stage 1, 2, 3, 4). The Standard does not allow for costs to be considered at a later stage. It is therefore not possible for a project to only consider and quantify costs after receiving bids in the tender process. The total cost, scheduling and the required budget must be reconsidered every year (Stage 1). **The argument made by the DoE on a number of occasions that it is not possible to discuss prices at an early stage, on the grounds that prices can only be discovered through the tender process, will not stand scrutiny under the Standard.**
- ☐ In the early stages (Stage 2), it must be specified how the project will be procured and contracted.
- ☐ The feasibility study in Stage 4 must demonstrate that the project is financially sustainable. **While the feasibility study will likely remain confidential, it is possible to challenge financial feasibility at this stage by offering independent analyses that demonstrates otherwise. The independent analyses can also be used to trigger a public debate, in Parliament for**

instance, which could result in the DoE disclosing its cost estimates in defence of its position.

General

- ☐ If budget support for the project is required from the fiscus, then the budget process must also be complied with.
- ☐ The procurement documentation must satisfy the requirements of the Construction Industry Development Board's (CIDB's) Standard for Uniformity in Construction Procurement.

Whether or not a nuclear procurement programme meets the above requirements can be verified by writing to the CPO of the National Treasury. The CPO is not allowed to supply details that she or he considers confidential, but should be able to confirm that they are monitoring the progress of the project, the stage the project has reached, and whether all conditions are being met. Members of the public can, of course, also ask the DoE directly or request that someone in Parliament does so on their behalf.

Preferential Procurement Policy Framework Act, 2000

Procurement regulations in South Africa make provision for the promotion of preferential policies, such as supporting historically disadvantaged people, small businesses or local contractors by allocating additional points for these in the bid evaluations.

Yet, the DoE has indicated on numerous occasions that it will be looking for an exemption from the Preferential Procurement Policy Framework Act 5 of 2000 (PPPFA). The argument appears to be that because vendors and subcontractors are mainly foreign, they are unlikely to score well on the preferential policy requirements.

However, in order to be granted an exemption from the PPPFA, the DoE will need to put forward a strong case to the Minister of Finance. Grounds for granting exceptions have mainly been based on reasons of national security, the need to use international suppliers because domestic suppliers cannot provide the particular goods or services or because it is in the public interest. Although not granted often, some exemptions have been granted, for example for PRASA's rolling stock procurement.

ENERGY POLICY AND LEGISLATION

In addition to the Public Finance Management Act and the Preferential Procurement Policy Framework Act, there are energy-specific requirements that apply to nuclear procurement. These include both energy regulations generally, and nuclear-specific regulations and policy.

Energy policy and legislation

1. Electricity Regulation Act, 2006
2. Electricity Regulations on New Generation Capacity, 2011
3. Integrated Resource Plans
4. National Energy Regulator Act, 2004
5. Nuclear Energy Act, 1999 and Nuclear Energy Policy, 2008
6. Secondary legislation
7. Cabinet decisions on nuclear energy

Electricity Regulation Act, 2006

The Electricity Regulation Act 4 of 2006 (ERA) sets out the roles of the Minister of Energy, and the national regulator – the National Energy Regulator of South Africa (NERSA) – in regulating the energy industry in South Africa.

According to the ERA, the Minister of Energy is responsible for making decisions or approving regulations related to how the industry operates. NERSA gives effect to this by carrying out its regulatory operations, and is specifically responsible for the following:

- approving licences
- regulating prices
- establishing rules to implement any policies, frameworks or Acts
- undertaking monitoring and information gathering on the energy sector
- enforcing performance and compliance.

The ERA states that NERSA must consult with licensees and other interested parties when drawing up guidelines, codes of conduct and codes of practice, or making any rules that will be published in a *Gazette*. This is where the requirement for public participation in energy decision making comes in. For example, when considering a new Integrated Resource Plan (IRP) drafted by the DoE, NERSA must consult the public and the public's feedback must be taken into account.

The ERA also sets out how the minister may determine that new generation capacity must be procured and the process that must be followed, namely, the issuing of a section 34 determination. Note that this means that only the Minister of Energy can do so – no other structure can supersede the minister (such as a cabinet subcommittee). Any 'decisions' made by external committees, for example, can only be taken as suggestions or policy directives – the Minister of Energy would then

have to decide to give effect to these by including these details in the section 34 determination. In making a section 34 determination, the minister:

- must act in consultation with the Regulator. **This is critical: as we have seen with the 2016 High Court ruling,¹¹ if NERSA is found not to have applied its mind, or too much time has passed since considering a section 34 determination and gazetting the determination, the courts would likely consider the entire determination invalid.**
- must stipulate the following:
 - the type of technology/source to be used and the quantity
 - who it must be sold to
 - that the stipulated buyer must buy it
 - that the energy must be acquired through a procurement process that is fair, equitable, transparent, competitive and cost-effective.
- may provide for private sector participation.
- can, in consultation with the Minister of Finance, issue guarantees, indemnities or any other security that binds the state to a future financial commitment that is necessary for the development, construction, commissioning or effective operation of any public or privately owned electricity generation business.

Electricity Regulations on New Generation Capacity, 2011

While the ERA sets out the overall rules regarding the regulation of energy in South Africa, the Electricity Regulations on New Generation Capacity provide details as to how the state must go about procuring new capacity.

Interestingly, the regulations on new generation state upfront that they do not apply to nuclear power technology. Industry advisers suggest that this means that regulations must still be developed and put in place to regulate how new nuclear generation capacity is to be procured. This creates an interesting legal conundrum: does it mean that nuclear procurement can go ahead unregulated because there are no regulations in place, or does the regulatory gap need to be filled (i.e. regulations passed) before nuclear procurement can take place?

The Electricity Regulations on New Generation Capacity cover the following:

- They confirm that the Minister of Energy has the power to determine when new energy generation capacity is required, and how it must be procured.
- They confirm that the Minister of Energy must issue a section 34 determination. The determination must lay out how much energy is being procured, what type

¹¹ High Court of South Africa, Western Cape Division. 26 April 2017. *Judgment: In the review application between: Earthlife Africa (et al) and the Minister of Energy (et al)*. South Africa: Department of Justice.

of technology is to be used, whether the private sector is to be involved, who is responsible for procurement, and who the buyer and owner-operator will be (Eskom, another organ of state or an independent power producer (IPP)).

