



# **THE ROLE OF THE WORLD BANK IN THE ENERGY SECTOR AND THE USE OF ENVIRONMENTAL ASSESSMENT**

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# World Bank Group

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- Founded 1944
- Over 185 Countries as Members
- Headquarters in Washington, DC
- Offices Throughout the World
- Includes:
  - International Bank for Reconstruction and Development (IBRD)
  - International Development Association (IDA)
  - International Finance Corporation (IFC)
  - Multilateral Investment Guarantee Agency (MIGA)
  - International Center for The Settlement of Investment Disputes (ICSID)



# World Bank

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- Focus on Poverty Reduction, including the Millennium Development Goals
- Commitment to Environmentally and Socially Sustainable Development, supporting Outcome of Rio and Johannesburg Summits
- Promoting Country Driven Development Effectiveness, including the Paris Declaration and Accra Agenda for Action
- Promoting Green Growth and Social Inclusion
- Addressing Climate Change – both Mitigation and Adaptation as a Development Issue
- Providing Global Knowledge to Support Public and Private Sector Policies, Strategies, Programs and Projects



# World Bank

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- Global Strategies
- Sector Strategies
- Regional Strategies and Programs
- Country Strategies and Macro-Economic Dialogue
- Economic and Sector Work
- Programs
- Projects
- Knowledge Products – World Development Report
- Institutional Strengthening and Capacity Building
- “Open Access” to Data Initiative



## World Bank: Types of Operations

- Development Policy Lending
- Poverty Reduction Strategy Credits
- Program for Results (Proposed)
- Investment Loans
- Risk Guarantees
- Financial Intermediaries
- Community Driven Development
- Social Funds
- Rapid Response
- Global Environment Facility (GEF)
- Carbon Finance and Climate Change Funds
- Forest Carbon Partnership Facility (FCPF)



## Strategic Framework on Climate Change and Development

A Means to Articulate the World Bank Group's Vision on  
Climate Change and Development Challenges without  
Compromising Growth and  
Poverty Reduction Efforts



# Climate Related Threats

<i>Drought</i>	<i>Flood</i>	<i>Storm</i>	<i>Coastal 1m</i>	<i>Coastal 5m</i>	<i>Agriculture</i>
Malawi	Bangladesh	Philippines	All low-lying Island States	All low-lying Island States	Sudan
Ethiopia	China	Bangladesh	Vietnam	Netherlands	Senegal
Zimbabwe	India	Madagascar	Egypt	Japan	Zimbabwe
India	Cambodia	Vietnam	Tunisia	Bangladesh	Mali
Mozambique	Mozambique	Moldova	Indonesia	Philippines	Zambia
Niger	Laos	Mongolia	Mauritania	Egypt	Morocco
Mauritania	Pakistan	Haiti	China	Brazil	Niger
Eritrea	Sri Lanka	Samoa	Mexico	Venezuela	India
Sudan	Thailand	Tonga	Myanmar	Senegal	Malawi
Chad	Vietnam	China	Bangladesh	Fiji	Algeria
Kenya	Benin	Honduras	Senegal	Vietnam	Ethiopia
Iran	Rwanda	Fiji	Libya	Denmark	Pakistan

 Low Income

 Middle Income

Source: World Bank



# **Environmental and Social Assessment**





## Safeguards: Key Objectives

- Ensure the environmental and social soundness and sustainability of investments
- Support integration of environmental and social aspects of projects into the decision making process by Governments, Public and Bank Management
- Provide a mechanism for addressing environmental and social issues in program and project identification, design, implementation and operation



## Safeguards: Key Objectives

- Identify and manage impacts and risks – both real and perceived – including reputational risks
- Provide a framework for public consultation and disclosure of information
- Development effectiveness and impact – increase results on the ground both short and long term
- Support implementation of national environmental and social legislation and international environmental agreements of cooperating Governments

# **World Bank -10 Safeguard Policies**

## ***Impacts, Risks and Sustainability***

- Environmental Assessment
- Natural Habitats
- Forests
- Pest Management
- Physical Cultural Resources
- Involuntary Resettlement
- Indigenous Peoples
- Safety of Dams
- Projects involving International Waters
- Projects in Disputed Areas

