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REPORT
SUMMARY

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Enabling Renewable Energy in South Africa: Assessing the Renewable Energy Independent Power Producer Procurement Programme

EXECUTIVE SUMMARY



This report provides a review of South Africa’s Renewable Energy Independent Power Producer Procurement Programme (REIPPPP or the Programme), an ambitious yet successful initiative spearheaded by the Department of Energy (DOE or the Department), which has procured multiple gigawatts of renewable energy generation at costs increasingly competitive with coal-fired electricity. To achieve this feat, REIPPPP has mobilised over R100 billion in renewable energy investment, largely from the private sector within the short span of less than three years.

The principal objective of this report is to discuss the key aspects of the REIPPPP bidding process from various stakeholders’ perspectives. The paper aims to highlight and explore the significant successes, challenges and developments that have emerged since the inception of the Programme. Through this report, WWF SA is seeking to generate debate and encourage ongoing constructive dialogue between public and private stakeholders, with the aim of promoting the sustainability of renewable energy (RE) development and financing into the future.

The key themes of the report are grouped under two broad sections: Section 1 (Non-financial aspects of REIPPPP) provides a review of the bidding process and outcomes with a focus on programme-related challenges; and Section 2 (Financial aspects of REIPPPP) discusses the financing landscape and key themes that have emerged in funding projects in REIPPPP. Where applicable, recommendations for potential solutions have been suggested as to how the Programme might be improved to address market barriers to scaling up RE in South Africa.

Background

In August 2011, after nearly a decade spent deliberating on RE policy, the DOE issued the first Request for Proposals (RFP) for REIPPPP. The RFP called for 3,725 MW of RE projects to be procured from the private sector over five rounds, subject to minimum project qualification criteria and a competitive bidding process.

With only a handful of small Independent Power Producers (IPPs) in existence, no history of large-scale renewable energy installations, and an astonishingly short timeline of three months to submit first round bids, South Africa surprised the international RE community with its call to perform at unprecedented scale and pace. Of course, many had their doubts whether South Africa could deliver on such ambitious targets after previous failed attempts; one notable example being the Renewable Energy Feed-In Tariff (REFIT) Programme, which was announced in 2009 but failed to materialise.

Today, three years later, REIPPPP has become an international success story for public-private partnerships and is lauded for surpassing the original objectives set out in the first RFP. To date, South Africa has procured approximately 3,920 MW of renewable energy in only three bidding rounds, providing South Africa with clean, secure and affordable energy to help meet its growing demand.

The boldness of the Programme is a clear response to three critical issues which needed to be addressed: i) South Africa's urgent need for new generation capacity to alleviate critical energy supply constraints; ii) mounting international pressure to decarbonise the country's energy supply; and iii) a significant political will and desire to promote a sustainable renewable energy industry which would deliver both cost-effective energy and socioeconomic benefits. REIPPPP was South Africa's environmentally and socially-conscious answer to how to best deliver new energy generation to the grid as quickly and cost-effectively as possible.

Non-Financial Aspects Of REIPPPP

Prior to the announcement of REIPPPP, South Africa's RE industry was shrouded in regulatory uncertainty and diminished investor confidence, owing to: i) a lack of follow-through on nearly a decade's worth of somewhat incoherent policies and programmes, and ii) a resulting set of contradictory targets, processes and timelines for implementation of such policies. REIPPPP brought clarity to the ever-changing policy landscape with the release of a comprehensive and transparent framework and bidding process, providing a clear path towards the execution of South Africa's long-held vision and ambitions for establishing a robust and sustainable RE industry.

However, establishing a new market (essentially from scratch) with ambitious targets and short lead times is not altogether straightforward. Non-financial aspects of the Programme relate primarily to the process and procurement policies; this paper aims to assess the efficiency and effectiveness thereof. Key non-financial themes and their consequences discussed in this paper include: 1) price discovery process; 2) financial burden on the private sector; 3) ambitious pace of development; 4) grid connection challenges; 5) standardisation of Power Purchase Agreement (PPA) terms; and 6) local content requirements.

