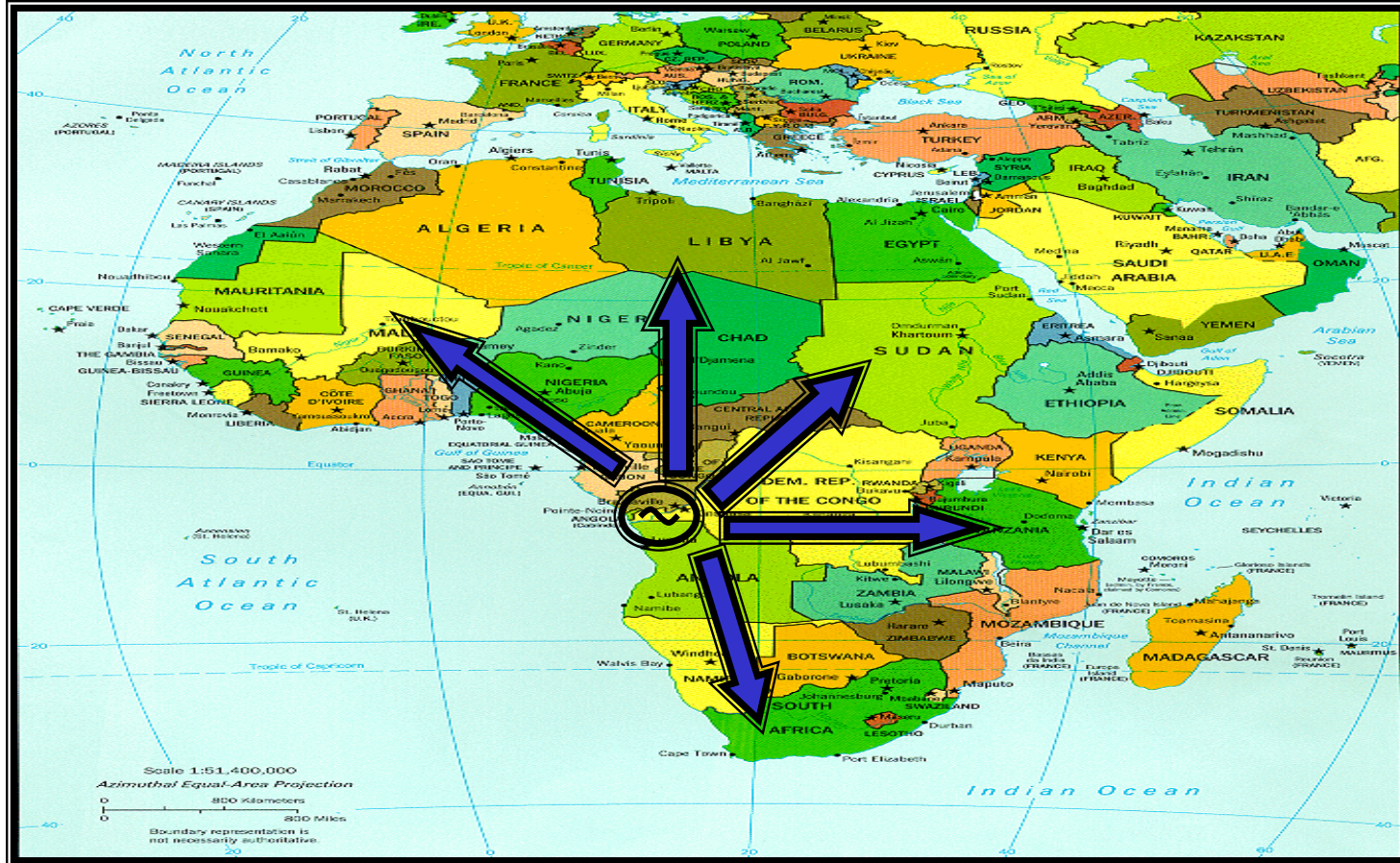


The Congo River A Renewable Energy Resource of Africa Contributing to Continental Economic Renaissance.



