

KIPAY

Energy & Investments



Sombwe

Hydro Power Plant

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KIPAY Presentation

Kinshasa / RDC

19/09/2018



Kipay presentation

Sombwe : feasibility study results

Business Model

Conclusions

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Kipay Presentation

KIPAY is a congolese firm based in the Haut-Katanga province of the Democratic Republic of Congo.

The aim of KIPAY is to become one of the major Independent Power Producer (IPP) in Central Africa and beyond.

KIPAY has offices in :

- **Lubumbashi (DRC)**
- **Kinshasa (DRC)**
- **New-York (USA)**

Most of its operations are currently based in the DRC's Haut-Katanga province.



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Solve energy shortage in the DRC through independent power production.

Activities are developed with international strategic technical partners INGEROP, Knight Piésold and Trade Service as local fiscal & logistics partners

DESIGNATION	RDC	KATANGA
<u>Installed Power (MW)</u>	2671	> 725
<u>Available Power (MW)</u>	1690	575
<u>Power Requirement (MW)</u>	4190	1625
<u>Deficit (MW)</u>	2500	1050

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INGÉROP

Knight Piésold
CONSULTING



TRADE SERVICE



Type : RCC arch/gravity

Location : 9°18'0 "S ; 26°49'20"E

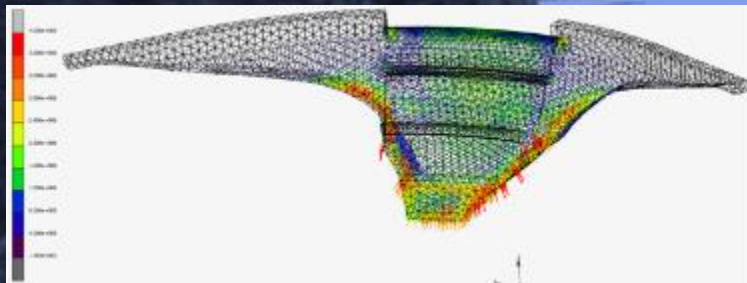
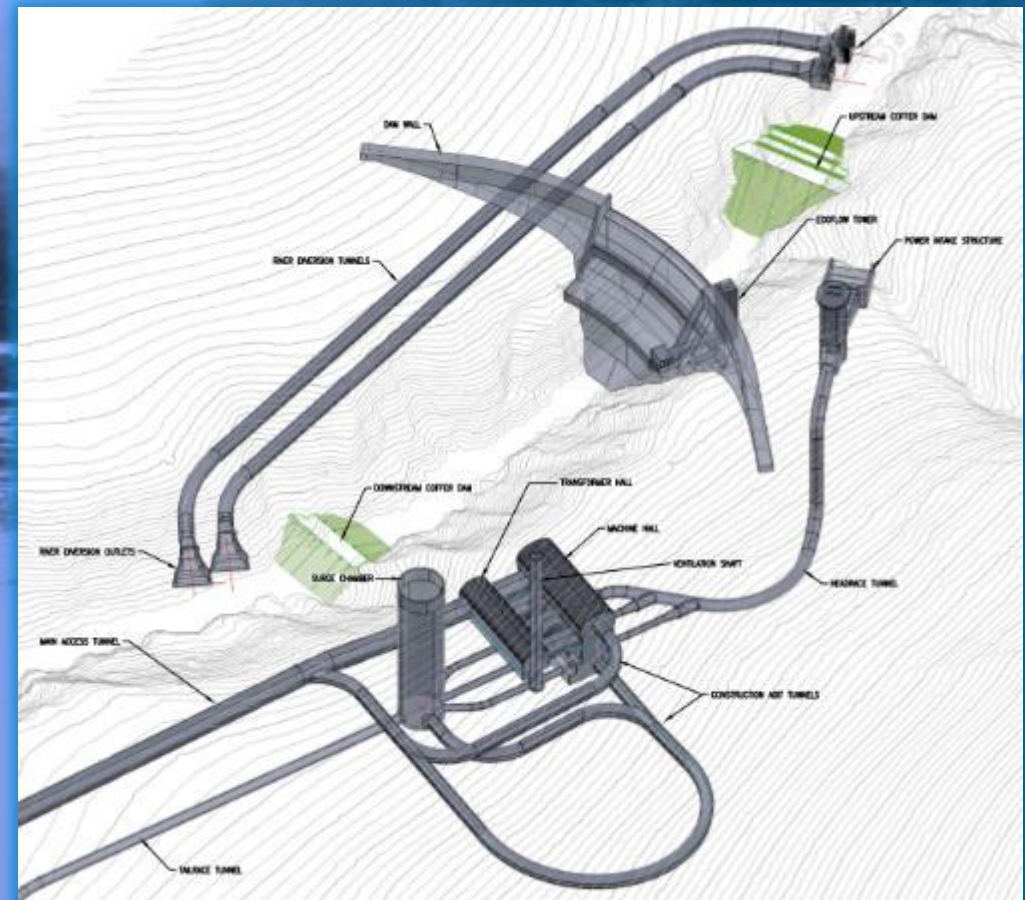
River : Lufira river

