Transformational infrastructure in Africa: the role of regional initiative

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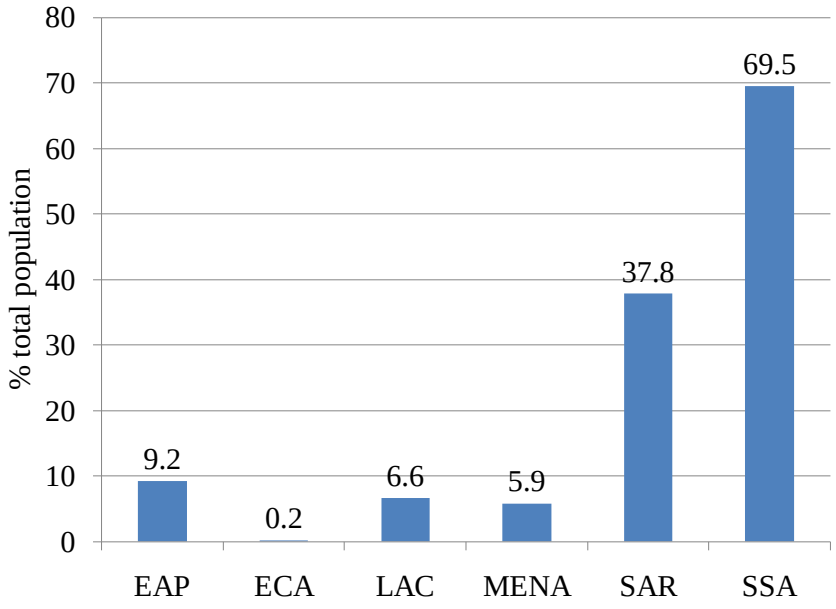
The magnitude of Africa's infrastructure needs requires transformational approaches

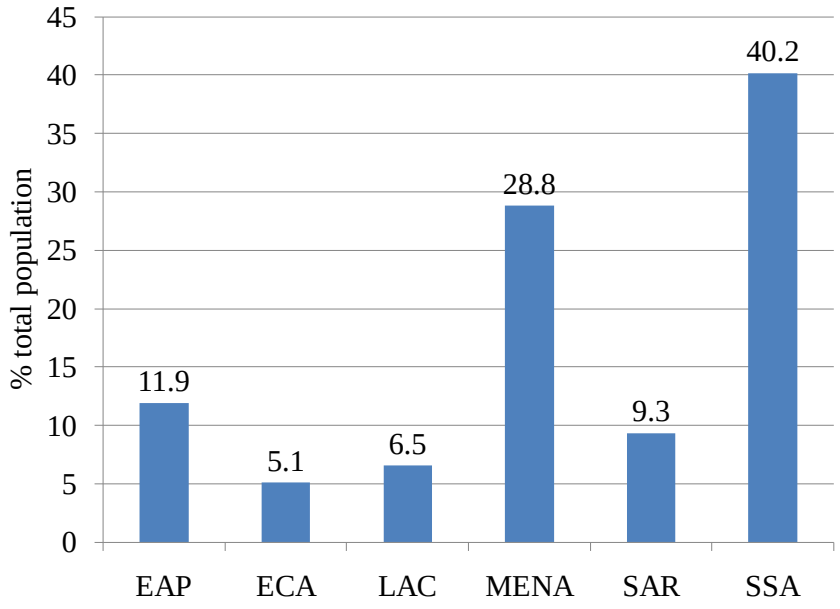
African infrastructure is lagging behind

