

Managing competition **for** the market: lessons from the experience of IPPs in Africa

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Leading change in emerging markets

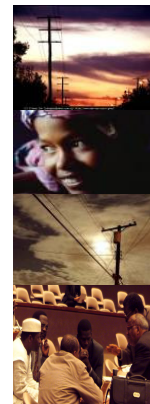


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Drivers for utility reform in developing countries

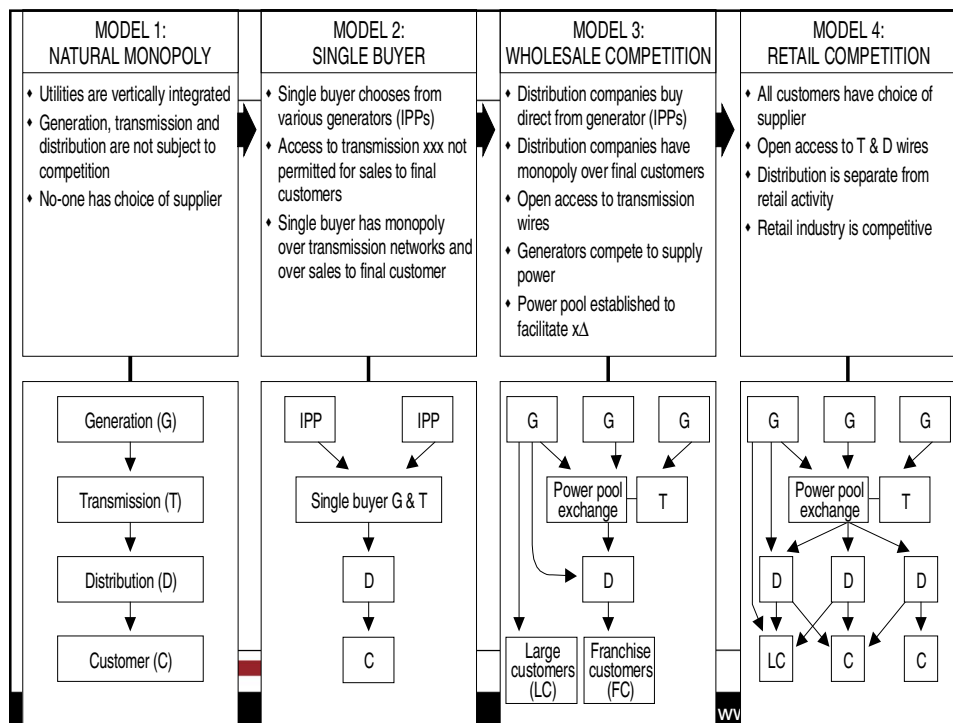


- Inefficiencies in investment and operations
 - soft budgets, poor governance, regulatory failure, no competition, few incentives for cost reduction
 - deterioration or collapse of services
- Financing for capacity expansion
 - public resources insufficient -> private
- Part of overall economic restructuring
 - macro-economic constraints or crises
 - state re-defines relationship to SOE's
- Technological innovation
 - Changing economies of scale and scope
 - New possibilities for competition
- Standard prescription applied internationally in 1990



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Emergence of the “standard model” of reform



But reality is mostly different to “standard model”



- Nowhere in South Asia or Africa do we find **full** wholesale or retail competition
- Not all countries or states have unbundled utilities
- In many cases, powerful state-owned utilities maintain dominant market share
- BUT – original drivers for reform remain
We still need to improve performance and attract investment
- Private sector being brought in on the margin
- Plus competition FOR the market
– rather than IN the market



Emergence of hybrid infrastructure markets

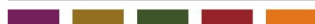


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Private sector participation