INGA, RUN-OF-RIVER HYDRO ENERGY



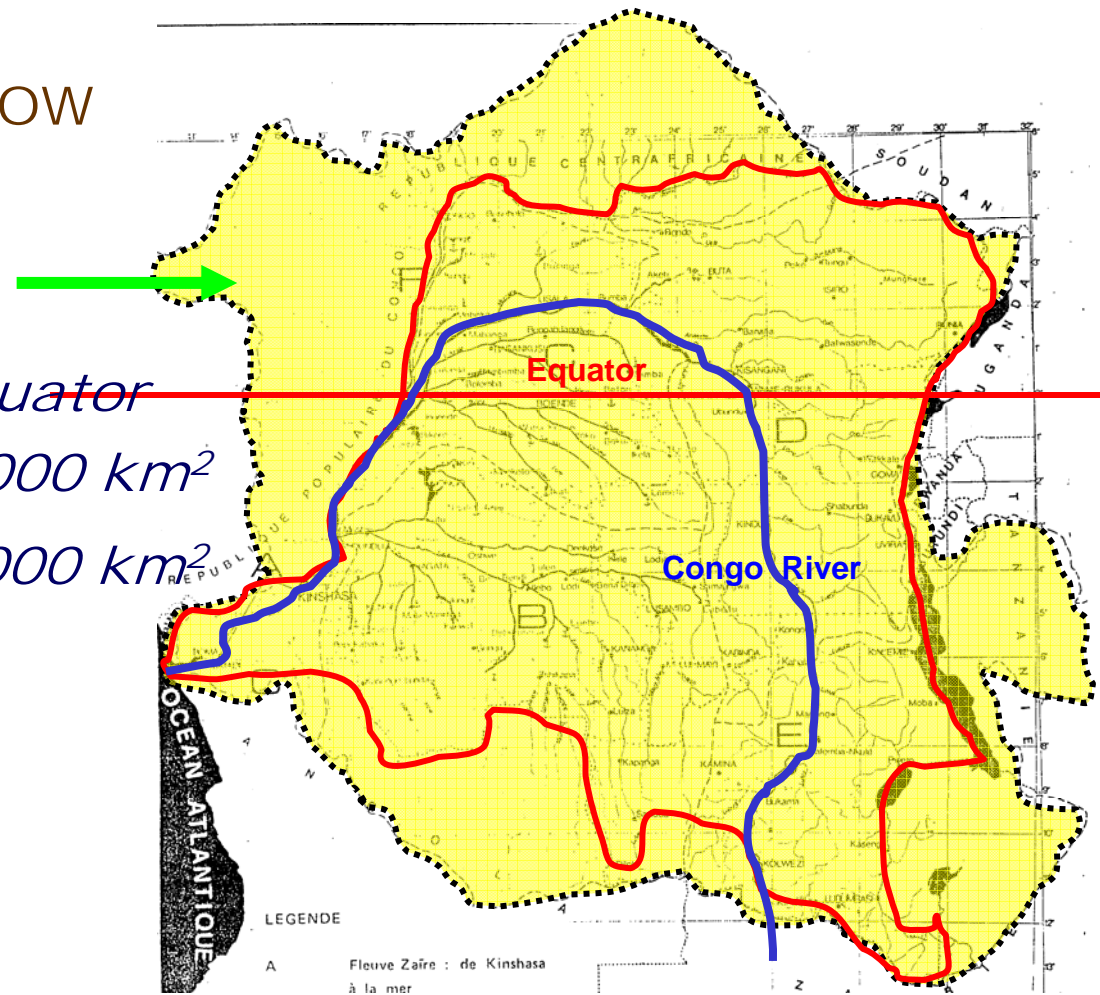
INGA site

INGA SITE CHARACTERISTICS

a) EXCEPTIONNALLY
REGULAR RIVER FLOW

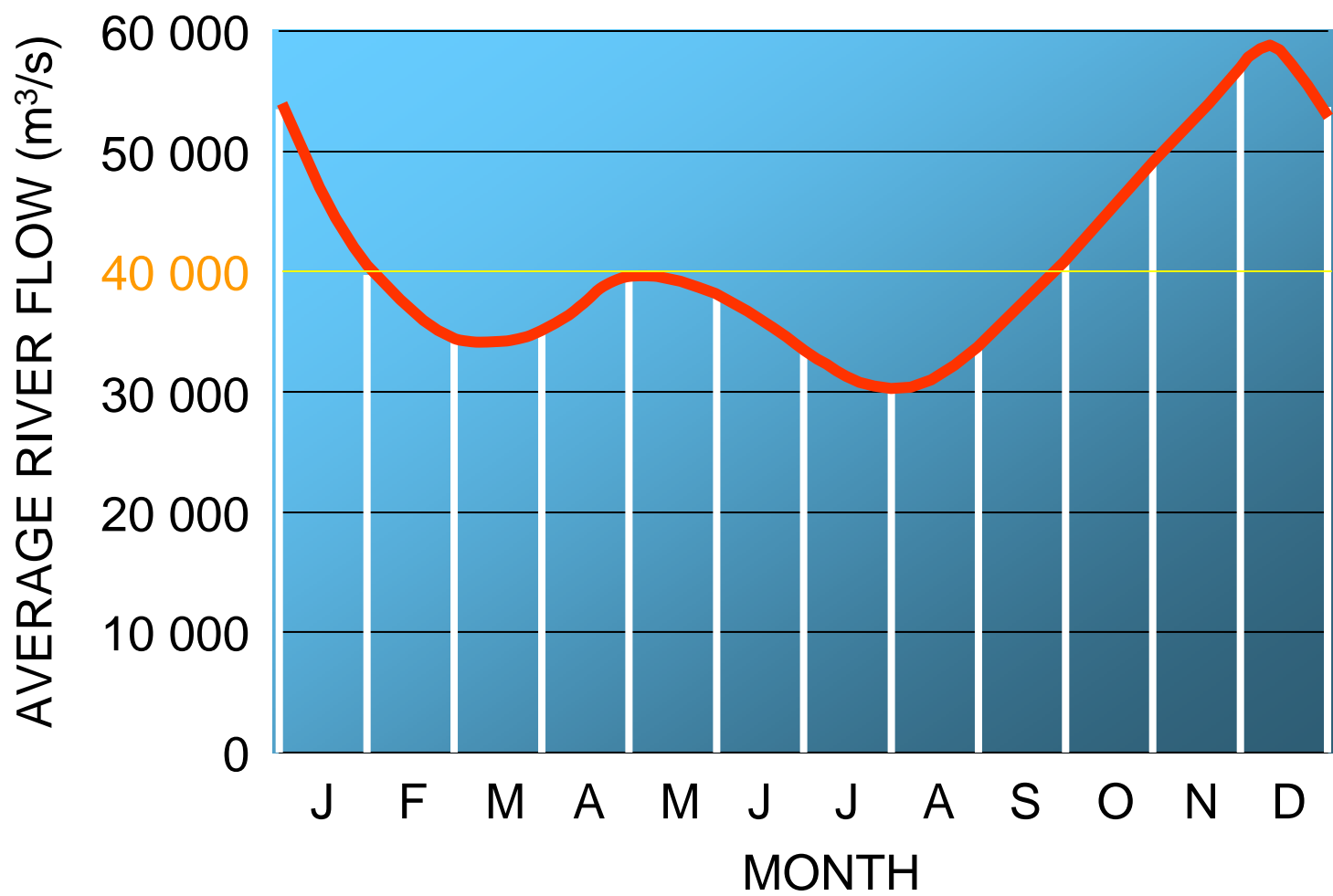
CONGO RIVER BASIN

- *On either side of the Equator*
- *Basin Surface : 3.800.000 km²*
- *DRC Surface : 2.345.000 km²*



