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5 February 2021

Dear Mr Dennis Seemela

National Energy Regulator of South Africa (NERSA)

Email: [irp-procurement.newcap@nersa.org.za](mailto:irp-procurement.newcap@nersa.org.za)

Herewith the Free Market Foundation's contribution to your Consultation.

**Preliminary**

The Free Market Foundation expresses its sincere appreciation for both the Ministerial Determination and the opportunity to submit this Comment.

We are an economic policy thinktank. As such we have no bias for or against any energy source.

It is clear from the world's experience, available data and economic theory that prosperity cannot be achieved without substantially increased, dependable, constant and affordable electricity supply.

Many if not most modes of production should be included in the "energy mix", subject to everything being contextually and economically rational.

The FMF urges the government to move from the statutory "strategic industry" monopoly it inherited from the apartheid regime towards modern, rational and viable market-driven post-apartheid alternatives.

No.	NERSA Public Consultation Questions	Answers
<b>Category: Capacity Allocation</b>		
1.	Is this 2,500MW of nuclear capacity section 34 determination compliant with the IRP 2019 as gazetted by the Minister of Mineral Resources and Energy?	Yes, it is. If anything it is required by it. It is also required by the 1996 White Paper, which is still binding policy.

2.	<p>In light of the decommissioning of a significant amount of base load capacity by 2030, and South Africa's reliance on natural resources extraction and beneficiation as significant drivers of economic development, should this baseload capacity be added post 2030 and why? Is this an important consideration in the broader integrated industrial policy and why?</p>	<p>There is no longer room for informed debate about this. It is clear from the world's experience that a precondition for economic development and prosperity is substantial and affordable energy security.</p> <p>That, in turn, requires reliable, affordable and dispatchable baseload, which, in the real world of South Africa, can, at least for the foreseeable future, be supplied only by means of (clean) coal and (safe) nuclear power generation.</p> <p>Although other energy sources should be in the "mix" they are no substitute for essential baseload.</p> <p>South Africa is not just a developing country, but (due to Covid) the economy has suffered an unprecedented setback. This means that our demand for electricity is lower than it should have been, which is a strange blessing in disguise.</p> <p>But to achieve the growth rates and prosperity the country needs desperately, it is essential to invest urgently in baseload (ie for now, coal and nuclear).</p> <p>Gas (CCGT) is a promising, but as yet not sufficiently available energy source. It will hopefully become a third viable baseload source.</p> <p>The need to decommission a substantial proportion of our baseload by 2030 without at least the same amount, preferably twice as much, new baseload will be economically disastrous. It would be a legacy we cannot inflict on future generations.</p> <p>One of the few basic truths of economics is that prosperity once lost is lost forever. The loss is compounded forever. Whatever subsequent prosperity is achieved is always minus the compounded loss of what has been sacrificed.</p> <p>This truism is as important to grasp as it is illusive. The fallacy that lost wealth can be recovered is a seductive illusion.</p> <p>Even more worrying than pre-2030 decommissioning is what must follow. Something like another 27GW (to total 37GW), more than half our current capacity, is extremely serious. It will leave thousands of people jobless, billions in sunk capital investment abandoned, multiple ghost towns, and an impoverished economy.</p> <p>It is essential to replace not just decommissioning capacity, but also existing baseload with newer and much more baseload capacity, preferably where economic, political and social devastation would otherwise occur.</p>
3.	<p>What other baseload options are available that the country could invest in? Justify the preferred option?</p>	<p>We trust that "other" options include new-tech coal baseload.</p> <p>It makes no sense for SA to deprive itself of its abundant coal reserves and ensuing prosperity.</p> <p>In addition to new coal, objective and rational bulk-supply and dispatchable alternatives are (a) nuclear, (b) gas (Combined Cycle</p>