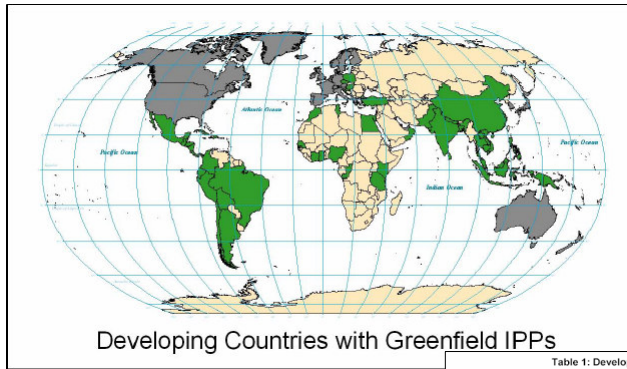


- Public finance for power investments insufficient
- Space is opening up for public private partnerships and/or private investments
 - Management contracts
 - Leases
 - Concessions
 - Divestitures
 - Greenfield investments – **IPPs**



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A worldwide phenomenon



QUICK STATS:

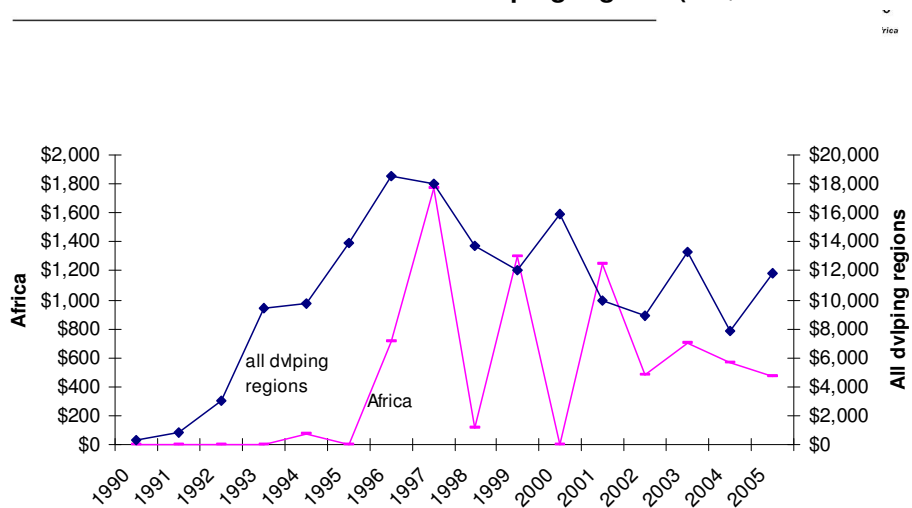
- 50 Countries
- 200 Projects

Argentina	Croatia	India	Nicaragua	Sri Lanka
Bangladesh	Cuba	Indonesia	Nigeria	Tanzania
Belize	Czech Republic	Ivory Coast	Oman	Thailand
Bolivia	Dominican Republic	Jamaica	Pakistan	Trinidad and Tobago
Brazil	Ecuador	Kenya	Panama	Tunisia
Burkina Faso	Egypt	Laos	Papua New Guinea	Turkey
Cambodia	El Salvador	Malaysia	Peru	Vietnam
Chile	Ghana	Mauritius	Philippines	West Bank and Gaza
China	Guatemala	Mexico	Poland	
Colombia	Honduras	Morocco	Rep. Congo	
Costa Rica	Hungary	Nepal	Senegal	

Source: World Bank PPI database, 2003, cited in Victor, D, Heller, T, House, J and Woo, P 2004, The Experience with IPPs in Developing Countries, PESD, p.35, [SEE APPENDIX A for MIR's African sample.](#)