*Access to Information Policy*

*Piloting Use of Country Systems  
for Environmental and Social  
Safeguards*



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# Integration in the Project Cycle

- Identification
- Preparation
- Project Documents
- Loan and Grant Agreements
- Management Plan
- Appraisal
- Negotiations
- Implementation Schedule
- Project Budget
- Implementation Process and Reporting
- Monitoring and Evaluation



# **Challenge of Energy in Africa**



## Africa – Major Energy Challenges

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- Total installed generation capacity at 78 GW (2008) - 30 GW without South Africa, same as Norway- constraining electricity access and use
- Only 31% of the population with access to electricity - the lowest rate in the world
- Under business as usual by all, universal access to electricity in Africa is within a horizon of 50 years
- With the Exception of South Africa, consumption is around 1% of OECD countries



## Africa - Major Energy Challenges

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- 30 countries face regular interruption of services
- 82% of households relying on solid biomass for cooking, imposing huge health and environmental risks
- Unreliable power supply costing 6% of turnover to the formal sector and as much as 16% to the informal sector
- State Owned Enterprises inefficiencies costing 0.8 % of Africa's GDP



# Africa - Possible Scenarios

	Status Quo	Africa in 2020: business as usual	Africa in 2020: concerted action
Installed capacity (GW)	78	81	100
Power consumption (kWh pc pa excl. RSA)	124	164	235
Electrification (% pop)	30	34	49
Cost of power (US cents/kWh)	18	18	10
Hydro power (% consumption)	36	36	48
Power traded (% consumption)	16	16	40





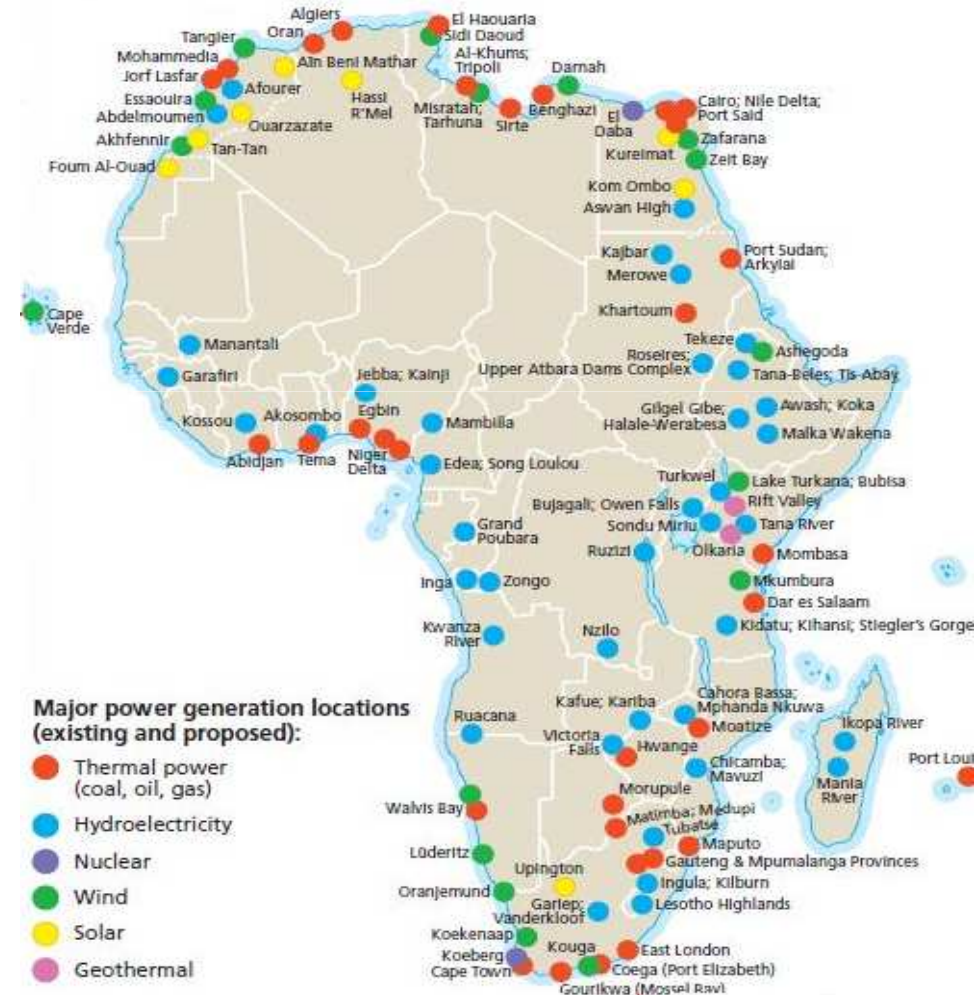
## Africa - Concentration of Hydropower and Thermal Generation Potential



