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From Strategy to Action: Business Opportunities for Energy Market Transformation

Creating a Creditworthy Power Sector and Financing the Transformation



Financial Solutions Unit
Finance, Economics and Urban Development

Attracting Private Capital
for Sustainable Infrastructure Development

PSLO Mission
Washington DC
24 October 2011

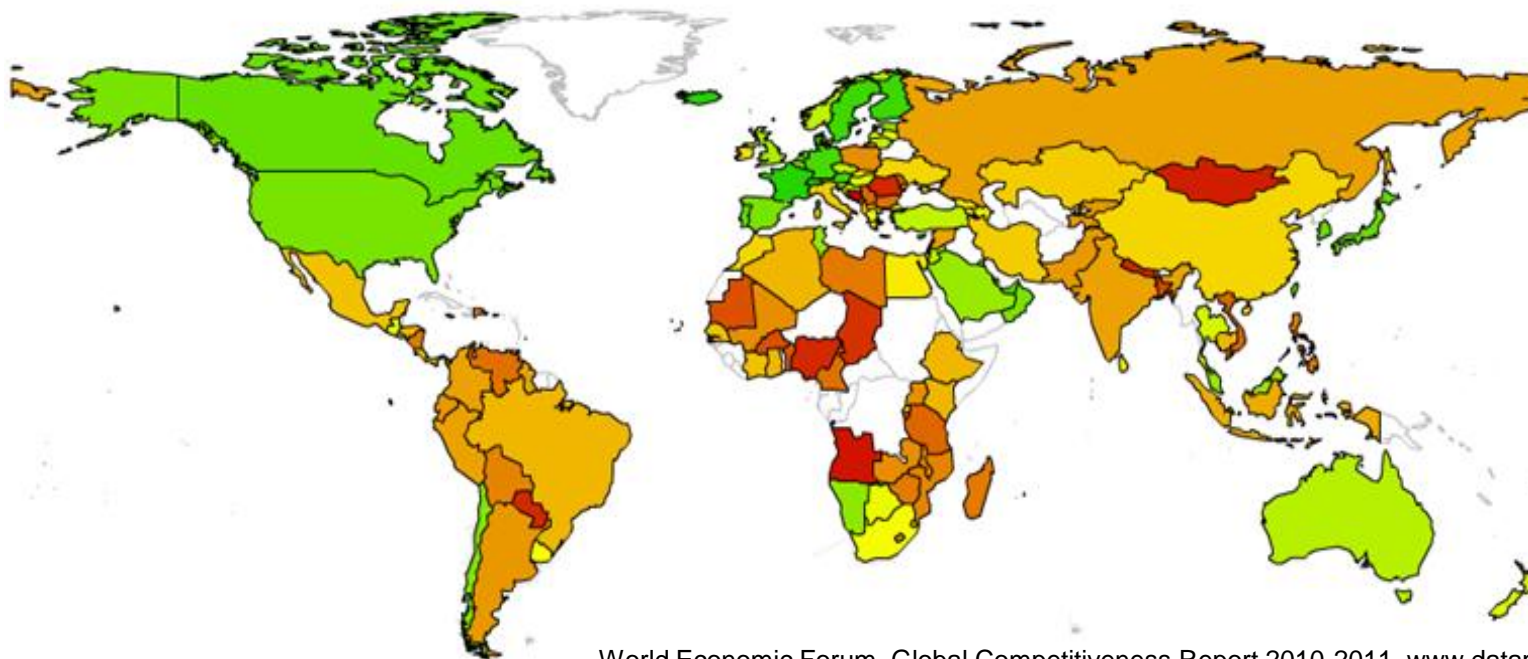
Creating a Creditworthy Power Sector and Financing the Transformation

Large Infrastructure Gap Remains



Extensive and efficient by
international standards

Extremely
underdeveloped



World Economic Forum, Global Competitiveness Report 2010-2011, www.datapult.info



Creating a Creditworthy Power Sector and Financing the Transformation

Key areas of strategic focus -

- **WHERE:** Africa – emphasis on transformational projects with regional impact
- **WHAT:** Infrastructure – energy, transport,
- **HOW:** Public-Private Partnerships



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Infrastructure Projects of High Impact –

A hydropower plant as a proof of concept for the private sector.

- Involving the construction, operation and maintenance of an 87 MW plant, as well as the associated distribution lines, the Paravani Hydro Power project will supply electricity to the Georgian market in the high-demand winter months while providing export to Turkey throughout the rest of the year.
- The significant size of the project will serve as an important proof of concept for the private sector, influencing Georgia's ability to attract future investment in the hydropower sector.



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Infrastructure Projects of High Impact –

A well-designed hydropower dam that transformed all stakeholders

- Nam Theun 2 Project, Vietnam (1070 Megawatt) showed how a well implemented hydropower dam can help support development in an economically, environmentally and socially sustainable way.
- This project employed an adaptative management system, which ensured flexibility along the implementation process



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Infrastructure Projects of High Impact –

Regional backbone network to reduce wholesale price for broadband capacity

- In the Africa, Caribbean, Pacific regions, the development of regional backbone networks connecting to new submarine fiber optic cables has not been commercially viable.
- The Bank played a catalytic role by incentivizing private investment in large-scale national and regional backbone facilities for broadband access. As a result, wholesale prices for broadband capacity have been slashed by 90 percent since 2009, while retail high-speed Internet access prices have been reduced by 30 percent in East Africa.