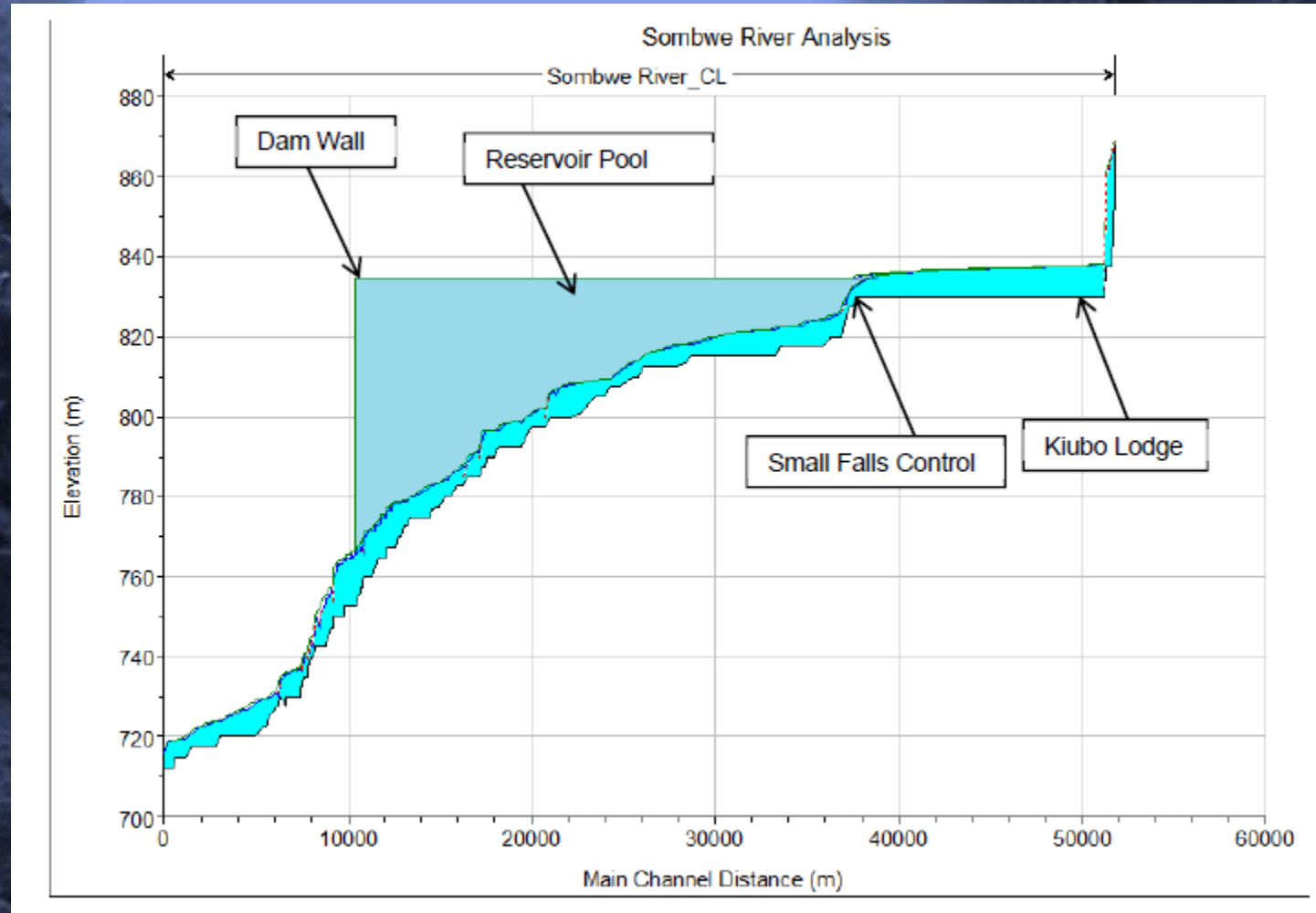
Installed capacity: 150 MW

Energy Output : 711 GWh/year

Nb Turbines : 3 vert. Francis

Construction will start in : 2019







KIPAY > POTENTIAL OFFTAKERS

Company name	Holding name	Location Name and geographical coordinates				Business	in operation	Required power (MW)	Delivery date
		Location Name	Longitude (E)	Latitude (S)	GMaps link				
IVANHOE	IVANHOE	Kipushi				Cobalt/Copper	no	discutions in progress	in 3 years
RUBAMIN	RUBACO	Kakontwe/Likasi	26°42'30.20"	10°59'46.86"	View	Cobalt/Copper	yes	12	in 3 years
MMG	MMG	Kinsevere	27°34'12.24"	11°21'44.33"	View	Cobalt/Copper	yes	25	in 3 years
