



# Supporting Energy Sector Adaptation

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**Africa Development Forum 7**

**World Bank side event: “Climate and Energy for  
Development”**

**Tuesday, October 12, 2010**

# Challenge in Africa: Balancing competing demands



**Energy access**

**Green-growth and  
climate-resilient economy**

**Paradigm shift  
in the power sector  
to tap Africa's vast renewable  
energy resources**

# Climate change is a corporate priority





# Bank's Strategic and Operational Approach

Ensuring access to energy and bringing Africa on a low-carbon growth path

Policy

Programs

Project

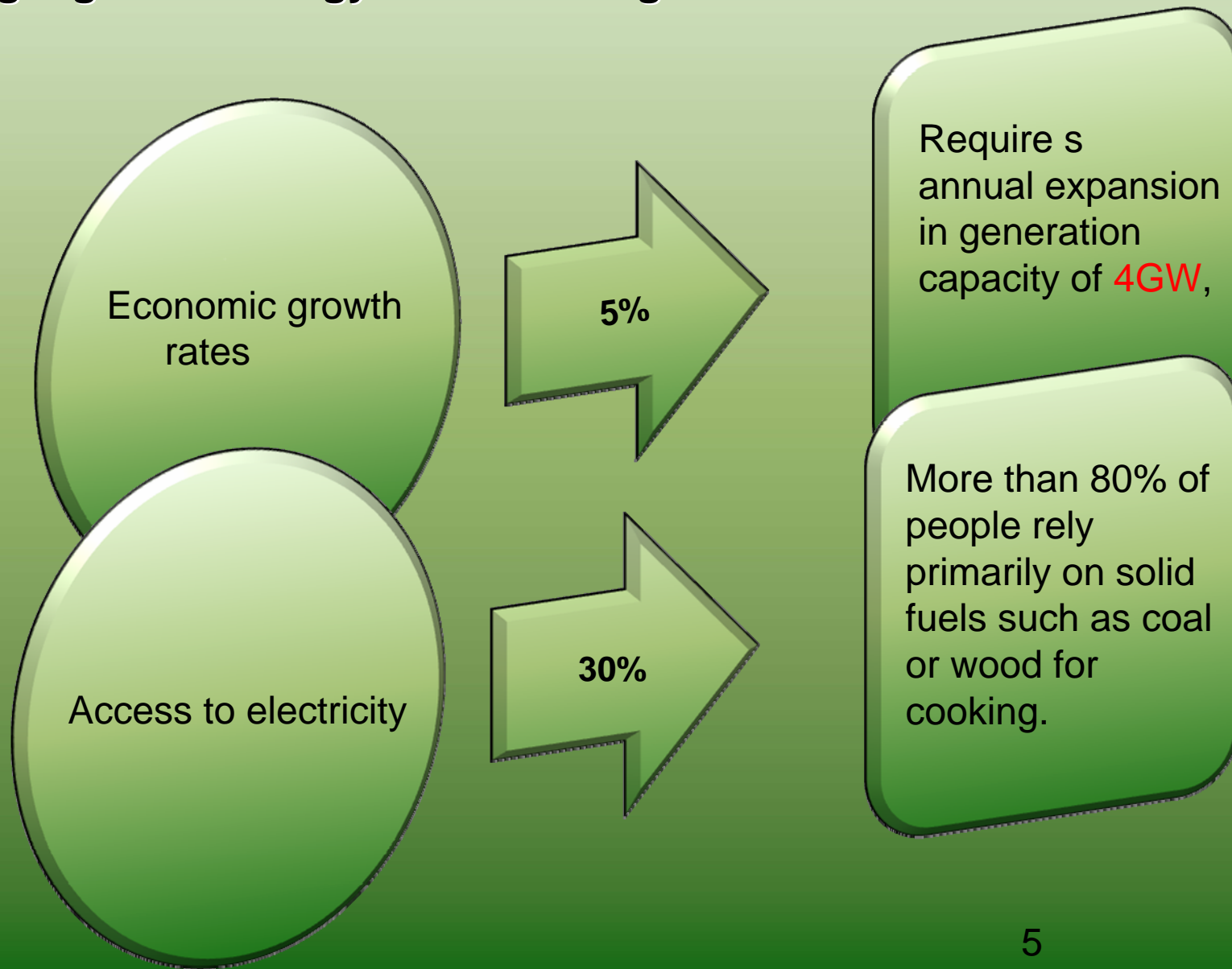
**The Department : created in 2010 for greater focus on climate change and related issues**