Share of population without access to electricity



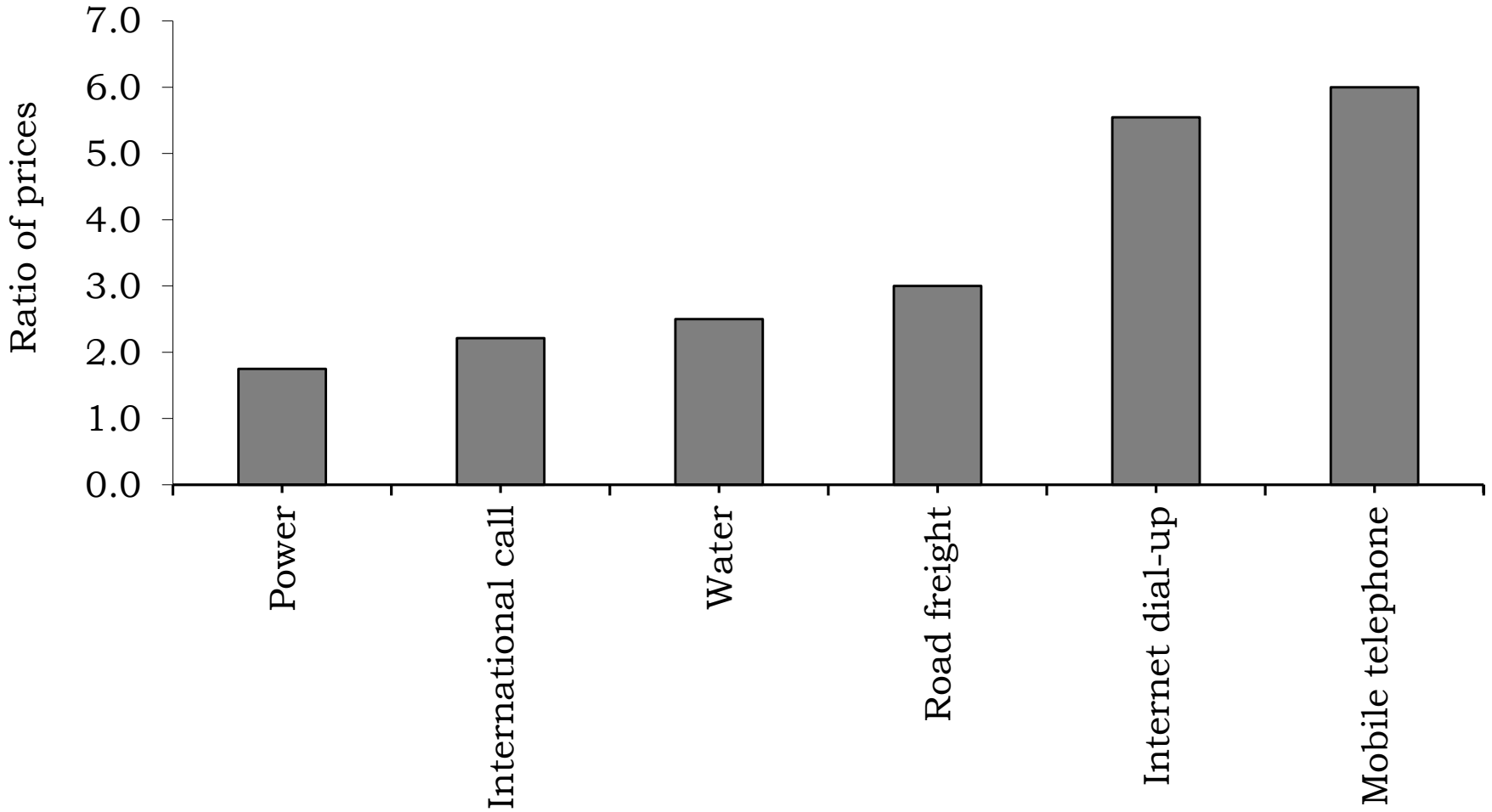
Source: IEA World Energy Outlook 2010

Share of population without access to improved water

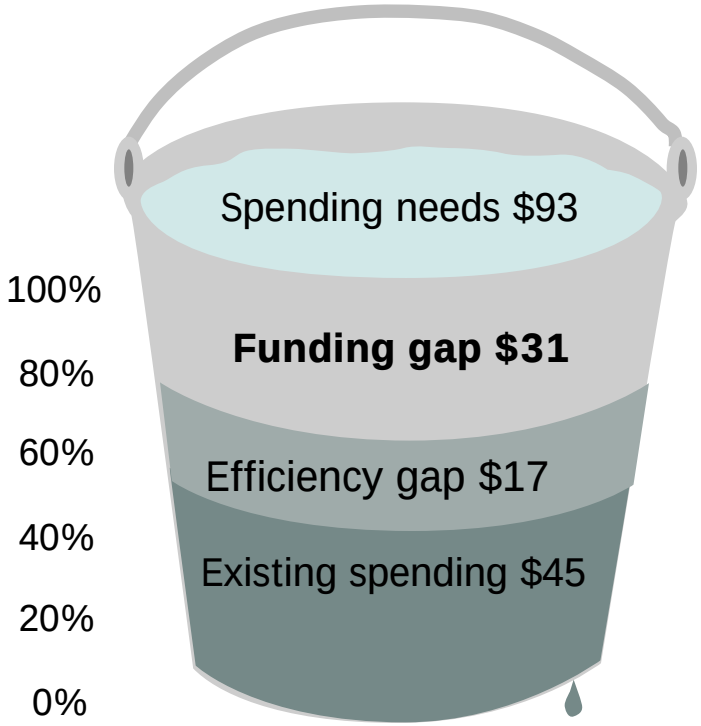


Source: WHO and UNICEF: Progress on Sanitation and Drinking Water 2010

Africa's infrastructure services several times more expensive than elsewhere



Investments needs are great



1/3 of the funding gap could be met through efficiency gains

Improving operational efficiency $7.5

Increasing cost recovery $4.7

Prioritizing public spending $3.3

Spending budgeted resources $1.9

All figures in US$ billion a year. Source: AICD.