INGA SITE CHARACTERISTICS

b) SIGNIFICANT RIVER FLOW

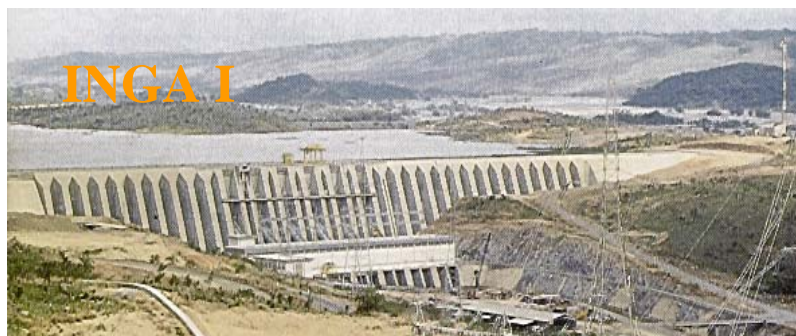


Historical Min (1905) :
21.400 m³/s

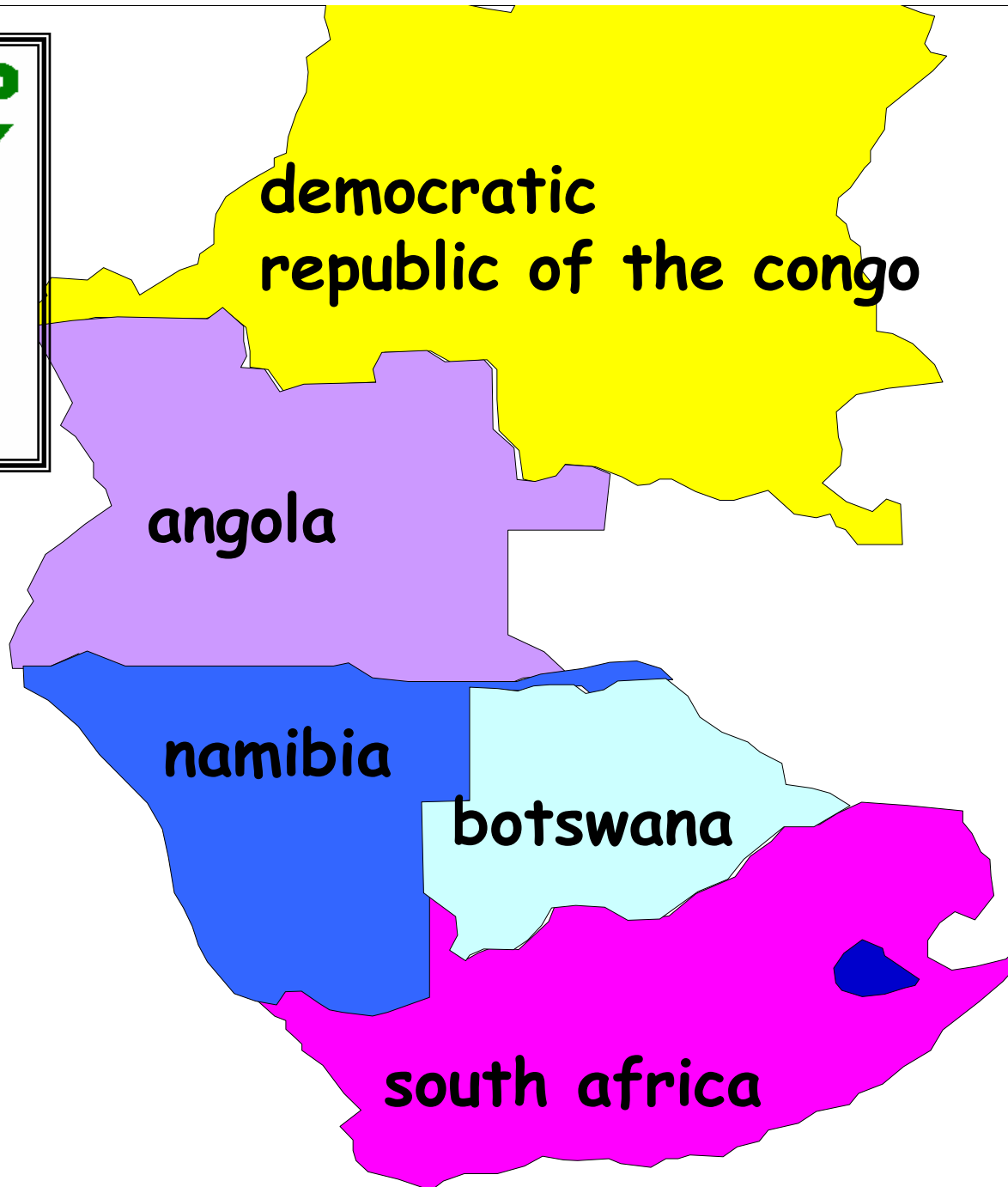
Inter-annual Module
40.000 m³/s

Historical Max (1961) :
83.400 m³/s

EXISTING POWERSTATIONS



	INGA I	INGA II
Commissioned in	1972	1982
Water head (m)	50	58
Turbine		
Water flow (m³/s)	780	2.800
Number of units	6	8
Installed Capacity (MW)	351	1.424
Production (TWh/an)	2,4	10,4