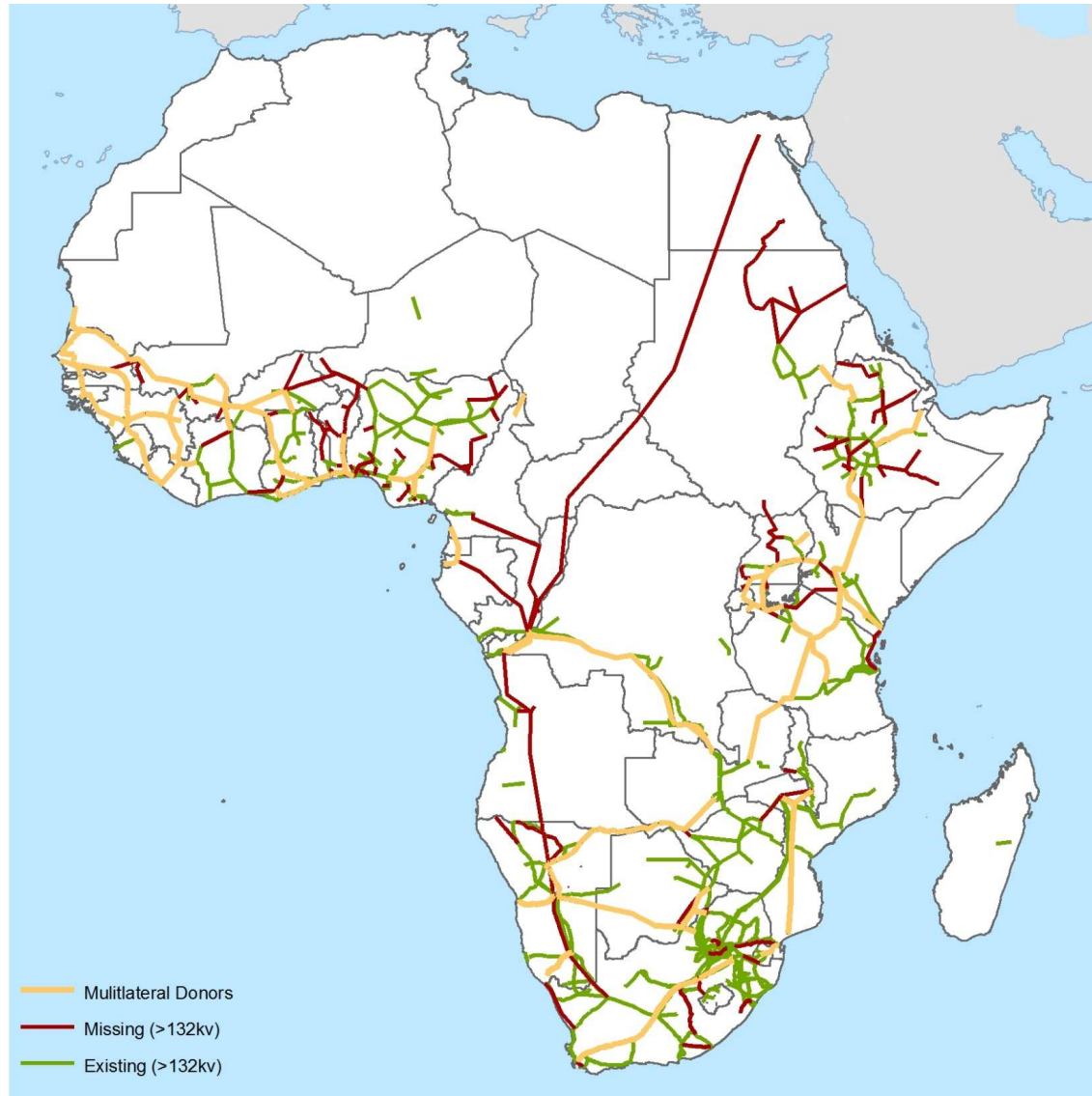


# Africa's Massive Low Carbon Potential

- 45 GW (~1 million GWh/year in energy terms) of economically feasible **HYDROPOWER** potential, nearly one tenth of the world's total
- 8% of world's proven **NATURAL GAS** reserves in the countries of the Gulf of Guinea
- **GEOTHERMAL** potential in the Rift Valley can provide more than 15 GW of power
- **WIND** and **SOLAR** potential exists, but needs to be exploited at scale



# Transmission Links Critical to Spreading New Power Capacity





## Regional Power Trade Provides Large Financial, Economic and Environmental Benefits

### Savings in.....

	