Africa's economic geography complicates infrastructure development

Need to think regional about infrastructure

- Africa's economic geography is a serious challenge
  - 20+ countries with populations of <5 million
  - 20+ countries with economies of <US$5 billion
  - 60 international river basins
  - 15 landlocked countries

- That means infrastructure inherently regional
  - Most countries too small to generate power efficiently
  - Handful of countries with major hydro resources
  - Upstream decisions compromise downstream availability
  - International corridors provide access to sea
  - Regional fiber optic backbone provides access to internet
  - Stronger regional hubs needed for air and sea transport

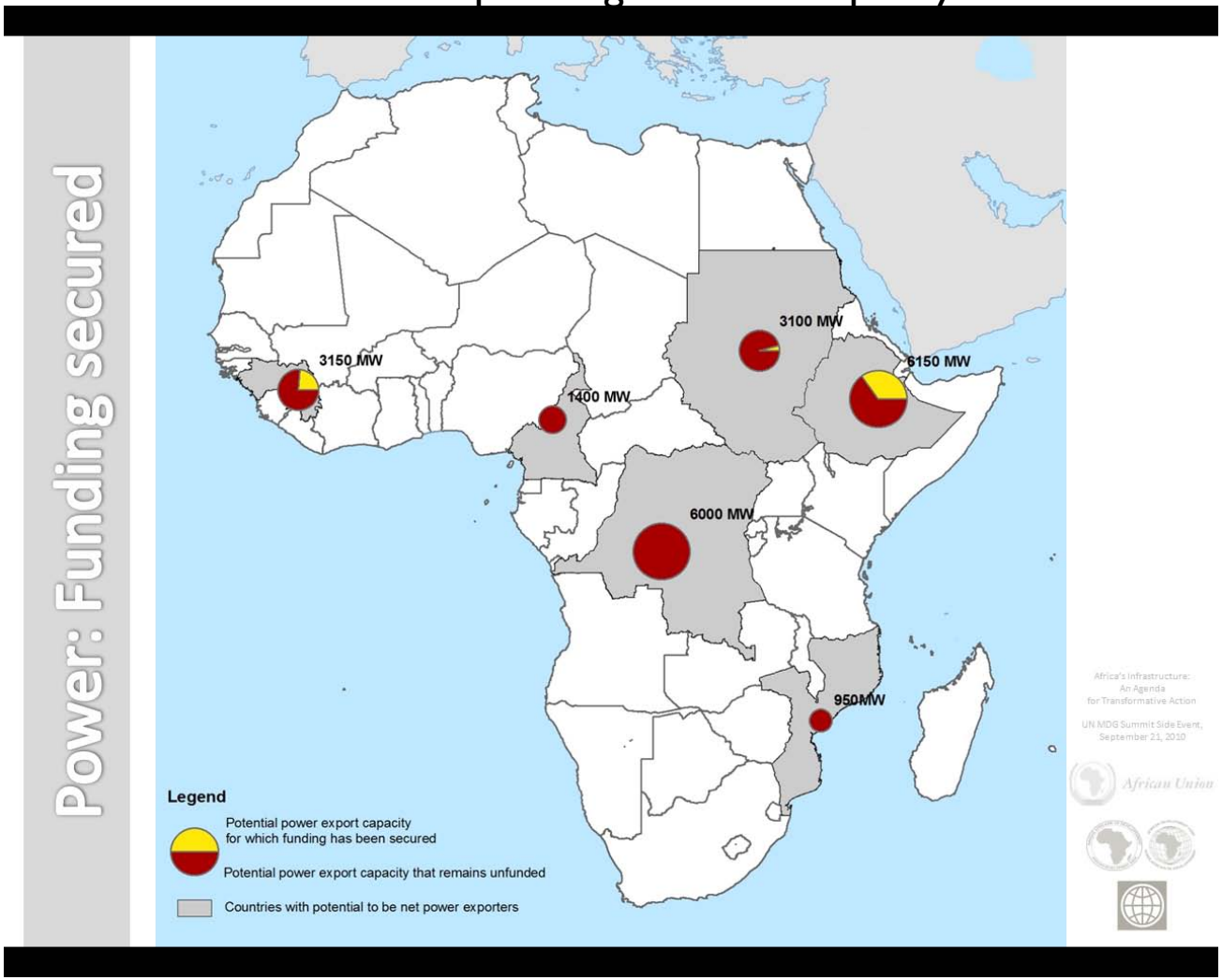
Regional integration has potential to lower costs and boost output in all sectors

- Power – more generation and cheaper electricity
- Transport – reduce delays and costs caused by poor road infrastructure and unharmonious border and customs
- Telecom – greatly expand access and halve costs of internet and phone services
- Water – quintuple water storage and cooperatively manage 60 river basins

