

Independent Power Producers and Power Purchase Agreements: Frontiers of International Experience

Prof Anton Eberhard

Graduate School of Business
University of Cape Town

<http://www.gsb.uct.ac.za/iirr/>

2 – 5 May 2004

Course objectives

To build understanding and capacity amongst leaders and professionals in the public and private sectors:

- ? to manage and facilitate the introduction of Independent Power Producers to meet growing electricity demand, and
- ? to negotiate Power Purchase Agreements that balance the interests of investors and customers and that are sustainable

Course motivation and rationale

- Growth in electricity demand and looming capacity shortages require new investments in power generation
- Public finance for power investments not generally available
- In some instances, experience in new generation technologies not locally available – e.g. gas and CCGTs
- Space is opening up for public private partnerships and/or private investments
- Wholesale or retail competition not yet an African reality
- Thus new generation investments are currently not merchant plant – but rather Independent Power Producers (IPPs) with Power Purchase Agreement (PPAs)

Course motivation and rationale

- Key challenge is how we can secure successful and sustainable IPP investments and PPAs
- i.e. can we secure private investment in Africa with PPAs that are affordable for customers
- We need to learn from the frontiers of experience in IPP investments and PPA negotiations internationally and in Africa
- We have to develop African understanding and capacity to create policy, regulatory, institutional and financial frameworks that can attract IPP investments and can secure sustainable PPAs

Learning methodology

- Simply not possible to take in everything in a lecture; what makes things stick is if you can relate it to your own context
- Personal preparation / readings
- Interactive lectures
- Role play – a social process of clarifying and articulating one's learning through confronting realistic problem contexts
- Select a few lessons per session
- Record and develop in a logbook / note book
- Share with other course participants

Learning methodology

1. What is the lesson or insight?
 - Seeing something new for the first time or seeing something from a new angle or perspective
2. Then visualise instances, examples, applications in your own situation
3. Then determine what would be the plausible consequences, i.e. what would change if you had to apply the insight/lesson in your own situation

	Monday 3 May	Tuesday 4 May	Wednesday 5 May
Early	Private Preparation	Private Preparation	Private Preparation
09:00 10:30	Context and introduction change drivers, investment needs, signposting the issues <i>Prof Anton Eberhard</i> GSB 1	Pricing and financing issues in IPP/PPA deals: examples from Indonesia <i>Donald Hertzmark</i> CORE 5	Role-Playing Exercise IPP/PPA negotiation <i>Donald Hertzmark</i> CORE 9
10:30 11:00	TEA/COFFEE/ Photograph	TEA/COFFEE	TEA/COFFEE
11:00 12:30	The potential for IPPs in the SAPP / SADC region <i>Lawrence Musaba, SAPP</i> 2	Legal and negotiating issues in IPP/PPA deals: the case of Meizhouwan <i>Prof Thomas Heller</i> Respondents: NARUC / RERA 6	Role-playing Exercise (cont) 10 Summary and conclusion: best practices in IPP/PPA contracts NARUC 11
12:30 13:30	LUNCH	LUNCH	Certificate awards CLOSING LUNCH
13:30 15:00	Experience in putting together IPP deals in Africa An IPP developer's perspective <i>Clive Ferreira, Fieldstone</i> 3	Regulatory issues in IPP/PPA deals <i>Raj Barua and Sandra Waldstein</i> NARUC 7	
15:00 15:30	TEA/COFFEE	TEA/COFFEE	
15:30 17:00	What can go wrong: the case of Dabhol <i>Prof Thomas Heller</i> 4	Key elements to a sustainable IPP/PPA deal <i>Prof Thomas Heller</i> 8	
19:00 -	DINNER MARCOS AFRICA PLACE	Private Preparation	

Categories/stages in power sector reform

- Commercialisation and corporatisation
- Structural change to separate non-competitive, regulated elements (wires) from potentially competitive (generation and retail)
- Competition **for** the market (IPP/PPAs) or **in** the market (electricity trading)
- Privatisation
- New regulatory frameworks