		<p>Gas Turbines-CCGT), and (c) hydro (primarily imported from secure sources).</p> <p>Despite being opposed by a small but disproportionately vocal group of uninformed activists, nuclear is by far the world's cleanest and safest source of abundant, affordable, dispatchable and "green" power.</p> <p>As such, it should arguably be the government's most urgent power priority.</p> <p>This does not necessarily have to be at the expense of other power sources, such as renewables, hydro, gas and coal, but is the most urgent priority amongst them.</p> <p>The government should create a maximally favourable environment for the development of market-driven power funded by investors on a "level playing field".</p>
4.	<p>Comment on the type of technology in the determination in line with the following:</p> <p>i. Energy security considering both security of supply and security of demand.</p> <p>ii. Efficient, effective, sustainable and orderly development and operation of the electricity supply industry from production through to consumption.</p>	<p>i. Security of supply is both a technological and economic question. Virtually all energy sources, even as in old mines, human and animal drawn cocopans, and human-powered factory looms, can be adequate <i>technologically</i>. But at what cost? Tidal, firewood and methane (from rotting vegetation) grid power can be secure at insane costs. Economics recognizes that "there ain't no such thing as a free lunch" (TANSTAAFL). Not only must benefits exceed costs, but the gap between then must be maximised. By far the best way to find out which are best, and to achieve a balanced mix, is the power of the market.</p> <p>ii. With or without electricity markets, the economics of nuclear is extremely attractive. We know that this is a complex and controversial statement. This is not the place to elaborate, but to urge the government through NERSA to create a positive climate for competitive bidding amongst suppliers. This raises a crucial question seldom asked and virtually never answered, namely "security of demand". There can be "secure" demand at low levels, all the way down to zero. Or there can be "secure" demand at hugely increased levels. We assume that what is being asked is how to achieve secure high-level demand. For that the economy must be (a) high-growth and (b) stable. As stated above, it is clear from the world's data that secure supply and demand are symbiotic. Without secure supply there cannot be secure (high-level) demand; without secure demand, secure supply would serve no purpose.</p>