Frontier	ERG	Sakania	28°30'36.04"	12°45'16.85"	View	Cobalt/Copper	yes	50	in 3 years
Metalkol	ERG	Kolwezi	25°30'32.01"	10°43'39.09"	View	Cobalt/Copper	no	75	in 3 years
Boss Mining	ERG	Kakanda	26°24'01.78"	10°44'06.25"	View	Cobalt/Copper	yes	25	in 3 years
								TOTAL	187



La faisabilité technique comprend :

- Accessibilité au site et Camp de vie
- La topographie
- L'hydrologie
- La géophysique
- Les caractéristiques de l'aménagement
- La géotechnique
- Contrats de vente d'électricité (PPA)
- La ligne de transport (Transmission)¹

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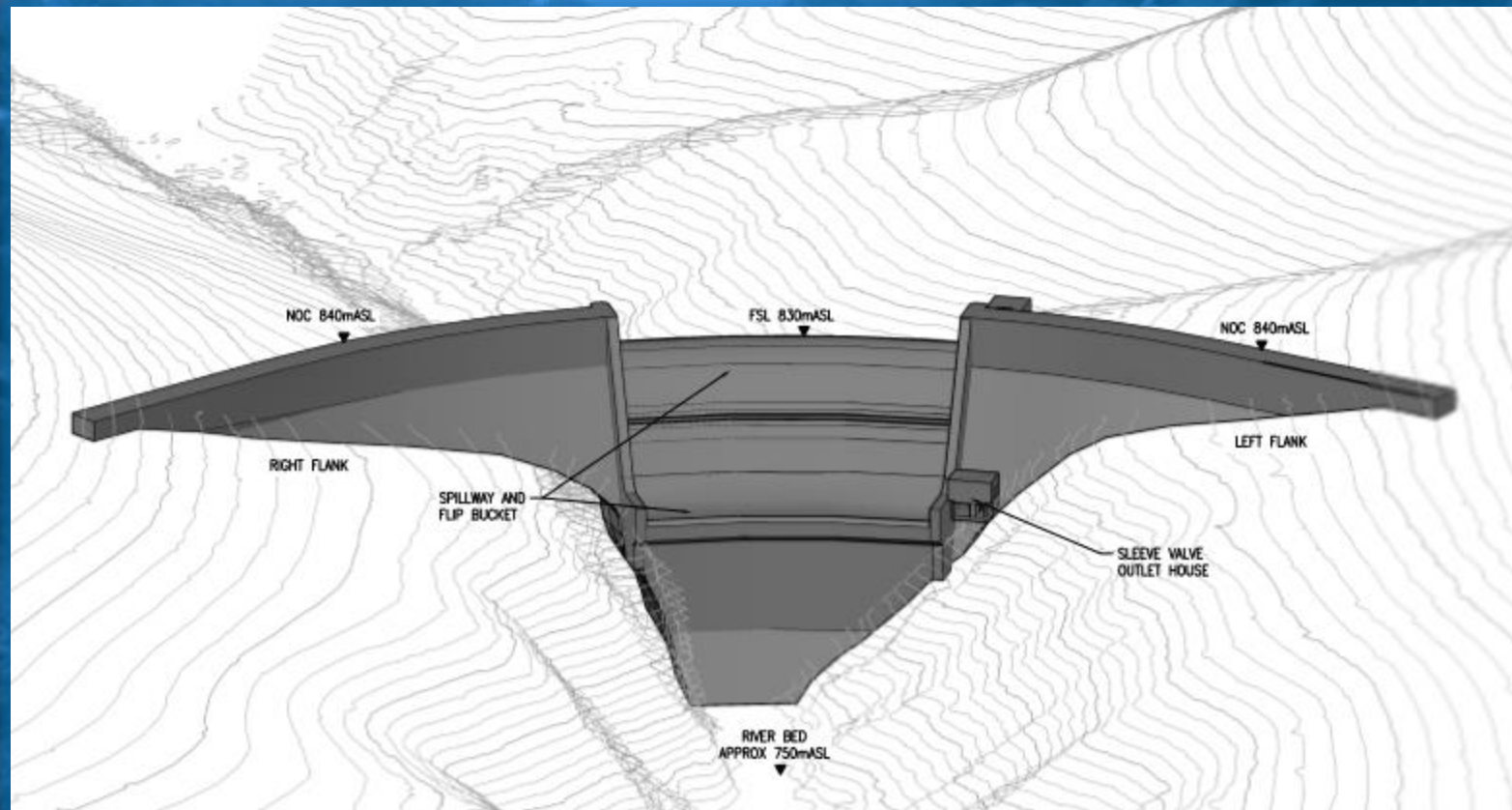
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Aerial view of the dam site