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Creditworthy Power Sector

Understanding the Value Chain



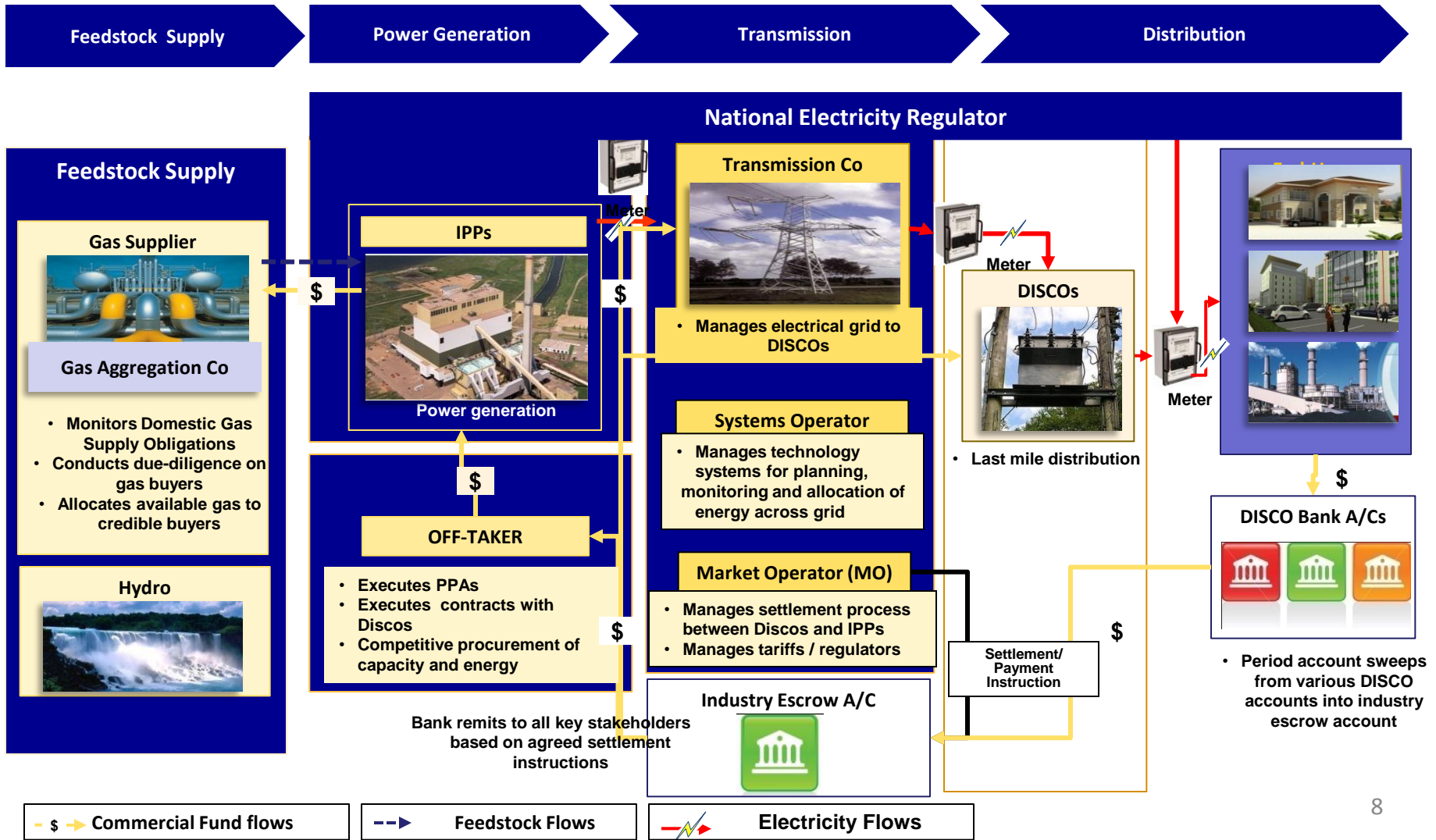
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Creating a Creditworthy Power Sector