**Mission to spearhead the Bank's climate change operations in mitigation and adaptation**

**Addresses climate change and environmental issues by incorporating them into Bank Group supported operations.**



## Highlights of Energy in Africa : High Need for Investment in the sector



# Building on legacy of infrastructure development



Strongly engaged in regional energy sector projects

AfdB current portfolio and future Lending & Financing program for "regional projects in the electricity sector (In Units of Account)						
	Countries	Project Name	Current	Planned for the yr:		
				2008	2009	2010
Projects	Ethiopia, Djibouti	Ethiopia Djibouti Interconnection	59			
	Ghana, Togo, Benin	Power Interconnection	15			
	Guinea, Guinea Bissau, Senegal, Gambia	OMVG Energy Program		120		
	Nile Countries	Interconnection of Equatorial Nile Countries		167		
	Botswana, SAR	Mamabula Thermal Plant and T Lines		1200		
	Zambia, Tanzania, Kenya	Power Interconnection			100	
	Zambia	Itezhi-Tezhi Hydro Power Plant and T-Line			112	
	Mali, Cote d'ivoire	Interconnection HV Line			57	
	Ghana, Burkina Faso	Interconnection HV Line			28	
	Central African Countries	Cross border electrification project			37	
	Ethiopia, Kenya	Power Interconnection				200
	Zambia	Kariba North Bank Hydropower Scheme				150
	Benin, Togo	Adjarala hydropower Scheme				25
	Nigeria, Niger	Power Interconnection				10
	Cameroon, Equ. Guinea	Power Interconnection				30
	Burkina, Mali, Niger	Gourbassy hydropower scheme				19
		<b>Totals</b>	<b>74</b>	<b>287</b>	<b>1534</b>	<b>434</b>
Studies	CAEEC	Interconnection of Central African Countries	3			
	Nile Countries	Interconnection of Equatorial Nile Countries	2			
	Nile Countries	Eastern Nile power trade program study	3			
	Rwanda, Tanzania	Rusumo fall scheme T Line	3			
	DRC	Grand Inga Development Study		10		
	Cameroon, Equ. Guinea	Memvele Hydropower plant T Lines			3	
	Guinea, Mali, Cote d'ivoire	Fomi hydropower scheme and T Line			4	
	Chad, Cameroon	Interconnection HV Line				1
		<b>Totals</b>	<b>11</b>	<b>10</b>	<b>7</b>	<b>1</b>
<b>Grand Total (Current Until 2010)</b>						<b>2330</b>



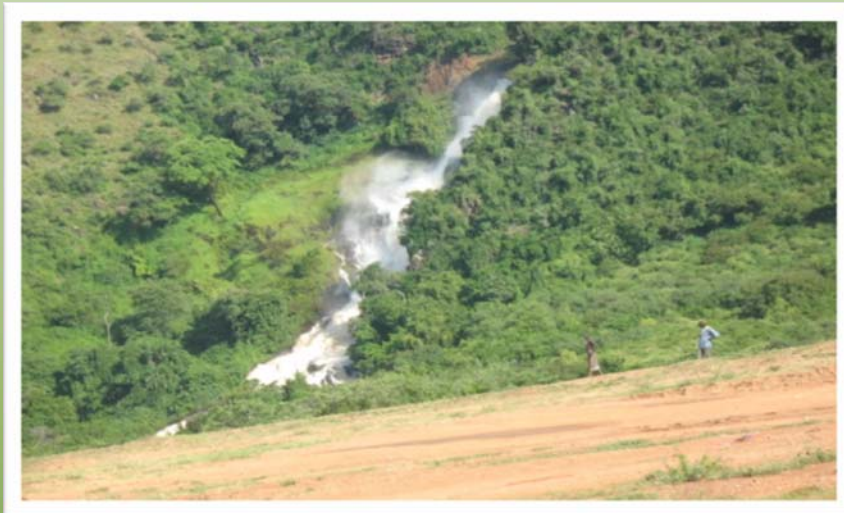
# 250MW Bujagali Hydroelectric Power Project