Spending needs (US\$ bl. pa)	LRMC of power (US cents/kWh)	CO <sub>2</sub> emissions (ml. tons pa)	Return on trade (%)
CAPP	0.2	-2	4	22
EAPP/NB	1.0	0	20	20
SAPP	1.0	-1	41	168
WAPP	0.5	-1	5	33



# Major Hydropower Potential

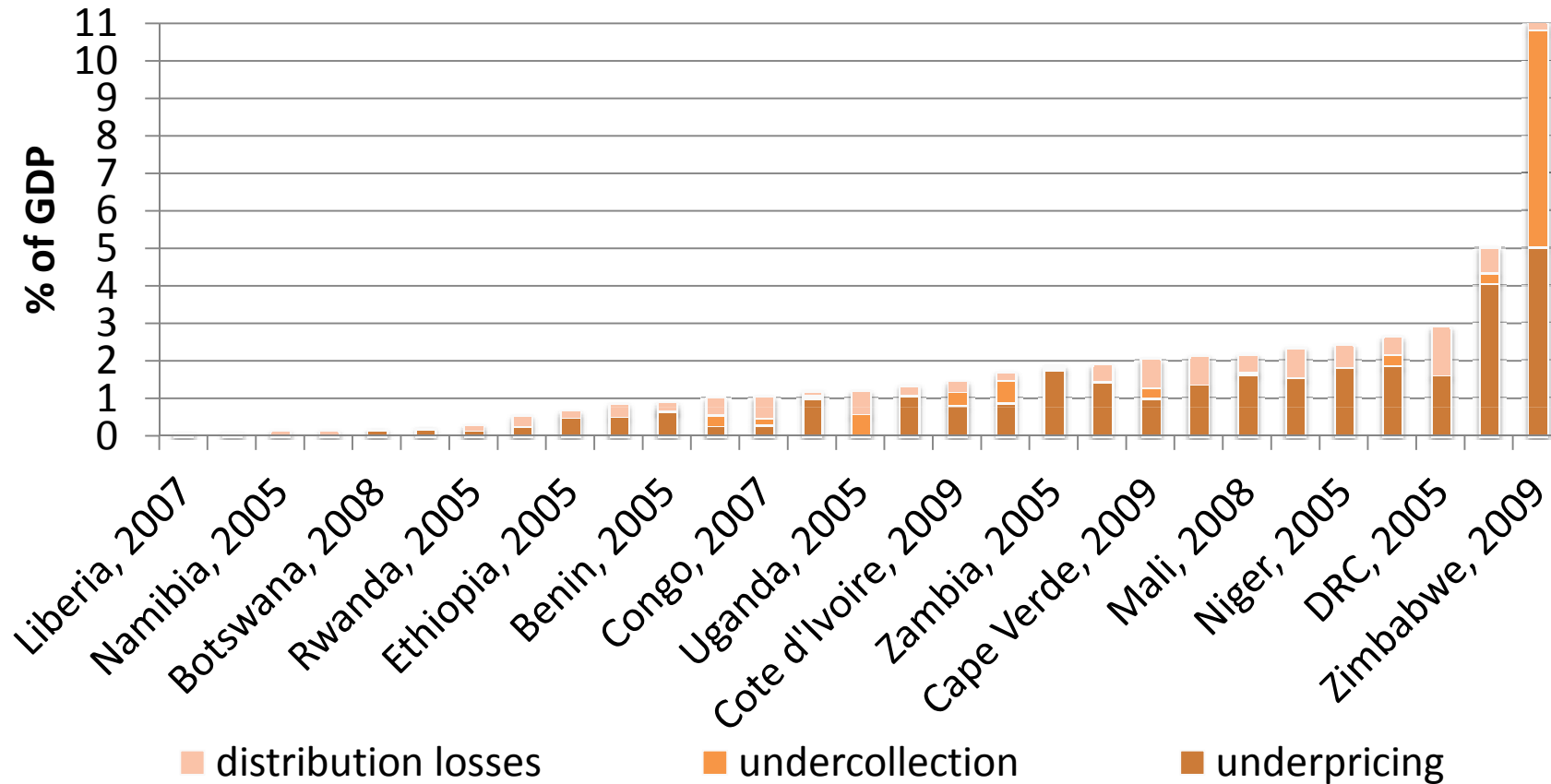
Country	Hydro developed in last decade (MW)	Hydro potential in next decade (GW)
Ethiopia	2.8	8.2
Guinea	0.8	4.3
DRC	1.3	4.0
Sudan	1.4	3.7
Mozambique	0	3.2
Cameroon	0.2	2.4
Zambia	0.5	2.0
Uganda	1.1	1.2
Ghana	0.4	1.0
<b>TOTAL</b>	<b>8.5</b>	<b>30.0</b>