Understanding the Value Chain

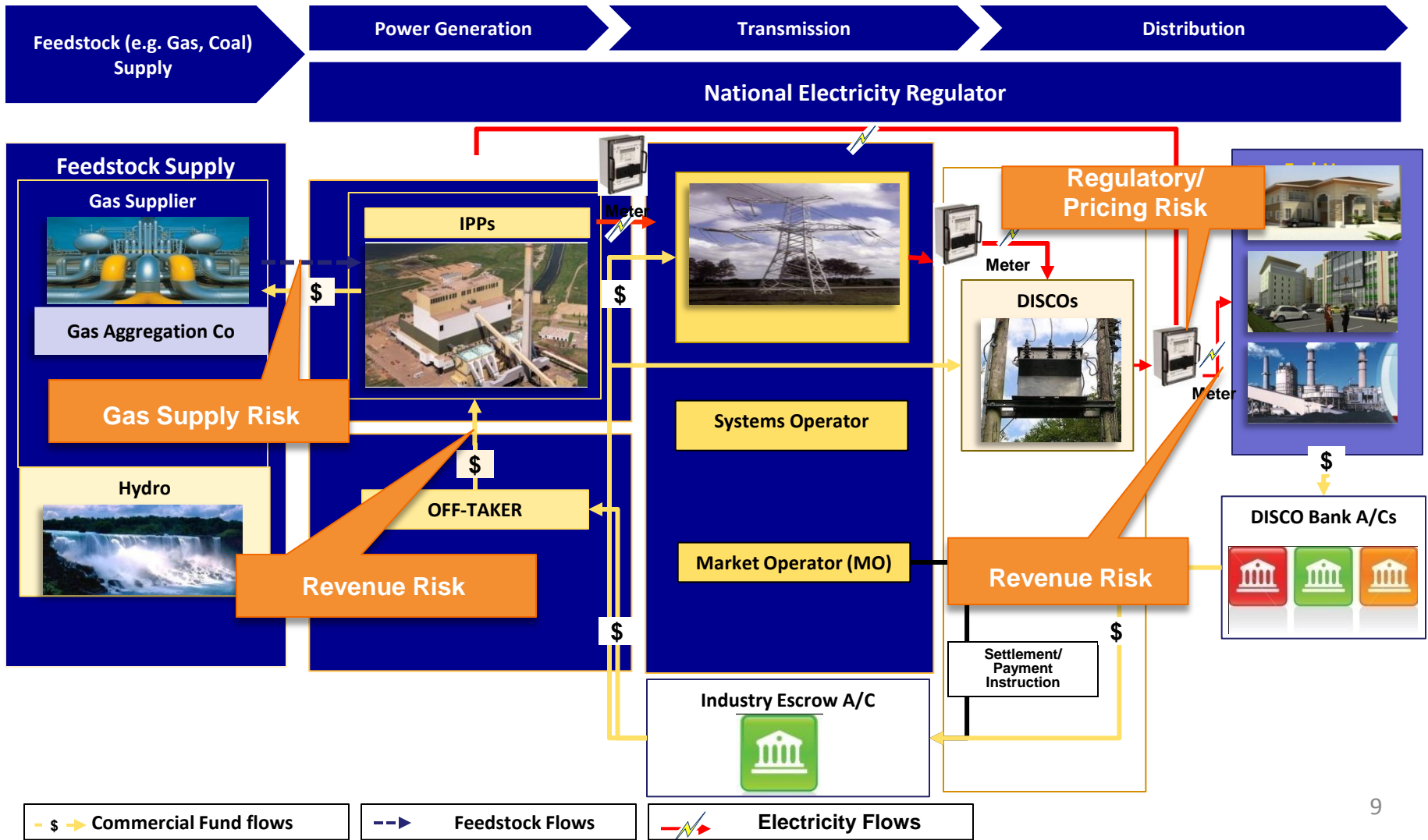
Key Players and Linkages



Creating a Creditworthy Power Sector

Understanding the Value Chain

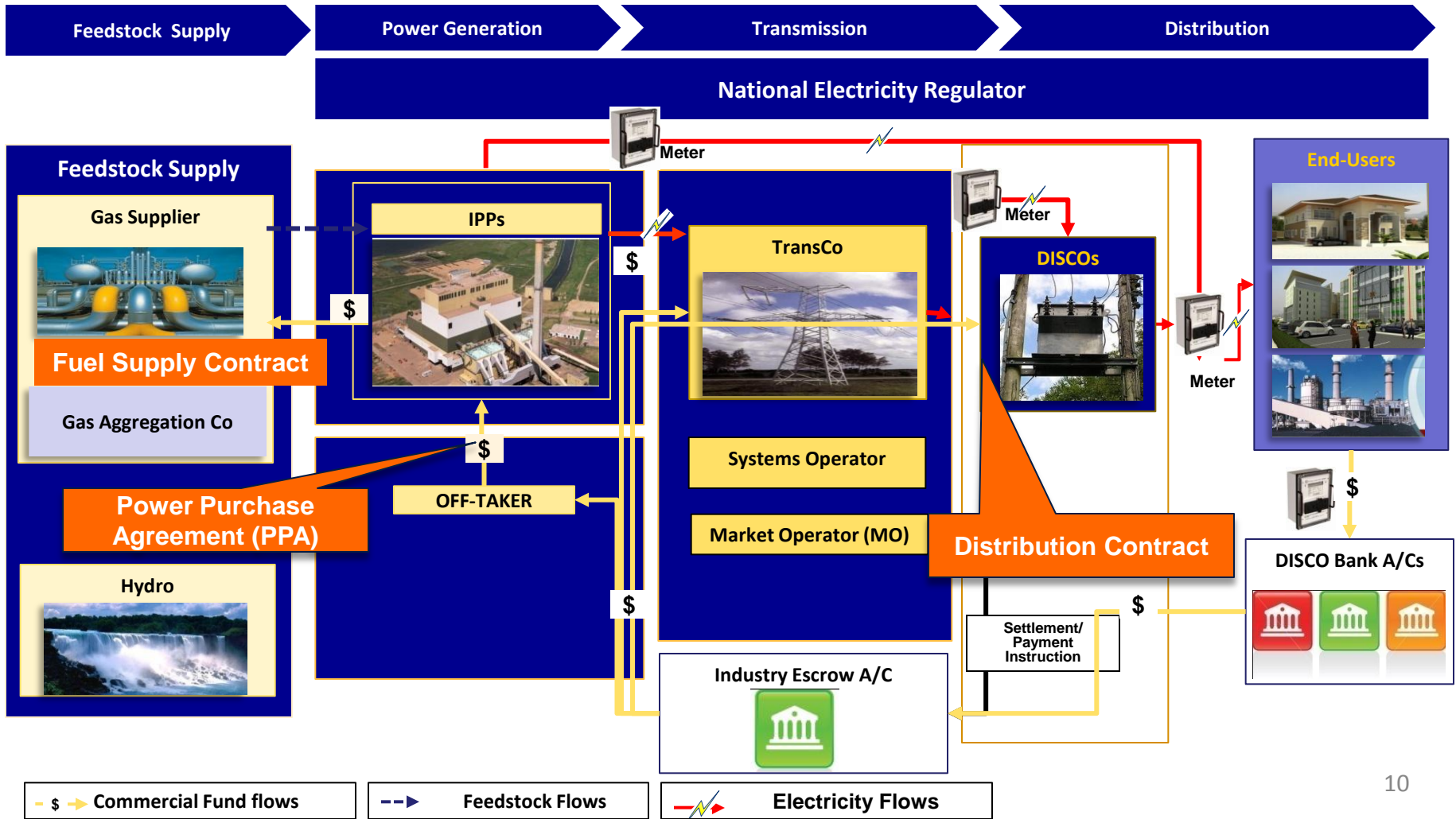
Inherent Risks along the Value Chain



Creating a Creditworthy Power Sector

Understanding the Value Chain

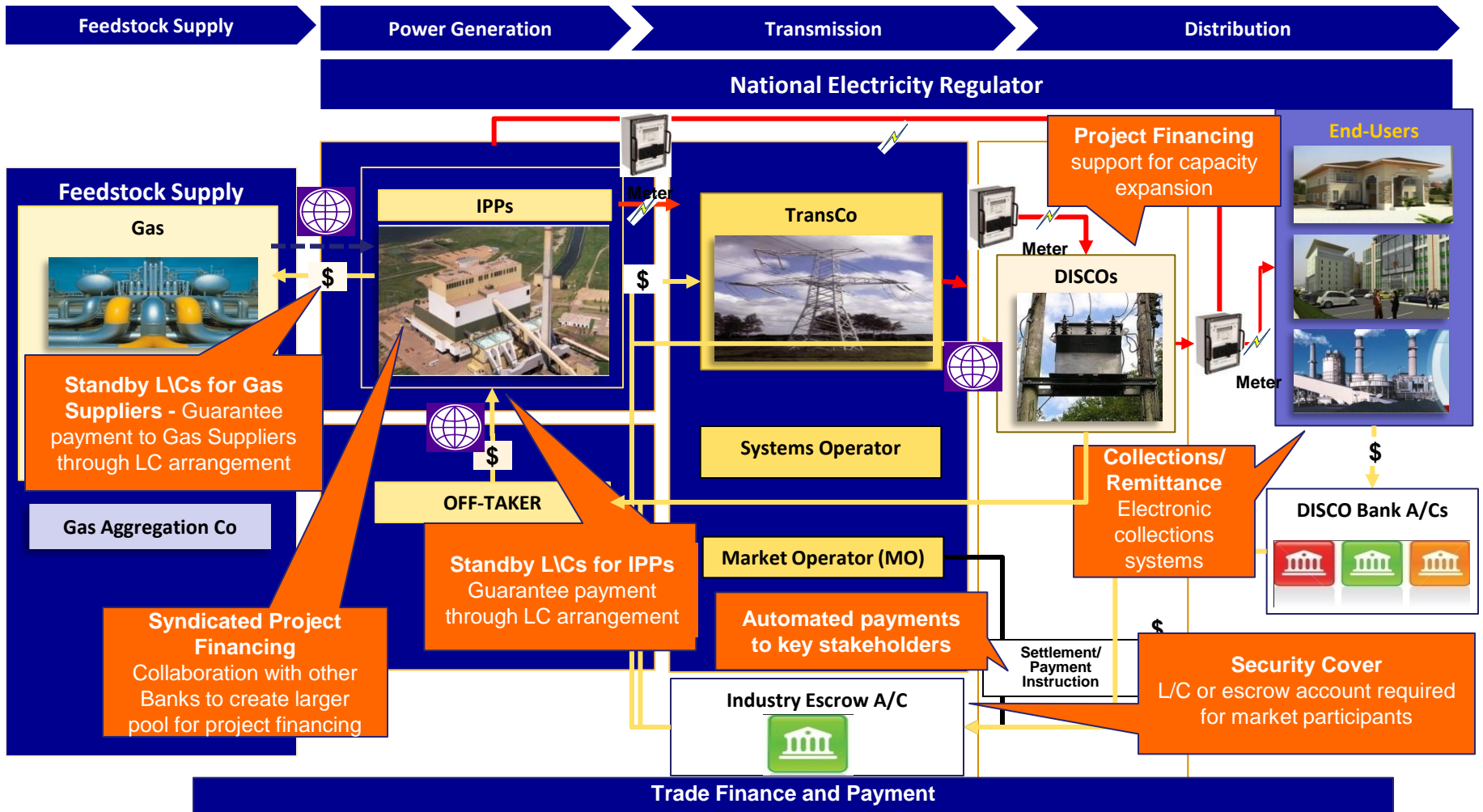
Agreements to Mitigate Inherent Risks and Ensure Commercial Viability of Major Stakeholders