Power: harnessing Africa's rivers and power trading

Untapped generation potential

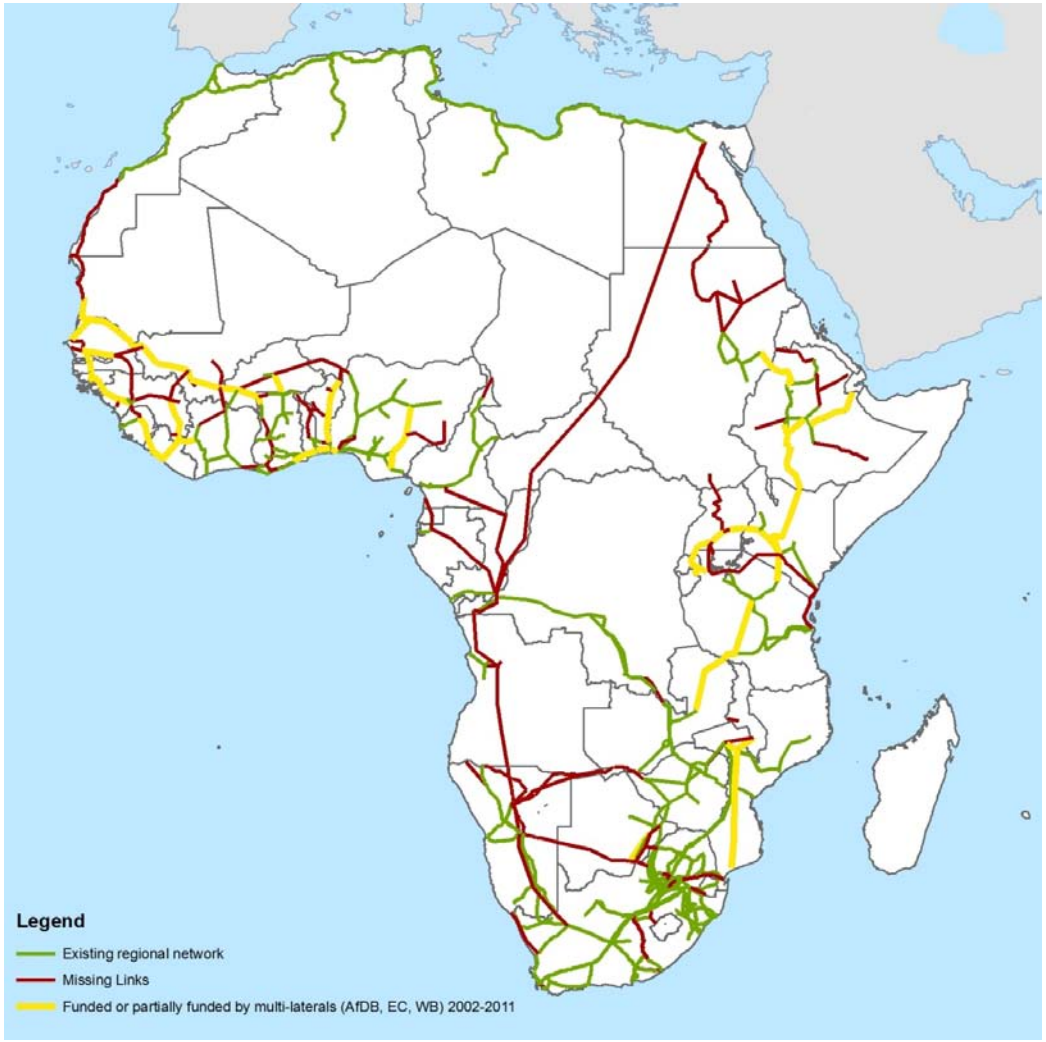
Unrealized power generation capacity



Power trade brings large financial, economic, and environmental savings

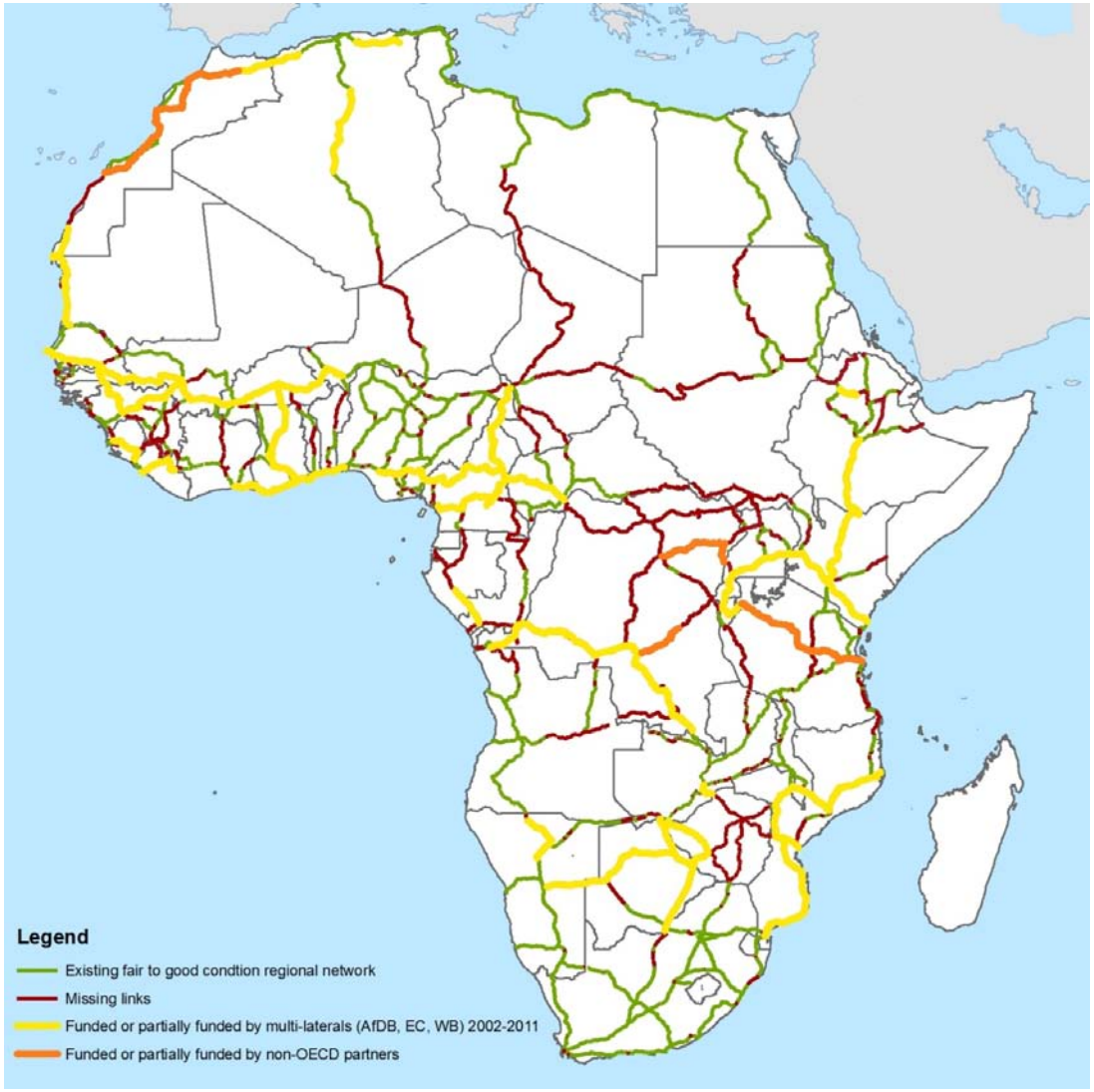
Power Pool	Savings in			Return on trade (%)