	<p>iii. The interest of present and future electricity customers is safeguarded against, inter alia, stranded assets, environmental impact and energy security.</p> <p>iv. Use of diverse energy sources and energy efficiency.</p> <p>v. International best practices.</p>	<p>iii. This is addressed above in the references to market-driven options, or at least government-driven options that simulate markets. How to achieve “efficient, effective, sustainable and orderly” production and supply of power cannot be answered merely by reference, as the question implies, to considering “the type of technology”. All technologies can be “efficient, effective, sustainable and orderly” .... at a price. Power policy must be based on discovery processes that allow for the most “efficient, effective, sustainable and orderly” alternatives to reveal themselves. The uncertainty principle must be appreciated. There is no way of knowing in advance which technologies would be ideal. What we need is technologies that are <i>economically</i> “efficient, effective, sustainable and orderly”. As stated, given South Africa’s realities, nuclear is an urgent imperative. What SA’s realities are must be appreciated. There is a long list of relevant realities. High on the list are (a) abundant coal and uranium deposits, (b) long distances between (most) sources of supply and demand, (c) minimal hydro potential, (d) as yet unproven gas reserves, and (e) renewables that are extremely costly and not dispatchable.</p> <p>iv. Nuclear seems to satisfy all the requirements more satisfactorily than alternatives. The best way to curtail negative environmental impacts is to have laws of general application equally applicable to all energy types. To be comprehensive, all aspects of all modes must be considered equally. Energy sources are not costed equally at present. False impressions prevail to the effect that RE is cheaper than, say, new nuclear.</p> <p>v. A diverse “energy mix” is essential. But that, on its own, does not say much. The reason for a mix is very simple and obvious, namely, to not put all our “eggs in one basket”. Since there is no way to know the future, we should “hedge our bets”. There are various aspects of the matter:</p> <p>a. No single source can ever be best, even at a single moment, in all contexts. Many sources make most sense in distinctive situations and for specific purposes. Wind, for instance, is suitable for farm windmills pumping water when the wind blows, but unsuitable for secure dispatchable baseload. Wood is suitable for many rural communities and braais, but, like wind, unsuitable for secure dispatchable baseload. Coal is suitable near coal deposits, but unsuitable far</p>
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	<p>vi. Mitigation of climate change by the reduction of greenhouse gasses and other environmental imperatives.</p>	<p>from them, as in Cape Town. And so on.</p> <p>b. Over time things get even more complex and challenging. Coal might be suitable now, but no longer so if superior technology renders solar secure and dispatchable. Nuclear might no longer be suitable in the very unlikely event of there being a spate of serious nuclear accidents.</p> <p>c. Demand can vary in unpredictable ways, such as more homes and firms going off-grid, or energy for travel falling away due to people working from home as they have learned to do during lockdown.</p> <p>vi. We urge caution regarding the “best practice“ cliché. All that anyone can do is look around at what others do and draw conclusions based on what follows a “practice”. Nothing is monocausal. What happens is multi-variate. Just as finding that sunrise follows roosters crowing does not mean that cocks cause sunrise. That there are more burglar bars where there are burglaries does not mean that burglar bars cause burglaries. Statisticians always point out that correlations are not causes. Typically what people call “best practice” is no more than a means of legitimising what they happen to want. That said, there are legitimate conclusions to be drawn from the world’s experience. That power is more costly and CO2 emissions are higher in Germany than France, is powerful, though not conclusive, pro-nuclear and anti-renewables evidence. The fact that most energy is produced by fossil fuels and nuclear (where those resources are abundant), suggests that “best practice” is to exploit what resources you have at your disposal.</p> <p>vii. Whilst the FMF does not adopt positions on the climate change debate, we do encourage the government to be realistic about the considerable uncertainties and costs involved. Whether or not there is “scientific consensus” as popularly alleged, is irrelevant. Facts are not established by majority vote, but by discovering objective truth <i>where truth is not plausibly debatable by so much as a small minority of experts.</i> Whilst most technologies are ideal in limited circumstances, nuclear should clearly play a substantial, if not dominant, role. Multiple environmental impacts of renewables, for instance, tend to be overlooked. What are implications of windmills changing wind patterns, materials being mined, construction, maintenance and so on? Curiously, many vital questions have never been answered. For every option it must be asked: what is involved in mining, transporting, materials processing, component production, construction, decommissioning, waste disposal and secondary environmental impacts of <i>all</i> modes?</p>
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5.	<p>Provide what you consider to be the risks and challenges associated with the allocated capacity in terms of the objects of the Electricity Regulation Act mentioned in question 3 above.</p>	<p>As always with policy formulation, there are risks and challenges. The risks are quite straight forward, namely getting the policy wrong.</p> <p>The challenges are about implementations and spontaneous market-driven responses.</p> <p>The solution is to ensure that sound policies are adopted and properly implemented.</p> <p>After that, the situation must be monitored with a view to making adjustments where intended affects do not materialise.</p> <p>To that end, NERSA and the government need a properly conducted SEIA.</p> <p>A quality SEIA includes provision for undesired outcomes, and provision for changing direction.</p> <p>Accordingly, we strongly urge NERSA to commission a truly professional and independent SEIA.</p> <p>Since the FMF introduced the SEIA concept to SA, we have considerable expertise, which we will gladly place at NERSA's disposal.</p> <p>There is a risk that proposed new capacity allocated may, as has been suggested, be "too little too late". What would mitigate this risk is obviously to adopt the fastest affordable means of generating lots of power soon. Small nuclear is especially promising in this context.</p> <p>It can best be implemented with new coal and gas. Very short-term gas turbines on rafts are also an obvious option. But they should be considered only as an emergency measure.</p> <p>Our electricity crisis has been a substantial contributor to economic stagnation and soaring unemployment.</p> <p>It has been suggested that the greatest post-2030 risk is an "imploding economy" unless successful power policies are adopted and implemented immediately.</p>
6.	<p>Comment on the lead time for the deployment of nuclear power plant of circa 10 years, from design, licensing, construction and commissioning.</p> <p>i. Considering the lead time above, what would be the most suitable time to commence preparations if nuclear was to be a no-regret option to replace the base load capacity to be</p>	<p>There is much mythology about how long it takes to build a nuclear power plant and how much it will cost. The 10-year R1 trillion meme that floats around in SA is simply a lie. Unfortunately, one cannot be polite about it. It is the tyranny of twaddle.</p> <p>In truth, a plant can be built in less than half that time at 1/10<sup>th</sup> of that cost. A 1100MW plant costs as little as <a href="#">US\$6bn</a>, (about R90bn). That is less than the cost overrun (as opposed to the actual cost) on either Medupi or Kusile.</p> <p>By comparison, the R200bn+ invested in wind energy capacity (as opposed to much less power actually supplied to the grid) could by now have been providing by a nuclear plant costing less and providing power for up to 80 years instead of a mere 25 years or so for RE and 50 years for coal.</p>