Price Discovery Process

The price discovery process was a key challenge for the fledgling industry, given there was no history of large-scale renewable energy projects built or financed in the country and hence no ‘market-established’ tariffs off which to benchmark. REIPPPP had to set tariff caps in order to ensure reasonable prices were bid and limit capacity allocations in order to generate sufficient interest while still promoting competition.

Non-financial Theme #1:

Price discovery process in Round 1 resulted in bids received at or just below the tariff caps with no true price competition.

Key Observations

- REIPPPP’s two-stage evaluation process allowed for a ‘loophole’ in competition – if the total megawatts bid for a technology fell short of the quantum for which the DOE had made available, all compliant bids could be accepted and not compete against each other.
- Tariffs bid in Round 1 were at or just below the price caps, suggesting market intelligence of demand exceeding supply – when bids came in for Round 2, which was significantly oversubscribed, tariffs for wind and solar photovoltaic (PV) technologies declined 22% and 40%, respectively.

Conclusions and Recent Developments

- While these results indicate that Round 1 projects potentially received a premium to fair market prices, it can be argued that this was necessary to restore investor confidence and reward first movers in the market.
- While endowed with healthy returns, Round 1 projects may face increased government risk of retroactive tariff setting in the future, as has been the case in some international markets.
- As of Round 3, the DOE has removed tariff caps for the most competitive technologies (solar PV and wind), suggesting market ‘equilibrium’ has been, or is close to being, reached.

Financial burden on the private sector

Warned against competitive tenders that have resulted in unrealistic proposals pitched by inexperienced developers who ultimately could not finance and deliver their projects, the government of South Africa, with the support of international consultants, was meticulous in creating a robust RFP that set out stringent requirements, with high penalty costs, to ensure that the bids received would be as close to fail-safe as possible.

Non-financial Theme #2:

Onus has fallen on the private sector to undergo a complex, time-consuming and costly process with increasingly limited chances of success.

Key Observations

- Preparation and submission of bids has required a significant amount of risk to be carried by developers – requirements to procure land, permits, Environmental Impact Assessments (EIAs), resource assessments, technical studies and costly bid bonds, are all undertaken without any guarantee of success.
- Significant capital has been deployed, which may never be successfully converted into RE generation.
- Increased competition and downward pressure on tariffs and success fees has impacted the risk-versus-return profile for developers.

Conclusions and Recent Developments

- An uneven playing field has emerged between large, well-capitalised RE developers (often international players such as foreign utilities) and smaller, local start-up enterprises – presenting a challenge to balancing a competitive environment with broad-based procurement.
- As of Round 4, the DOE has provided some concessions to reduce the time-consuming and costly nature of the bid process by waiving certain bid requirements and introducing the concept of Returning Compliant Bidders – there may be scope for further concessions as the market evolves.

Ambitious Pace of Development

In order to deliver on REIPPPP's targets, the government had effectively required the nascent RE market to mobilise all available resources in order to meet the comprehensive bidding and financial close requirements.

Non-financial Theme #3:

Timelines set for bid submission and financial close have been extremely ambitious for South Africa's nascent RE market, which has been tasked with building capacity with limited resource availability.

Key Observations

- Capacity constraints have extended from infrastructural, to governmental and Eskom personnel, to professional services, and of course to financing capacity.
- In many instances, professionals have worked on several projects at once, or have been simultaneously attempting to reach financial close and submit bids. This has demanded careful planning (especially in the case of infrastructural bottlenecks) and management of conflicts of interest.

Conclusions and Recent Developments

- While the ambitious pace of development required has stretched the available skills pool, the upshot of this has been a significant transfer of skills to the local market.
- As of Round 3 financial close, the DOE has introduced staggered financial close timelines, which may help reduce capacity bottlenecks.
- As of Round 4, the Department has officially communicated a shift to an annual procurement process, which may be less demanding on resource requirements.