	Spending needs (US$ bn pa)	Long-run power cost (USc/kWh)	CO_2 emissions (mn tons pa)	
CAPP	0.2	2	4	22
EAPP/NB	1.0	<1	20	20
SAPP	1.0	1	41	168
WAPP	0.5	1	5	33
Total	**2.7**		**70**	

Trading electricity regionally



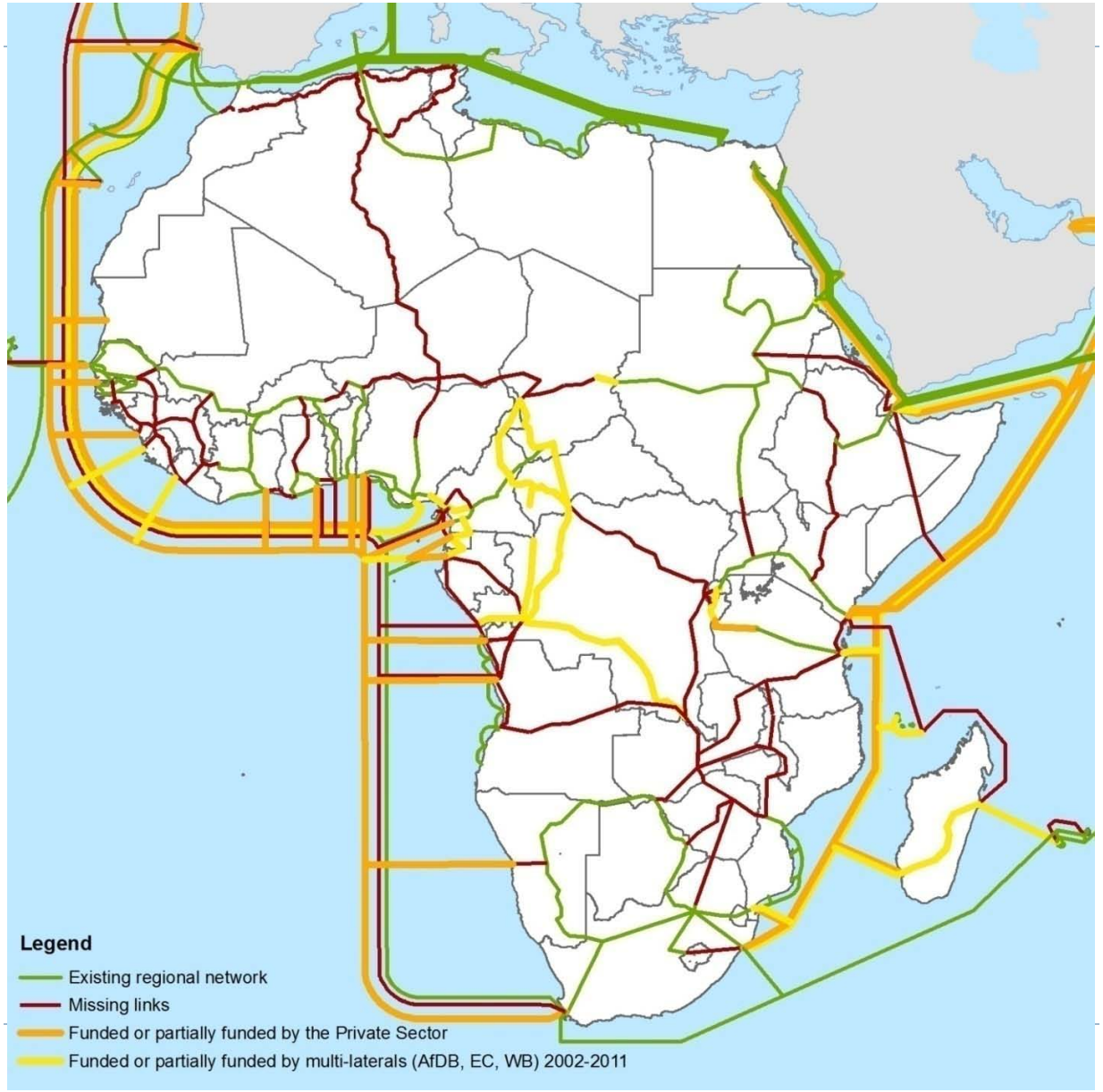
Transport: Bringing Africa closer together and to the world