- They require the Minister of Energy to make provision for long-term planning for new generation capacity by developing an IRP. However, the Regulations do not stipulate how this should be done. Neither the Act nor the Regulations actually stipulate that the IRP must be in place before a section 34 determination is made or that the determination should be consistent with the IRP. In fact, the Regulations only require the minister to have ‘a basis’ upon which a section 34 determination is made. In practice, ministers of Energy have always by default used the IRP as that ‘basis’.
- They acknowledge that the minister *may* require feasibility studies to be undertaken – but do not oblige the minister to do so. However, other requirements, such as those stemming from the Standard for Infrastructure Procurement and Delivery Management *do* require feasibility studies to be undertaken when infrastructure is being procured.
- They set out the rules governing IPP procurement processes. Independent power producers are defined as ‘any person in which the Government or any organ of state does not hold a controlling ownership interest (whether direct or indirect), which undertakes or intends to undertake the development of new generation capacity pursuant to a determination made by the Minister in terms of section 34(1) of the Act’.
- They lay out how NERSA must ensure that full cost recovery is possible for the buyers of new capacity, including:
 - all payments the buyer has made in terms of power purchase agreements (PPAs) (i.e. buying electricity from IPPs). However, the buyer must have acted in an efficient manner.
 - all efficiently incurred costs of the buyer in performing its own functions (i.e. generating its own electricity). The emphasis on efficiency is important here – it means that if NERSA decides that certain costs were incurred owing to inefficiencies, it does not have to allow for cost recovery. This has been employed by NERSA on previous occasions where they ruled against cost recovery on items submitted by Eskom.

Note that the Regulations state that they do not apply to any project relating to the electricity generation capacity listed under “Current Programmes” in the table titled IRP 1 in Schedule A to GN 25 of 29 January 2010: Determination regarding the integrated resource plan and new generation’ (section 12(1) of the ERA). This appears to refer to the ‘committed build’ listed in the IRP, which includes: RTS Capacity, Medupi, Kusile, Ingula, OCGT IPPs of 1.020 MW, a small co-generation programme of 390 MW, wind and concentrated solar power (CSP) programmes of 700 MW and 200 MW each, landfill and hydro power of 125 MW, Sere and decommissioning. However, none of the new-build options that the IRP2010 contemplates, such as a nuclear fleet, are included in this exception.

Integrated Resource Plans

While the Regulations do not stipulate how the IRPs are to be developed, the following observations may be useful:

- The DoE stated in the IRP2010¹² that its policy objective is to update the IRP every two years in order to accommodate any changes that take place (e.g. weak economic growth or changing electricity demand) that have an impact on the outcome of the IRP and energy planning. In subsequent versions (IRP2010 Update) the DoE stated that the IRP should ideally be updated annually.¹³ This, by the DoE's own admission, is reason enough why an 'old' IRP, such as the IRP2010, cannot be used as the basis for energy planning in 2018.
- The various iterations of the IRP have themselves expressed uncertainty about the necessity of nuclear power and allude to the fact that nuclear power generation is a policy decision rather than a model-generated preference. These references include the following:
 - The IRP 2010–2030 Revision 2 Final Report of 2 March 2011 notes in the conclusion that 'a commitment to the construction of the nuclear fleet is made based on government policy and reduced risk exposure to future fuel and renewable costs'.
 - The IRP 2010–2030 promulgated on 6 May 2011 states that 'the scenarios indicated the future capacity requirement could, in theory, be met without nuclear, but this would increase the risk to security of supply (from a dispatch point of view and being subject to future fuel uncertainty)'.

In both these examples, the conclusion is that the IRP model does not recommend nuclear energy, but other policy justifications were used to make room in the model. In other words, if the model was left to run by itself, nuclear energy would not be selected.

- The IRP version that was published for comment in 2013 is very telling. It states that 'commitments to long range large-scale investment decisions should be avoided' and also warns about the considerable uncertainty surrounding nuclear capital costs. It concludes by recommending that the nuclear build be delayed.

Should attempts be made to use an earlier version of the IRP, such as the IRP2010, as the DoE sought to do under Minister Mahlobo, it is unlikely that this would pass legal muster. In view of the statements made about nuclear power in the later versions as well as the considerable changes that have taken place since the promulgation of the IRP2010, it would be difficult for the DoE to prove that a decision to rely on an earlier version of the IRP was rational.

¹² Department of Energy. 6 May 2011. *Integrated Resource Plan for Electricity 2010–2030*. Pretoria: DoE.

¹³ This was stated in the Integrated Resource Plan for Electricity 2010–2030: Update Report 2013. (Department of Energy. 21 November 2013. *Integrated Resource Plan for Electricity 2010–2030: Update Report 2013*. Pretoria: DoE)

National Energy Regulator Act, 2004

The National Energy Regulator Act 40 of 2004 (NERA) establishes the National Energy Regulator of South Africa (NERSA) as the entity responsible for the regulation of electricity, gas and petroleum industries in South Africa. It deals largely with the structure and international functioning NERSA. The important aspects that relate to the principles governing its regulatory function are contained in the Electricity Regulation Act discussed above.

Nuclear-specific Acts and policies

The various Acts and policies on nuclear energy make it clear that the Minister of Energy is the line minister responsible for the nuclear industry and related matters. This includes authority over nuclear power generation, waste and fuel management, and non-proliferation of nuclear weapons.

Nuclear Energy Act, 1999

The Nuclear Energy Act 46 of 1999 establishes the South African Nuclear Energy Corporation (NECSA), to undertake research and development in the field of nuclear energy and radiation science and technology.

In addition, it sets out the Minister of Energy's responsibilities with regard to:

- South Africa's adherence to non-proliferation treaties and other international agreements
- authority to regulate the acquisition and possession of nuclear materials and related equipment
- authority over the management of nuclear waste and storage of irradiated fuel.

Nuclear Energy Policy for the Republic of South Africa, 2008

The Nuclear Energy Policy of 2008 is a key policy document that states the government's intentions regarding nuclear energy. As this is only a policy (and not an Act or regulation) it is not legally binding. However, it does appear to have been influential and it is unlikely that any minister would proceed on a different trajectory without first trying to obtain cabinet approval to amend this policy.

Key elements of the Nuclear Energy Policy include the following:

- The intention to undertake a large nuclear fleet build programme, including the development of a self-sufficient nuclear fuel cycle, with an emphasis on maximising localisation and job-creation opportunities.
- The intention that all 'investment funding to implement the nuclear build should come from government and public entities'. Elsewhere it goes on to say, 'Eskom shall be the main owner and operator of nuclear power plants in South Africa. Ownership of nuclear power plants may also take the form of Public

Private Partnerships with Eskom retaining the controlling shareholding as the public sector player'. This is an important statement: essentially what the policy intends to do is to maintain state ownership of nuclear plants.

Not surprisingly then, when the Korean vendor, KEPCO, began publicly suggesting that an independent power plant route was an opportunity to deal with financing constraints, Rosatom, the Russian state corporation specialising in nuclear energy, responded that its understanding from interacting with the South African government had always been that the policy was clear: the state would maintain ownership of any new plants.¹⁴

- There are numerous stipulations concerning international cooperation and commitments to international agreements and organisations. Emphasis is placed on membership of the International Atomic Energy Agency (IAEA), and its authority is acknowledged. This is important, because the IAEA governs how South Africa must set up its relationships with other nuclear countries, for example having intergovernmental agreements (IGAs) in place before undertaking procurement.
- South Africa must undertake bilateral cooperation in its nuclear pursuits. This encompasses a list of broad categories, including 'learning'; 'nuclear programmes from which South Africa requires technology, material or equipment transfer'; and even 'export opportunities for South African nuclear services and manufactured goods'.