	decommissioned post 2030?	<p>Modern nuclear power plants can be built from start to finish in 5 years or less:</p> <ul style="list-style-type: none"> <li>• 42 months for a <a href="#">CANDU</a> ACR-1000,</li> <li>• 45 months for an <a href="#">ESBWR</a><sup>[64]</sup></li> <li>• 48 months for an <a href="#">EPR</a>.</li> <li>• 50 months for a <a href="#">VVeR-1200</a> (faster for smaller versions down to a VVeR-120).</li> <li>• 60 months for an <a href="#">AP1000</a>,</li> </ul> <p>Since we already have a fully approved site (Duynefontein) and virtually approved site (Thyspunt), we could have new nuclear power in as little as 3,5 years.</p> <p>We could have more expensive nuclear and gas power immediately. The first nuclear plants on rafts were built recently in Russia, and gas-fired plants on rafts are already in use in various places.</p> <p>It is easily forgotten that the majority of nuclear plants are small and predate large plants. Nuclear submarines, icebreakers, aircraft carriers and large tankers have small nuclear power plants. In theory, they are available “off the shelf” so to speak. A nuclear submarine could literally be parked in Simonstown and feed nuclear power into the grid.</p> <p>The mistakenly presumed 10-year lead-time does seem unduly long given the crisis into which past delays plunged us.</p> <p>On the other hand, 10 years – even were it true that it must take that long -- is not long compared with Medupi and Kusile which remain unfinished after 23 years with immense cost-overruns. They were approved in 2007 without significant EIA delays. Construction started within months of the decision to proceed.</p> <p>Regardless of how long it might take, there is no choice. We must now undertake baseload construction urgently.</p> <p>Smaller coal and nuclear plants can be constructed more quickly. A strong case has been made to the effect that deciding to construct the world’s biggest coal-fired power plants (nearly) was an extraordinarily ill-conceived response when the current crisis started in 2007.</p> <p>Had proper plans been formulated then, the crisis would now be history.</p> <p>Wind and solar renewables can be constructed relatively quickly but they are of little value without full baseload.</p>
7.	What would be the advantages brought about by SMRs, and is it possible for these to complement	<p>There appears to be no certainty that SMRs can be completed sooner than 2030. Why it would take so long to complete SMRs is a technical challenge regarding which the FMF has no expertise.</p>

	intermittent technologies such as renewables?	Although the construction time of new design SMRs must follow similar planning and licensing processes as large NPPs, design, manufacturing and construction times could be shorter.
8.	Comment on the impact of nuclear technology on the electricity tariff and how this may affect demand for electricity in the longer term, and how this may affect future investment decisions and how long the investment cycle is, where applicable.	<p>As is well-known, the up-front cost of nuclear is comparatively high, and the operating cost low. Nuclear power plants have much longer shelf-lives than other technologies, up to 80 years.</p> <p>Given the low operating cost of nuclear, we know from Koeberg, that it is (in the long-term) the cheapest source of bulk power.</p> <p>If amortised over the lifetime of a plant, cheap power can be provided immediately. If the desire is to recover capex faster, nuclear would be competitively priced immediately and get cheaper over time.</p> <p>Much depends, of course, on the interest (discount) rate for the capital. But if financed, as it should be, by nuclear power vendors, that is not a question the government needs to address.</p>
9.	<p>Comment on the costs of mature and commercially available nuclear power generation technologies. Provide your comments in line with a mandate to ensure that:</p> <p>i. investment in the electricity supply industry is facilitated.</p> <p>ii. universal access to electricity is facilitated; and</p> <p>iii. competitiveness, customer and end-user choice are promoted.</p>	<p>The FMF welcomes the assumptions that inform this question.</p> <p>i. Various models apply here. If there is a single buyer, or government is one of the buyers, investment can be left entirely to power producers. All they must do is bid for whatever the government requires.</p> <p>If the government allows energy markets, as it should, it need not be concerned with either side, supply or demand.</p> <p>ii. That the government might want universal access is not an energy question, but a welfare question. The conditions on which the government decides to supply power should make no difference to how power is produced or by who. The government should simply purchase what it wants to supply, just as it gets construction companies to build roads, dams and RDP houses.</p> <p>Suppliers are not expected to make any adjustment in their bidding process by virtue of the government wanting universal access to housing, health care, or infrastructure.</p> <p>iii. It is long overdue for this to apply in SA. NERSA, as the energy regulator, ought to liberalise the market immediately to allow competitiveness and consumer choice.</p> <p>The issue that bedevils this is what must be done with ESKOM. The answer is to liberate ESKOM; to give it complete freedom to compete and innovate.</p>