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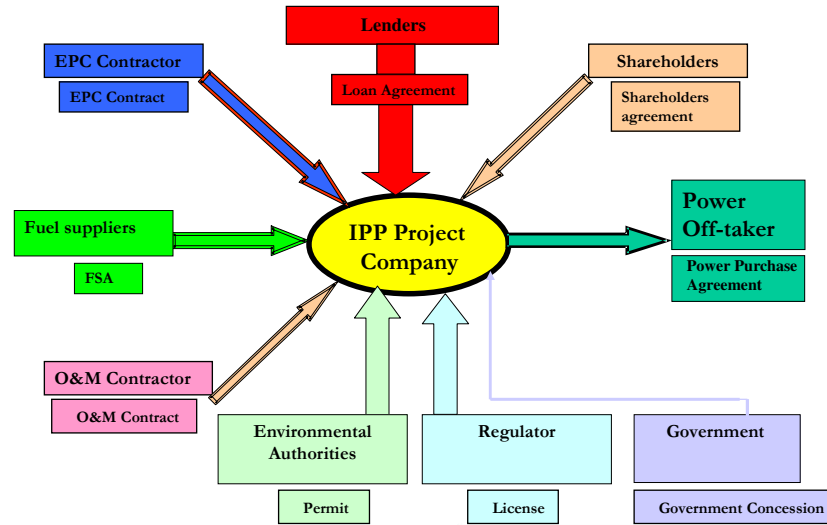
Greenfields IPPs in Africa vs. all developing regions (US\$ mil)



Source: World Bank Private Participation in Infrastructure Database, accessed on November 14 2006 and author's compilation.
Note: Africa figures include only greenfield electricity projects in North Africa and Sub-Saharan Africa whereas world figures include greenfield electricity and natural gas projects (however electricity projects account for 84 per cent of the total value).

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Contract stakeholders



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Key IPP contracts

- Implementation Agreement ("IA")
(Typically granting land or rights);
- Power purchase agreement ("PPA");
- Fuel supply agreement ("FSA");
- Operation and maintenance agreement ("O&M");
- Engineering Procurement Contract ("EPC");
- License;
- Permits;
- Financing agreements;
- Inter-creditor agreements; and
- Insurance agreements
- Guarantees?



A lawyers dream:
a developers nightmare!

Source: Clive Ferreira - Fieldstone

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Traditional risk management (1 of 5)

	Risk	Mitigation
Tender and bid process	<ul style="list-style-type: none"> Non-competitive, non-transparent tender and award process Corruption 	<ul style="list-style-type: none"> Open bidding to foster competition Transparent notification of procurement intention and tender process, including timetable Comprehensive information and documentation packages for bidding and negotiation, pre-bid conferences Information on avoided costs Pre-qualification, bid-securities set at appropriate level Objective evaluation criteria with independent scrutiny



Traditional risk management (2 of 5)

	Risk	Mitigation
Construction	<ul style="list-style-type: none"> Late completion Reduced output Inefficient (high heat rate) Environmental compliance 	<ul style="list-style-type: none"> Turnkey, lump sum, date certain contract Liquidated damages for performance failure
Operational	<ul style="list-style-type: none"> Low availability High operating cost 	<ul style="list-style-type: none"> Fixed fee contract with performance bonuses Operational guidelines and penalties/termination for performance failure
Fuel Supply	<ul style="list-style-type: none"> Reliable fuel supply to specification Adequate resources for life of project (PPA) 	<ul style="list-style-type: none"> Proven reserves Alternative supply obligation Liquidated damages for delivery failure Cost pass through



Traditional risk management (3 of 5)

	Risk	Mitigation
Revenue	<ul style="list-style-type: none"> Creditworthiness of Power Purchaser Poor billing and collection Demand for electricity Non-dispatch Currency convertibility and transferability Devaluation of local currency Inflation Change in fuel prices 	<ul style="list-style-type: none"> Accounting and financial information available on power purchaser Long term power purchase agreements Sovereign guarantees Front-loading of tariffs Escrow accounts Dollar denominated contracts Indexation of key costs Local currency financing (established financial markets)

"The odour of over-pricing can set back IPPs for years!"

Source: based partly on Clive Ferreira – Fieldstone and Woodhouse, E 2005.