WESTCOR

Empresa
Nacional de
Electricidade



 Eskom




NamPower



Société
Nationale
d'Electricité



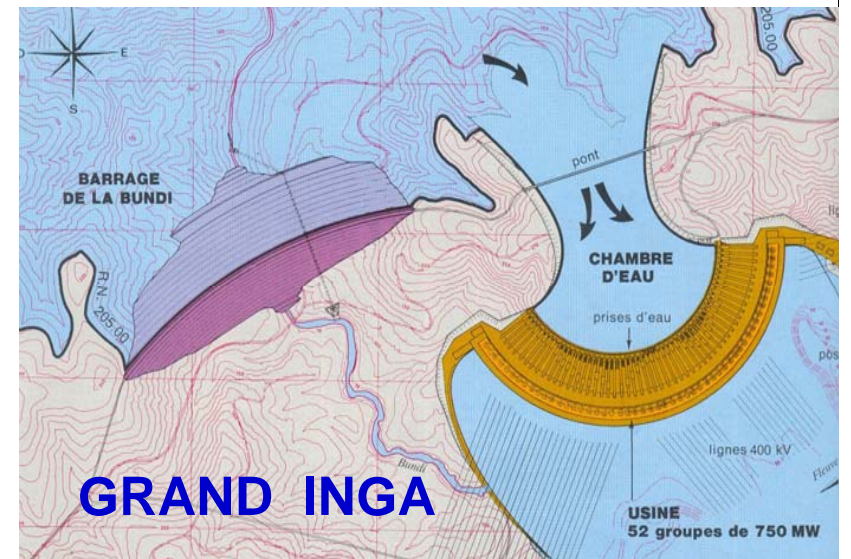
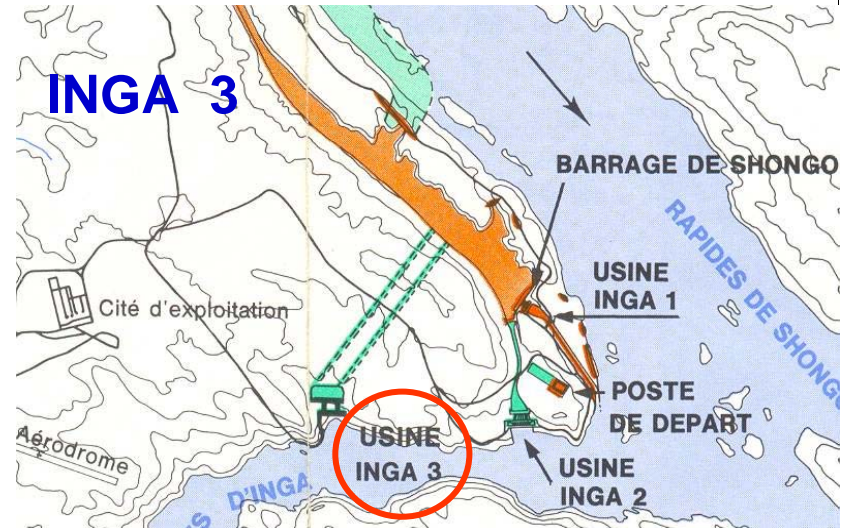
The Project

**Results of the First Pass
Engineering Studies**

WESTCOR PROJECT

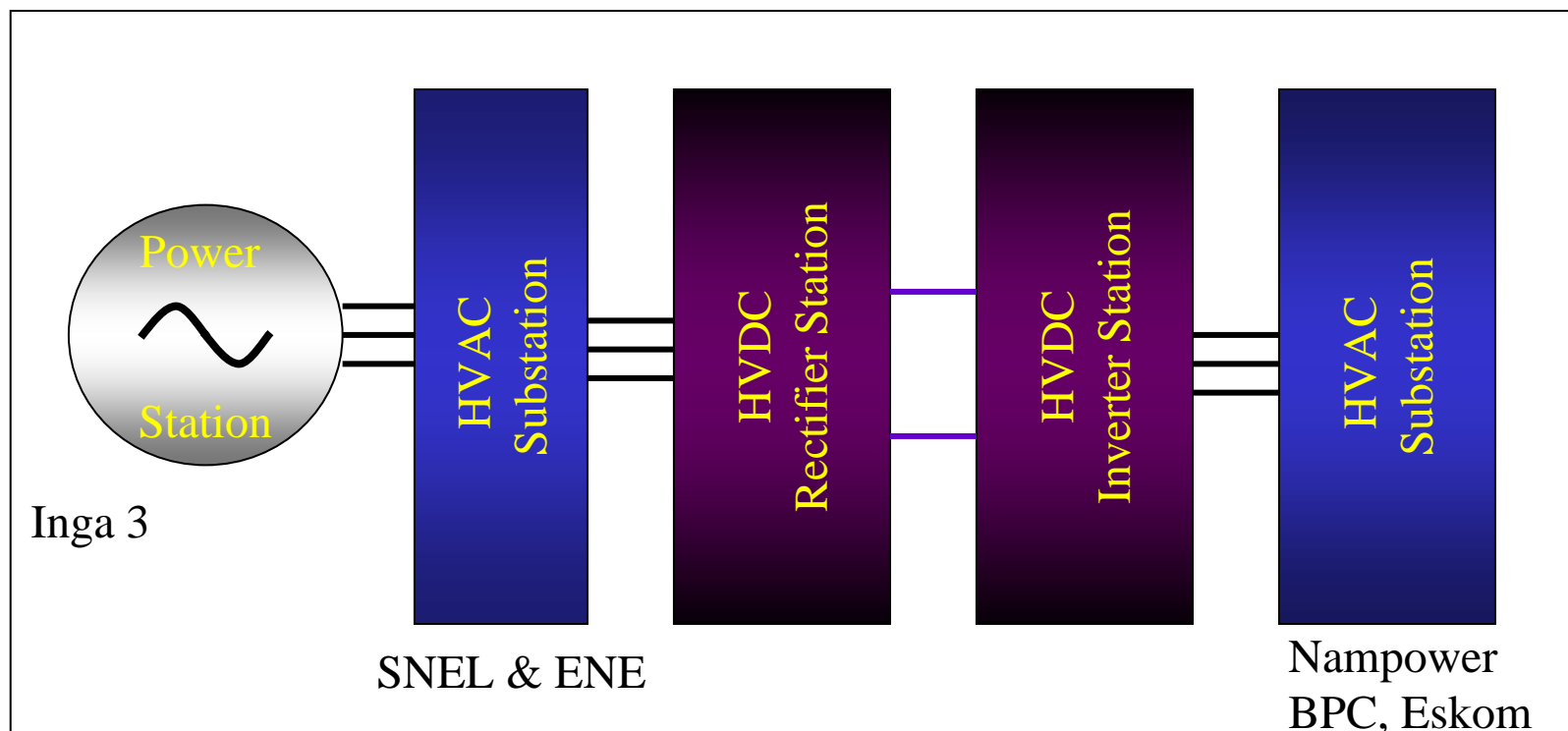
	INGA III WESTCOR PROJECT	GRAND INGA
Water Head (m)	60	150
Turbine Water flow (m ³ /s)	6.300	26.400
Number of units	16	52
Installed Capacity (MW)	3.500*	39.000*
Generation (TWh/y)	23,5	288,0