Generation



Transmission

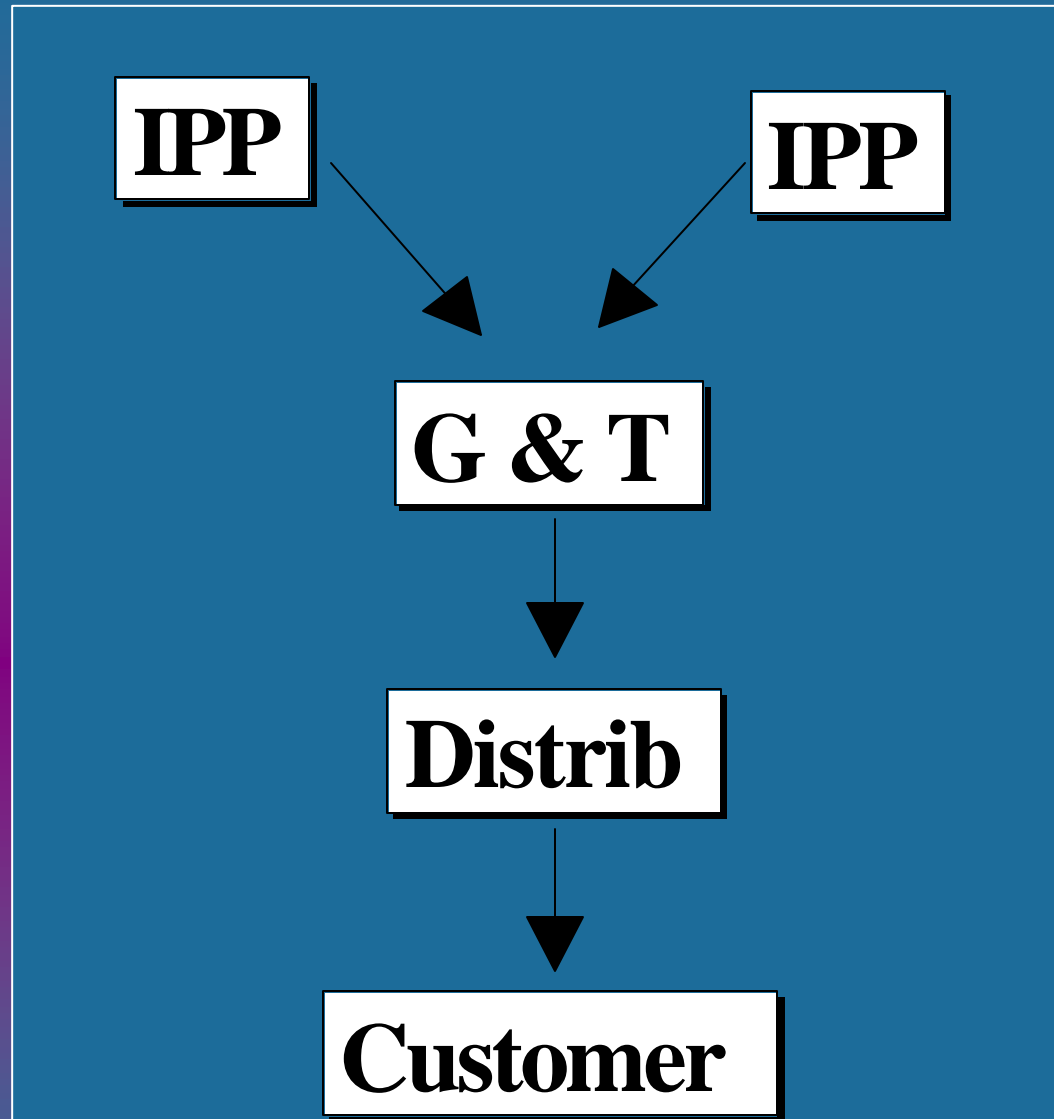


Distrib

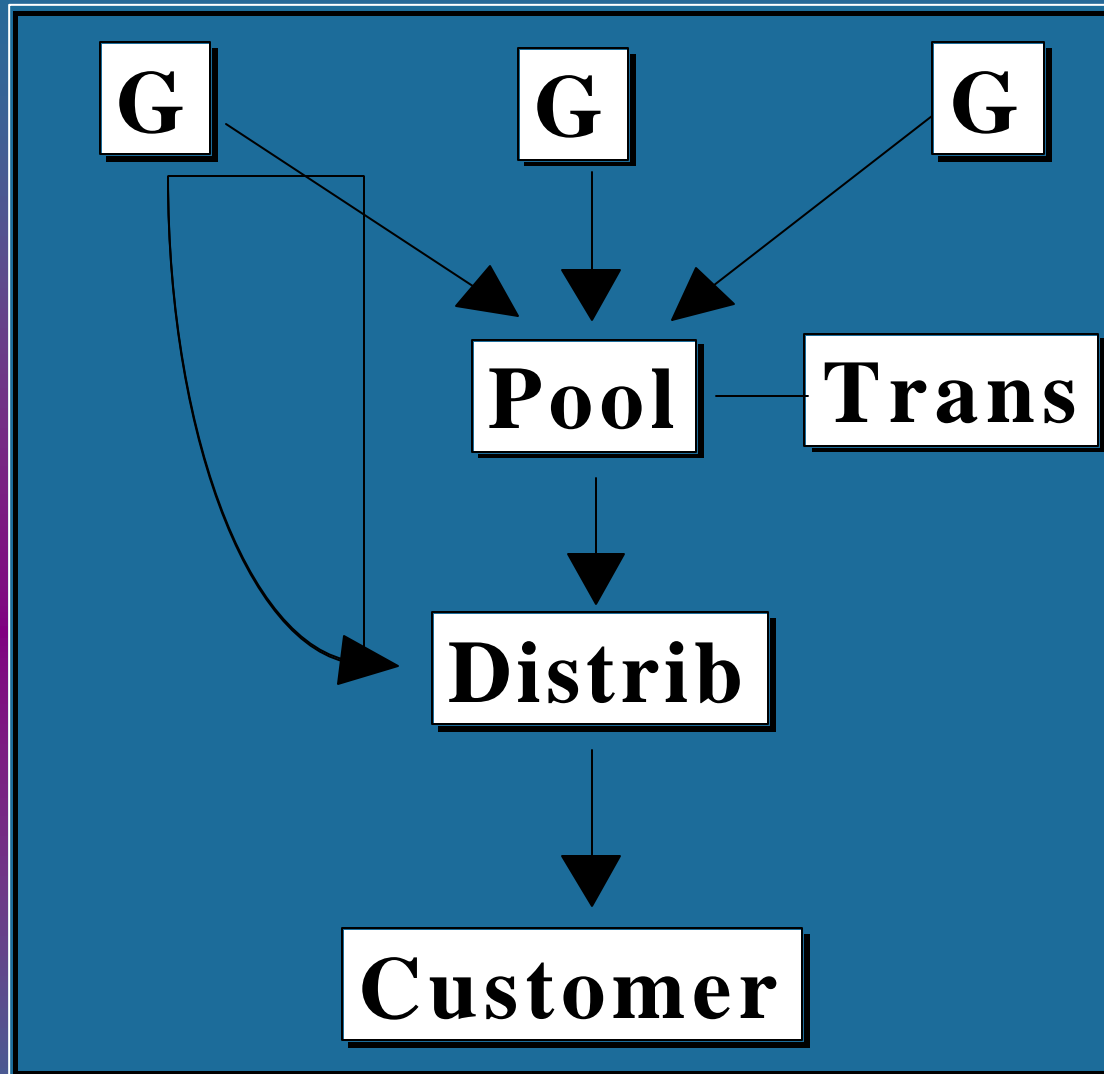


Customer

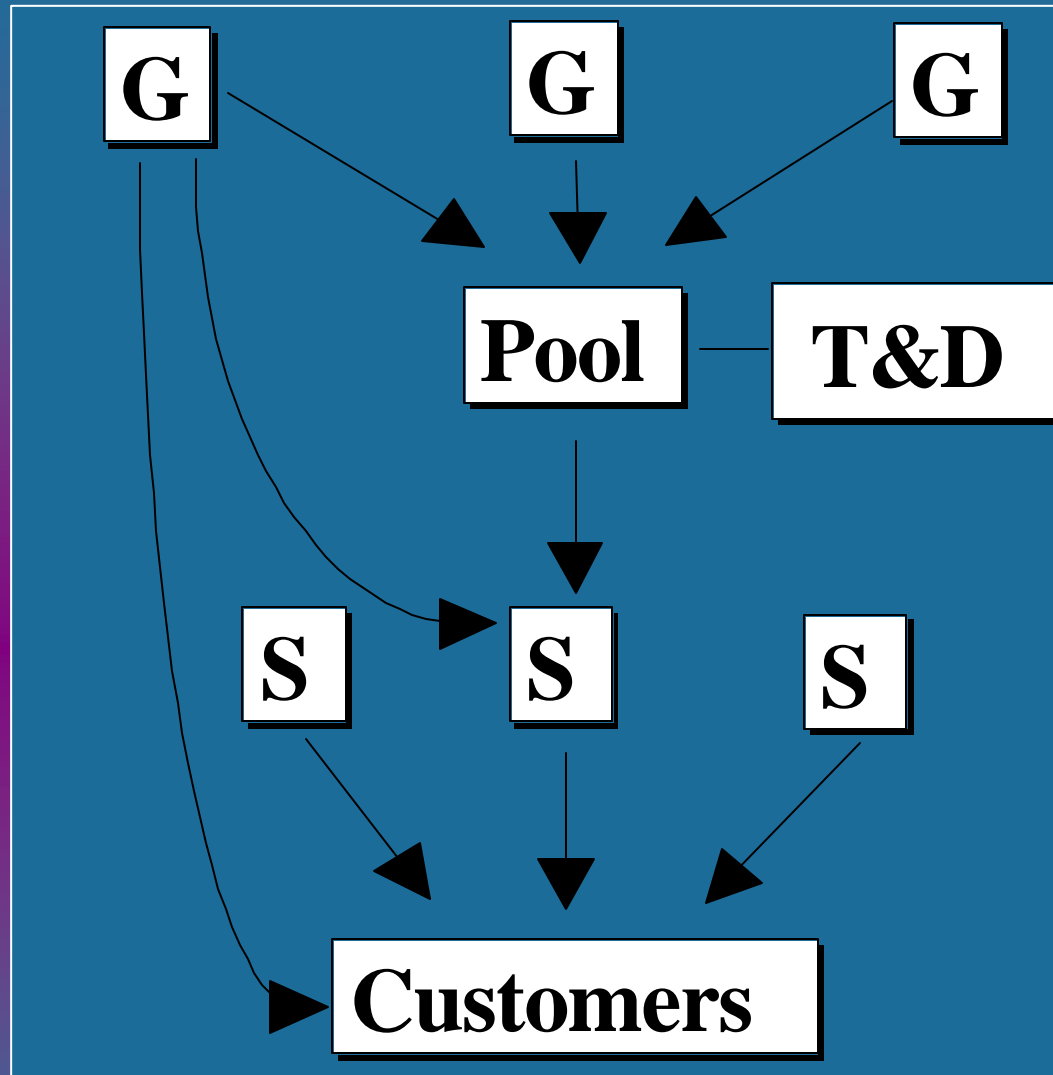