Grid Connection Challenges

One of the practical challenges in the REIPPPP process has been the requirement to budget and plan for numerous potential project connections to Eskom's grid. The DOE had to ensure that IPPs would be able to connect to the electrical network when and where they needed to, while maintaining a consistent process that provides equitable, cost-effective and on-time access.

Non-financial Theme #4:

The grid connection process has led to time and cost inefficiencies on both Eskom and RE developers, leading to project delays in some instances.

Key Observations

- Eskom has had to deliver reliable cost and timing estimates for hundreds of grid connection requests prior to bid submission, despite a number of uncertain factors.
- Only once projects have been awarded Preferred Bidder status can Eskom commence its approval processes to ensure it has the resources to safely and reliably connect the IPP to the grid.
- While Eskom has employed a standard process, it still has no certainty on which projects will be successful – thus, each request is treated on an individual project basis.
- This process has placed significant resource demands on Eskom.

Conclusions and Recent Developments

- There is a fundamental disconnect between what the IPP needs (a date-certain connection with as close to a fixed price as possible) and what Eskom needs (visibility in terms of how many total megawatts from REIPPPP will go onto the grid, when and from where).
- Grid connection delays – which are beginning to emerge – may result in deemed energy payments payable by Eskom or other compensation mechanisms required to mitigate the impact on project economics.
- If Eskom had the ability to plan on a portfolio basis (i.e. considering all projects), cost estimates could potentially be far lower and translate into lower tariffs being bid.
- Looking to the future, the benefit of operating data from technologically diverse projects with a significant geographical spread will help inform a long-term strategy for grid integration of RE and optimisation of South Africa's resources – this may include the concept of Renewable Energy Development Zones.

Standardisation of PPA Terms

In the absence of precedent examples, the Programme had to apply, in some instances, uniform PPA terms across RE technologies, which may not be optimal for each specific technology.

Non-financial Theme #5:

Setting standardised PPA terms, such as project size and plant life, may not allow the market to capitalise on cost efficiencies such as economies of scale and technology innovations.

Key Observations

- In an effort to promote competition, the DOE limited the maximum size of projects, and by extension, the potential economies of scale that may have been achieved with larger plants.
- The Programme also set a 20-year PPA term across all technologies, which may curtail the useful life of certain plants and have a negative impact on the long-term cost of power.
- Developers are also required to assume site rehabilitation at the end of the PPA term (and incorporate associated costs into financial models).

Conclusions and Recent Developments

- While it is likely Eskom would continue buying power from projects still operating at the end of the PPA, such an assumption is not covered in the RFP.
- As a remedy, an insertion to allow PPA extensions at Eskom's marginal cost of power would allow investors to assume, as applicable per technology, the full unrestricted useful life of the plants, which could improve equity returns and thus lower tariffs bid.
- Removing a size cap would also most likely result in further economies of scale and lower tariffs bid.
- As the market matures, PPA terms will likely evolve based on empirical data and experiences.

Local Content Requirements

In an effort to establish a local RE industry and create long-term sustainable employment prospects, the DOE placed a significant weighting for 'local content' in the project evaluation scorecard. With pricing becoming increasingly competitive and tariff levels seeming to converge, the local content element can be an important differentiator between projects.

Non-financial Theme #6:

Local content remains a hotly debated topic in REIPPPP; a well-structured policy, which strikes a balance between the trade-offs of cost and economic development, still needs to be defined.

Key Observations

- Minimum thresholds for local content across technologies have increased from as low as 25% in Round 1 to 40% and above in Round 3 (a span of two years), with targets set at 65%.
- Prescriptive criteria and high penalties for non-compliance have added another layer of compliance costs to projects.
- The definition of 'local content' has evolved over the rounds as the DOE has attempted to narrow the scope and remove potential for circumvention of the objective (e.g. the importing of majority-completed parts/components which are simply re-assembled locally).