(* Without any optimization of the site)



WESTCOR Conceptual Plan Classic Case

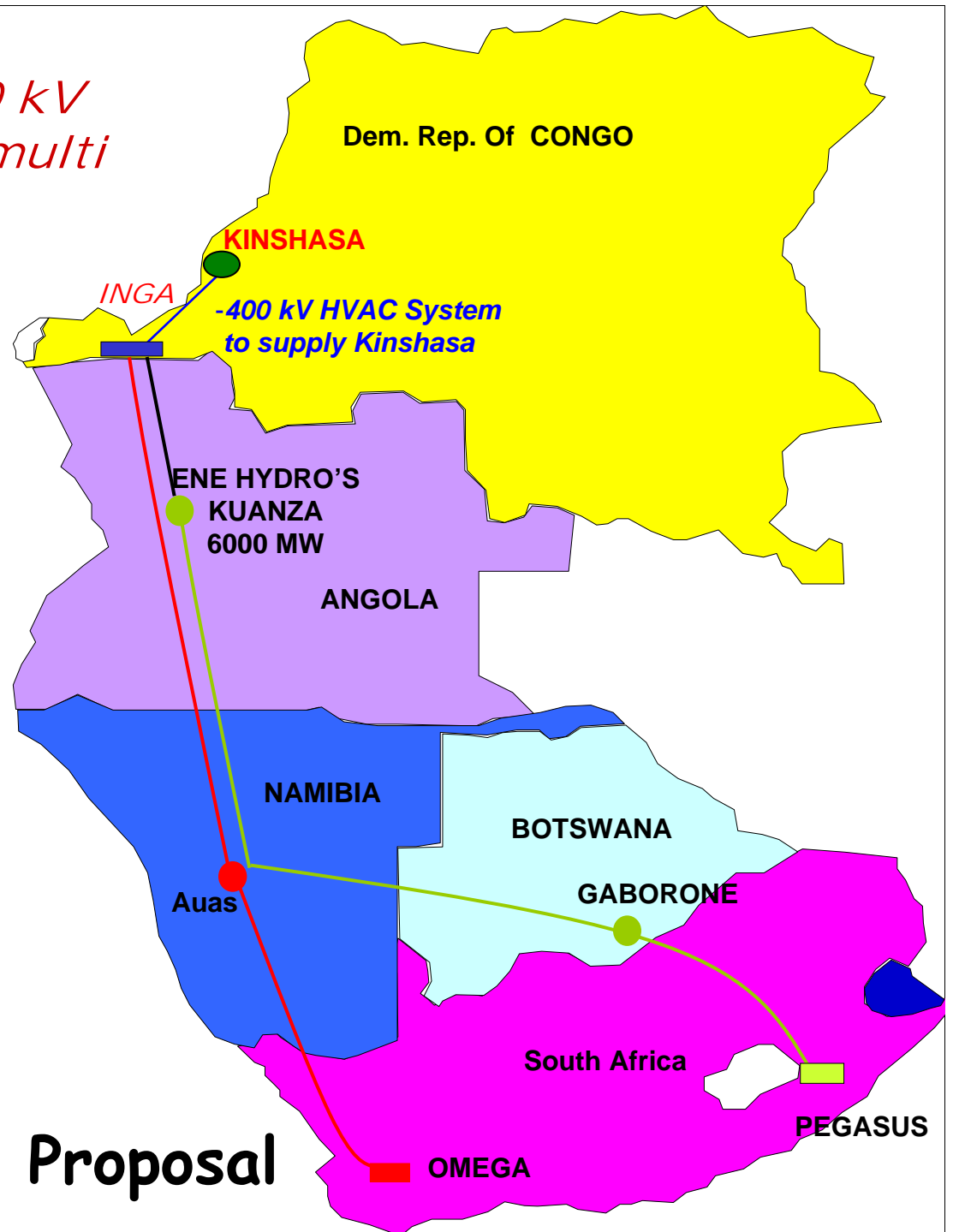
Generation and Transmission



**Plus long distance carrier for broadband
telecommunications**

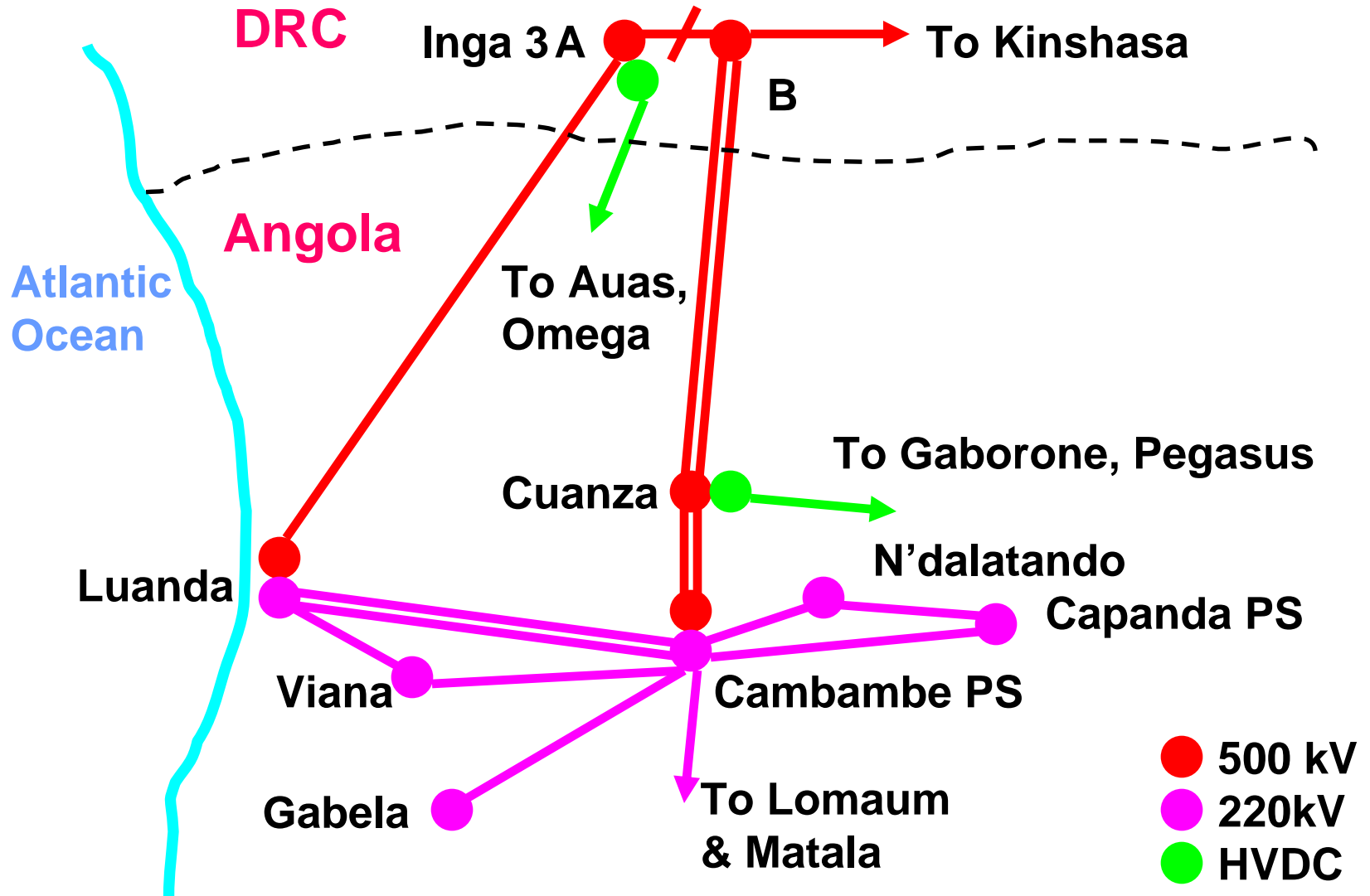
500 kV HVAC and 500 - 800 kV HVDC ; 2 - 6 GW bipole multi terminal proposal.

HVDC MULTI-TERMINALS SCHEME	
<u>BIPOLAR 1</u>	<u>BIPOLAR 2</u>
(3 converter terminals)	(3 converter terminals)
Inga 3 - Aus 0,5 GW - Omega 1,5 GW	Kuanza - Gaborone 0,5 GW - Pegasus 1,5 GW



