Risks and barriers for the deployment of renewable energy sources in South Africa through Independent Power Production: an integrated assessment of market development and governance

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Introduction:

South African (SA) power supply is highly centralised, with a state owned and monopolistic utility Eskom producing 95% of overall electricity supply and 93% of it is generated by coal-fired power stations. Although SA contributes to only around 1% of the world's greenhouse gas emissions, in per capita terms, it is one of the globe's dirty nations. Unsurprisingly, a switch away from fossil fuels and towards renewables is now seen as essential if the country is to adapt to the environmental, social and economic challenges that are presented by climate change. Independent Power Producers (IPPs) is a form of competitive government procurement through outsourcing, which will leverage private capital, thereby significantly reducing the burden that this inevitably expensive transition would otherwise place on the public deficit. IPPs will also be public private partnerships, as the outsourcing done by government involves Eskom, who buys energy from the IPP. So, two questions arise. Firstly, the study assess whether IPPs be successful in effecting the transition from fossil fuels to renewables. Secondly, will they be successful in attracting private capital, thereby realising the transition to renewables without placing an undue burden on the public deficit. The study investigates whether IPPs increase or decrease systemic risks in the development of renewable energies in SA, in order to do so, the perceptions of systemic risks by stakeholders are assessed. Our methodological framework roots in two theories. One is the New Public Management (NPM) theory, which focuses on the public management discourse. Another one is the Cultural Theory, which provide us with insight on risk perceptions as well as institutionalism, organisation, legitimacy and power. We base our analysis on primary data gained through interviews with experts in South Africa and the large-scale stakeholder survey and the analysis of secondary data, mainly consisting from the official documentation.

Methodology:

A mixed method approach was followed using qualitative and quantitative data obtained from multiple experts through in-depth interview and survey responses. Experts were consulted from academia, public and private sector.

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Conclusion:

The preliminary results indicate that the public sector requires technical expertise to overcome barriers, which includes risk control, assessment, mitigation and communication. Respondents were required to rank the degree of risk exposure that face the development of renewable energy through PPPs. The risks presented in the quantitative results include corruption, political risk, human capacity risk, shareholder value, technology, and high cost of lending, construction, operational, design, legislation, regulation, institutional and reputational risk. The degree of risk exposure was ranked according to the most significant risks in the first instance and the most likely risks in the second instance. Some risks were viewed as significant and not probable. However, the analysis identified the following risks that were identified as significant and probable include political risk, human capacity, corruption and high cost of lending. Thus the study deduces that significant efforts to good governance should be directed towards increasing and strengthening human capacity and decreasing political risks by greater political, institutional, regulatory and legislative efficiency.