Secondary legislation

There are other regulations that apply to nuclear in South Africa, but which play a secondary role, such as the following:

- Hazardous Substances Act 15 of 1973
- Non-Proliferation of Weapons of Mass Destruction Act 87 of 1993
- Mine Health and Safety Act 29 of 1996
- Mineral and Petroleum Resources Development Act 28 of 2002
- National Environmental Management Act 107 of 1998
- National Water Act 36 of 1998.

While it is beyond the scope of this report to investigate these in any detail it is worth noting that understanding the implications and requirements of these Acts is also useful in understanding how and where to intervene in the nuclear new-build programme.

14 Slabbert, A. 17 March 2016. *SA nuclear affordable if IPP model employed – South Korea*. Moneyweb. [Online] Available at: moneyweb.co.za/news/industry/sa-nuclear-affordable-ipp-model-employed-south-korea

Cabinet decisions on nuclear energy

Over the years there have been numerous cabinet decisions related to the nuclear build programme. These decisions are important because they serve as the trigger that prompts action to take the programme forward, and are influential in shaping how the programme is pursued.

Important recent cabinet decisions include:

- **Approval to go to tender:** In December 2015, the Cabinet approved the DoE going to tender for the 9.6 GW build. This decision also stated that the funding model that would be selected would be informed by the response received from the request for proposals (RFP), rather than stating the funding model upfront. **This decision goes against procurement rules as the Cabinet is not a procurement authority and cannot make statements as to the funding model. It also has no power to override the procurement rules.**

Following the cabinet decision, the DoE proceeded to develop a draft RFP document in 2016. However, this was of very poor quality and was never issued. By the end of 2016, the DoE instead moved to issue a request for information (RFI). An RFI is merely an information-gathering exercise, where market players voluntarily and confidentially share high-level information on what they believe they can offer. This was meant to help the DoE understand the range of options that the market is able to supply. This process is useful in designing the subsequent RFP.

- **NECSA selected as implementing agent:** In November 2016, the Cabinet amended its earlier decision, designating NECSA as the implementing agent for the nuclear new-build programme.¹⁵

It was never clear what this in fact meant. If the intention was to make NECSA the *procurer* of the nuclear build, then the cabinet decision failed because the term ‘implementing agent’ has no precise meaning in the context of procurement. Moreover, the minutes of the cabinet meeting went on to say that it ‘*approved* [author’s emphasis] Eskom as the Owner Operator and Procurer for the Nuclear Power Plants as per Nuclear Energy Policy of 2008’. One month later, in December 2016, the Minister of Energy issued a section 34 determination for the nuclear build programme which specified *Eskom* as the procurer of the programme.

- **IRP2017 approved:** In December 2017, the Cabinet approved an updated version of the IRP, now known as ‘IRP2017’.¹⁶ Neither this version of the IRP nor the details of the cabinet meeting discussion were publicly released. The public came to know about it from an announcement made by former Minister Mahlobo at the Energy Indaba workshop that took place in December 2017.

¹⁵ Government of the Republic of South Africa. 3 November 2016. *Statement on Cabinet meeting of 1 and 2 November 2016*. Pretoria: GCIS. [Online] Available at: gcis.gov.za/newsroom/media-releases/statement-cabinet-meeting-1-and-2-november-2016

¹⁶ There is no reference to this decision in the statement on the Cabinet meeting of 6 December 2017. However, according to former Minister Mahlobo, this did take place. See Njobeni, S. 8 December 2017. *Reviewed integrated resource plan gets approved*. Business Report. [Online] Available at: iol.co.za/business-report/reviewed-integrated-resource-plan-gets-approved-12307588

The announcement caused great confusion because the DoE had been working on another iteration of the IRP. The various iterations of the IRP that the DoE had been working on are as follows:

- The Draft IRP2016, published in November 2016 for public comment by March 2017, after which the DoE stated it would take the plan to the Cabinet for approval.
- Under Minister Kubayi, it was reported that a new IRP was in development, for completion by February 2018. This would require public consultation, and a workshop was hastily organised by the DoE in December 2017. While it was never formally stated that this was a public consultation process, it was assumed by many that this would be used as a platform to conduct public participation.
- However, at the 2017 Energy Indaba, the new Minister of Energy, Mr Mahlobo, announced instead that an 'IRP2017' had recently been approved by the Cabinet. The IRP2017, according to Minister Mahlobo, was the same as the IRP2010, with all technologies reduced in volume proportionately by 20%.

As mentioned above, the IRP2017 was not published, nor was it clear whether it was actually an updated version of IRP2010 or IRP2016. Either way, given that consultation had previously been carried out on both, it appeared that the DoE was relying on this to argue that the regulatory requirement for public participation had been met.

The history of the IRPs, section 34 determinations and court rulings raise an interesting question: just how much standing do these cabinet decisions have? When some of the decisions prove to have been the result of irregular processes, then the courts overrule them. When the DoE decides to change who the procurer will be, the Minister of Energy can simply designate it so. Lastly, cabinet (or subcommittee) decisions do not have legal standing as far as procurement is concerned – in the case of energy, only the Minister of Energy and the DoE's procurement structures have the authority to give official instructions.

INDUSTRIAL POLICY REQUIREMENTS

The policy for promoting localisation using large procurements by the government is framed in the Industrial Policy Action Plan (IPAP). The IPAP, which falls under the Department of Trade and Industry (dti), is an iterative document.

The IPAP makes provision for government support of selected programmes in a number of ways. These include the following:

- As mentioned in the section on the PPPFA on page 21, preferential policies can be supported by allocating points for localisation in the procurement evaluation process. Constituencies that could be supported include historically disadvantaged persons, small businesses or local suppliers.
- Another way of supporting localisation is through the designation of 'set-asides' for specific industries or subsectors. A list of set-asides that have already been designated can be obtained from the dti. If set-asides were designated for any sectors or subsectors connected to nuclear construction or manufacturing, then procurement officials would need to ensure that the required percentage is indeed procured locally.
- In addition, the nuclear procurement specifications could also stipulate that a certain quantity of goods or services in specific areas must be procured from local suppliers, in line with any objectives that may be set out by the dti. Bidders would have to meet these criteria to pass the first stage of the evaluation process (functionality).

Given the size of the intended nuclear build programme and the potential for a fleet to be built over a long-term rolling build programme, nuclear proponents argue that this is an opportunity to involve local enterprises in a way that these enterprises can be trained and acquire nuclear building capabilities.