## Developing Bankable Projects Costs Time and Money

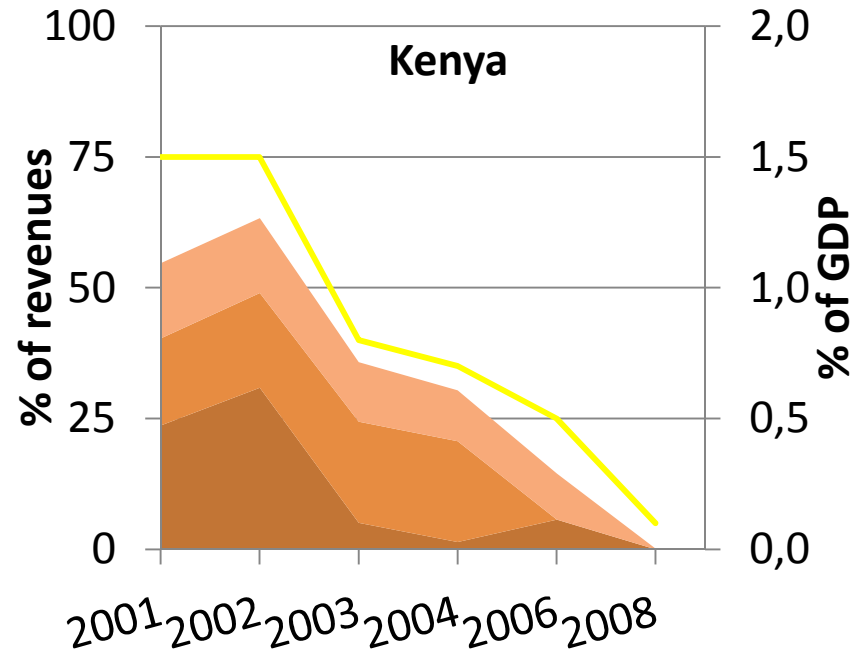
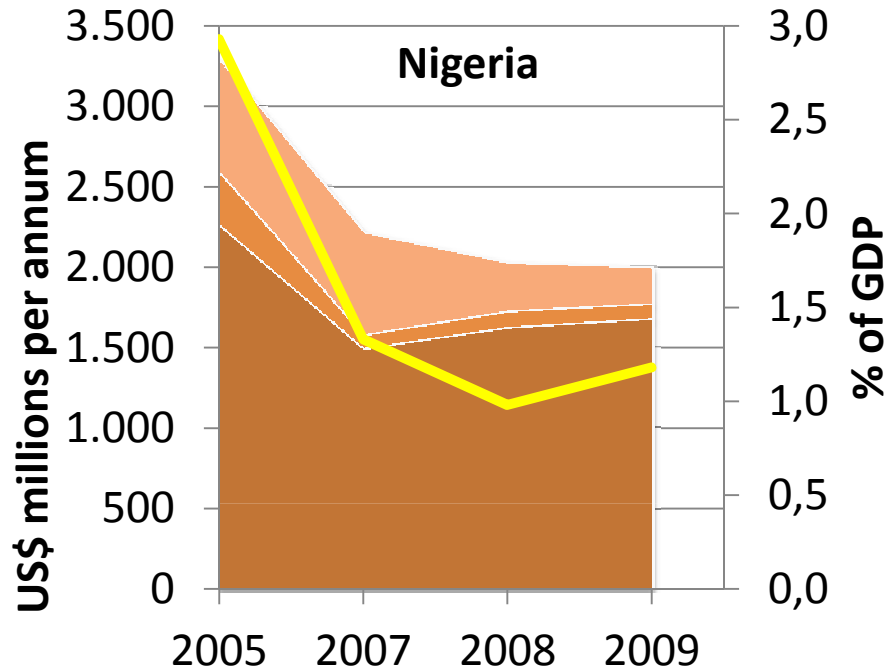
	Overall project costs (US\$ ml. )	Cost of project preparation (US\$ ml. )	%
<i>Implemented</i>			
Bujagali	780	15	2%
Nam Theun 2	1,400	124	9%
<i>Under preparation</i>			
Inga 3	>5,000	100	2%
Cahora Bassa Nth	1,000	60	6%