Base Case Commercial Proposal

NORTHERN SYSTEM



Inga 3 Generation

Inga 3 - First Pass Complete
Run of the River

8 Francis turbines @ 450 MW

Turbine flow : 5 700 m³/sec, with 64,5m

Powerplant total : 3 600 MW

Next Steps - Generation

Inga 3

2005 2006 2007 2008 2009 2010 2011 2012

Pre Feasibility

Feasibility

Construction Construction

Power Flows

End

Angolan Generation

2005 2006 2007 2008 2009 2010 2011 2012

First Pass Medio Kwanza 6000 MW

Pre feasibility and Feasibility

Construction

Power

Generation Capacity in the MÉDIO KWANZA RIVER

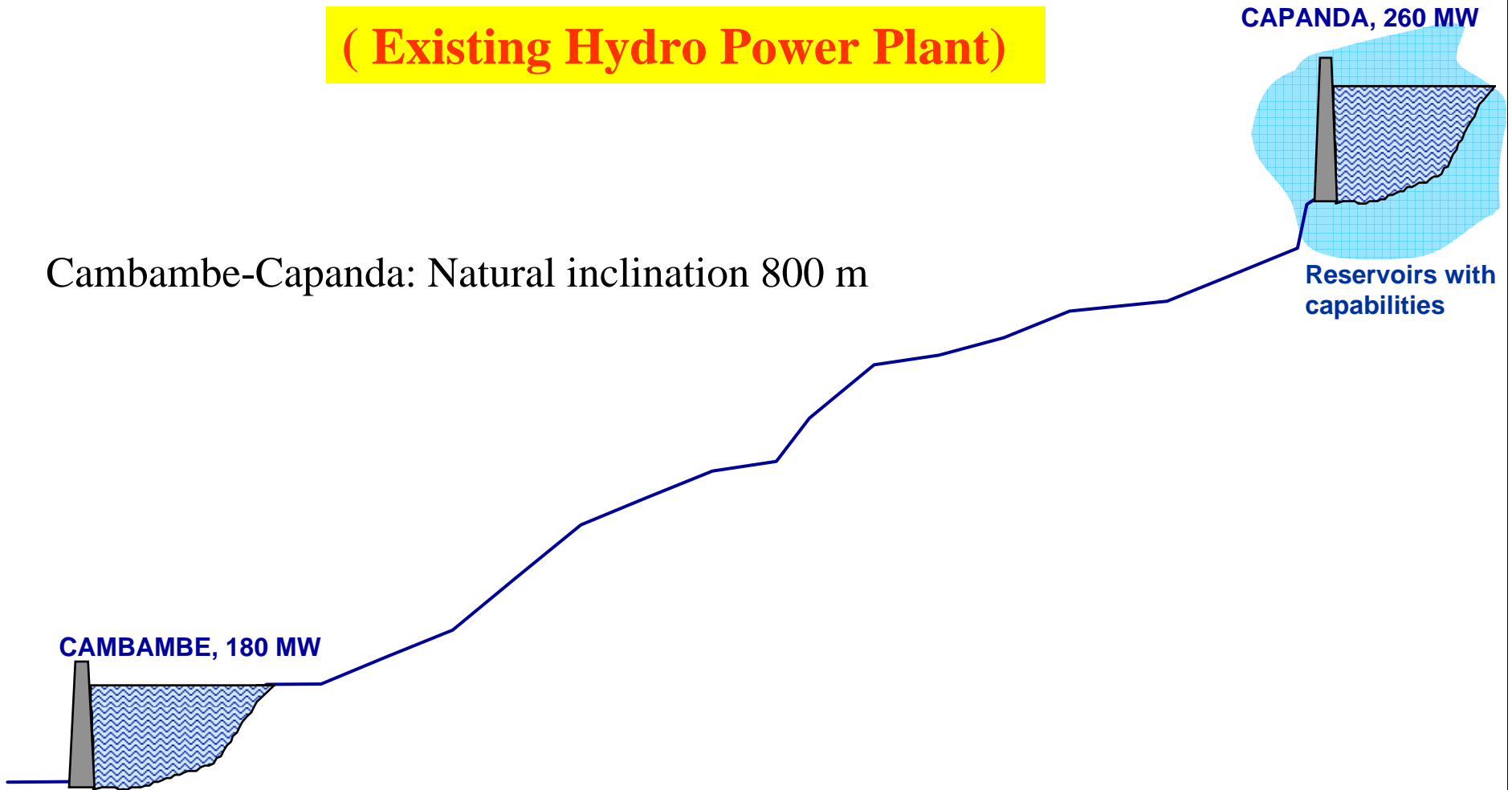
(Existing Hydro Power Plant)