However, the extent to which this is possible has always been questionable. Studies on localisation during fleet builds show that acquiring nuclear build capabilities is usually limited in the first few units, then rises incrementally towards the last unit. If the size of the programme is reduced from eight units to two, then this limits the opportunity significantly. Moreover, one has to take into account that reaching substantial levels of localisation in nuclear build capability has only taken place in countries that already have advanced industrialisation, i.e. they already have sophisticated industrial engineering capabilities that can be built on. Generally, the immediate localisation opportunities lie in civil works but this is more complex when it involves a nuclear reactor that requires strict compliance with nuclear regulatory requirements and specialised skills.

Another complication South Africa will face if it relies on the vendor to arrange finance from abroad, particularly export credit agency financing, is that the vendor

usually requires its own country's goods and services to be used, thus limiting the room for localisation.

Job creation possibilities in nuclear builds also tend to be relatively limited compared to other energy technologies, and very limited compared to the value of the procurement. The comparison in Table 3 shows how few jobs nuclear builds create, which is partly because of its heavy reliance on sophisticated engineering by foreign vendors and custom-designed imported nuclear plant components. When broken down by the job type, it is evident that nuclear builds tend to create skilled or highly skilled jobs. South Africa, which has a high unemployment level, lacks these skills and is seeking to create jobs and training opportunities that can benefit semi-skilled or unskilled workers.

Table 3: Job creation potential per energy technology

Energy technology	Total jobs	
	Construction, manufacture and installation jobs (per MW) in 2009 [in 2030]	Operation and maintenance and fuel processing jobs (per MW)
Existing coal	0 [0]	0.75
Supercritical coal	2.5 [2.3]	0.65
OCGT	3.4 [3.4]	0.17
Nuclear	1.8 [1.8]	0.68
Biomass	8.5 [8.5]	14
Landfill gas	3.8 [3.8]	2.3
Wind	15 [10.4]	1
CSP	10 [5.5 – 6.5]	0.4
Solar photovoltaic	30 [9.1]	0.4
SWH	21 [11]	0

SOURCE: Edkins et al, 2010 ¹⁷

According to the Adcorp Group, a global human resources company, in 2014 South Africa had a shortage of approximately 829 800 highly skilled workers.¹⁸ These include engineers, technicians, scientists, planners, project managers and other professionals that will be in demand during a nuclear build programme. While some training programmes have been initiated by the DoE that would introduce new entrants into these fields, there would still be a shortage of experienced personnel. At the same time, the demand for low-skilled workers in a nuclear build programme is limited. There is therefore a disjuncture between the skills South Africa has available, the employment opportunities the country needs to create and those offered by a nuclear build programme.

¹⁷ Edkins, M, Marquard, A and Winkler, H. June 2010. *South Africa's renewable energy policy roadmaps*. Cape Town: Energy Research Centre, UCT.

¹⁸ Adcorp. January 2014. *Adcorp Employment Index*.

FINANCING NUCLEAR ENERGY BUILDS

Financing nuclear energy builds

1. Unique attributes of nuclear energy builds that make finance difficult to secure
2. Drawing on public finance to support the nuclear build programme
3. Could an SOE go it alone without fiscal support?

Unique attributes of nuclear energy builds that make finance difficult to secure

There are particular characteristics of nuclear builds that make financing difficult to secure. First, the very high costs associated with nuclear builds and the long construction times mean that it takes a long time before revenue is earned and costs can be recouped. Moreover, the financing that is sourced accumulates large amounts of interest. Nuclear builds therefore put significant financial burdens on the project owners. Furthermore, given the fact that most nuclear builds are subject to construction delays and cost overruns, this has a significant impact on financing and makes the budget for a nuclear build difficult to control.

The costs of building nuclear plants have also increased significantly. This is partly owing to the introduction of new generation technology, but mainly to the increased safety requirements introduced in recent years following the Fukushima disaster in Japan. In addition, there are significant costs associated with managing nuclear waste and decommissioning plants. Permanent waste solutions have not been found and current solutions such as waste deposit facilities located deep underground are extremely expensive. Nuclear waste and decommissioning costs are often not factored into the project estimates.

While nuclear plants do have the advantage of relatively low operational costs (if we exclude the cost of dealing with nuclear waste), when comparing the lifecycle costs of nuclear to other technologies, they still work out to be more expensive than alternatives (even if we exclude decommissioning costs, waste management, insurance for disasters, cost overruns and delays). Furthermore, alternative energy technologies are increasingly more competitive in other ways: less environmental impact (solar and wind); more flexibility because they can be built as smaller modules and on shorter notice (because of a short build period); and more dispatch flexibility in terms of their ability to be ramped up and down during the day (gas). There is also the significant risk associated with a nuclear disaster, with its unique dangers and high clean-up costs, which further undermines the competitiveness of nuclear energy.

Another feature of nuclear energy that affects financing requirements is the high proportion of imports required for construction. This is particularly the case for nuclear processing plants, with core components usually manufactured in the vendor's home country and shipped to the nuclear build site. This inevitably adds to the costs and is subject to currency fluctuations.

These unique characteristics of nuclear energy affect financing in the following ways:

- Financing requires innovative structuring and access to a wide variety of sources and long tenor financing. This entails significant reliance on foreign funding alongside local sources.
- The prospect of making a nuclear build profitable as a stand-alone project diminishes as the cost escalations intensify. Delays in construction mean that the date on which projects become operational and begin earning revenue is often pushed out for extended periods. Only very large entities – usually public ones – are able to absorb this.
- Because of the high risks involved in nuclear builds and the significant costs associated with them, funding largely comes from public sector entities – such as state-to-state loans, state-sourced equity, development finance institutions, export credit agencies or other state-owned banks or entities. Commercial banks are increasingly unwilling to provide any large-scale funding for nuclear builds.
- Vendors are finding it increasingly difficult to survive and are desperately seeking new markets because more and more countries are unwilling to take on the risks of nuclear builds. Those countries that are, are looking to push the financial risk of cost overruns and schedule delays onto the vendors. They are also making more demands on vendors, such as insisting on high levels of localisation or industrialisation benefits. To accommodate this, vendors are attempting to price the risks into the build by charging large premiums or arranging subsidy schemes (by the government or consumers). But very few countries are able to afford this.
- Currency risk is a major factor that needs to be managed. Long construction times, cross-boarder revenue payments and uncertainty about future currency movements have a significant impact on the project's financial viability for both the vendor and the client country.

Drawing on public finance to support the nuclear build programme

What are the public finance requirements that will have to be met?

A nuclear build programme could seek to draw on various types of financial support which, among other things, would provide finance to:

- assist with providing equity
- assist with interest, principal payments or currency hedging costs
- provide a state loan to Eskom or the vendor
- provide a guarantee
- provide tax incentives.