A patchwork of poorly maintained or missing roads



Telecom:
Cheaper internet and phone service and ICT engine for growth

Longing for terrestrial linkages

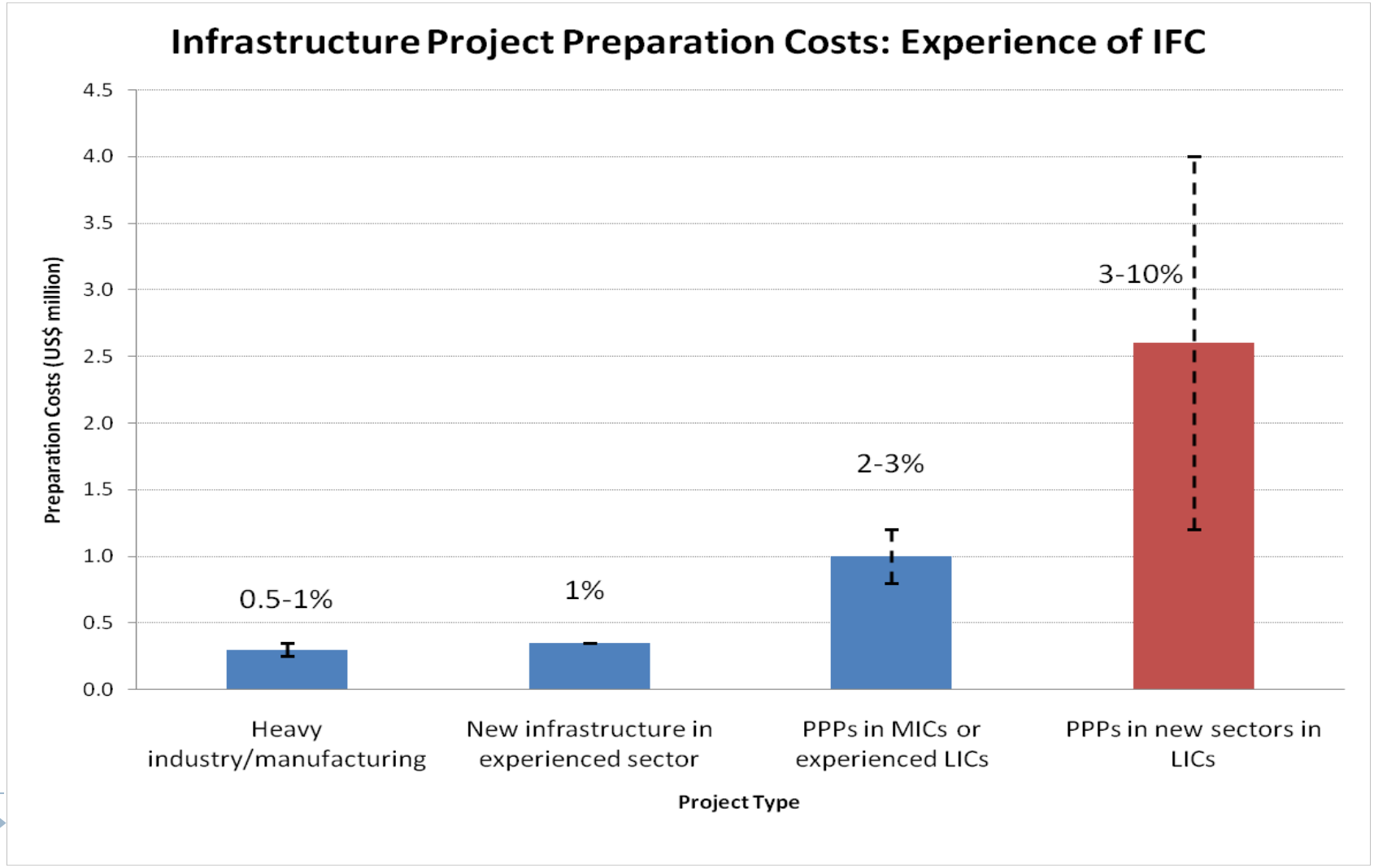


Key constraint: Project pipeline suffers from lack of project preparation resources

Developing bankable projects takes time and money

	Overall project costs (US$ m)	Cost of project preparation (US$ m)	%
Implemented			
Bujagali	780	15	2%
Nam Theun 2	1,400	124	9%
Under Preparation			
Inga 3	8,000	>>100	>>1%
Cahora Bassa North Bank	2,000	60	3%

This is not unique to Africa



Current institutional arrangements are inadequate for the undertaking

PPF Name	Hosted By	Format	Contributors	Funding Bracket	Geography	Beneficiary	Sector	Project Type
					ACP	Public, Private, PPP	EG, ICT, TR, UW	Regional, Nat'l, Sub-nat'l

PPF Name	Hosted By	Format	Contributors	Funding Bracket	Eligibility				
					Geography	Beneficiary	Sector	Project Type	Notes
PIDG Technical Assistance Fund	PIDG	TA Facility	World Bank, DFID, and SIDA. Works in association with the other PIDG financing facilities (EAIF, DevCo Advisory, InfraCo, and GuarantCo)	Annual budget of US$3,000,000 to US$5,000,000 (likely to increase to US$10,000,000).	Africa: all countries, ACP countries only	Public, Private, PPP	EG, ICT, TR, UW	Regional, Nat'l, Sub-nat'l	All projects supported must be financed or guaranteed by one or more PIDG investment vehicles. Co-financing with recipient parties is encouraged. Equipment and other capital expenditures are not normally eligible for support.
Public Private Infrastructure Advisory Facility (PPIAF)	World Bank	Multi-donor TA facility	15 donors (including Japan and DFID)	Maximum US$1,000,000. Small grants (below US$75,000) are encouraged	Africa: all countries	PPP	EG, ICT, TR, UW	Regional, Nat'l, Sub-nat'l	PPIAF will not work in extractive industries. Can support activities intended to benefit any developing and transition country included in the DAC's List of Aid Recipients: all 5 columns of the Part I table, column 1 of the Part II table