# Utilities Inefficiencies Cause a Large Drain of Public Resources



For some 20 countries hidden costs represent loss of >1% of GDP

# Reforms Yield Large Dividends



distribution losses
  undercollections  
 underpricing
  total as % of GDP

underpricing
  undercollections  
 distribution losses
  total as % of GDP



**1.3% GDP** saved annually in **Kenya** and **1.7% GDP** in **Nigeria** thanks to power tariff increases and utility reforms strengthening revenue collection





## Lighting Africa – A Successful Approach

- Mobilizes the private sector to build sustainable markets to provide safe, affordable, and modern off-grid lighting to 2.5 million people in Africa by 2012 and to 250 million people by 2030
- Key impacts to date:
  - Shift in designs for the African consumer – now 70+ products costing less than \$25
  - Development of a quality standard and test method
  - 8 products passed the quality test and now being promoted
  - 93% growth in sales in the last six months for manufacturers selling LA approved products
  - 200,000 Lighting Africa-approved products sold since the program began (impacts about 1 million people)



# **Role of Environmental and Social Assessment in Meeting the Challenge**



# Africa – Energy and Impact Assessment

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- **Strategic Environmental and Social Assessment** - At Program and Basin/Sub-Basin Level to Capture the Larger Dimensions of Development Initiatives
- **Project Level Environmental and Social Assessment** - Placing increased emphasis on balancing evaluation of environmental and social impacts and risks
- **Institutional Strengthening and Capacity Building** – Working with Governments and Donors to Improve Skills at a Variety of Levels
- **Riparian Notifications** – Providing Information on Proposed Projects to Upstream and Downstream Riparians
- **Evaluation of Climate Change** – An Emerging State of Practice



# Africa – World Bank Investments

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- Hydropower (new and rehabilitation) – Cameroon, DRC Congo, Ethiopia, Ghana, Mozambique, Niger, Rwanda, Uganda
- Gas/Oil Development and Pipelines – Cameroon, Mozambique, West Africa Region
- Thermal Power – Botswana, Cameroon, South Africa
- Geothermal, Solar, Wind – Kenya, South Africa, Uganda
- Regional Power Transmission – West Africa, South Africa, East Africa and within many Countries
- Energy Conservation and Efficiency – Region-wide
- Rural Access – Region-wide