When examining any of the above in more detail, it is important to understand the quantum of financial support that might be required, the process that must be followed in applying for such support, and the various fiscal thresholds that need to be respected. To begin with, a ballpark estimate of the amount of financial support a nuclear build programme may require is provided. Using this, the following sections explore possible sources of this kind of financial support and the processes that will need to be followed to apply for it.

Estimating the financial support required

While it is possible to estimate more exact numbers, for the purpose of this analysis a simple estimation of the costs involved is used to provide a ballpark figure that could serve as a basis for exploring financing options.

Assumptions:

1. **Cost of a plant:** A commonly accepted estimate for a 9.6 GW nuclear build programme using Generation III technology is R1 trillion.

Using this as a ballpark, if eight units of 1 200 MW are built, these would cost roughly R115 billion each.

2. **Building time:** The industry average for building one plant is 13 years. Although there is considerable evidence to show the average is in fact longer, 13 years is used here.
3. **Cost overruns and construction delays:** While cost overruns and construction delays are symptomatic of nuclear builds, the assumption used here is that there are no cost overruns or schedule delays.
4. **Staggering the construction of plants:** It is assumed that not all plants will begin construction at the same time. It is assumed that two plants will begin construction every two years.
5. **Calculating interest payments:** Interest payments on loans (or dividend payments on equity) could be immediately payable from the start (corporate finance) or from when revenues begin to flow (project finance, with the interest being 'capitalised'). An easy way to calculate the ballpark figure is to use a construction loan calculator,¹ which takes into account the fact that drawdowns are made at phased intervals (and interest only accumulates on these drawdowns when they actually take place). Using a total loan period of 30 years (assuming payback begins during construction, which lasts for the first 17 years) and drawdowns take place in an 'S' curve, one can calculate the total interest payments due.
6. **Estimating total costs in today's prices:** The calculations below are done assuming that the total required is R1 trillion in today's prices (which is usually how construction prices are quoted – i.e. the 'overnight costs').

1 financial-calculators.com/ultimate-financial-calculator

SCENARIOS

Scenario A: Building a 9.6 GW nuclear fleet using Generation III technology with no equity injection

- Assuming eight units or 1 200 MW (at R115 billion each) are built; that each unit takes 13 years (with no delays) to build and that the builds are staggered (with construction of two units beginning every two years) this would result in 17 years of building time for the whole fleet. Assuming that there are no cost overruns and using the construction loan calculator, interest payments will range between at least R1–R2 trillion.
- If the vendor were to organise a generous package where interest is waived during construction, this would be analogous to doing a mortgage calculation on a lump sum. For instance, if this is calculated over 20 years, total interest payments would be in the ballpark of R1 trillion.
- The cost of the nuclear fleet including interest will therefore range between R2 trillion and R3 trillion (R1 trillion for construction costs and R1–R2 trillion for interest payments).

Scenario B: Building a 9.6 GW nuclear fleet using Generation III technology with a R300 billion equity injection

Assuming the same scenario as above, but this time with a R300 billion equity injection, the principal debt would be R700 billion with interest payments of around R1 trillion. The total cost would be close to R2 trillion.

Scenario C: Building a 2.4 GW nuclear fleet using Generation III technology with no equity injection

Assuming two units are built using Generation III technology at a cost of around R230 billion over 13 years, the interest payments on this principal debt will be around R400 billion. The total cost would be around R630 billion.

Note that these are the minimum amounts. They do not include inflation nor make provision for actual cost overruns or schedule delays. They are also based on today's prices. If we adjust for the impact of time, then the value of the drawdowns needs to be escalated by the value of inflation that each year has added. Similarly, as interest payments on loans are calculated on nominal amounts, the new interest payments would be recalculated based on this. The impact is staggering: if one calculates the net present value on Scenario 1 (i.e. to see the figure in today's prices) it comes to around R4 trillion. By adjusting the calculations to reflect the impact of time or inflation, the interest total only escalates. Even though the totals in the scenarios above are very conservative, they are nevertheless useful in understanding what financing options may be available. This is explored in the following sections.

Project appraisal by National Treasury

Regardless of the type of financial support that is requested, the National Treasury would undertake a project appraisal. This would entail a review of the strategic necessity of the programme, the value for money, the project demand profile,

the availability of alternatives, the true economic cost, the fiscal burden and the likelihood of the programme being executed successfully.

An analysis of this nature would raise a number of red flags:

- Strategically, the programme does not align well with the country's socio-economic objectives. For instance, the National Development Plan (NDP) warned against embarking on a nuclear build programme because of its potential to crowd out investments into other programmes.² The NDP advised that studies on the necessity of the programme should be undertaken.
- The potential for stranded assets exists. If energy demand forecasts show that electricity demand is low, too uncertain or requires more flexibility, then the addition of large quantities of baseload capacity suggests that the nuclear plants will become stranded assets.
- The project offers poor value for money in the sense that the benefits of the programme are not sufficient to justify the high costs.
- The extent of fiscal support required would be considerable and on a scale that would be unaffordable or crowd out support for other critical priorities.
- The institutions that would be responsible for procurement, project oversight and operations or management have limited capacity. As a result it is possible that execution would be poor, and the expected benefits would not materialise as envisaged.

When a formal request is submitted from a line department, this assessment will be undertaken. These considerations will, therefore, inform the National Treasury's analysis from an early stage. For large projects, the initial appraisal is often shared across different departments, including the relevant line departments, central departments and related forums that have been set up for the project. This is then usually presented to the Cabinet.

Requesting support from the national budget

Any request for transfers from the budget, regardless of whether for equity or to support interest, capital, hedging or other payments, would need to go through the national budget process. The budget process begins by looking at the overall envelope of funding available for expenditure for the years ahead. This is informed by any fiscal expenditure ceilings, national debt ceilings or other considerations that might have an impact on South Africa's sovereign credit rating. Based on this, and informed by the overarching policy priorities set by the government, the Treasury will assess requests submitted by line departments.

In recent years, expenditure has struggled to remain within fiscal targets, revenue has been well below target, and debt has been edging closer to the threshold levels considered sustainable by credit agencies. The government is also under considerable pressure to reverse the downgrades by two rating agencies to subinvestment level, and to prevent further downgrades. As a result, pressure on the Treasury to

2 National Planning Commission. 15 August 2012. *The National Development Plan 2030: Our future – Make it work*. Pretoria: Presidency of the Republic of South Africa. [Online] Available at: gov.za/sites/default/files/NDP-2030-Our-future-make-it-work_r.pdf

implement austerity measures and fiscal consolidation has grown. At the same time, the Treasury is under pressure to find money to support new policy priorities, such as the National Health Insurance scheme, free higher education, relief funding for the current drought, contingency funding to recapitalise Eskom if need be (without even taking on any new builds) and to possibly assist other state-owned entities in trouble (SAA, PRASA, the SABC, the Post Office and Denel).