		Nuclear can provide high-capacity centralised and decentralised power wherever there is a demand and can provide universal access to and through government.
10.	What would constitute modular scale and at what cost would it be affordable for the South African economy?	<p>The answer depends on what assumptions are made regarding who will bear the cost.</p> <p>What is “affordable” is whatever users are willing to pay. As with all purchases, the fundamental law of economics is that people value more what they get than what they give. That is the sole reason people transact. Popular consumerism creates the mistaken impression that this is not always necessarily so, but a moment’s reflection makes it obvious that it is.</p> <p>What people are willing to pay for power varies enormously. Mercifully, economics comes to the rescue of people who value things especially highly. A pen to a writer might be worth millions, but the writer pays the same price as an impoverished learner.</p> <p>In the power fields, prices will fall spontaneously to the lowest levels compatible with the cost of supply.</p> <p>If the government does not want to allow energy markets, what it considers “affordable” is a political not economic or energy technology decision.</p>
11.	Comment on the cost of other suitable base load technology options the country can consider – whether referenced in the IRP 2019.	<p>If the government wants, as it should, a rational “mix”, there will necessarily be a range of baseload costs. They will vary over time.</p> <p>Other feasible baseload options include:</p> <ol style="list-style-type: none"> <li>1. <b>Clean coal</b> – our number one option given our huge reserves.</li> <li>2. <b>Gas</b> – CCGT natural gas if found locally in suitable deposits and/or imported. Price variability might be a challenge. If the government moves, as it should, towards vendor competition, that will be their problem.</li> <li>3. <b>Hydro</b> – which must be largely imported. Dependable supply from politically unstable countries could be a challenge. Again, that should be regarded as the vendor’s problem.</li> </ol>
12.	Comment on the most suitable pace (timing between power units) at which South Africa should implement the nuclear build programme.	<p>As implied above, we face an emergency. The ideal pace is (within the “mix”) the fastest possible at current market prices.</p> <p>Preparation and primary site construction can literally start tomorrow at the approved sites.</p> <p>The pace between units should be, say, 5 years (hopefully less) for the first unit. As work progresses, capacity get shifted when no longer needed to the second unit and so on. This implies roughly 1 year between units.</p> <p>Six units would, by this timing, be completed in roughly 10 or 11 years, with the first supplying grid power 6 or so years before the last.</p>

13.	Comment on the procurement of this capacity now for build beyond 2030.	<p>We might be missing something, but do not see why post-2030 procurement should not be decided closer to the date <i>in response to unforeseeable conditions that will exist then</i>.</p> <p>No post-2030 procurement decision should be made now.</p>
<b>Category: The Generator</b>		
14.	<p>Provide your comments on Eskom or any future entity of the unbundled Eskom as the generator of the new generation capacity. Provide your comments under the following three scenarios:</p> <p>a) Status quo remains, that is, Eskom is not unbundled and remains a state owned vertically integrated utility.</p> <p>b) Eskom being unbundled, and Generation, Transmission and Distribution are separate state-owned entities.</p>	<p>a) It is hard to imagine how our energy needs can be provided affordably and efficiently under the <i>status quo</i>. We inherited the model from the apartheid regime’s “strategic industry” policy. In the early ESKOM years, it was an international standard.</p> <p>This was realised as far back as 1998 when the government decided to allow private competing providers into the market. Had the policy been implemented, Eskom would and could be free to charge whatever it wished, and NERSA could stand by watching competition drive down prices.</p> <p>Meanwhile, the world has moved on and left us behind. All advanced economies now have energy trading, with a range of unbundled government and privatised entities.</p> <p>We suffer with a true “apartheid dinosaur”.</p> <p>That said, ESKOM’s nuclear power history is impressive. Koeberg was built on budget on time and now supplies by far the country’s cheapest power.</p> <p>Under the current model, NERSA has an impossible task, namely, to decide what ESKOM should charge for power. There is simply no rational methodology for NERSA to apply. It is forced to participate in a political guessing game. This is as unfair to NERSA as it is to ESKOM.</p> <p>b) Under this model, the government remains fully in control, but in control of a much more rational and manageable system.</p> <p>The separate units will be incentivised to “keep an eye” on each other, and demand efficiencies.</p> <p>Unbundling into the three has been assumed to be the government’s only unbundling option. This is severely mistaken.</p> <p>In other countries with government ownership there has been unbundling into, for example, separate regional entities, and separate means of production (eg coal, nuclear, hydro, gas, renewables etc).</p>