Creating a Creditworthy Power Sector

Understanding the Value Chain

Key Opportunities for Financing the Value Chain



- \$ → Commercial Fund flows

--> Feedstock Flows

⚡ Electricity Flows





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Financing the Transformation

Financing Structure



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Financing the Transformation

Financing Structures

An End-to End Financing Approach

- **Value chain is only as durable as the strength of the weakest link**
- **Sustainable financing arrangement for power sector value chain must address entire asset conversion cycle to ensure cash-flows are adequately captured**
- **Requires comprehensive finance solution that addresses the needs of stakeholders along the financial flow of the value chain**
- **Approach is important for power sector, given its disaggregated form**



Financing the Transformation

Financing Structures

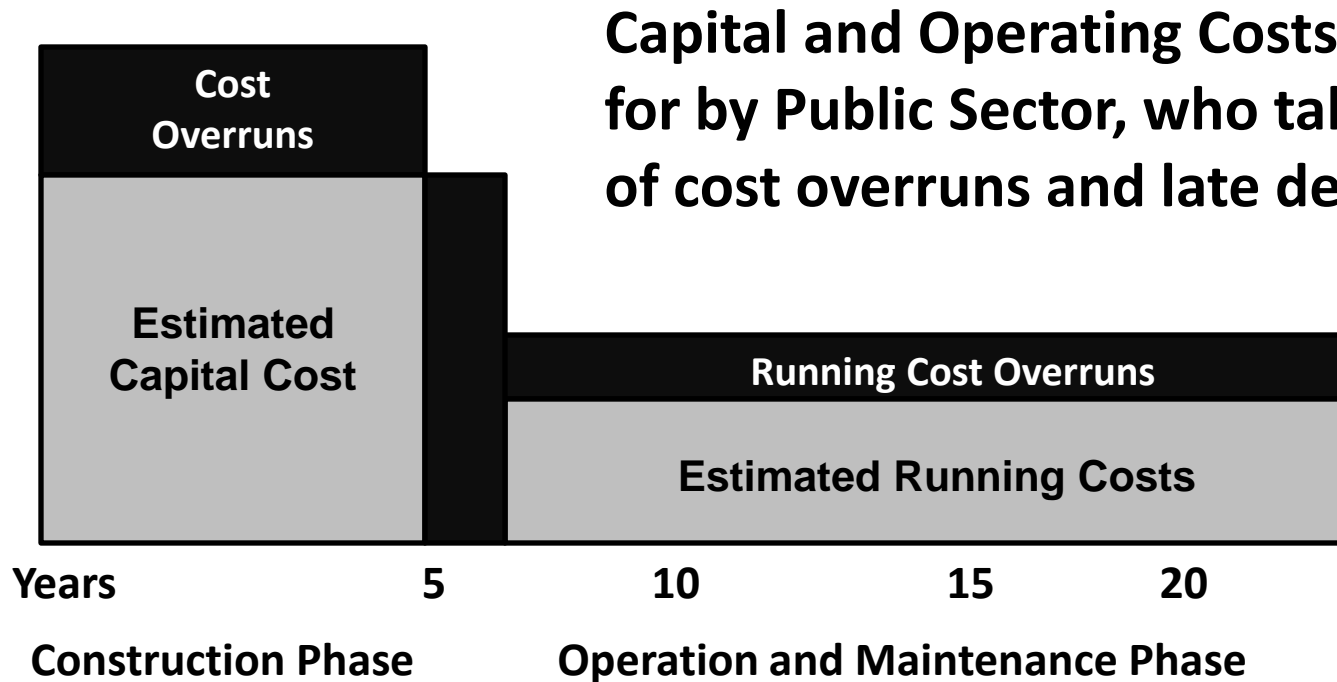
Source of Financing Implications

	Public	Private
Project selection	Political/social returns	Commercial returns
Governance	Public sector/utility	Public/private – performance oriented
Procurement	Construction input price – lack of funding for maintenance	Cost of service, whole of life management
Cost over-runs	Public purse – tendency to manage through change orders	Additional capital required – tight risk allocation on contractor
Delays	Political implications	Significant financial losses - focus on completion