CAPANDA, 260 MW

Reservoirs with capabilities

Cambambe-Capanda: Natural inclination 800 m

CAMBAMBE, 180 MW



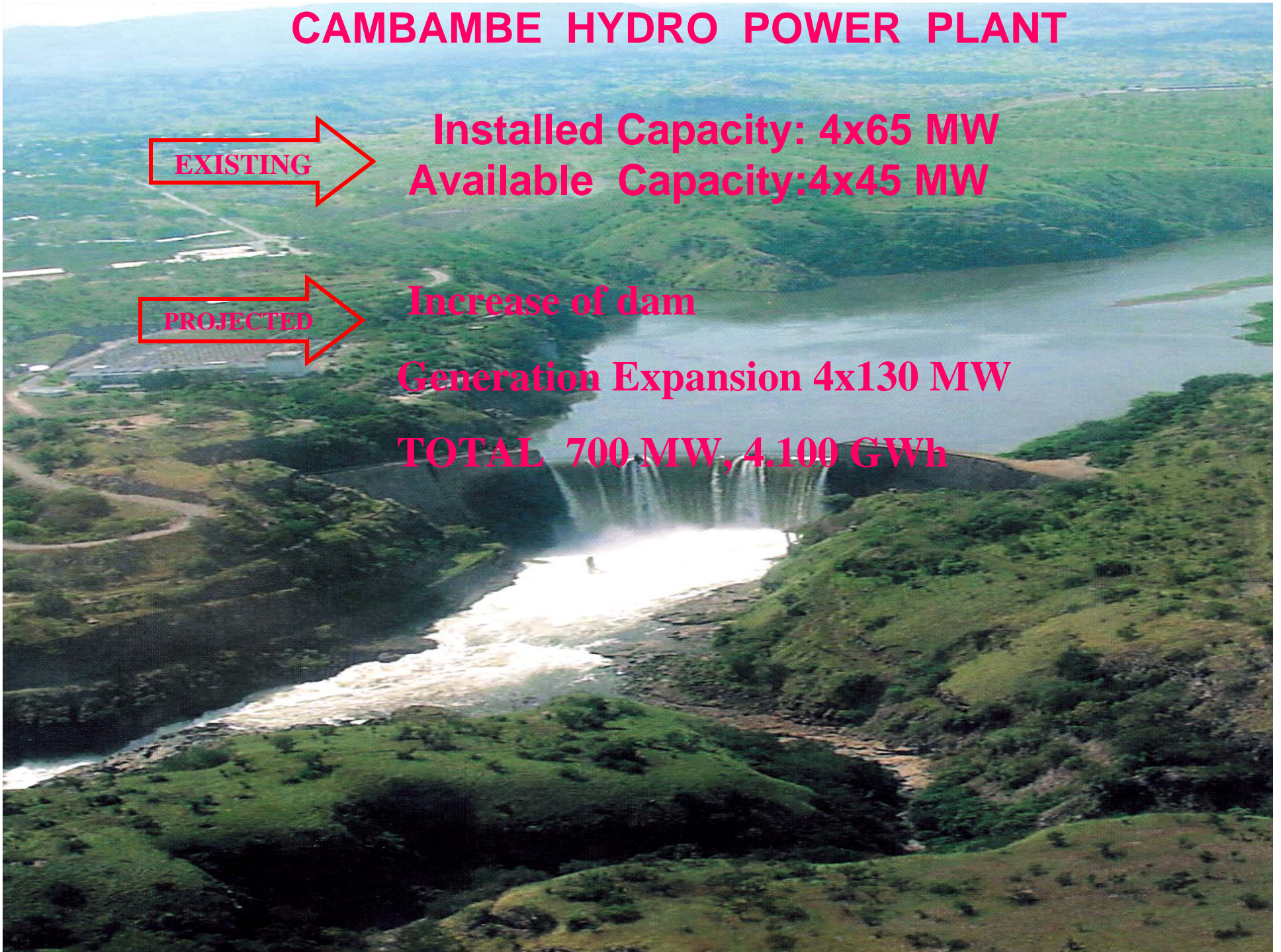
CAMBAMBE HYDRO POWER PLANT

EXISTING

Installed Capacity: 4x65 MW
Available Capacity: 4x45 MW

PROJECTED

Increase of dam
Generation Expansion 4x130 MW
TOTAL 700 MW, 4.100 GWh





Capanda Project

1 th Fase: 260 MW

2 th Fase: 260 MW