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Traditional risk management (4 of 5)

	Risk	Mitigation
Regulatory	<ul style="list-style-type: none"> Arbitrary changes to rules, and/or addition of new rules Misapplication of rules Too much regulatory discretion in price reviews Additional cost risks (associated with performance and environmental standards, accounting rules, taxation) 	<ul style="list-style-type: none"> Change of law exemption Clarity of regulatory framework and approval processes Regulatory discretion limited Regulatory capacity built Political risk insurance Partial risk guarantee Appeal process and dispute settlement facilities

Political interference risk: government intervenes in regulatory process

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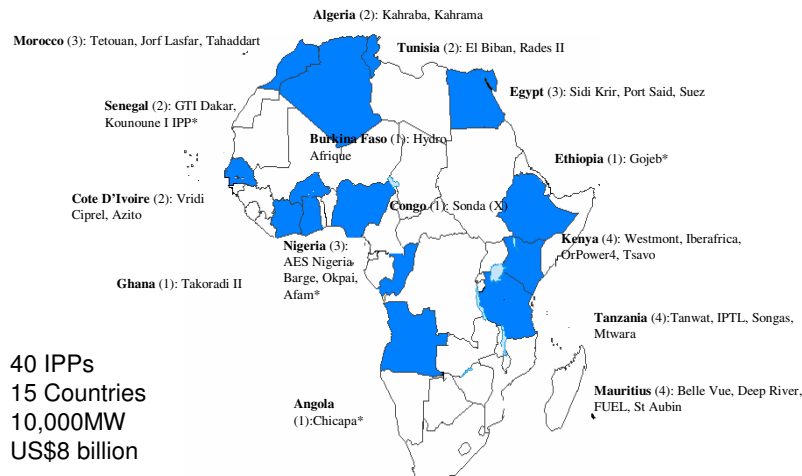
Traditional risk management (5 of 5)

Legal and
political

Risk	Mitigation
<ul style="list-style-type: none"> Lack of clarity in investment, taxation and contract law Lack of clarity in energy policy and restructuring Movement to merchant market No recourse to courts Change of law Cancellation of contracts 	<ul style="list-style-type: none"> Enforceable legislative framework for foreign investment / taxation / property rights / contract law Published energy policy backed by legislation and reform steps with clear IPP framework and level-playing field with incumbent Change of law exemption Multi-lateral partners / finance Equity turn-over / local partners Renegotiation or exit options, linked across issues Political risk insurance Partial risk guarantee Off-shore arbitration
<ul style="list-style-type: none"> Force Majeure for unforeseen circumstances, usually insurable Strikes and labour disputes usually contentious issue Parties to receive payments from power purchaser under Force Majeure 	

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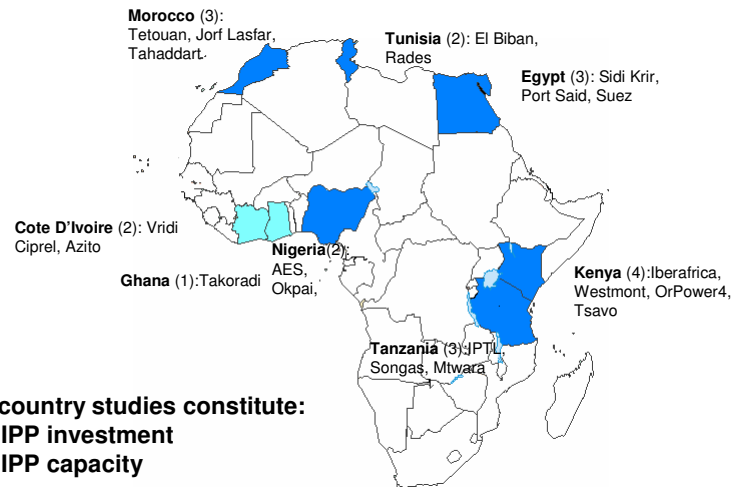
Greenfield IPPs in Africa



Source: based on WB PPI database as well as author's compilation. Notes: (X) designates projects were cancelled; * designates projects are under construction; emergency power units not depicted.