Monopoly Model



Single-Buyer Model



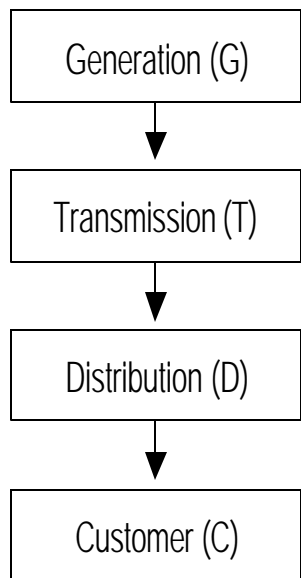
Wholesale Competition Model



Retail Competition Model

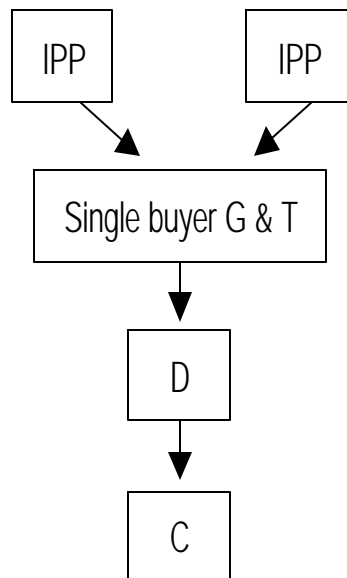
MODEL 1: NATURAL MONOPOLY

- ♦ Utilities are vertically integrated
- ♦ Generation, transmission and distribution are not subject to competition
- ♦ No-one has choice of supplier