The Treasury therefore has a very difficult balancing act to perform. This was evident in the 2018 budget which saw it cutting budget allocations by R85 billion (as can be seen Table 4) and increasing tax (in particular VAT) to raise an additional R36 billion.³ Furthermore, the Treasury has already advised in its 2018 Budget Review that it will have to breach its 2017/2018 expenditure ceilings (see Table 5) by R2.9 billion in order to bail out SAA and the Post Office.⁴

Table 4: Baseline reductions by sphere of government, before funding fee-free higher education and training

R million	2018/19	2019/20	2020/21	MTEF total	% of baseline
National government	-18 048	-17 221	-18 177	-53 446	-2.1%
Provincial government	-5 182	-6 387	-6 797	-18 366	-1.0%
Local government	-3 152	-5 212	-5 499	-13 863	-3.5%
Total baseline reductions	-26 382	-28 820	-30 473	-85 676	-1.8%

SOURCE: National Treasury

Table 5: Expenditure ceiling⁵

R million	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
2016 Budget Review	1 076 705	1 152 833	1 240 086	1 339 422		
2016 MTBPS	1 074 992	1 144 353	1 229 742	1 323 465	1 435 314	
2017 Budget Review	1 074 970	1 144 225	1 229 823	1 323 553	1 435 408	
2017 MTBPS	1 074 970	1 141 978	1 233 722	1 316 553	1 420 408	1 524 222
2018 Budget Review	1 074 970	1 141 978	1 232 678	1 315 002	1 416 597	1 523 762

SOURCE: National Treasury

The long and the short of it is that, given the quantum of funding needed to provide any meaningful support to a nuclear programme (which lies in multiples of R100 billion), the significant budgetary constraints the country faces and the need to

³ National Treasury. 21 February 2018. *Budget Review 2018*. Pretoria: National Treasury.

⁴ National Treasury. 21 February 2018. *Budget Review 2018*. Pretoria: National Treasury.

⁵ Non-interest spending financed from the National Revenue Fund, excluding skills development levy, special appropriations in 2015/16 for Eskom and the New Development Bank, debt management and Gold and Foreign Exchange Contingency Reserve Account transactions and the International Oil Pollution Compensation Fund.

fund other priorities, the fiscus simply cannot accommodate the nuclear new-build programme.

Requests for guarantees or loans

When a request is made for a guarantee or a loan from the fiscus, a submission is made to the National Treasury. The submission is first assessed by the Fiscal Liability Committee (FLC) which is made up of senior officials. The FLC then makes a recommendation to the Minister of Finance, who ultimately decides whether to approve or deny the request.

A request will be assessed both on its own merit (whether it is really necessary and an appropriate solution) and on the potential impact it could have on the government's contingent liabilities. These contingent liabilities consist of the national debt levels and the guarantees that have already been issued by the Treasury.

Rating agencies tend to view national debt and contingent liability levels above 60% of GDP as unsustainable. For this reason, a threshold level of 60% is generally treated as a ceiling. As can be seen from Table 6, gross loan debt is already approaching 56% of GDP. The 2018 Budget Review advised that, if additional measures had not been taken, South Africa would be well on its way to reaching 60% of GDP by 2023. Furthermore, if contingent liabilities are also included, then the total liabilities are already a few percentage points over the 60% of the GDP threshold.

Table 6: Total national government debt⁶

End of period	2016/17	2017/18	2018/19	2019/20	2020/21
R billion	Outcome	Estimate	Medium-term estimates		
Domestic loans⁷	2 020	2 286	2 502	2 712	2 940
Short-term	277	310	324	347	377
Long-term	1 743	1 976	2 178	2 365	2 563
<i>Fixed-rate</i>	1 300	1 449	1 584	1 700	1 818
<i>Inflation-linked</i>	443	527	594	665	745
Foreign loans⁷	213	220	269	271	310
Gross loan debt	2 233	2 506	2 771	2 983	3 250
Less: National Revenue Fund bank balances	-225	-221	-244	-215	-220
Net loan debt	2 008	2 285	2 527	2 768	3 030
<i>As percentage of GDP:</i>					
<i>Gross loan debt</i>	50.7	53.3	55.1	55.3	56.0
<i>Net loan debt</i>	45.6	48.6	50.3	51.4	52.2

SOURCE: National Treasury

⁶ A longer time series is given in Table 10 of the statistical annexure at the back of the Budget Review.

⁷ Estimates include revaluation based on National Treasury's projections of inflation and exchange rates.

Table 7: Government guarantee exposure⁸

R billion	2015/16		2016/17		2017/18	
	Guarantee	Exposure ⁹	Guarantee	Exposure ⁹	Guarantee	Exposure ⁹
Public institutions	469.9	255.8	475.7	290.4	466.0	300.4
<i>of which:</i>						
Eskom	350.0	174.6	350.0	202.8	350.0	220.8
SANRAL	38.9	27.2	38.9	29.4	38.9	30.1
Trans-Caledon Tunnel Authority	25.8	21.2	25.6	20.9	25.7	18.7
South African Airways	14.4	14.4	19.1	17.8	19.1	11.8
Land and Agricultural Bank of South Africa	6.6	5.3	11.1	3.8	9.6	6.6
Development Bank of Southern Africa	13.9	4.4	12.5	4.1	12.3	4.2
South African Post Office	4.4	1.3	4.4	4.0	0.4	0.4
Transnet	3.5	3.8	3.5	3.8	3.5	3.8
Denel	1.9	1.9	1.9	1.9	2.4	2.3
South African Express	1.1	0.5	1.1	0.8	0.8	0.8
Industrial Development Corporation	2.0	0.2	0.4	0.2	0.5	0.1
South African Reserve Bank	3.0	-	3.0	-	-	-
Independent power producers	200.2	114.0	200.2	125.8	200.2	122.2
Public-private partnerships¹⁰	10.3	10.3	10.0	10.0	9.6	9.6

SOURCE: National Treasury

If guarantees for a nuclear build had to be issued, which could be in multiples of R100 billion in any given year, this would easily push government liabilities way above the threshold level – to an extent that no cost-cutting or tax-raising countermeasures would be able to offset them. Moreover, the Treasury would be weary of providing guarantees if its assessment showed that there was a strong possibility that the guarantee will be called on or that the loan will not be repaid, because in both cases the state would effectively be providing a subsidy. This is particularly problematic because if it were to do so, then it would actually be subverting the budgetary process – which is the only recognised process for allocating subsidies. **If the state is seen to be circumventing processes to allocate funding to a project, it could open itself up to a litany of litigation.**

Conclusion on fiscal support

Various finance ministers have over the years stated that the country will only procure nuclear energy on a scale and at a pace that South Africa can afford. Any amount of support that is requested would have to be assessed against the available fiscal room, which is virtually non-existent. Moreover, even if there is room, there are various red flags regarding value for money, strategic fit and sufficient demand for the electricity and institutional capacity, among other things, that the Treasury would have to consider.

