

Regulation and new investment: The challenge of hybrid power markets

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Leading change in emerging markets



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From regional power surpluses to shortages: why?

- We have known for some time that electricity demand would outstrip existing power supply capacity
- For many years, SAPP has had a list of least-cost and priority power projects
- Why have these potential power projects not translated into actual investments?
- What lessons can we learn about these past investment failures so that we can accelerate new investments?



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Context



- Power sector reform in each of the SADC countries has not followed the **standard model**
 - Unbundling
 - Private sector participation
 - Wholesale and retail competition
- Instead, **hybrid power markets** have developed
 - Incumbent state-owned utilities have retained dominant market positions
 - Independent Power Producers (IPPs) are being introduced on the margin
 - i.e. both State Owned Enterprise (SOEs) and IPPs are involved in new generation investments

The consequence is that responsibility for core generation planning, procurement and contracting are mostly unclear, neglected or sub-optimal

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Questions



- Who should be responsible for generation expansion planning & security of supply?
- How are new build opportunities allocated between the incumbent SOE and IPPs?
- Who should initiate bids for IPPs?
- How should we deal with unsolicited bids?
- Who should be responsible for contract negotiations with new IPPs?
- How do we avoid potential conflicts of interest when SOEs are the Single-Buyer?
- Who should approve long term PPAs?
- How do we ensure fair dispatch between SOE generators and IPPs?



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1. Security of supply

- Set security of supply standard
 - Loss of load probability and associated generation reserve margin
- Assign responsibility for maintaining security of supply
 - System operator (short, medium and long term)
- Require reporting on system adequacy & continuity of supply, monitored by regulator
- Regulator to recommend (to government) timely remedial action when required



2a. Generation expansion planning

- In the past the national utility was responsible for power sector planning
- When the market is opened to IPPs, the SOE is no longer the supplier of last resort and either stops power sector planning or transfers it to the Energy Ministry or we have duplicate systems
- Energy Ministries seldom have sufficient capacity to undertake detailed generation expansion planning and “Master Plans” are either too general or soon become out of date

As a consequence, few countries in the region have robust, up-to-date generation expansion plans



2b. Generation expansion planning

- Plans must be dynamic & flexible & should reflect latest market prices
 - E.g. international oil, gas, coal prices
 - E.g. latest capex prices
- Either strengthen Energy Ministry's planning capability (adequate budgets + good models + trained & experienced staff) & ensure that plans are regularly updated
- Or rebuild planning capacity in national utility (pragmatic solution) – but ensure
 - planning is national (not just from utility perspective)
 - adequate governance oversight
 - located preferably in ring-fenced system operator



3. Allocation of new build opportunities

- National utilities often continue to frustrate the entry of IPPs, arguing that they can do the job more cheaply
- However, utilities seldom have sufficiently strong balance sheets to raise enough finance for new generation plant
- Also not inevitable that they can necessarily deliver more cheaply
- And track record speaks for itself: sufficient new capacity has not been added to meet demand

Governments need to develop transparent and clear criteria whereby new build opportunities are allocated to either the national utility or IPPs



4a. Procurement of new power

- **Timely** initiation of **international competitive bidding** (ICB) processes now needed
 - Bid process, financial closure, construction & commissioning take time – need to start years ahead
 - ICBs offer more transparency & competition & lower prices
- But Southern Africa has very little history of ICBs. Why?
 - Ministries have little experience with ICBs
 - Utilities often given responsibility for procurement, but do not fully appreciate security requirements for project based financing for IPPs (as opposed to their own balance sheet financing)
 - Need for experienced transaction advisors not always appreciated



4b. Procurement of new power



- Unsolicited bids can be costly
 - Uncompetitive
 - Corruption
 - Cf. IPTL/Tanzania – most expensive generator in region
- But unsolicited bids have advantage that project preparation is undertaken by sponsor
- Swiss Challenge could be used to bid out unsolicited proposal but allow original sponsor to match best bid



5. Contracting of new power

- Who will be the off-taker?
- In most instances cost of new power is higher than current average utility tariff
- Hence few customers will want to buy directly from IPP (unless security of supply concerns warrant higher prices)
- Thus most common model will be Single-Buyer where utility averages costs
- Certainty needed for investors through long term power purchase agreement (PPA) but also need a degree of flexibility to allow for market development



6a. Clarify new market structure

- Need for clear policy (& legislation) to make explicit hybrid power market & which institutions are responsible for (& procedures for)
 - planning
 - allocating new build opportunities
 - initiation of competitive bidding processes
 - procedures for dealing with unsolicited proposals
 - contracting
 - dispatch



6b. Clarify new market structure

- No need for *de jure* monopoly for “single-buyer”
- Refer rather to a **centralised purchasing function**
- Allow large customers to also contract directly with IPPs
- Also allow non-exclusive cross-border contracting
- Centralised purchasing agency should be unbundled (at least functionally and in terms of accounting) from generation division of national utility and preferably located with System Operator / Transmission



6c. Clarify new market structure

Central purchasing agency / function could be linked to the following functions.....

- Generation expansion planning
- Transmission planning
- Cross border trading
- Market administration (if applicable)
- System operation
- Transmission operation

Governments & national utilities should be more pro-active in new transmission investments that would facilitate IPP entry

7a. Regulators' role in hybrid power market



- Licensing of centralised purchasing agent
 - Economic procurement
 - Competitive bidding
- Approval of generation expansion planning
- Guidelines or procedures for competitive procurement & standard tender documents
- Licensing of IPPs
- Approval of standard PPAs
- Approval of new PPAs subject to compliance with procurement guidelines / procedures
- Periodic audits of central purchasing agent's procurement process and dispatch function
- Approval of bulk supply tariffs and pass through of PPAs subject to proof that purchase was economic & least cost
- Approval of distribution retail tariffs with pass through of bulk purchase costs



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7b. Regulators & PPAs



- Assist in negotiating PPAs?
- Standardised PPAs?
- Promote transparency, make public PPAs & avoid confidentiality provisions?
- Benchmarking of PPAs?
- Review or final approval of PPAs?
- Pass through provisions for bulk and retail tariffs



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Caveat

- This is not the whole story (obviously)
 - Investment climate
 - Policy & legal framework
 - Transparent, credible and competent regulator
 - Credit worthiness of off-taker
 - Currency matching
 - Secure PPA
 - Sovereign guarantees
 - Other credit enhancement
& security measures
 - Competitive and secure fuel contracts
 - etc



Conclusions (1)

- Deliberately simplified (focused) message
- Clarify policy & make explicit challenges of hybrid power markets
- Assign responsibility (& reporting) for security of supply
- Assign responsibility for (dynamic & flexible) power sector planning
- Clear criteria for allocating new build opportunities between SOE & IPPs
- Define responsibility for procurement of private power
 - Non-exclusive central purchasing agency rather than monopoly single-buyer
 - Initially situated in (unbundled) System Operator / Transmission division
 - Subject to stakeholder governance oversight



Conclusions (2)



- Initiate early and timely competitive bidding processes
- Adopt Swiss Challenge for unsolicited proposals
- Regulator to license central purchasing agency / function and (with government) to set procurement guideline / rules & model PPA
- Regulator to test competitiveness of procurement and PPA
- Regulator to approve cost pass through for bulk & retail tariffs subject to competitiveness test



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