SEFI Transaction Support Facility (SEFI TSF)	UNEP and BASE	Clean Energy Pilot Facility	UNEP Sustainable Energy Finance Initiative (SEFI)	Advisory support lines for financial institutions: US$50,000 per institution to support 5 to 10 small-scale project evaluations.	North Africa	Private, PPP	EG	Nat'l, Sub-nat'l	A pilot of the TSF is being launched under UNEP's Financing for Renewable Energy in Tunisia, Morocco and Egypt, and will be financially managed by BASE (Basel Agency for Sustainable Energy). BASE and UNEP will seek further donor funding to be able to offer the SEFI TSF in other developing countries.
Slum Upgrading Facility	UN Habitat	Pilot Facility	DFID	US$2,000,000 to US$3,000,000 million per country of operation. May increase with higher funding.	ACP countries only	Public, Private, PPP	TR, UW	Sub-nat'l	Countries of operations in Africa: Ghana, Uganda, Zambia, Senegal, Tanzania and Kenya. Sector focus is mainly water and sanitation and transport. However, other sectors (e.g. energy) may be considered at a later stage. Beneficiaries are municipal authorities, civil society, NGOs and special purpose vehicles established by municipal authorities.
Water And Sanitation Program – Africa (WSP)	World Bank	Trust Fund Program	17 major international donor agencies	No minimum or maximum – the typical magnitude of support is in the region of US$5,000 – US$350,000	Sub-Saharan Africa	Public, Private, PPP	UW	Regional, Nat'l, Sub-nat'l	Allocates the majority of its resources towards supporting activities in the following 12 focus countries: Benin, Burkina Faso, Democratic Republic of Congo, Ethiopia, Kenya, Mozambique, Niger, Rwanda, Senegal, Tanzania, Uganda and Zambia.

* The information above was extracted from the ICA Project Preparation guide from May/June 2006. Hence, these figures may not reflect the status quo.