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IPP Case study countries/cases*



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North African IPPs: larg(er), mostly gas-fired

Country/ Project	Size (MW)	Cost US\$ million	Fuel/cycle	Contract type	Contract yrs	Project tender- COD
Egypt (10%, 2005)						
Sidi Krir	683	413.9	natural gas/steam cycle	BOOT	20	1996-2002
Port Said	683	340	natural gas/steam cycle	BOOT	20	1998-2002
Suez	683	338	natural gas/steam cycle	BOOT	20	1998-2003
Morocco (66%, 2005)						
Jorf Lasfar	680+680	1500	Coal	BTO	30	1994-2000
CED	50	58.5	Wind	BTO	19	1995-2000
Tahaddart	384	364.9	natural gas/combined cycle	BTO	20	1999-2005
Tunisia (23%, 2004)						
Carthage Rades II	471	260.7	natural gas/combined cycle	BOO	20	1997-2002
SEEB	27	30	natural gas/open cycle	BOO	20	2000-2003

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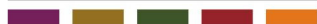
East Africa: mostly smaller (diesel, gas, geothermal)

Kenya (10%, 2005)						
Iberafrica	56	65	HFO/medium speed diesel engine	BOO	7, 15	1996-1997
Westmont	46	35	Kerosene/gas condensate/gas turbine (barge mounted)	BOO	7	1996-1997
OrPower4	13	54	Geothermal	BOO	20	1996-2000
Tsavo	75	85	HFO/medium speed diesel engine	BOO	20	1995-2001
Tanzania (60%, 2005)						
IPTL	100	120	HFO/ medium speed diesel engine	BOO	20	1997-1998
Songas	190	310	natural gas/open cycle	BOO	20	1994—2004
Mtwara	12	8.2	natural gas	BOO	2 (20)	1994-2007



West Africa: mostly medium sized gas

Nigeria (15%, 2005)						
AES Barge	270	240	Natural gas/open cycle (barge mounted)	BOO	20 (2 parts)	1999-2001
Okpai Agip	300	462	Natural gas/ combined cycle	BOO	20	2001-2005
Cote d'Ivoire						
CIPREL	210	105.6	Natural gas / open cycle	BOOT	19	1993-1995
Azito	330	233	Natural gas / open cycle	BOOT	24	1996-2000
Ghana						
Takoradi 2	220	110	Light crude / single cycle	BOOT	25	1998-2000



Sustainable IPP investments?

Simple hypothesis

“Sustainable IPP investments depend on a balance between investment and development outcomes”

Investment outcome:

- Adequate return on investment
- Prospects for expanded investments

Development outcomes

- Reliable power
- Competitively priced power

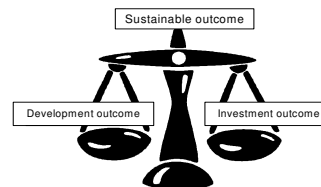


Sustainability of IPP investments?

What determines investment and development outcomes?

Theory of obsolescing bargains

Raymond Vernon (1971) *Sovereignty at Bay*. Bargaining position of foreign investor changes once heavy infrastructure built. Original deal becomes obsolete and host country can potentially expropriate the benefits



Can stakeholders strike a balance between investment and development outcomes to create more sustainable projects?



Exogenous stress factors on projects

- Macro-economic shock and currency devaluation
- Creeping devaluation
- Drought - > emergency/expensive procurement
- Civil strife
- Alleged corruption
- Abrupt policy shifts



Contributing elements to success

Country level

- Favourable investment climate
- Clear policy and legal framework
- Coherent power sector planning
- Transparent and credible regulatory oversight
- Competitive bidding practices
- Competitive fuel availability



Contributing elements to success

Project level

- Favourable equity partners
- Favourable debt arrangements
- Secure and adequate revenue stream
 - Credit worthiness of off-taker
 - PPA
 - Other security arrangements
- Secure, competitive fuel contracts
- Positive technical performance
- Other risk management and mitigation measures
- Ongoing strategic and risk management

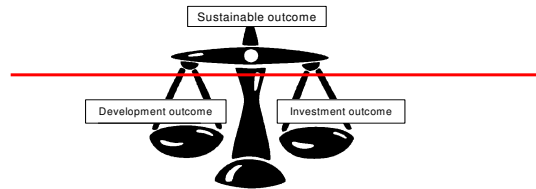


IPPs in Africa: overall outcomes

Despite serious stresses (including macroeconomic shock and currency devaluation, drought and the need for emergency power, abrupt policy shifts, civil strife and corruption) there have been remarkably few failures (in our sample); but of the 20 projects, 8 have undergone a contract change