	<p>c) Eskom is not viable and privatised, but as outlined in (a) or (b) above.</p>	<p>c) No sound argument has ever been advanced for why ESKOM could not be viably privatised.</p> <p>However, since there is such powerful dogma to that effect, we do not enter the debate here that the country needs beyond this enquiry. The government does not have, as is generally assumed, a binary choice: privatise or not?</p> <p>With unbundling aspects or autonomous entities could be privatised.</p> <p>And there are many privatisation options. The government could keep a “golden share”, for instance.</p> <p>One of the most exciting options is “people’s privatisation”. The idea is that the general public and/or employees and/or managers become owners.</p> <p>There is no need to sell such enterprises into capital markets. There are various successful models the government can emulate, such as the Czech model, where every citizen got shares, or the Telkom joint-ownership model.</p> <p>Whatever happens, ESKOM must be liberated from political interference and influence. It, and all its unbundled entities, must be truly autonomous government agencies along the lines of Chapter 9 organs of state.</p>
15.	<p>Comment on the feasibility of a partnership between Eskom and other juristic persons in view of Eskom’s current balance sheet. What would the risks to electricity customers associated with this arrangement be?</p>	<p>As stated in another submission, assuming Eskom is unbundled and Eskom’s Nuclear Department and generating assets are ringfenced, because of Koeberg, that entity would be easily partnered, as a viable and profitable organisation, with a good balance sheet.</p> <p>The rest of Eskom may be a bigger challenge. However, it too can attract equity partners. This is not a matter of principle, but which terms are offered. The government need not decide this as part of this exercise, but call instead for proposals.</p> <p>The risks to customers are obvious, namely that supply might deteriorate and prices rise.</p> <p>This again is not a matter of principle, but of terms. The government must implement suitable transition measures.</p> <p>As for cheap power to the poor, that is, as stated above, a welfare and not energy policy matter.</p> <p>Shouldn’t pose any risk to electricity customers. To the contrary, we will likely see improvements and opportunities for intensive energy users to participate.</p>
16.	<p>Give your comments with regard to the ownership model:</p> <p>a) IPP owned;</p>	<p>a) IPP ownership is the ideal for which to strive. It might be hard to achieve but should be the objective. It will be especially easily achieved regarding nuclear, as it has been with renewables. Other aspects lend themselves to IPP ownership.</p>

	<p>b) joint venture (RSA &amp; IPP);</p> <p>c) state utility owned; or</p> <p>d) any other applicable model.</p>	<p>b) Since there is considerable opposition to full IPP ownership, joint ventures should be the compromise. There has been an inconsistent international and local experience with state-private JVs. That experience should be carefully observed so as to ensure adoption of more promising models.</p> <p>c) No comment.</p> <p>d) A model worth considering is the ESOP model, whereby enterprises are partly or fully owned by Employee Stock Option Plans. This might, for instance, have been and still might be a successful SAA solution.</p> <p>As mentioned above, the UK electricity model was IPPs with strong state participation via a single “golden share” with defined voting rights and powers.</p> <p>It should be noted that some of the options can be appealing to two normally opposing interests: labour and capital. If labour is brought in alongside capital, as in the German <i>mitbestimmung</i> model, there can be labour-capital harmony.</p>
<b>Category: The Buyer</b>		
17.	<p>Provide your comments on the chosen buyer for the capacity. Provide your comments under the following three scenarios:</p> <p>a) Status quo remains, that is, Eskom is not unbundled and remains a vertically integrated utility, with the Single Buyer situated within the System Operator.</p> <p>b) Eskom being unbundled and Generation, Transmission (Wires and System Operator that includes Single Buyer Office) and Distribution are separate entities.</p> <p>c) Eskom being unbundled and Generation, Transmission (Wires) and Distribution are separate entities. A form of ISMO is instituted, with the System Operator also encompassing a Single</p>	<p>It is vital, and already been promised by government, that the “apartheid dinosaur” single buyer model will be modernised. In the circumstances, we do not respond to each point separately. Ours is a combined response to all.</p> <p>a) through c) are incrementally better options.</p> <p>It is not understood why ESKOM might not be “viable”. Our submission is that it can be viable, provided that there is a suitable regulatory order and appropriate structure.</p> <p>We repeat that ESKOM could be “liberated” whilst remaining fully state-owned. It should, at the very least, be decided what power it buys and from whom. This should be entirely out of DMRE hands.</p> <p>Eskom should not, for instance, be forced to buy RE except on terms it freely determines.</p>

