

SANEA

South African National Energy Association NPC



Member of
**WORLD
ENERGY
COUNCIL**



Thinking
Energy

South African Energy Risk Report 2019



EXECUTIVE SUMMARY

Energy is a key risk in any economy and particularly in the South African economy due to its energy intensive nature and low readiness for the energy transition. This is SANEA's second South African Energy Risk Report and the report has begun to evolve, mature and track the progress made in the energy sector to help make South Africa competitive in the global economy. The energy transition readiness as defined by the World Economic Forum, is broad in nature and is an overall indication of the inability or ability of a country to be able to shift the energy sector, including the availability of investment and capital, effective regulation and political commitment, stable institutions and governance, supportive infrastructure and an innovative business environment, human capital, and the ability of the current energy system to accommodate change. This has to include in South Africa's context consideration of the social impacts of change and a focus on ensuring that the energy transition includes consideration and addressing of social impacts both positive and negative.

A set of top 20 risks was prioritised by SANEA members from an initial list of 50 energy risks. A group of energy experts then used this top 20 list of risks to prioritise the top 5 risks for impact and likelihood at both a country and an industry level. They then identified the overall top risks for the country for 2019 (9 risks).

The risk of price volatility and uncertainty was identified as one of the top 5 risks at both country and industry level and in both impact and likelihood. This risk was identified as being significant as it impacts on many other sectors and on the vulnerable in our society. Some of the barriers to treating this risk are out of South Africa's control as they are global in nature, resulting in a low risk readiness and making it more difficult to treat this risk.

The risk of **price volatility and uncertainty** was identified as one of the top 5 risks at both country and industry level and in both impact and likelihood. This risk was identified as being significant as it impacts on many other sectors and on the vulnerable in our society. Some of the barriers to treating this risk are out of South Africa's control as they are global in nature, resulting in a low risk readiness and making it more difficult to treat this risk.

Price volatility and uncertainty the top 5 risk at both country and industry level.

The **fiscal crisis** as well as the changing customer of the future and parochial interests all were ranked high in the top 5 lists. The fiscal crisis also scored high in both the country and industry perspectives with a low risk readiness at an industry level, as was the case in 2018. The fiscal crisis will have a significant impact on the achievement of the objectives of the NDP and the energy white paper, due to higher cost of capital and a loss of investor confidence. It is the only risk from the 2018 top 8 to make it into the 2019 top 9, showing that the risk has not diminished and is likely to be in the top ranked risks for some time, unless significant economic growth and other factors are improved. It links to another top 9 risk, namely, a lack of **investment in and breakdown of infrastructure**, which reflects the constrained financial situation of many energy market participants leading to increased breakdown and decreased reliability further exacerbating investor confidence.

Fiscal crisis remains a top risks for 2019.

The **changing customer of the future** is also primarily driven by factors out of our control due to global technological trends and declining prices for disruptive technologies. This risk puts additional pressure on market participants to innovate around their business models. The issue of having **appropriate policy** is also highlighted as being key if the country and business is going to be able to be competitive by being adaptable and flexible to the rapid pace of change. This risk is very

Appropriate policy a key enabler.

difficult to manage and is likely to have a high impact and likelihood over the next few years. It links very closely to the risk of **parochial interests** as it is these parochial interests that are a

major barrier to addressing this risk. Increased communication and not embedding long term policy positions into legislation can help address these risks. Another consequence of not having appropriate policy is a rise in **activism and civil disobedience**. This is an issue that has been rising in importance around the world.

The last two risks in the top 9 risk for 2019 are energy transition readiness and energy data availability. Energy data availability is a barrier to appropriate policy and business model innovation and is a key enabler to be able to deal with parochial interests, so that decision making is fact based. Energy transition readiness is really an outcome of many of the top 9 and in fact of the top 20 risks as it is an indicator of how the energy system is able to adapt and change. South Africa has a very low readiness for the energy transition so the treatment of all the other related risks is required before this risk can be moderated.

The consolidated view of the SMEs on causes, consequences, barriers and effective responses was analysed for impact. In other words, if these are consistent across many of the top 9 risks, then if addressed, multiple benefits across a variety of risks can be simultaneously addressed.

By dealing with these common causes, many consequences could be managed. Again policy plays a fundamental role across all the elements assessed. It is also interesting to note that almost all the common causes and barriers to treating the top 9 risks are within South Africa's control. In other words they can be treated and multiple risks and opportunities in the energy sector managed at the same time. The possible exception is that of low economic growth which is, to some extent, impacted by global economic trends, commodity prices, etc.

Many common causes and barriers are within our control.

An effective risk response across industry and nationally was that of increased consultation together with policy coherency, new business models and a general increase in flexibility. The consultation is linked to that effective risk response of having integration and systemic planning both at an industry and national level. In response to our increasingly complex and fast changing world, this is a critical risk response to note going forward.

An integrated analysis was also carried out where a systems diagram was developed so that the inter-relatedness of the risks could be assessed. A cluster analysis shows that the number of market

Changing customer of the future a major market disruptor.

and business model risks increased from last year. It is an indication that as this process matures and risks are better understood or change, the focus of the sector will change.