Conclusions and Recent Developments

- Opponents of the policy argue that: i) local content requirements result in higher tariffs bid in REIPPPP, given local components are not cost-competitive with those sourced abroad; and ii) RE projects create short-term jobs by nature so money spent on higher tariffs is not justified for the total number of jobs created.
- Proponents of the policy maintain that: i) significant socioeconomic benefits can be derived from incentivising local content; and ii) a lack of local manufacturing capacity is a form of subsidisation of foreign imports.
- Since the inception of REIPPPP, the government has endeavoured to optimise the local content policy – evidenced by undertaking further studies on localisation potential and earmarking key components for local production in the RFP.

Financial Aspects of REIPPPP

In the two years that have elapsed from the first to the third bid submission, approximately R120 billion of capital has been committed to 64 projects, a clear indication of market appetite for REIPPPP.

South Africa is fortunate to have a fairly deep, well-regulated and sophisticated banking sector. To date, the majority of the project debt has come from local commercial banks through non- or limited-recourse financing. Terms have become fairly standardised, although this may change as the market matures and competition amongst lenders increases. In addition, the market is likely to find innovative and alternative funding structures as a means of reducing the costs of funding.

While REIPPPP allows for a variety of funding structures to be employed, stringent qualification criteria for each form of finance must be met in order to give the DOE comfort that commitments are sufficiently robust and there is limited risk of funding shortfalls, which would jeopardise the projects reaching financial close.

Some of the obstacles encountered in financing REIPPPP projects are inherent to project finance, while others are particular to the South African market, and

more specifically to the Programme’s structure. The following financial themes are discussed in this paper: 1) financial close and market movements; 2) foreign exchange exposure; 3) interest rate risk; 4) diversification of funding sources; 5) Broad-Based Black Economic Empowerment (BBBEE) financing vehicles; and 6) refinancing restrictions.

Financial Theme #1: Financial close and market movements

One of the key challenges specific to the Programme was the requirement that all Preferred Bidders reach DOE Financial Close on the same specified day, with costly penalties for those who did not. From a government perspective, this was necessary to enable a level playing field and ensure projects were delivered on time.

<p>Financial Theme #1: Pushing tens of billions of rand of hedging activity through the market effectively on the same day had a pronounced effect on the Foreign Exchange (FX) and swap markets in the first two rounds.</p>
<p>Key Observations</p> <ul style="list-style-type: none"> • While the substantial hedging requirements were not solely the cause, there were significant movements in the FX and swap markets at the time of both Round 1 and 2 financial close. • The effects of ‘front running’ also contributed to these market movements. • Hedging requirements in Round 1 were better absorbed by the market given apparent sizeable offshore demand in the swap market. • External macroeconomic factors and their effects on financial markets also had a large impact on Round 2 financial close.
<p>Conclusions and Recent Developments</p> <ul style="list-style-type: none"> • These post-DOE Signing market movements can place projects at risk of not achieving financial close given the significant impact on project economics. • While projects endeavour to reach financial close as soon after DOE Signing as possible, any delays expose the projects to substantial market risk. • Staggering DOE Signing dates or extending the window in which projects can reach financial close would mitigate this impact. • The Department has since announced that it will stagger DOE Signing for Round 3.

Financial Theme #2: Foreign Exchange Exposure

Recognising the volatility of the South African rand (ZAR) and the import-intensive nature of RE projects, the DOE structured the Programme so that the government would shoulder the FX exposure from bid submission by adjusting the bid tariff to reflect subsequent FX movements to DOE Close.

Financial Theme #2:

FX exposure has presented a significant risk to both projects and government.

Key Observations

- The rand depreciated against the dollar by 8.8% and 11.8% from DOE bid assumption to DOE Signing in Rounds 1 and 2, respectively.
- Projects are exposed to FX movements between DOE Signing and financial close, the latter being when hedging takes place. It is imperative that this window is minimised by achieving financial close as quickly as possible.
- The depreciation of the rand can also significantly impact the overall commitment levels for debt and equity and by extension place a project at risk of being underfunded.