Figure 1. Risk significance

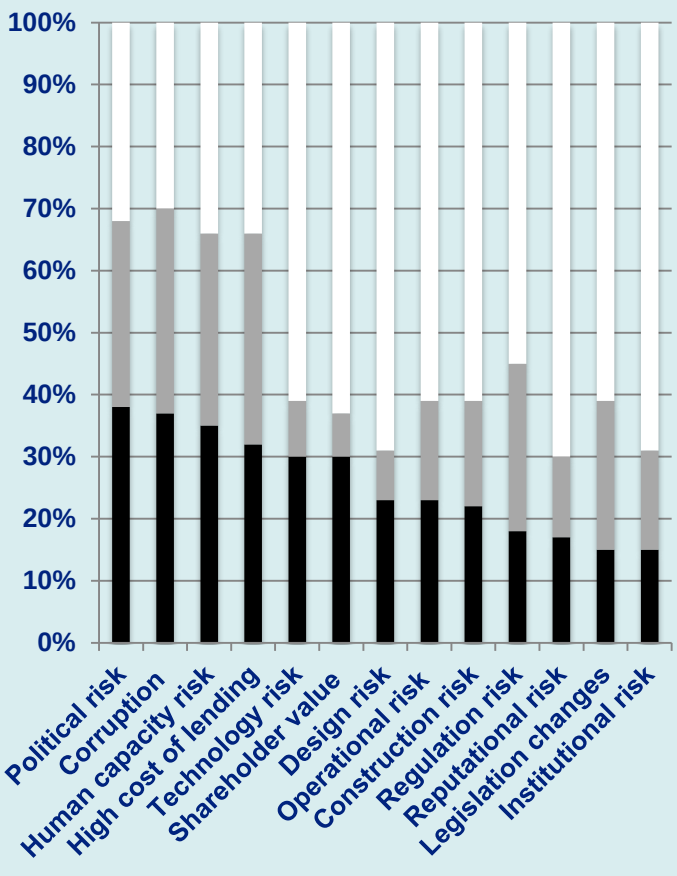

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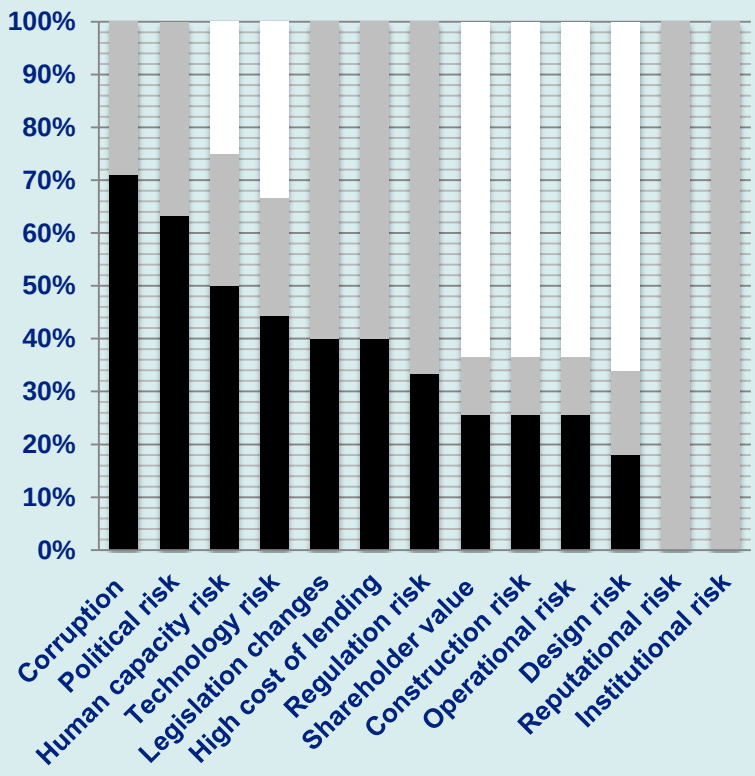
Figure 2. Risk likelihood



Also efforts shall be directed forwards such mitigating the effects of high cost of lending. These results indicate that challenges for deployment of renewable energy sources are closely connected with perceived risks by stakeholders. This barrier hinders investment into renewable energy generation capacities. This barrier is also more significant than societal integration of renewable energy. The qualitative results were classified into five groups: structure of the decision-making process, involvement of private sector and local communities, perceptions of prices and competing goals for development policies, regulations and policies, bureaucracy and governance gaps of decision-making process. When comparing the qualitative and quantitative data for both stages of the analysis the most overlapping risks are human capacity and political risks as these risks feature in all the underlying data sets. The political risk is the most overlapping risk in all the data sets, which is interesting as after the study was conducted and results were obtained, the results were confirmed through real world examples. Recent media reports and news headlines currently reveal that political risk is a serious concern in the country as some investors in general are withdrawing from SA market due to high political risk and which contributes to a greater lending risk as news headlines are revealing that the currency in SA is depreciating due to high political risk at the moment, reports also reveal that this may lead to a recession. Reports reveal that political, economic instability and civil strife is contributing to the current situation.