

# THE GRAND INGA DAM



The mighty **Congo River** drains half of central Africa, but curves around, avoiding major falls along its whole length except, as it is about to enter the Atlantic Ocean.



And this fall is very unimpressive, merely

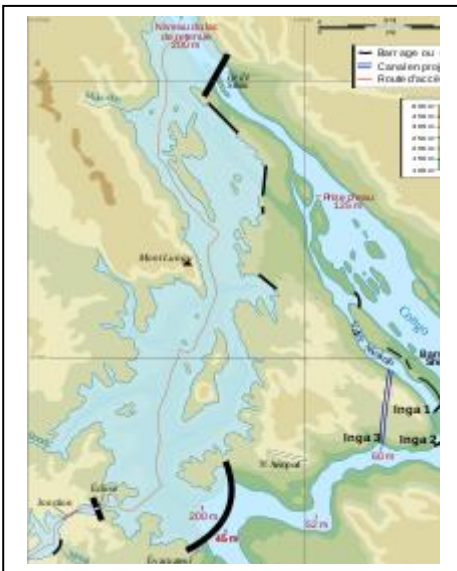
96 meters, but it has a flow of 42,5 cubic meters per second.

**The Congo** flows through a series of channels and cataracts before debouching. This is why The Congo is not navigable from the sea and actually poses difficult access to the hinterland,

There is an unimpressive drop of some 300 feet, but it is the fact of the enormous flow-rate through turbines and powers the project.

The **Inga Dams**, located in western Democratic Republic of the Congo 140 miles southwest of Kinshasa, are hydroelectric dams on the **Inga falls**.

The **Grand Inga Dam** is a proposed dam, and is the fourth and largest of the Inga Dams, 8 km from Inga I dam, 7.3 km from Inga II, and 6.5 km from the proposed Inga III.



The dam has an expected generating capacity of 39,000 Megawatts (MW), with 52 Turbines, each with a capacity of 750 MW



This is a significantly **larger capacity** than the **Three Gorges Dam**, which is currently known as the largest energy-generating body ever built. I & II exist, but are small and are in need of rehabilitation.

Inga III and Grand Inga are two massive new hydroelectric stations in the pipeline ([forgive the pun](#)).

Projections indicate that Inga III would generate 4,000-5,000 MW of electricity. And it is the centrepiece of the Westcor partnership, which envisions the interconnection of the electric grids of the DRC, Namibia, Angola, Botswana, and South Africa.

This gives a massive total of 43,000-44,000 MW of clean Energy for Southern Africa!

The Democratic Republic of Congo expects its Inga III hydro project to start generating power by 2017/18 to supply the DRC and neighbouring states. It is projected to cost \$8-\$10 billion.

A consortium of the World Bank, African Development bank, European Investment bank and the JFPI Corporation the Southern African power companies will fund the projects, estimated to cost USD \$80 billion in total.

**ESKOM** hopes to start the Grand Inga project in 2012, but the deadline is already slipping and the cost may well escalate.

With a capacity of 39 GW, the big dam can produce annually 250 TWh (Tera watt hours) alone for a total of 370 TWh for the whole site.

In 2005, Africa produced 550 TWh (600 kWh per capita). If the dam was to be completed somewhere in the 2020s the continent may be producing more than 1000 TWh, making The Inga's contribution to about 20% (still significant though).

Africa between the tropics is the most in need of many small or big energy projects equivalent to Great Inga.

The 550 TWh were produced in 2005 as follows:

230 TWh (42%): South Africa with 5.5% of the continent population (4500 kWh per capita)

150 TWh (27%): Five northern African nations with 16.7% of the continent population: Egypt, Algeria, Morocco, Tunisia and Libya (1000 kWh per capita)

170 TWh (31%): The rest of the continent or Intertropical Africa with 77.8% of the continent population (250 kWh per capita)

This is an average power of 63 GW to be compared to the 43.5 GW the Inga and the Grand Inga would generate.

Therefore, the Inga cannot produce enough electricity for the whole continent, despite earlier estimate. The reason for the shortfall is due to sluggish economic growth and burgeoning population growth.

The problem of distribution of the bonanza has not been addressed here, and Europe wants to import some of the power. Distribution it may prove to be a major problem.

Of great importance is the fact that few of the difficulties associated with large dams such as the Three Gorges Dam will not impact on this project.

Firstly, relatively little water will be impounded and the level in the Stanley Pool at Kinshasa will not rise.

No agricultural canalisation is planned – it is cheaper to canalise from Stanley Pool or higher up The Congo River.

Fish upriver migration, if any, will not be affected because the cascade has been a barrier for millennia.

The dam is not deep or heavy enough to cause tectonic changes such as tremors

Thus, very little environmental changes will result,

**And the energy produced will really be CLEAN**

Peter Joubert