Financing the Transformation

Financing Structures

Traditional Government Procurement Payment Profile

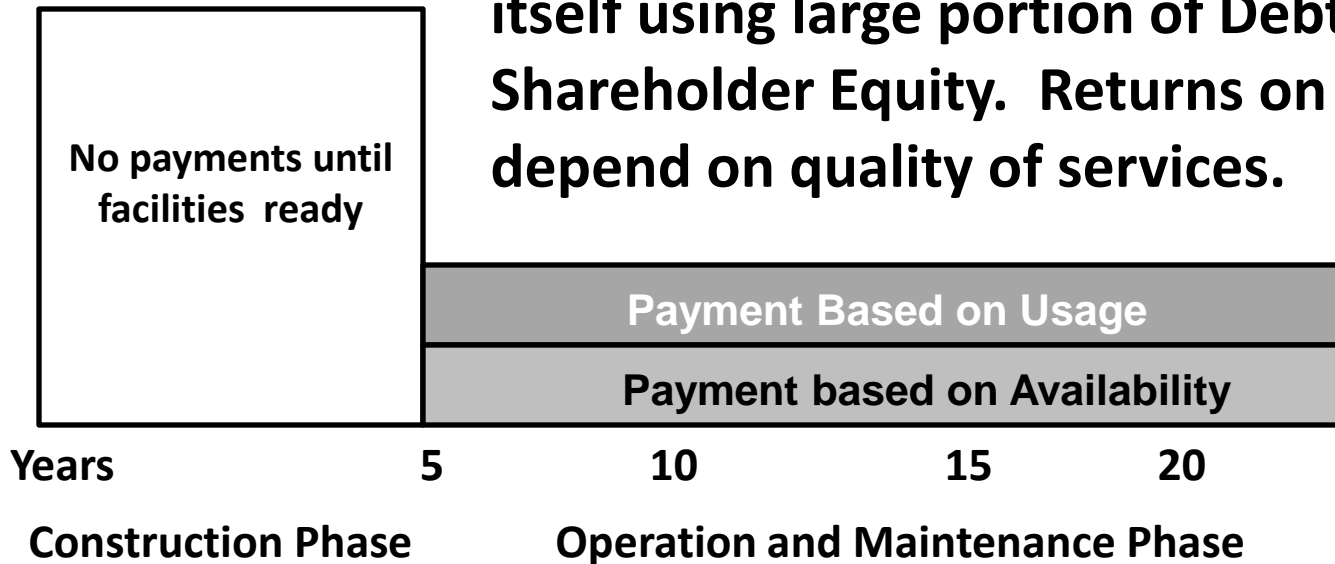


Financing the Transformation

Financing Structures

Procurement Payment Profile for Public Sector

Public Sector only pays over long term as services are delivered. Private Sector funds itself using large portion of Debt plus Shareholder Equity. Returns on Equity depend on quality of services.





Financing the Transformation

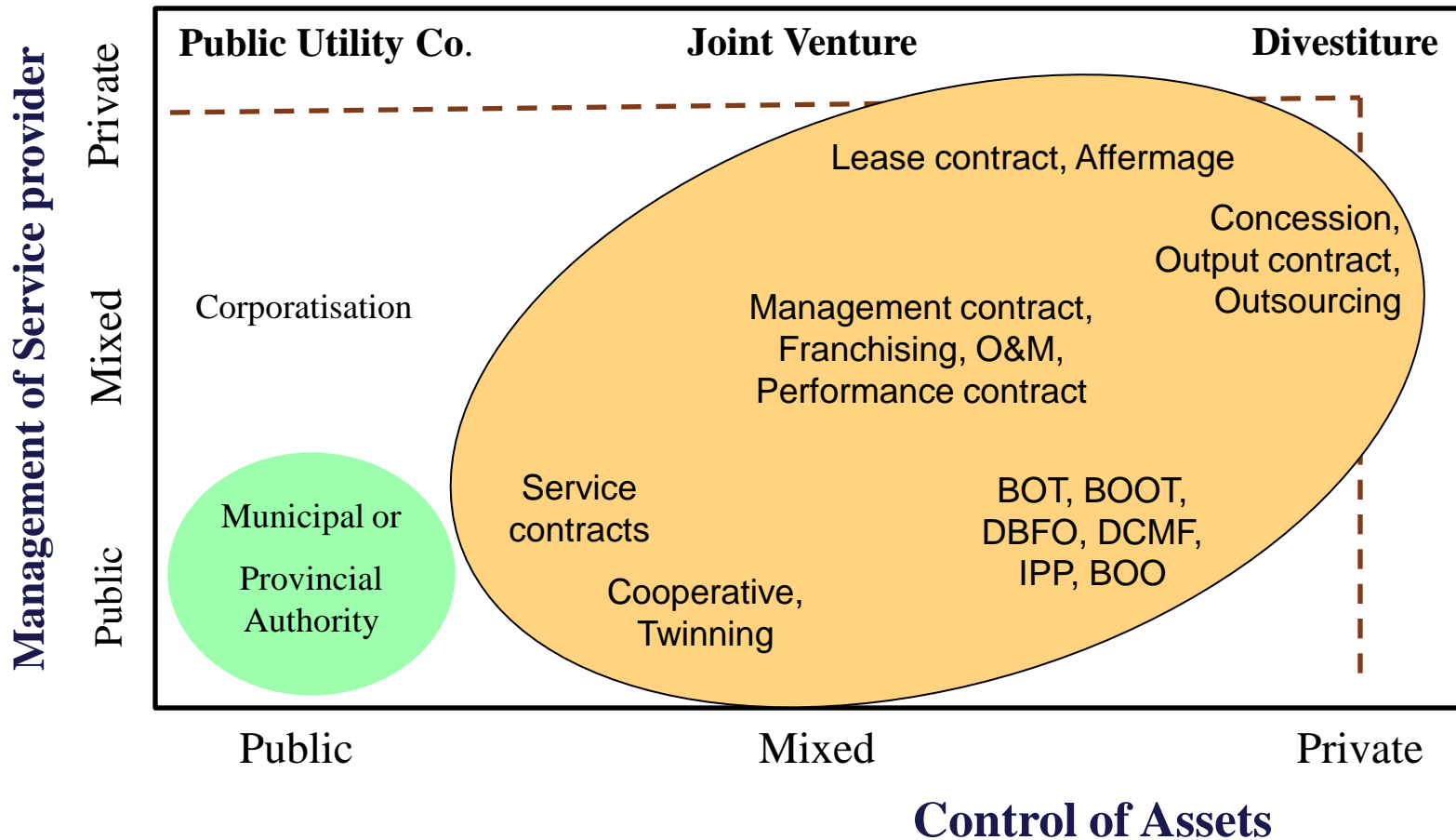
Financing Structures

Depending on how uncertainties are addressed and risks allocated (or mitigated), different types of financial structures might be used

- **Lease Structure**
- **Loan Structure**
- **Concession Structure**
- **Management Contract**

Financing the Transformation

Financing Structures





Financing the Transformation

Financing Structures

20 yrs of WBG experience suggests successful PPPs require:

- **Climate:** The right enabling legal, regulatory, and institutional environment allows well-structured, balanced PPPs to be offered to market, and ensures the projects' sustainability (e.g., power sector in Romania)
- **Commitment:** at highest levels and sustained over time, to attract private finance, and ensure PPPs remain integrated into investment financing plans (e.g., Jordan, Senegal).

Source: World Bank Group 2011



Financing the Transformation

Financing Structures

20 yrs of WBG experience suggests successful PPPs require:

- **Capacity:** Public sector needs skills and resources to:
 - understand public-private interface, and
 - work with the private sector (e.g., governance and transparency reforms, public sector management).

- **Capital:** LIC countries, where infrastructure gap largest, have most difficulty attracting private capital (e.g., Ethiopia, Tanzania, Mozambique).
 - "Patient capital": Where there are large up-front investments (e.g., utility projects), or private sector requires shorter pay-back periods, governments may need to do early development work and mobilize financing instruments (e.g., sovereign guarantees, loans and risk/credit guarantees from MDBs, DFI financing) to attract private capital from project developers, commercial lenders.