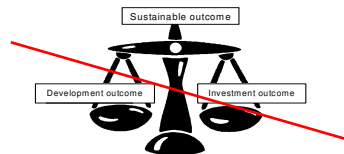
Experience of IPPs in North Africa



- Development and investment outcomes largely perceived to be in balance with overall positive outcomes reported
 - No arbitration proceedings and/or renegotiations
 - Competitively priced power
- BUT future is not so certain
 - Egypt: equity turnover and no new IPPs on same terms
 - Tunisia and Morocco: future hybrid market ?



Experience of IPPs in SSA



- In the majority of SSA IPPs, development and investment outcomes largely perceived NOT to be in balance (with contract changes noted for 7 of the 12 projects)
- There are, however, 5 projects where contracts have endured
- What made the difference between the North Africa projects and SSA IPPs that saw no change and the 7 SSA projects that did go through some form of renegotiation?
- Furthermore, why are the renegotiated SSA projects more sustainable than before? What made the difference?



Contributing elements to success revisited

Country level

- Favourable investment climate
 - not a deal breaker (e.g. Kenya) but obviously impacts on costs/prices (e.g. N Africa vs SSA)
 - Many more bidders in countries with investment grades
(Of 53 African countries, only 24 have received international credit ratings and most are speculative grade. Only 5 have investment grade—Botswana, Mauritius, Namibia, South Africa and Tunisia)
- Clear policy and legal framework / coherent planning / & competitive bidding
 - Most countries had passed legislation. But policy not always implemented (e.g. Tanzania). Policies also reversed....
 - Emerging hybrid power market with IPPs alongside incumbent SOE. Need clear policy and planning frameworks outlining relative roles, how much private power, when and bidding and procurement process
 - Too frequent, forced reliance on VERY expensive emergency power: e.g. Kenya, Tanzania, Nigeria, Ghana
- Transparent and credible regulatory oversight
 - Are regulators assisting or hindering IPP investments?
- Competitive fuel availability
 - Obvious point: competitive IPPs more likely



Contributing elements to success revisited

Project level

- Favourable equity partners
 - Global and local partnerships
 - 7 of 20 projects had local partners
 - Origins, experience and mandate of partners
 - Previous involvement and country relationships
 - Experience with developing country risk (Globeleq, IPS, "southern" firms)
 - Presence of DFI's and/or state aligns interests
 - Equity turnover (50% of projects) may aid sustainability
 - Haven't yet seen major Indian and Chinese presence in power sector. Future?
- Favourable debt arrangements
 - While most are limited-recourse project financed, 5 exceptions that were financed exclusively with balance sheet of sponsors
 - DFIs & Exlms prominent
 - Take longer to reach financial, but
 - Insist often on international competitive bidding
 - Help maintain contracts and resist renegotiation (e.g. Egypt, Kenya)
 - But also once again financing SOEs! Crowding out IPPs?
 - Local currency financing – few examples (Morocco), limits?



Contributing elements to success revisited

Project level

- **Secure and adequate revenue stream**
 - Credit worthiness of off-taker sometimes didn't seem to matter! (e.g. Egypt, Tanzania, Kenya - although now complicates Nigeria IPPs). IPPs seek additional security arrangements, or simply translate higher risk into higher prices (e.g. Kenya, Nigeria, Ghana)
 - PPAs all foreign denominated (except 1 in Morocco that secured local debt financing). Remarkably, these PPAs have survived currency devaluation shocks as well as creeping devaluation overtime.
 - Were unable to analyse PPAs (most confidential – should they be?). Are we learning around devising “PPAs with more staying power” (c.f. Fiona Woolf)
- **Secure, competitive fuel contracts**
 - shifting risk (cf Egypt, Nigeria, Tanzania)
- **Positive technical performance**
 - need more evidence, Egypt IPPs claimed this was significant)
- **Ongoing strategic management of risk**
 - Minor examples: e.g. informal agreement in Egypt, after currency devaluation, shifting part of O&M to local currency
 - More significant example: 2nd PPA contract for Iberafrica halved capacity charges through initiatives of sponsor, off-taker and regulator
 - Refinancing: e.g. IPTL and Songas in Tanzania