	<p>Buyer Office.</p> <p>d) Eskom is not viable and privatised, but as outlined in (a) to (c) above</p>	
18.	<p>How should the cost recovery be handled to ensure that the generator earns its revenue. The response should be in terms of the ownership models outlined in question 15 above.</p>	<p>There should not be a distinctive cost recovery model. It should be a simple common law matter whereby ESKOM, as creditor, freely decides how to deal with buyers, especially municipalities, as debtors.</p> <p>If a local government does not or cannot pay, it must be bailed-out, if appropriate, by the central government. This should not be ESKOM's concern at all.</p> <p>This basic principle should apply regardless of how ESKOM is structured and owned.</p>
19.	<p>Provide what you consider to be the risk associated with the chosen buyer.</p>	<p>Eskom is currently expected to "carry" bad debts. This should end immediately. ESKOM should be an autonomous organ of state (with or without equity partners).</p> <p>As a buyer, ESKOM is in an equally impossible position. It is forced to buy from suppliers who do not supply dispatchable power. This should end immediately. Regardless of how power is generated, Eskom should call for bids. Typically, ESKOM will buy (or pay high rates for ) only reliable, secure, and constant power.</p> <p>If it wants intermittent power, it must be expected to pay much less for it.</p>
20.	<p>Must the buyer be paid only for power required by the system, i.e. the generator takes the risk for reduction in demand?</p>	<p>Yes.</p> <p>It is unheard of for suppliers to be paid for what they do <i>not</i> supply.</p> <p>It is reminiscent of the old communist Russia joke during typical shortages, that the price at which meat is <i>not</i> available is an absurdly low price.</p> <p>That said, it all depends on the contract. If an IPP says to ESKOM "I will supply very cheap power provided you pay me when there's no demand", ESKOM must be free to consider such an offer.</p> <p>Normally it will be the other way around; ESKOM will specify its needs and call for bids. It can invite a range of options.</p> <p>That to expect suppliers It is common for the Buyer to be paid for power delivered (demanded) only. The same applies to Generators.</p>
21.	<p>In the event that Eskom as an organ of state is designated as generator and buyer, how will this arrangement affect the fairness, transparency, competitiveness and cost effectiveness of nuclear procurement as far as</p>	<p>Eskom has accounting systems that simulate transparency, competitiveness and fairness.</p> <p>There will be a substantial improvement if ESKOM is unbundled, especially if there is an autonomous nuclear entity.</p> <p>NERSA is well aware of what the relative costs of power from different sources supposedly is.</p> <p>The problem is, of course, that no one knows what the real cost to ESKOM of RE is because the cost "at the fence" is only part of the</p>

	electricity customers are concerned? Should this arrangement be encouraged?	real cost (when grid integration is added), which might be multiples more.
<b>Category: The Procurement Process</b>		
22.	Provide your comments on the DMRE as the designated procurer of this capacity.	We do not have the necessary expertise, so do not interrogate this issue.
23.	What entity (e.g.: private or state controlled) is best positioned to be the procurer of this capacity and why?	Initially, ESKOM and NECSA would be best placed to be procurers.  However, there should be rapid modernisation to the point where there are also independent direct procurers, including local governments and private users.
24.	Provide your comments in respect of juristic persons that may partner with the state or the nature of the partnership for purposes of this procurement.	We know of no reason why any solvent and viable juristic person should not be eligible.
25.	Which funding model would be suitable for this capacity to ensure a lowest price for the consumer?	We endorse the view expressed in another submission that Project Finance, with its high interest rates, may be suitable for subsidised, small and quick to market Renewable Energy IPP projects, but large, high value and long-term Nuclear Energy Projects require a more appropriate funding model to alleviate the high interest incurred during construction and thereby significantly reduce the overall costs and tariff.  For that reason, Nuclear Energy projects are typically financed by the Nuclear Vendor or the country of origin through low interest Export Credit Agency (ECA) funding at about 3%. Something that is becoming popular for funding Nuclear Energy projects are the Mankala and Exceltium funding models, where private intensive energy industrial stakeholders and Municipalities can help to fund the construction costs in exchange for long term, clean energy off-take agreements at highly competitive rates, which they can also use to off-set their CO <sub>2</sub> footprints. Win-Win.
26.	What is the most cost-effective model of plant construction (e.g. turnkey	This best model is an effective, carefully designed and managed tendering process.