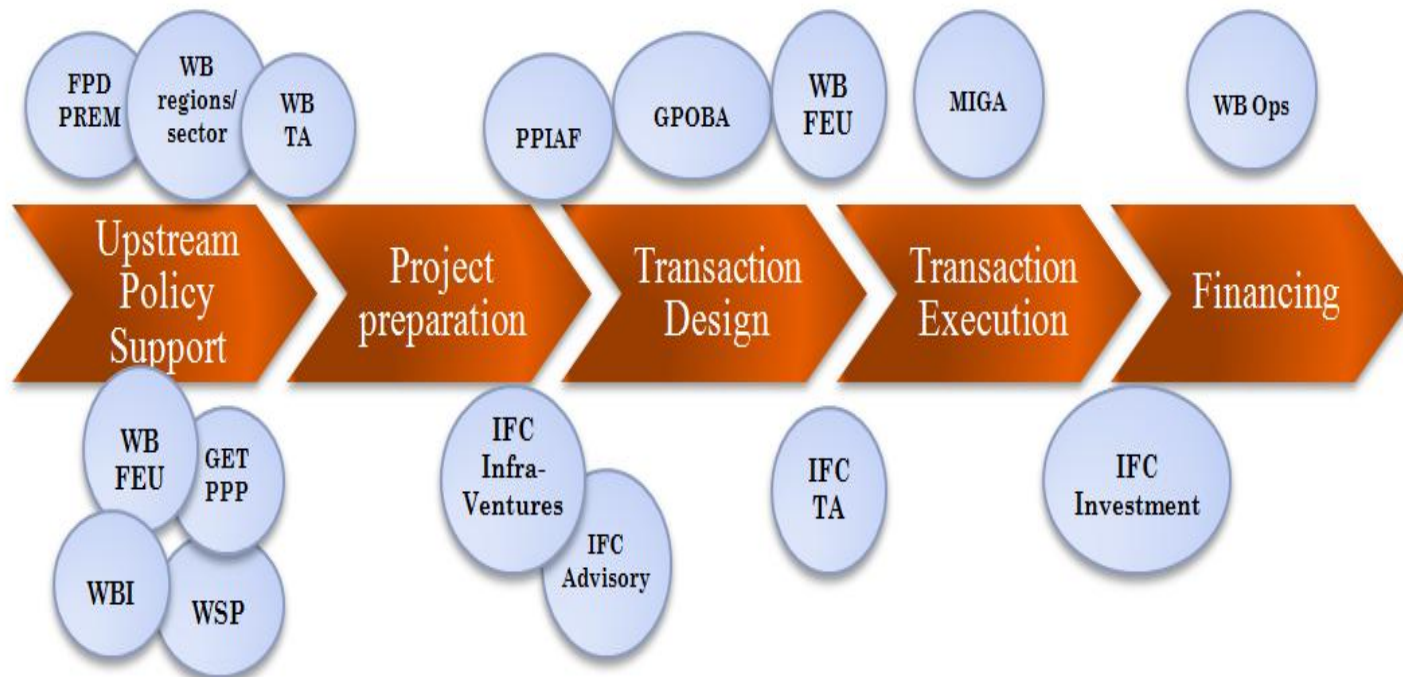
Source: World Bank Group 2011

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Financing Structures

WBG Involvement with PPP

Source: World Bank Group 2011





Financing the Transformation

Financing Structures

Action Plan for Mobilization of Private Capital (including PPP Scale-Up)

Tier 1 - Concerted efforts WBG PPP-related units to develop enabling environment and pipeline of projects in focus countries, with resources (budget, trust funds and expertise) aligned accordingly.

Specific actions will include:

- **Launch of a new PPP portfolio assessment tool**, focused on identifying “quick wins”, “transformational” projects and problem PPP for restructuring/cancellation.
- **Develop and implement a joint WBG strategy** through the use of new assessment tool for PPP involvement, including identification of integrated program of activities and resources from the various WBG units. Funding to cover upstream engagement, PPP transaction and implementation.
- **Develop private sector finance mobilization plan** - including potential amount of private capital that could be mobilized to specific projects through the Bank’s engagement
- **Dedicated support to client countries to establish private participation targets** for national infrastructure investment programs (including PPPs)
- **Scaled-up capacity building support**, make greater use of south-south knowledge exchange though and transfer lessons on the "how to" aspects of PPPs
- **Priority technical support**
- **Preparatory work** for “transformational” and problem PPPs,
- **Priority PPP training course**

Tier 2 – Enhanced PPP support

Source: World Bank Group 2011



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Creating a Creditworthy Power Sector and Financing the Transformation **Structuring Bankable Projects**



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“Feasible” does not necessarily mean “Bankable”

- **Feasibility Study**
 - engineering study based on test work /engineering analysis
 - presents information to determine whether project should advance to final engineering and construction stage
- **Project may appear economically feasible to a company but not be structured or scheduled optimally for bank financing**



Creating a Creditworthy Power Sector and Financing the Transformation Structuring Bankable Projects

“Bankability”