Deeper level issues such as funding models, skills and energy data are starting to emerge as risks together with indications of the utility death spiral in the form of the changing customer of the future and a lack of resources leading to a lack of investment in and breakdown of infrastructure.

The technology drivers were lower in number and this indicates that the technology disruptors are no longer causing the level of uncertainty that they were and are better integrated into the energy system. The technology drivers continue to fundamentally change the industry, as markets and consumer preferences and choices shift but the discussion is now shifting to the policy domain and whether we have appropriate policy to allow uptake of these new technologies and the readiness of our energy sector to transition smoothly.

Policy, regulation and governance issues at a national and industry level are key, as they influence investor confidence and longer term financial sustainability and will impact on the implementation of the NDP.

Socio-economic issues which influence demand and product needs are also important, especially given the need for economic growth, social upliftment and the rising levels of activism and civil disobedience. The low levels of economic growth are also a strong driver of this risk as well as the readiness for the energy transition. Managing the social transition is critical in order to ensure a smooth energy transition.

All of these risks need to be treated, but by categorising them differently, it allows their relative importance, and the strategies to treat them, to be differentiated. An active passive analysis was carried out to identify drivers, pivots and outcomes of the risks system. The analysis shows that the **major drivers** of the current energy system in South Africa are the changing customer of the future, appropriate policy and parochial interests. The major drivers from 2018 were environmental compliance, endemic corruption, governance and leadership and lack of clarity on the electricity industry structure. This shows that there is some alignment between 2018 and 2019 as appropriate policy encompasses the industry structure and parochial interests in turn drive a lack of governance and leadership including corruption. It also shows that the energy experts felt that some progress has been made in addressing corruption in the country but that parochial interests where the best interests of the country are not necessarily put first remains a key concern. The changing customer of the future is also a significant shift, as this risk is partially out of the control of regulators and utilities alike and will be driven by much bigger global forces. It is a major market disruptor and has both opportunities and negative consequences, depending on your role in the energy system.

The **major outcomes** in 2019 are the lack of investment in and breakdown of infrastructure, energy transition readiness and price volatility and uncertainty. In 2018 the outcomes were a lack of investment in the liquid fuel industry, regional energy planning and affordability. Again this shows alignment with the investment outcome, albeit with an extended outcome of breakdowns. Affordability in this analysis became a pivot and was replaced with price volatility and uncertainty as an outcome, showing how the process is maturing and evolving over time. This is a noteworthy insight as it means that customers that are not vulnerable to the actual price of energy are beginning to see more risk in volatility and uncertainty, which impacts investment and investor confidence.

*The major **pivots** for 2019 are innovative business models; aligned funding models; energy affordability; the national primary energy mix and rising levels of activism and civil disobedience.* In 2018 the pivot risks were regulatory coherence; national primary energy mix; agile business models and alternative transport modes. Again some alignment was noted but with key shifts with the addition of funding models, energy affordability and activism as pivots. The pivot risks are primarily at a country and an industry level. The country level pivot risks of energy affordability, national primary energy mix and activism and civil disobedience are also inter-related. By addressing the national primary energy mix in a manner that ensures an affordable and socially acceptable transition to a new energy future will mean that activism and civil disobedience are minimised. It must however be noted that activism can also be activism for change as well as activism in protest against a lack of service delivery or other dispute. This was noted by the energy experts group as a being a trend across a number of the risks and this types of activism may accelerate a positive change.

Activism and civil disobedience has positive and negative outcomes.

Having certainty around the longer term energy mix for the country will encourage both up and downstream investment and decision making and contribute towards the most optimal integrated

Activism and civil disobedience has positive and negative outcomes.

energy plan. One of the risks noted in 2019 was the readiness of the country for this energy transition, given South Africa's low rating by both the World Energy Council and the World Economic Forum. This transition readiness risk will improve if these pivot risks noted here are addressed. The major pivot risks for 2019 from an industry perspective, if addressed, would ensure that new business models together with the aligned funding models would positively impact the energy transition in South Africa. This would need to be supported by aligned government policy, and regulatory coherence. It also highlights that the funding of the various elements of the energy value chain needs careful consideration and review.

The energy risk environment in South Africa remains one of high uncertainty and change. Some certainty has been achieved with the release of the IRP in 2018 and decisive action from government and business in terms of addressing corruption. This has given rise to some country level risks declining in importance and as a result, a deeper level reflection on energy industry specific risks occurred in the 2019 report. Overall the country is at risk of not being ready for the energy transition and new and innovative approaches to policy and business models will be required. Building resilience at a sector level has been explored in this report and it has been identified that although much work is currently being undertaken, a more deliberate focus on resilience is required. The energy sector can be steered toward a more sustainable future by: (i) proactively engaging with the interdependencies of the sector with other sectors; (ii) embracing ambiguity over an over-reliance on prediction, and by (iii) regularly affecting course-corrections in an agile manner.

¹World Energy Council - World Energy Trilemma Index 2018
World Economic Forum - Fostering Effective Energy Transition 2018