	<p>approach, split package approach and multi-contract approach) to avoid excessive cost overruns, noting that the recent Eskom new build was a multiple EPC contract approach, managed by Eskom. To what extent should Eskom be involved in the actual construction management of the build programme?</p>	<p>Much could be written about this, but this is not the submission in which to explore it fully.</p>
27.	<p>In the event a non-turnkey solution is preferred, how should the nuclear build work under construction (WUC) be dealt with in the future Multi-Year Price Determinations (MYPDs), given the long lead times of the technology?</p>	<p>Again, we support, with permission, what has been proposed in another submission. Medupi and Kusile projects have clearly demonstrated that large non-turnkey EPC infrastructure projects are not viable in South Africa, for now, even with a technology which is part of Eskom's DNA (price and construction time more than doubled on a known technology). Sure, corruption also played a hand. A non-turnkey solution would likely extend the build programme significantly, which becomes material under NERSA, 3-to-5-year MYPDs. Suicide for Eskom!</p> <p>As mentioned earlier, Eskom, when building a new NPP, should be afforded similar contractual frameworks and inflation linked PPAs given to Renewable Energy IPPs. This levels the playing field. It just has different dynamics. Existing Eskom assets may remain under the MYPD system.</p>
28.	<p>In the event the generator is in partnership with Eskom and another juristic person, should this jointly operated asset qualify under Eskom RAB when considering the MYPD application?</p>	<p>It is improbable that a JV with private forms will agree to their arrangement being managed in terms of the MYPD.</p> <p>There should be a customised contract that shifts the focus from a centrally planned to the market order.</p>
29.	<p>Provide your view on the method chosen for the procurement of the new generation capacity.</p>	<p>We support the shift as being in the right direction.</p>
30.	<p>State how the procurement process proposed can be reconciled with Eskom</p>	<p>The procurement process can be reconciled with ESKOM being the generator, but it is not ideal. There should be arms-length transactions in a new energy paradigm.</p>

	being the designated generator of this power.	
31.	Provide what you consider to be the procurement-related risks associated with the capacity in this determination.	We submit that the proposed 2500 MW initial nuclear programme is a good start – less demanding than the originally proposed 9600 MW nuclear programme. However, it should be seen merely as a start, with more to follow as soon as feasible.
32.	Comment on the socio-economic impact of nuclear new build programme on South Africa (e.g.: job opportunities and localisation).	<p>We suggest a formal SEIA, with which we'd be delighted to help. Indeed, it is a compulsory precondition for the adoption of policy.</p> <p>Much is written and said in the energy discourse about localisation and job creation. Desirable as these might be, by far the most important contribution for both purposes, and much more, is the down-stream impact to the country as a whole of abundant, affordable and constant power.</p> <p>There is a very direct correlation the world over between electricity consumption and prosperity.</p> <p>If there is sufficient power there will be many more jobs in the economy, and much more local industry, than can possibly be contributed by power plant construction and power provision.</p> <p>Whatever jobs and localisation are created by and in the electricity sector are virtually irrelevant compared with the benefits of power.</p> <p>It is critical for nothing to be done that raises the cost of power. All power must flow spontaneously into the larger power-thirsty economy.</p>
33.	Do you agree with the determination as provided by the Minister?	<p>Absolutely.</p> <p>The Minister could not have done anything more welcome, wise and insightful.</p>

(We are indebted to the South African Nuclear Build Platform for assistance and this template.)

<http://nersa.org.za/wp-content/uploads/2020/11/Annexure-D-Consultation-Paper-for-Nuclear-Procurement.pdf>