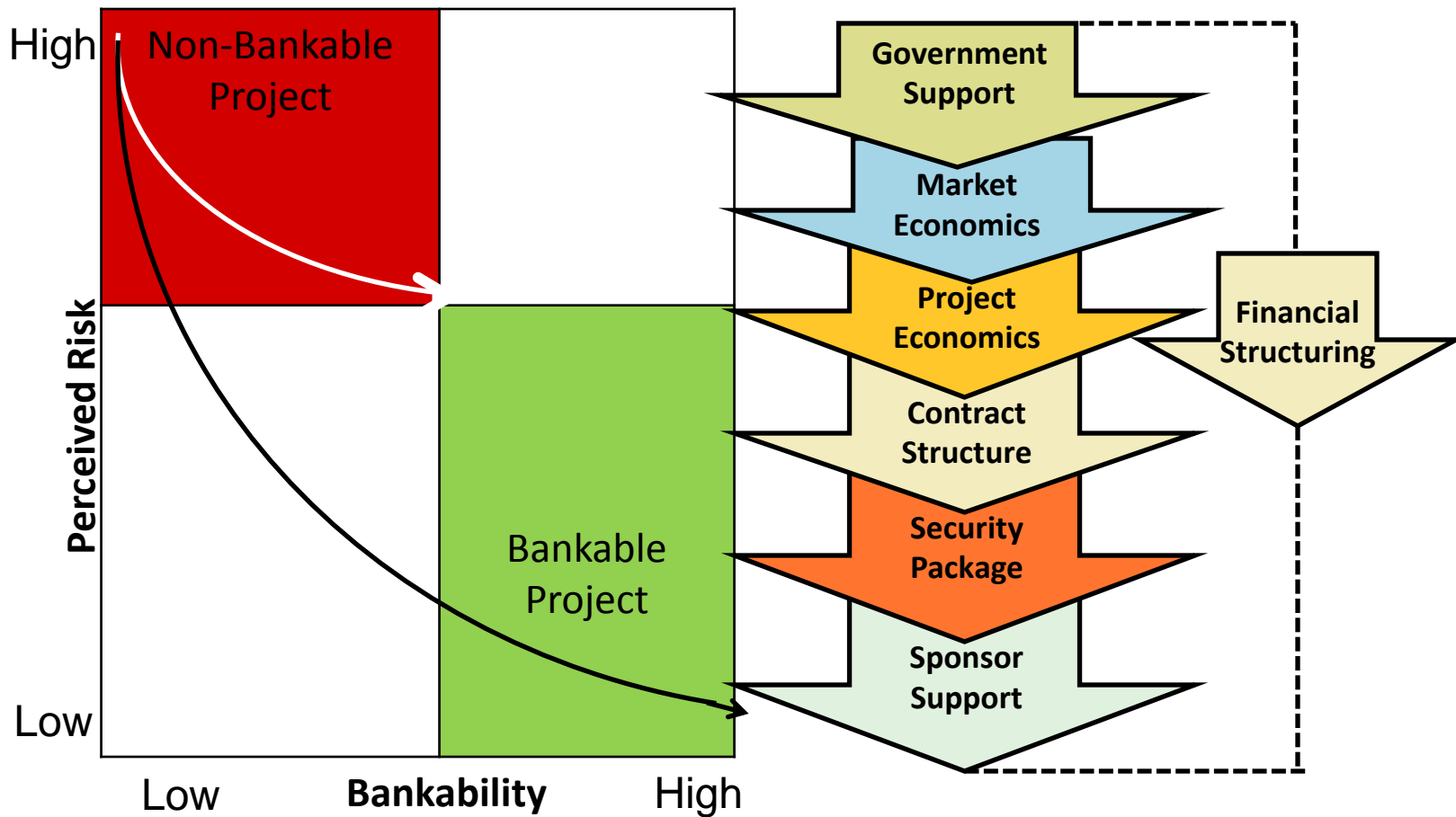
- Banks most interested in *cash flow during loan repayment period* not overall project economics
 - sufficient collateral
 - predictable and adequate future project cash-flows
 - enough revenue to pay off loans
 - enough financial benefits to attract private finance
 - high probability of success within given market

“Bankability” reflects constraints /opportunities of both the project scope and the environment in which it is implemented

Creating a Creditworthy Power Sector and Financing the Transformation

Structuring Bankable Projects

Project Finance FEASIBILITY Matrix

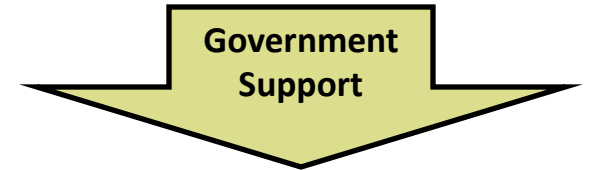


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Structuring Bankable Projects

Government Support

- Acceptable country risk
- Legislation permitting private generation
- Regulatory framework
- Clear and coherent policy framework for energy



Creating a Creditworthy Power Sector and Financing the Transformation Structuring Bankable Projects

GOVERNMENT SUPPORT: **Primary Issues**



- Legal and institutional framework for IPPs
- Availability of financial infrastructure and fiscal mechanisms to support investment in IPP projects
- Clear legal regime for contracting, land ownership, taxation, licensing, permitting, connection, evacuation
- Mechanism for transitioning IPP power purchase agreements to wholesale competition

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Structuring Bankable Projects



Market Economics

- Electricity shortages – demand / supply
- Base load opportunity
- Supportive industry
- Sufficient fuel supply / sources available
- Competitive position of project compare to others

Creating a Creditworthy Power Sector and Financing the Transformation Structuring Bankable Projects

MARKET ECONOMICS: Primary Issues

- Market supply and demand characteristics
- Need for secure base load electricity supply
- Cost reflective tariff structure
- Supporting industry with limited experience
- Limited experience with off-take of private power generation
- Financial sector with limited exposure and experience



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Structuring Bankable Projects



Project Economics

- Technology used, efficiencies and equipment track record
- Costs per MegaWatt
- Use of credits and subsidies from support schemes
- Financing options – availability of debt / equity

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Project
Economics

PROJECT ECONOMICS: **Primary Issues**

- Verifiable feasibility studies
- Strong track record and/or guaranteed performance of equipment
- Cost of technology/equipment/construction, which allows economic generation/savings given price of energy or incentives (cost per kWh)
- Sufficient tariff levels to provide comfortable Returns on Equity and Debt Service Coverage Ratios

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Contract
Structure

Contract Structure

- Long-term off-take agreement with creditworthy party (**Off-taker**)
 - exceeding longest debt tenor
 - single buyer or fully functioning competitive wholesale market
- Turnkey contractor under fixed price date certain contract
- Reputable Operations & Maintenance (O&M) contractor

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Contract
Structure

CONTRACT STRUCTURE: Contractual Situation

- Secure fuel supply
- Connection to and evacuation through electricity networks
- Multiple construction and equipment contracts
- Power purchase agreements difficult in liberalised electricity markets
- Contractual regime for third party finance does not always allow savings to be realized and properly attributed
- Need for enforceable PPA, turn-key contracts, supply contracts, O&M and connection contract

Creating a Creditworthy Power Sector and Financing the Transformation **Structuring Bankable Projects**



Security Package

- **Product warranties**
- **Comprehensive risk coverage**
- **Mortgage over land or other assets**
- **Adequate and enforceable legal protections**

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Security
Package

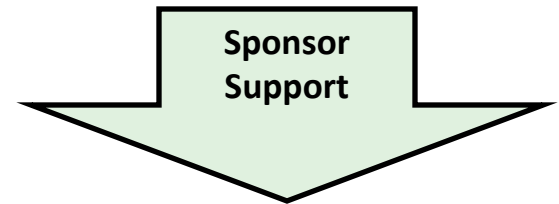
SECURITY PACKAGE: Lenders' Security Issues

- **Lenders do not assume completion risks**
 - allocated to EPC contractors (through retention of construction contract payments and liquidated damages on performance) and with equity providers (through contingent equity for cost overruns)
- **Legal regime should allow land ownership by sponsor and use as security**
- **Equipment suppliers should be able to attract comprehensive cover for the benefit of potential lenders (Export Credit Agency's cover)**
 - Lack of coverage restricts ability to access commercial bank market

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Sponsor Support

- Reputable and experienced sponsor
- Committed level of equity investment
- Sufficient contingent equity available for completion