Towards more sustainable PPAs

- Operational:**
 - include incentives (not just penalties) in PPA for plants to follow dispatch instructions
 - provide for mothballing one or more units which may mitigate change due to new/cheaper technology
- Financial:**
 - provide for sponsor and utility to share in re-financing gain (if sponsor refinances after construction)
 - allow for partial buyout, which means IPP may take more market risk as market develops and capacity charge may be reduced
- Regulatory:**
 - introduce incentives to minimize cost of cost pass-through;
 - capping the rate of return may protect IPP from political interference and/or forced renegotiation
- Legal:**
 - contract terms can encourage voluntary renegotiation, which may involve appointing a contract manager, incentivised financially to look for “win-win” solutions



Source: based on Woolf, F 2005, 'PPAs With More Staying Power', Independent Power Producers and Power Purchase Agreements. University of Cape Town, Graduate School of Business and NER 2005.

Summary: differences between NA and SSA?

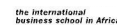


- Most North African IPPs in significantly more attractive investment environments→ competition was greater, as were ICBs, which may have also contributed to cost reductions.
- Despite exogenous stresses, policy frameworks remained largely intact and planning mishaps were fewer than in the SSA sample.
- Most North African IPPs benefited from abundant low cost fuel and secure fuel contracts as well as credit enhancements such as sovereign guarantees.



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Summary: differences between SSA w/change and those without?



- The IPPs that have seen changes to their original contracts were all procured amidst a form of electricity crisis, mostly as a result of drought in largely hydro-dependent systems.
- Often World Bank sanctioned power master plans and/or conditional loans were passed over to plug the immediate power crisis.
- ICBs were only followed in two of the projects that saw changes; furthermore in the two projects that did see an ICB (Songas and OrPower4) only two bids were received.
- Such crisis conditions did not predominate to the same degree in the group of IPPs that have not seen changes.
- Although ICBs were still limited (Azito and Tsavo), it is arguable that the IPP framework was more clearly defined, bidding was more transparent and ultimately more thorough due to the fact that plants were procured under less urgent circumstances than in the group of change.



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More differences between SSA change and no change?



- In all four of the projects that have stayed intact to date in SSA, multilateral and bilateral development institutions and/or development-minded firms have been equity holders (IPS and IFC in Tsavo, FMO in Mtwara, IFC in CIPREL, and Globeleq and IPS in Azito).
- In addition, most of these projects have also benefited from concessionary funding, provided and/or arranged by DFIs.
- In contrast, in the eight remaining projects, which have encountered some form of change, such agencies and firms have been notably less present on both the equity and debt side. Only one of the eight projects had a development minded firm as an equity holder (Globeleq in Songas). Only two of the eight projects saw involvement of a DFI on the debt side (World Bank in both Songas and Takoradi II).



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Emerging trends



- The core driver remains: the need for increased investment in capacity
- IPPs continue to be developed
- However, they enter increasingly complicated policy and market conditions: kind of hybrid markets with SOEs still dominant. (Will IPPs only be a niche market?)
- Parallel reforms in legal system, public finance, local finance markets and in fuel and labour markets also crucial
- More emphasis now needs to be placed on integrated & coherent policy and planning – defining clearly the space and terms for IPPs
- Regulatory design needs revisiting -> a better match between decision-making discretion and local regulatory commitment and institutional and human resource capacity



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Emerging trends



- Need a better understanding of new sponsors: origins, experience, mandates - > how do they assess and manage risk?
- Local finance, local partners: need better understanding of opportunities and constraints
- DFIs continue to play crucial role, but in funding SOEs should not crowd out space for IPPs
- Ultimately a balance has to be achieved between investment and development outcomes if infrastructure investments in developing countries are to be sustainable



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