TOTAL 520 MW, 2.111 GWh

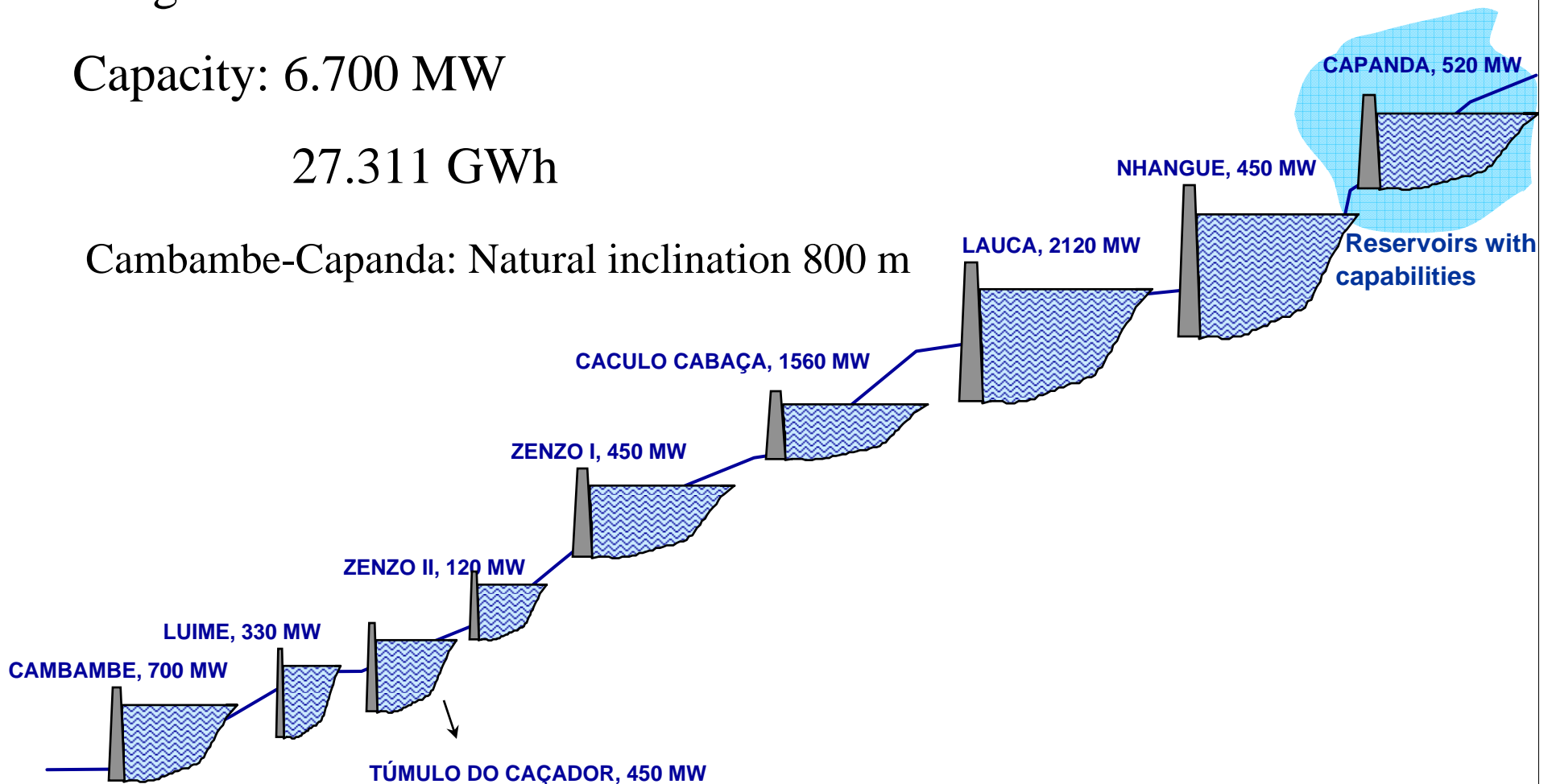
Generation Capacity in the MÉDIO KWANZA RIVER

Length: 137 Km

Capacity: 6.700 MW

27.311 GWh

Cambambe-Capanda: Natural inclination 800 m



Next Steps - Generation

Lower Cunene River

2005 2006 2007 2008 2009 2010 2011 2012

First Pass Studies 2X 300 MW Baseload

1500 MW peaking or mid merit depending on river flows.

Thank you