Creating a Creditworthy Power Sector and Financing the Transformation Structuring Bankable Projects



Sponsor
Support

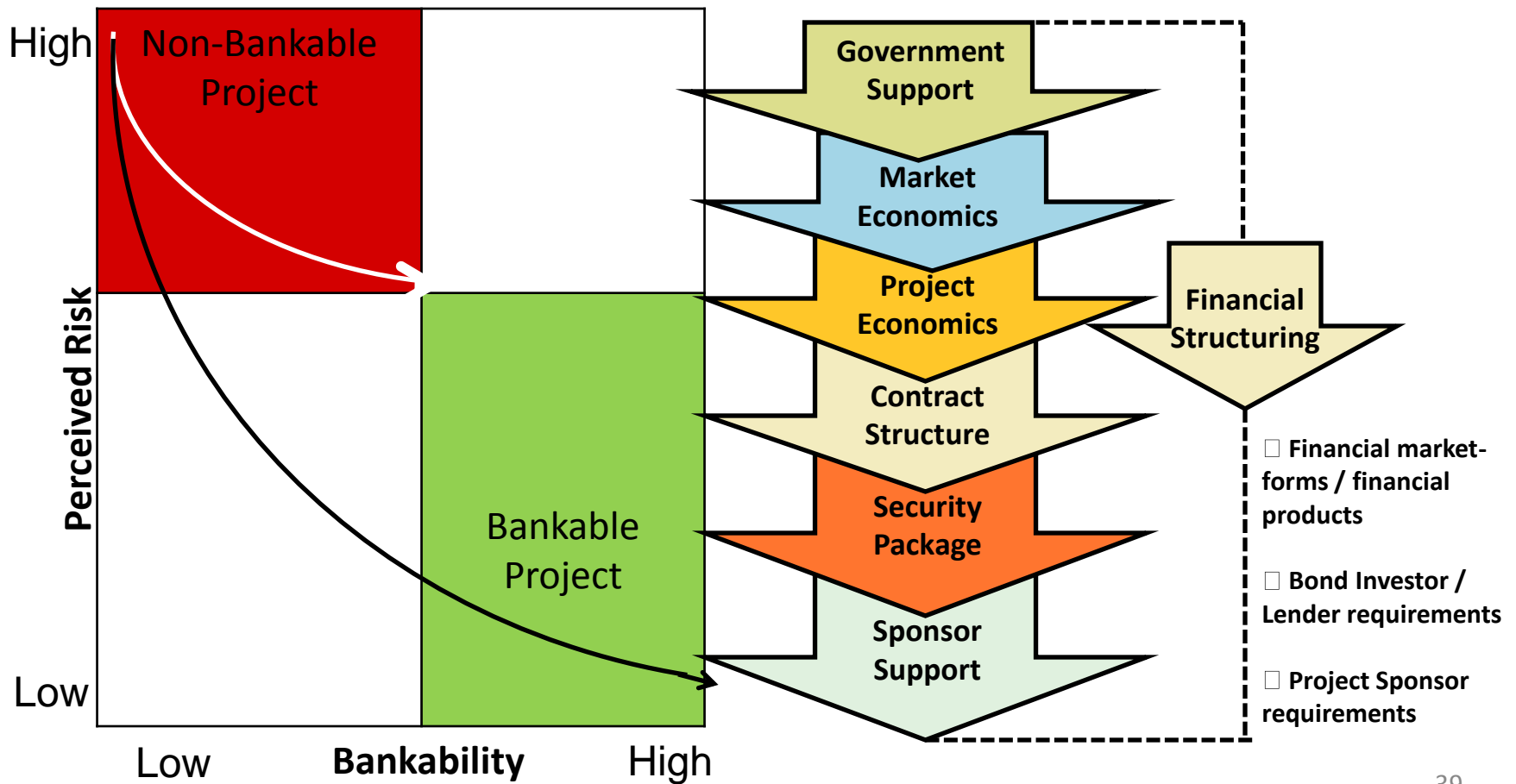
SPONSOR SUPPORT: Equity Considerations

- Banks want to see reputable sponsor
- Equity participation of 25% to 40% of project cost
 - level depends on uncertainties related to the project
- Contingent equity requirement of 30% to 40% of project equity
 - addressed in project's funding plan

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Structuring Bankable Projects

The General Project Finance FEASIBILITY Matrix





Creating a Creditworthy Power Sector and Financing the Transformation **Capacity Requirements**



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Capacity Requirements

Capacity Building requires concerted efforts to build strong institutional knowledge base amongst

- **Governmental officials**
- **Developers**
- **Investors**


Areas where critical capacity is needed

- **Feasibility studies**
- **Risk allocation**
- **Financial Modeling**

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Capacity Requirements

Importance of Capacity Building



Gov't
Support

- To make regulatory framework for IPP's bankable
- To make legislation and legal regime transparent and predictable
- To implement support programs and policies for IPPs
- To prepare long term market strategies
- In financial institutions to appraise 'bankable' projects
- In local industry to offer financing, equipment and services
- To prepare and present viable business plans
- To finance, prepare, evaluate and verify feasibility studies
- To consider different technical and financing options



Market
Economics



Project
Economics

Creating a Creditworthy Power Sector and Financing the Transformation

Capacity Requirements

Importance of Capacity Building Important

Contract
Structure

Security
Package

Sponsor
Support

- To prepare/negotiate project contracts
- To evaluate contractor's technical and financial strength
- To monitor, evaluate, and enforce contracts
- To build strong security package
- To arrange comprehensive risk coverage (ECAs, PRGs)
- To arrange mortgages on land or other assets
- To have knowledgeable developers/sponsors
- To structure proper equity package
- To structure proper level of contingent equity

TO STRUCTURE THE RIGHT FINANCIAL PACKAGE



Thank You



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Katharine Baragona - Ms. Baragona is a senior bank executive / US lawyer / UK solicitor with over 20 years of international project finance practice and experience. A member of The World Bank's Financial Solutions Group in the role of Senior Infrastructure Finance Specialist, Kate is currently leading the Bank's Partial Risk Guarantee (PRG) interventions in the power sectors of Nigeria, Ghana and Democratic Republic of the Congo. A graduate of the UOP-McGeorge School of Law's JD program in Sacramento, California, Kate also participated in McGeorge's LL.M studies and internship programs in Salzburg, Austria and London, England. As an undergraduate, Kate studied Economics & Finance at St. Edwards University in Austin, Texas, and Graphic Design at Louisiana State University in Baton Rouge, Louisiana. Prior to joining The World Bank, she held senior positions with Richards Butler (in London & Brussels), Hunton & Williams (in Brussels & New York) and Citibank (in New York & London). Kate has extensive work experience and travel in Europe, the Middle East, Africa and Central Asia.

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