⁸ A full list of guarantees is given in Table 11 of the statistical annexure in the Budget Review.

⁹ Total amount of borrowing and accrued interest for the period made against the guarantee.

¹⁰ These amounts only include the national and provincial PPP agreements.

Could an SOE go it alone without fiscal support?

Eskom

Eskom is in dire financial straits. It has lost the financial support of long-term creditors – largely owing to its recent history of poor governance. This has had a significant impact on the utility's cash flow. Furthermore, sales levels have been flat and total expenditure has seen a rapid increase. The utility has been surviving on emergency loans to stay operational and will likely have to scale back on build programmes already under way. It is also possible that the fiscus will need to recapitalise Eskom to ensure its financial sustainability in the medium term. Even in the best case scenario it will take Eskom years to recover from this position. As such, it is simply inconceivable that it could take on any new large infrastructure build programmes.

These considerations aside, if Eskom were to take responsibility for financing a nuclear build, it would have to look for corporate finance or project finance plus some level of equity injection and, probably, guarantees. It may also have to consider getting a project partner. These options are examined below.

- **Corporate finance** would be virtually impossible to secure given the amount of funding required, the weak state of Eskom's balance sheet, and South Africa's subinvestment credit rating.

Corporate financiers would look at how heavily leveraged Eskom is – by checking the gearing rate. This is usually calculated as the level of borrowing over the level of assets the company holds. According to Eskom, 68% is considered the advisable limit. By September 2017, the utility was already in breach of this limit, with its gearing rate standing at 72%.¹¹ Given the quantum of financing required for a nuclear build, the impact on this ratio would be significant.

Even if Eskom were able to secure funding from a vendor country, this would have an impact on its gearing rate and would deter existing corporate lenders. The corporate lenders on which Eskom currently relies would likely pull their investments because of the high gearing rate, which would have an impact on Eskom's current operations. Most local creditors already feel too heavily exposed to Eskom's debt and are looking to diversify.

- **Project finance** is another way to raise finance for an infrastructure build. This involves taking out a loan that is ring-fenced for that project. The loan is repaid from the revenues raised once the new plants become operational. This means that the project is not dependent on the strength of the company's balance sheet but only on the strength of the project's business case.

Project finance conditions often stipulate that there is no recourse to the project owners. In other words, creditors can only claim payment from the project special purpose vehicle (SPV) and not from the rest of the project owners' business operations. It is, however, unlikely that investors would be willing to accept these terms, given the considerable risks associated with a nuclear build

11 According to Eskom's Interim Financial Statement of September 2017, non-current liabilities of R465 bn and non-current assets of R643 bn were reported. Dividing the former by the latter leads to 72%.

project and the strong likelihood of these risks materialising. Investors would, therefore, probably insist on recourse to other means of repayment by the utility. But given Eskom's financial position, this would not be feasible.

In addition, creditors would require a very secure power purchase agreement in order to feel assured that electricity sales would result in sufficient payment to the project owners, and then onwards to themselves. Creditors would also be concerned about the risk of the programme being cancelled once construction had begun given the public sentiment towards the project. In light of this, it would be difficult for Eskom to secure significant project financing from commercial banks.

- As far as **multilaterals** are concerned, the World Bank and the African Development Bank do not fund nuclear projects. Other multilaterals such as BRICS might provide funding, but their balance sheets are still relatively small compared to the project's needs, so their contributions would be limited.
- The other potential financing mechanism is **bilateral sources**. These are usually arranged by the government associated with the particular vendor. It typically involves a combination of direct state loans, loans from development finance institutions, import-export bank loans and even equity from the vendor itself. Sovereign wealth funds have been suggested as a source of finance, but there do not appear to be any known examples of this yet.
- Financiers would most certainly want a **government guarantee** on Eskom's ability to repay. However, as explained above, there is very little room for this given the country's existing debt and contingent liability levels.
- Given that Eskom would find it very difficult to raise finance on its own even if it could secure government guarantees, it would still require an **equity contribution**, either from the Treasury or from equity partners. As explained above, the Treasury is simply not in a position to provide this. Furthermore, **equity partners** would be reluctant to invest given the risks associated with nuclear energy and with being in business with Eskom. Existing nuclear policy states that Eskom must be the owner-operator of any new nuclear plants, which means retaining majority shareholding with more than 50% of equity. Its ability to draw on equity partners would therefore be limited.
- If state institutions are considered, one option could be the **Development Bank of Southern Africa (DBSA)**. However, the DBSA needs to maintain a diversified, balanced portfolio of loans and investments in order to ensure its sustainability as a bank. Hence, its contribution would be relatively small and would be unlikely to make any significant impact.
- The **Industrial Development Corporation (IDC)** is not an option because it does not extend loans to SOEs, only to the private sector.
- It is difficult for nuclear projects to attract **private partners**, and if they do, this would not amount to a significant share of the funding burden. In one nuclear project, large electricity customers from industry grouped together to provide funding, but this is unlikely to be replicable in South Africa. The Energy Intensive Users Group (EIUG) represents this group in South Africa and they are

not in favour of nuclear energy.¹² Neither are many of the business associations in South Africa. It must also be noted that a private partner would typically require higher returns, which would have an impact on the overall cost of the project.

- A **foreign partner** for Eskom, such as a public entity from the nuclear vendor's home country, is another option. But even if this partner were to provide substantial equity (say 49% of a 30/70 equity-borrowing finance arrangement, i.e. R150 billion), this still leaves around R150 billion in equity that Eskom must find on top of the large bulk of debt it would require.

Former Eskom CEO Brian Molefe once intimated that Eskom would be able to finance the build itself, without the National Treasury's help.¹³ The analysis above shows that this is not feasible. Eskom simply is not able to finance a nuclear programme of this nature and the National Treasury does not appear to be in a position to assist in any meaningful way.

NECSA

NECSA is mandated to do research in nuclear science and technology, develop fuel-cycle activities, deal with nuclear waste, and sell nuclear-related manufactured products and services. It is not mandated – nor equipped – to operate nuclear plants.¹⁴ Legally this would require a change in legislation. In addition, NECSA is simply not equipped organisationally to do this.

12 Creamer, T. 11 January 2013. *EIUG head calls for rethink of SA's nuclear plan*. Engineering News. See also Barron C. 30 July 2017. *Delusions of grandeur jolt Eskom punters*. Business Day.

13 Fin24. 21 September 2016. *No need for Treasury to finance nuclear – Molefe*. [Online] Available at: fin24.com/Economy/no-need-for-treasury-to-finance-nuclear-molefe-20160921

14 Nuclear Energy Act 46 of 1999.

POTENTIAL POINTS OF INTERVENTION

While procurement policy at a national level in South Africa has not been designed with public participation as a key component, the procurement rules nevertheless provide various points of intervention that those seeking to challenge the nuclear new-build programme can draw on. Some of these points are listed in the Table 8.