Some potential transformational projects

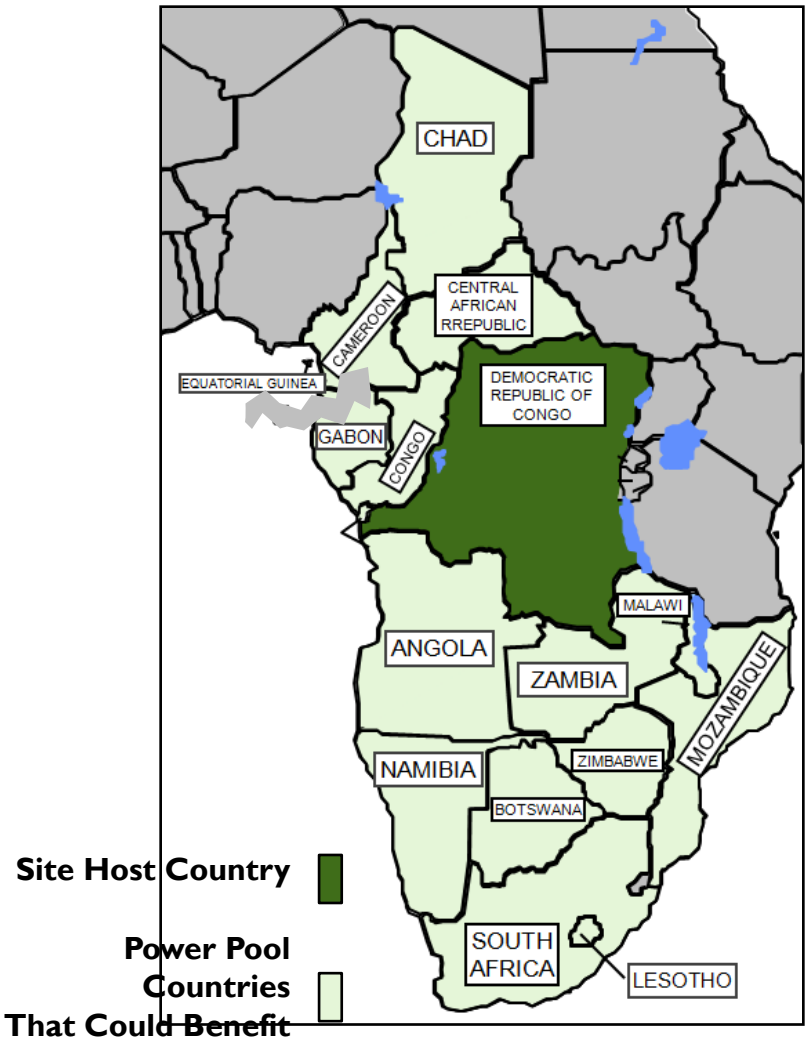
Project selection criteria

- Extent of integration
- Political support
- Transformation potential
- Maturity
- Ease of implementation
- Funding gaps (preparation and investment)

Inga Hydropower Site

Democratic Republic of Congo
(with exports likely to Central and Southern Africa Power Pool)

- ✓ Largest hydropower site in the world
- ✓ Capacity to generate 45 GW or two-thirds of existing installed capacity in sub-Saharan Africa)
- ✓ One of the continent's most cost-effective power sources (US$0.025/kWh)
- ✓ Would allow for a transformational reduction in power costs across Africa
- ✓ **Financing:**
  - Approximate costs: $8 bn for Inga 3 and $80 bn for Grand Inga.
  - Need to develop the overall Inga site as a PPP (given project size, investment needs and country risk).



North-South Corridor

- From Dar Es Salaam to Durban
- Also provides sea access to Botswana, southeastern DRC, Malawi, Zambia, and Zimbabwe.
- **Goals:**
  - **Simplify and harmonize** requirements and controls that govern movement of goods within the corridor;
  - **Improve the quality and reliability** of the infrastructure, transport, and other logistics services within the corridor;
  - **Reduce the spread of HIV/AIDS** in corridor countries

- **Financing:**
  - $800 Mn estimated total cost, $150m now available for Phase 1 under IDA.
  - Financing gap of US$10-15m for the feasibility study and detailed engineering for Phases 2-3.
- **Institutional Support:** a top priority for SADC, COMESA, and EAC.
- **Country Support:** strong but for concerns about locking up IDA allocations in slow moving projects

Ethiopia-Kenya Interconnector

Six countries– Ethiopia, Kenya, and surrounding East African Power Pool nations

Objectives:

- Create high-capacity interconnector linking Ethiopia's hydro, Kenya's geothermal and the Rift Valley countries
- Upgrade existing connections between Ethiopia-Sudan, Kenya-Uganda, and Kenya-Tanzania.

Transformational:

- **reduce the cost of power from $0.35 to $0.04/kWh.**
- create a trading network, expand the diversity and security of power supply
- trigger further investment in Ethiopian hydropower and geothermal resource development.

Challenges and next steps:

- Financial and economic analysis has been done funded by donors on a grant basis.
- Need a detailed implementation plan, ESA and RAP

Financing: $1bn overall costs, likely co-financing WB, AfDB, ADF