Conclusions and Recent Developments

- It is crucial that projects add significant FX volatility buffers in overall funding packages to protect against funding shortfalls, although this will ultimately add to the total project cost.
- Maximising local content at a project level will reduce FX exposure.
- In addition to staggering DOE Signing, the Department could consider using an average FX rate for adjustments, which would potentially provide flexibility to project companies' hedging strategies and would limit the FX volatility to the benefit of the DOE.

Financial Theme #3: Interest rate risk

While the government provides a significant amount of risk mitigation for FX exposure, the same is not applied to interest rate risk. This can present a challenge for projects given the volatility of the swaps market and long lead times between bid submission and financial close.

Financial Theme #3:

The volatility of the swaps market has placed some projects at risk of not reaching financial close, given the lack of DOE guidance on interest rate assumptions and cures for movements in interest rates from bid submission to financial close.

Key Observations

- Long-term rates and inflation are two of the most significant variables impacting project economics, and therefore tariff levels bid.
- While the RFP provides inflation assumptions for bid submission, the DOE does not set assumptions for interest rates, allowing developers who model aggressive assumptions to present a stronger economic case than those modelling conservative assumptions.
- Projects can be at risk of not achieving financial close due to interest rate changes, given the lack of relief provided for unfavourable market movements.
- Banks typically require that a large portion of the debt is hedged to a fixed-rate basis. While this 'protection' can be costly in its own right, it also presents a risk that interest rates are locked in for long tenors at unfavourable points in the interest rate cycle.

Conclusions and Recent Developments

- The DOE could consider providing a universally adopted curve for base interest rates used for bid submission so that all projects can be evaluated on a 'like-for-like' basis; and in the event of a material rise in base rates, the DOE could provide a cure based on the baseline provided at bid.
- Inflation forecasts should be incorporated when modelling economics of projects: there is currently a mismatch between the fixed inflation forecasts stipulated by the RFP (used to adjust revenue), and the higher inflation forecasts implicit in the forward interest rate curves (used to model costs).
- While REIPPPP projects to date have been fortunate to obtain funding at or near the bottom of a local interest rate cycle, future projects may be required to fix rates at the top of a cycle, which would result in increased tariffs being bid.
- Inflation-linked debt in place of Johannesburg Interbank Agreed Rate (JIBAR)-linked debt (currently the norm) could provide a natural hedge, and such debt could be more prevalently used than is currently the case.
- At a project level, derivatives that offer greater flexibility for breakages or allow the project to fix inflation on revenue may mitigate these risks, although the market is not yet sufficiently deep or liquid to make such options attractive.

Diversification of Funding Sources

The commercial banks have often been called the 'gatekeepers' of REIPPPP, given the important role they have played in jumpstarting the RE industry in South Africa. However, as more projects are funded and additional operating history becomes available, there will likely be greater funding appetite from a larger, more diversified pool of investors willing to take risk earlier on in the project development cycle than is currently the case.

Financial Theme #4:

The diversification of funding sources over time is needed to reduce the cost of debt and therefore tariffs bid.

Key Observations

- Commercial banks have dominated the market to date, despite the mismatch between their preference for shorter-dated loan tenors and the longer-dated tenors typically required, the latter of which can be punitive in terms of capital reserve requirements.
- Cost of debt is a limiting factor on tariff reduction; alternative funding solutions, which lower the cost of debt, are currently being sought.

Conclusions and Recent Developments

- Creating financing frameworks that price in the benefit of syndication to institutional investors may increase flexibility to procure financing post-bid and/or at a lower cost of debt.
- A bridge funding market – which would be used to fund the higher risk construction/start-up phase of plants – has not yet developed for REIPPPP, but may reduce the long-term cost of debt should this develop as the market matures.
- Other forms of financing that may be used more frequently in time include the use of corporate financing, project bonds, export credit agency financing, structured cross currency swaps, securitisation and listed funds. REIPPPP has already seen some examples of these forms being used, but in a fairly limited capacity.