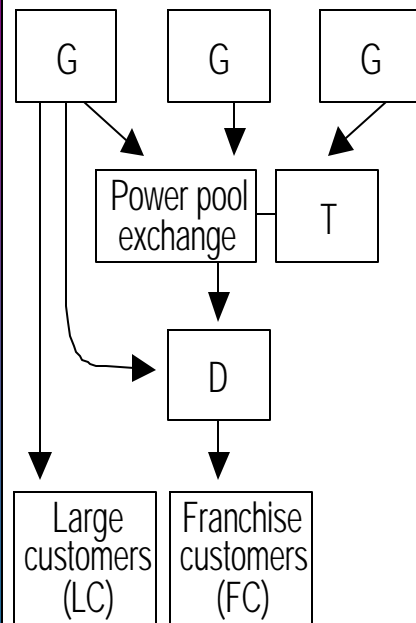
MODEL 2: SINGLE BUYER

- ♦ Single buyer chooses from various generators (IPPs)
- ♦ Access to transmission xxx not permitted for sales to final customers
- ♦ Single buyer has monopoly over transmission networks and over sales to final customer



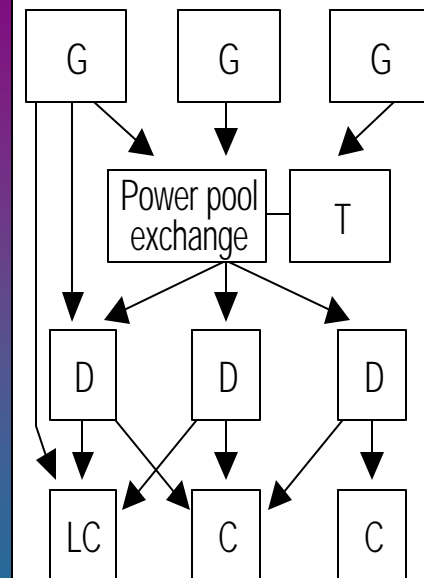
MODEL 3: WHOLESALE COMPETITION

- ♦ Distribution companies buy direct from generator (IPPs)
- ♦ Distribution companies have monopoly over final customers
- ♦ Open access to transmission wires
- ♦ Generators compete to supply power
- ♦ Power pool established to facilitate $x\Delta$