# Africa – Issues in Impact Assessment

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- Definition of the Proposed Program/Project
- Analysis of Alternatives including No Action
- Defining the Geographic Scope of the Study Area for both Direct and Indirect Impacts
- Linked Investments and their Coverage
- Cumulative Impact Assessment
- Working with Limited Data Sets for Physical, Biological and Social Baselines Conditions
- Analysis of Potential Impacts to Critical Ecosystems, Biodiversity and Aquatic Resources



# Africa – Issues in Impact Assessment

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- Addressing HIV/AIDs and other Health Risks
- Complex Involuntary Resettlement and Land Acquisition Issues
- Broader Recognition of the Importance of Meaningful Public Consultation in Preparation and Implementation Phases
- Design of Effective Environmental and Social Management Plans and Frameworks
- Cost Estimates and Schedules for Management Plans
- Realistic and Useful Monitoring Plans
- Provisions for Field Based Oversight



# Africa – Challenges in Impact Assessment

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- Early Engagement on Environmental and Social Issues in Strategy, Program and Project Development and Decision Making
- Integration of Environmental and Social Impacts and Risks into Program and Project Design, Implementation and Operation including Budgets and Schedules
- Effective Monitoring to Adjust Operation and Improve Performance



## **Africa – Challenges in Impact Assessment**

- Sustained Engagement with Stakeholders Throughout the Process – Public Consultation, Disclosure of Information and in Some Cases Third Party Monitoring
- Use of Evaluation and Audit to Assess Performance Outcomes and Development Results
- Support for Complementary Measures for Institutional Strengthening and Capacity Building
- Use of Adaptive Management of Environmental and Social Impacts and Risks in Formal and Transparent Manner





# **Africa – An Energy Road Map**



# Africa – An Energy Road Map

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- **Creating a Creditworthy Power Sector**
- **Planning for a Better Future**
- **Developing Energy Sources**
- **Financing the Transformation**
- **Powering People**

***Providing Support for Grid and  
Off-Grid Solutions***



# Roles for Many Stakeholders

Stakeholders	Role
National Governments	Work together to lobby global support and the push needed for large projects; convene peers in their sub-regions to champion specific projects. 'Get their house in order' to prepare for investment and set examples of good investment climate
Power Utilities	Adopt good practice and governance to improve performance, achieve financial viability and establish creditworthiness
Regional institutions (AUC, RECs, Power Pools)	Lead project selection and development, seek and forge public and private partnerships to finance and execute projects
Multilateral institutions and Bilateral partners	Provide technical assistance for capacity building, facilitate political understandings and partnerships and credit enhancement/financial leverage
Private sector	Open to re-engagement in African power projects
Other global players (G20, Climate Funds, ICA)	Assist in creating political support and confidence building, secure investors and underwrite risk perception issues



# **Information and Contacts**



# Information on World Bank Group Environmental and Social Policies

- Safeguards Website  
[www.worldbank.org/safeguards](http://www.worldbank.org/safeguards)
- Use of Country Systems Website  
[www.worldbank.org/countrysystems](http://www.worldbank.org/countrysystems)
- Strategic Environmental Assessment (SEA) Tool Kit Website  
[www.worldbank.org/seatoolkit](http://www.worldbank.org/seatoolkit)
- IFC's Sustainability Policy Framework  
[www.ifc.org](http://www.ifc.org)
- Environmental Health and Safety  
[www.ifc.org/ifcext/enviro.nsf/context/EnvironmentalGuidelines](http://www.ifc.org/ifcext/enviro.nsf/context/EnvironmentalGuidelines)



# World Bank Safeguard Policies

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- Arabic
- Chinese
- English
- French
- Portuguese
- Russian
- Spanish
- Also in Additional Languages



## Contact

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# **IAIA Annual Conference - 2012**

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**International Association for  
Impact Assessment (IAIA)**

**IAIA12**

**Energy Future: The Role of Impact Assessment**

**27 May – 1 June 2012**

**Porto, Portugal**

**Contact: [iaia.org](http://iaia.org)**