BBBEE Financing Vehicles

A key aspect of REIPPPP has been the requirement for meaningful black economic empowerment (BBBEE) participation in projects. To date, financing of BBBEE participants in REIPPPP has largely been the domain of Development of Finance Institutions (DFIs), in particular the Industrial Development Corporation (IDC) and Development Bank of Southern Africa (DBSA).

As with most BBBEE financing structures, debt repayments are typically serviced by dividends from the project's equity cash flows. Key terms of such financing typically include vesting periods, pricing and trickle dividend levels.

Financial Theme #5:

Limited options for BBBEE finance have put upward pressure on tariffs.

Key Observations

- Limited BBBEE financing options can be a constraint in financing and can result in increased bid tariffs in order to meet vesting requirements.
- Given the quasi-equity nature of the financing and recourse available, there has been limited funding from commercial banks, unlike corporate South Africa, where BBBEE financing often has recourse to the corporate and/or other security including listed shares.

Conclusions and Recent Developments

- New players are entering the BBBEE funding market, including commercial banks, which are offering a 'one-stop shop' for funding based on relationships with project sponsors.
- Current BBBEE financing instruments are likely to evolve as projects begin operating and financiers gain greater experience of how such instruments are performing.
- There may be scope for alternate BBBEE funding sources, such as dedicated BBBEE RE funds, which could provide more attractive financing to a number of projects through a diversified approach.

Refinancing Restrictions

One key distinction between REIPPPP and other developed market procurement programmes has been the restriction on refinancing (required to manage the government's liability in the event of Eskom default) and on the sale of equity in the project within the first three years.

Financial Theme #6:

Refinancing restrictions should be eased over time to allow developers to free up cash flow to invest in new projects and benefits from refinancing to be realised.

Key Observations

- Refinancing is a normal event for RE plants; the cost of financing typically decreases once the plant has been operational for a few years and its risk profile has reduced.
- If new strategic shareholders can improve the project's financial or operational standing, the project may be able to outperform forecast generation levels and extend its useful life.

Conclusions and Recent Developments

- While there is yet to be a change to the RFP to allow blanket refinancing approval, some exceptions for refinancing have been granted.
- It is likely that the DOE has recognised the need for refinancing to recycle capital into development of new projects, so this requirement may change over time.

Conclusion and Outlook

The South African renewable energy market will continue to evolve and mature in the coming years. As market participants become more familiar with the process and the procurement framework established by REIPPPP, focus will shift from 'establishing' the market, to improving the market and process. In particular, a key focus will be the drive to reduce the cost of capital. This will most likely be driven by reduced risk profiles of projects as investors become more familiar with the Programme and technologies, as well as through diversification and increased competition amongst funding sources. Another likely evolution is the increased flexibility that the government allows to terms and structures of REIPPPP projects.

Beyond REIPPPP, the path becomes a little more difficult to foresee. Notwithstanding the important role that a centralised utility monopoly such as Eskom has played, there is potential that South Africa may move towards establishing a partially privatised and liberalised energy market, which could incorporate a flexible energy trading market such as a merchant power model. This is a subject of significant debate in South Africa and such a model is unlikely to materialise in the near future, although REIPPPP has proven a positive step in the direction of encouraging more private sector participation in the generation of electricity.

Until such time, REIPPPP (and its continued evolution) will provide the necessary building blocks for an ultimately diversified buyer/seller market. In the interim, it has already established a flagship public-private partnership model for South Africa, and indeed the rest of Africa, and in the process is helping to alleviate Eskom's current power crisis while also reducing national greenhouse gas emissions.

About WWF

WWF is one of the world's largest and most respected independent conservation organisations, with almost 5 million supporters and a global network active in over 100 countries. WWF's mission is to stop the degradation of the Earth's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

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To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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