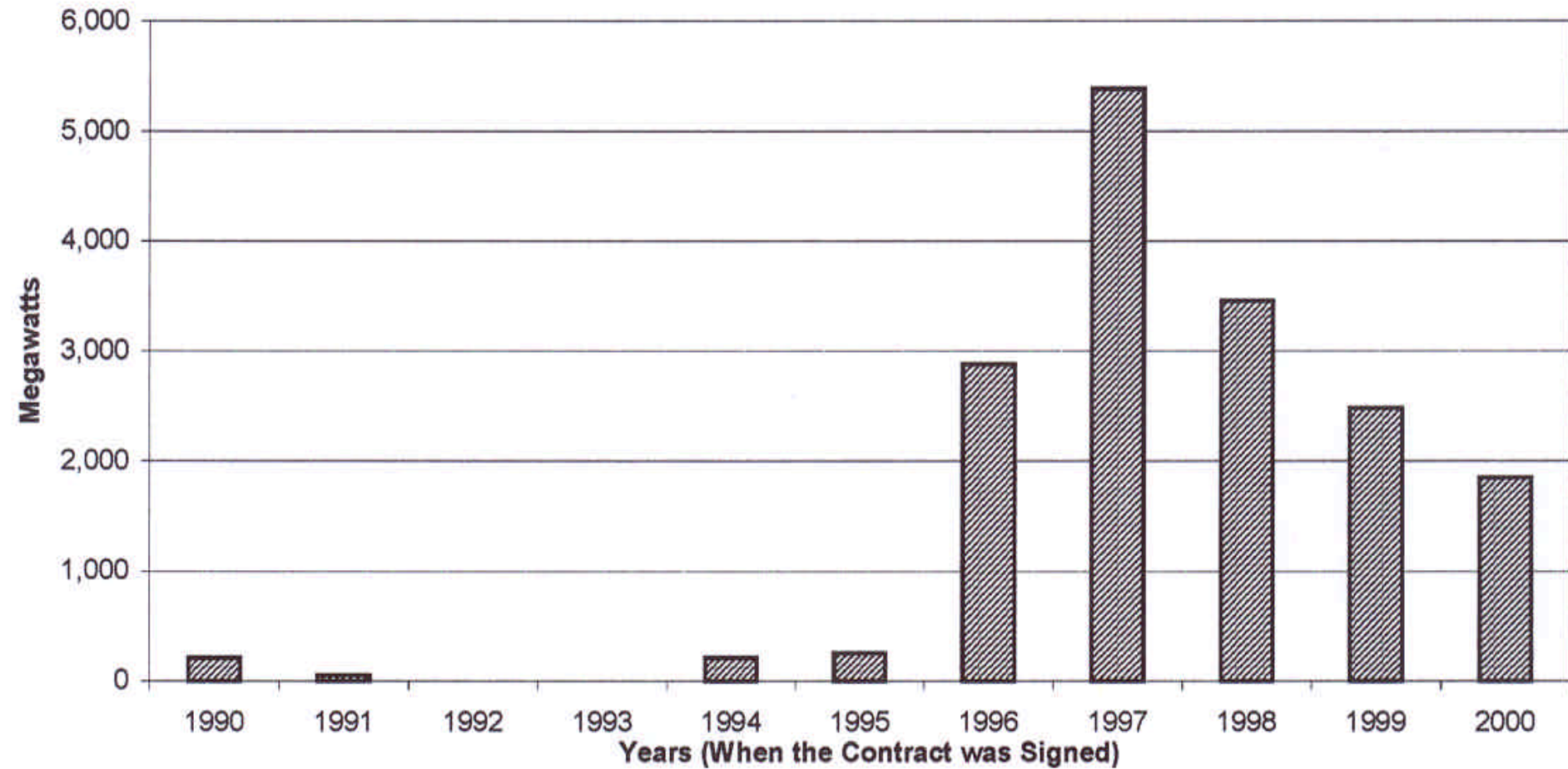


MODEL 4: RETAIL COMPETITION

- ♦ All customers have choice of supplier
- ♦ Open access to T & D wires
- ♦ Distribution is separate from retail activity
- ♦ Retail industry is competitive



IPPs in Africa



Thinking through the key IPP/PPA issues

- What determines the investment outcome?
- What determines the development outcome?
- 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

Thinking through the key IPP/PPA issues

- Politics, policy, law, regulation & institutions
- Financing and risk management
- Tender / bid processes
- Power purchase agreements and associated tariffs

Policy, regulatory & institutional issues

- Established legislative framework for foreign investment / taxation / property rights / contract law
- Established financial markets
- Public finances and solvency of utility
- Clear energy sector policies & legislation
- IPP framework: competition **for** the market
 - level playing field with incumbent
- Quality and independence of regulation
- Clear, published and transparent approvals process (including environmental and generation licences)

Financing and risk management

- Determined income stream, revenue collection
- Accounting and financial information available on power purchaser
- Guarantees
- Enforceable legal frameworks for creating security over project assets
- Sophisticated renegotiation clauses, linkage across issues, offshore arbitration
- Front-loading in tariffs, or upstream (fuel, equipment)?
- Availability of commercial insurance and political risk insurance
- Shifting risk profile through involvement of bilateral or multilateral lending agencies
- Revisiting ownership structures (local partners and/or domestic capital)

Tender / bid processes

- A diversified programme of generation expansion
- Technology selection
- 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

Power purchase agreements

- Retail tariffs have to reflect cost of supply
- In almost all developing countries – new generation investments mean increased tariffs
- PPAs should not tie in uncompetitive prices forever – need to factor in potential move to competitive market – sunset clauses or contract convertibility
- Allocation of risks (affects price)
 - Market risk / non-dispatch
 - Foreign exchange risks
 - Currency convertibility and transferability
 - Changes in fuel prices
 - Costs due to change in law
 - Political risk
 - Effective dispute resolution and enforcement mechanisms
- Structure of PPA - cost pass through, peak pricing, capacity payments
- Counter-party to PPA
- “Odor of over-pricing can set back IPPs for years”

Sustainable IPPs and PPAs?

- Conceptually simple (apparently) – but complex in detail because of difficulties in managing risk – political, legal, regulatory, commercial and social
- Changing incentives for politicians, regulators and corporate developers under conditions of asymmetric and imperfect information can lead to project conflicts and risks that are difficult to manage
- Interaction with ongoing reform process?
- Managing dynamic instability!