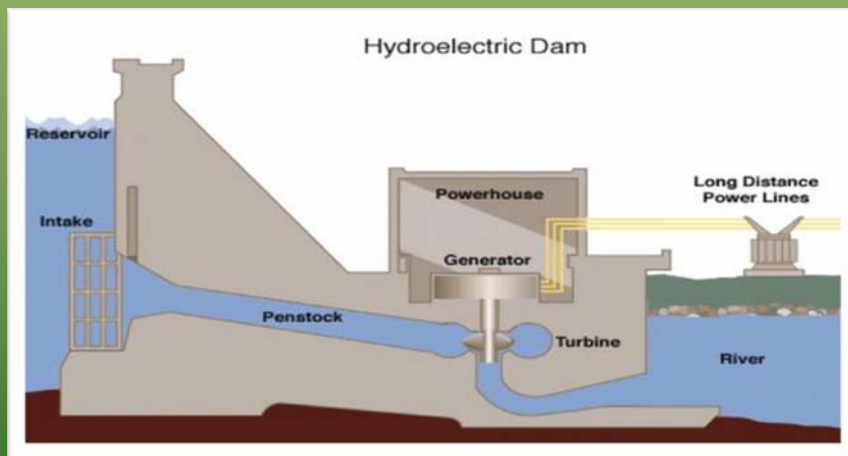
- **Uganda**
- **Project cost USD 736 M**
- **ADB loan USD 110 M**
- **ADB roles**
  - Project structuring
  - Long-term lender
- **Benefits**
  - Independent power project (IPP)
  - Expand the supply for electricity
  - Reduce generation cost
  - Long-term socio economic benefits



# 9MW Buseruka Small Hydroelectric Power Project



- Catalyst for Uganda's power sector
- Project cost USD 26 M
- ADB loan USD 9 M
- ADB roles
  - Project structuring
  - Long-term lender
- Benefits
  - Independent power project (IPP)
  - Connection of rural population
  - Reduce generation cost
  - Long-term socio economic benefits





# Cabeolica Wind Project



- **Cape Verde, multi-island project**
- **Investment Euro 64 mn**
- **ADB loan Euro 15 mn**
- **ADB roles**
  - Long-term lender
  - Lead arranger
  - Advisor in project preparation
- **Benefits**
  - Increased installed capacity by 25MW
  - Renewable
  - Lower the average cost of generation

# Sahanivotry Mini-hydro Project



- **Installed capacity of 15 megawatt (MW)**
- **Average gross electricity generation of 80GW**
- **It will produce 10 percent of the country's total supply of electricity**

# Lake Turkana Wind Power Project



- Kenya
- Building 365 wind turbines
- Adding an estimated 426 km of transmission lines to connect and supply power to the national electric grid
- The wind park will be generating 300 MW in 2012

# Concentrated Solar Power Projects (Clean Technology Fund)



Country	No. of Projects	Location	Capacity (MW)	Est. cost (US\$ million)	CTF Contribution (US\$ million)
Egypt	2	Kom Ombo	70	370	51
		Marsa Alam	30	270	44
Morocco	3	Tan Tan	50	240	35
		Ain Beni Mathar	125	525	90
		Ouarzazate	100	440	72
Tunisia	3	IPP-CSP Project	100	450	73
		ELMED-CSP	100+	450	73
		Tunisia-Italy transmission		1140	40

[1] This is a project with 8 hr storage so the size of the solar field will be equivalent to a 60 MW project.

[2] This is a CSP-desalination project

# Lessons learned



- **The RMS are finding it difficult to go on low carbon path because of high costs involved compared to other traditional forms of energy**
- **Need to have better communication on Climate related data so that project promoters and policy makers can make informed decisions**
- **Systems need to be developed that allow for early assessment of potential carbon credits in projects**
- **The cumbersome process of accessing carbon credits should be simplified.**
- **Supporting capacity building within RMC's and energy utilities to manage and implement climate friendly projects**



# Recommendations

- **The Bank continues to mobilize resources for regional projects in the energy/electricity sector without neglecting sub sectors like renewable, off grid schemes, capacity building and support to reforms.**
- **The Bank supports projects stimulating energy trade within neighboring countries, inside sub-regions through power pools and cross border installations (HV lines, Pipelines, hydropower plants in multinational basins).**
- **The Bank supports and collaborates with other institutions and authorities on initiatives for regionalization of energy projects, harmonization of policies and creation of data bases on energy statistics for assisting decision makers.**
- **The Bank is supporting the creation of attractive investment climate and favorable business environment that encourages private finance needed to fill the large gap in projects funding through PPP's.**



Thank you

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