Table 8: Potential points of intervention

Scenario	Potential interventions
Annual budgets	<ul style="list-style-type: none"> Monitor annual budgets for any indication of large projects or programmes being budgeted for. The website of the Chief Procurement Officer at Treasury also lists forecast procurements above R500 000 at a national level or R200 000 at a provincial level. Monitoring annual budgets gives an indication of projects/programmes going to tender.
Special Appropriation Bills	<ul style="list-style-type: none"> Pay attention to the Special Appropriation Bills for projects or programmes that have to be passed by Parliament. These Bills make provision for items not included in the national budget process or annual adjustments.
Tenders (general)	<ul style="list-style-type: none"> If tenders are announced, the CPO's e-tender site should be monitored to check who the tender was awarded to, who the competitors were, and which prices were bid. It will also provide details of any deviations from competitive processes that have been applied for and the CPO's decision.
Procurement (general)	<ul style="list-style-type: none"> At any point in the procurement process, any member of the public can write to the responsible department or the National Treasury to register a complaint that procurement may not be compliant with procurement regulations. Departments, entities or the National Treasury are then compelled to act, by law. Similarly at any point in the process, if there is suspicion that a particular official is circumventing rules, any member of the public can lodge a complaint in terms of Regulation 16A9.1(b) or Regulation 16A9.3. This must then be investigated.¹⁵

¹⁵ Regulation 16A9.1(b) Avoiding abuse of the supply chain management system states that: 'the accounting officer or accounting authority' must 'investigate any allegations against an official or other role player of corruption, improper conduct or failure to comply with the supply chain management system ...'. Regulation 16A9.3 is even more explicit. It states that: 'National Treasury and each provincial treasury must establish a mechanism:– (a) to receive and consider complaints regarding alleged non-compliance with the prescribed minimum norms and standards; (b) to make recommendations for remedial actions to be taken if non-compliance of any norms and standards is established, including recommendations of criminal steps to be taken in the case of corruption, fraud or other criminal offences.'

Scenario	Potential interventions
An open bid procurement process	<ul style="list-style-type: none"> Watch for the specific details in the Terms of Reference, particularly in the 'Evaluation Criteria', for indications that particular bidders have been favoured, for example by specifying that certain technology will be used, a certain number of years of experience is required or that additional products and services will be awarded bonus points. Favouring of bidders goes against the requirement of competitiveness in the procurement rules and can be challenged.
The vendor parades hosted by the DoE	<ul style="list-style-type: none"> The vendor parades hosted by the DoE with nuclear vendors may potentially be subject to legal challenge because they were held individually and behind closed doors. Procurement rules require vendor parades to be held in open sessions. Complaints about non-compliance can be reported directly to the DG of DoE, the CPO of Treasury or the Public Protector. The CPO of Treasury is required to investigate the matter if she or he receives a complaint.
Specificity in the procurement design	<ul style="list-style-type: none"> The Public Finance Management Act requires tenders to be specific. A review of the procurement documents by a procurement expert can reveal any omissions or vagueness that could form the basis for challenging the procurement documents.
A procurement framework allowing the DoE to procure on behalf of another entity	<ul style="list-style-type: none"> In order for the DoE to procure on behalf of another entity, such as Eskom, a procurement framework must be in place. If this is not in place, it can form the basis for challenging the procurement documents.
The Standard for Infrastructure Procurement and Delivery Management	<ul style="list-style-type: none"> The whole Standard constitutes a checklist against which compliance can be assessed. A legal team, or Parliament, could be tasked with asking the DoE or National Treasury where the project is in the gateway systems, whether compliance with the Standard is being monitored and whether there has been full compliance with every aspect. If the DoE were to pursue the nuclear build programme, it would have to restart its procurement process. Non-compliance with the Standards could form the basis of a challenge. The argument made by the DoE on a number of occasions that it is not possible to discuss prices at an early stage, on the grounds that prices can only be discovered through the tender process, will not stand scrutiny under the Standard because costs must be calculated early in the process and reviewed regularly. An independent analysis of the financial viability can be used to trigger debate, which could force the DoE to disclose its cost estimates in defence of its position. Whether or not a nuclear procurement programme meets the requirements of the Standard can be verified by writing to the CPO of the National Treasury. The CPO is not allowed to supply details that she or he considers confidential, but should be able to confirm that they are monitoring the progress of the project, the stage the project has reached, and whether all conditions are being met. Members of the public can also ask the DoE directly or request that someone in Parliament does so on their behalf.
Prices	<ul style="list-style-type: none"> Check how prices are dealt with (whether total or unit costs). Commitments to overly high prices must be checked for, as well as how these might be masked in the contract. Overly low costs are a red flag: they may signal an intention to favour a particular country or that other benefits have been negotiated.
Hidden benefits	<ul style="list-style-type: none"> Check if other deals are being simultaneously sought by the vendor or its home country (e.g. gas exploration, export or import incentives in particular sectors, control of electricity infrastructure). Parliament could be encouraged to insist on declarations being made in this regard.

Scenario	Potential interventions
Issuing section 34 determinations in consultation with NERSA	<ul style="list-style-type: none"> The Minister of Energy can only issue section 34 determinations after consulting NERSA. If NERSA is found not to have applied its mind, or too much time has passed since considering a section 34 determination and gazetting the determination, the courts would likely consider the entire determination invalid.
The IRP	<ul style="list-style-type: none"> Should attempts be made to use an earlier version of the IRP, such as the IRP2010, as the DoE sought to do under Minister Mahlobo, it is unlikely that this would pass legal muster. In view of the statements made about nuclear power in later versions as well as the considerable changes that have taken place since the promulgation of the IRP2010, it would be difficult for the DoE to prove that a decision to rely on an earlier version of the IRP was rational. This could form the basis of a legal challenge.

Demanding an ‘integrity pact’

In the 1990s, Transparency International introduced ‘integrity pacts’ as a way of addressing corruption in public sector procurements.¹⁶ An ‘integrity pact’ is a contract between a government (the procuring agency) and all the bidders for the contract, where they agree not to offer or accept bribes or to collude over who wins the contract. If the contract is broken, those involved stand to lose the contract, pay liabilities for damages, be excluded from bidding for any future contracts and face criminal charges or disciplinary action.

Members of civil society organisations, who are appointed by Transparency International or another reputable NGO, play an oversight role by scrutinising particular parts of the procurement process. They are given access to all records but can only make these public when irregularities arise and these are not addressed by the officials involved.

These pacts have been used in over 15 countries and could be introduced in South Africa if civil society organisations are prepared to campaign for this. To participate meaningfully, civil society organisations would also need to ensure that they have the right subject matter expertise and proper access to bid documents, and fully understand the procurement process.

¹⁶ Transparency International. *Integrity Pacts*. [Online] Available at: transparency.org/whatwedo/tools/integrity_pacts/5

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