Dam wall : 90 meters high, 400.000 m³ of concrete RCC



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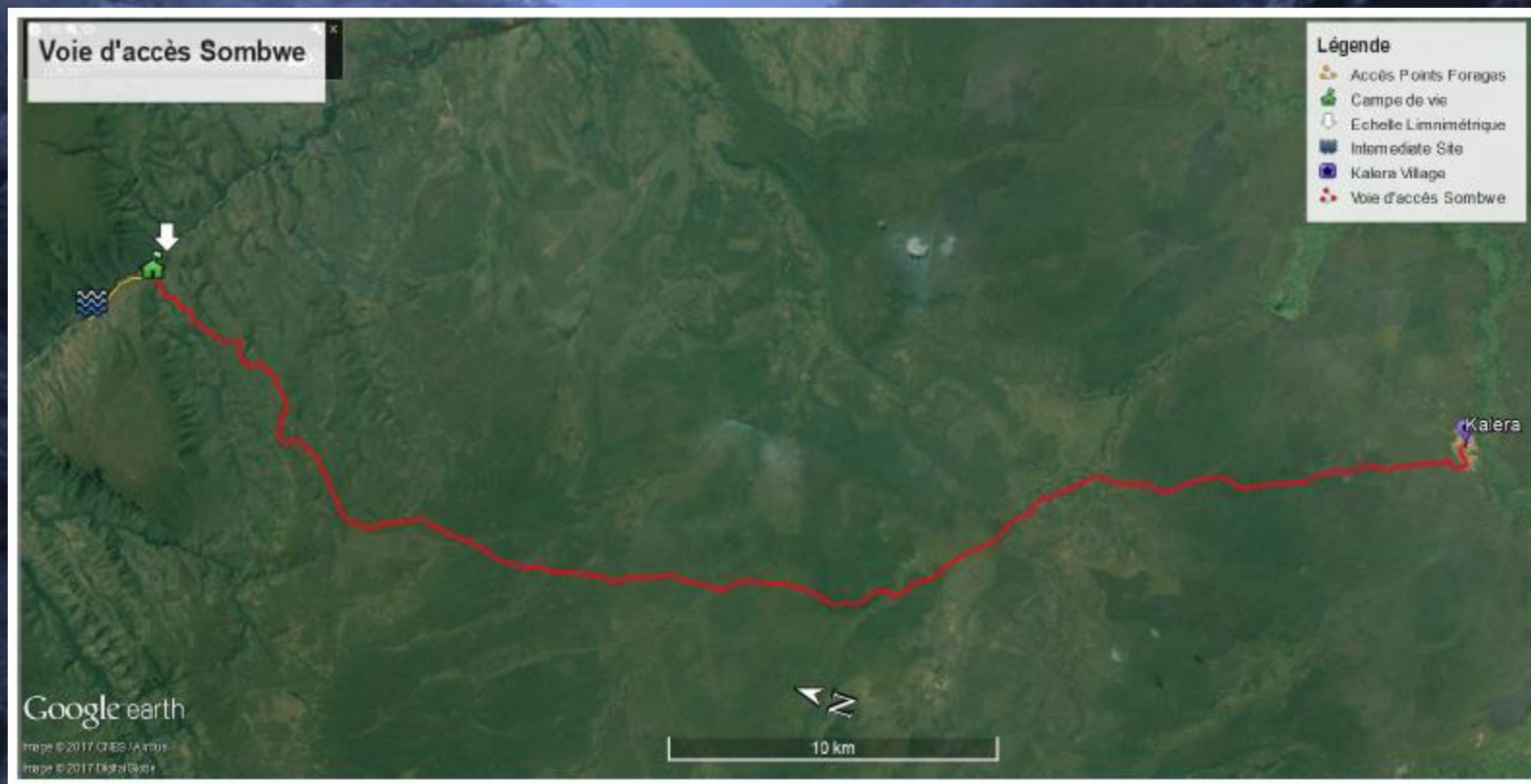


Sombwe

Feasibility Studies Results

Site Access

Private road from Kalera (nearest village) to Sombwe site – 50 Km



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Sombwe

Feasibility Studies Results

Site Access

Sombwe site entrance



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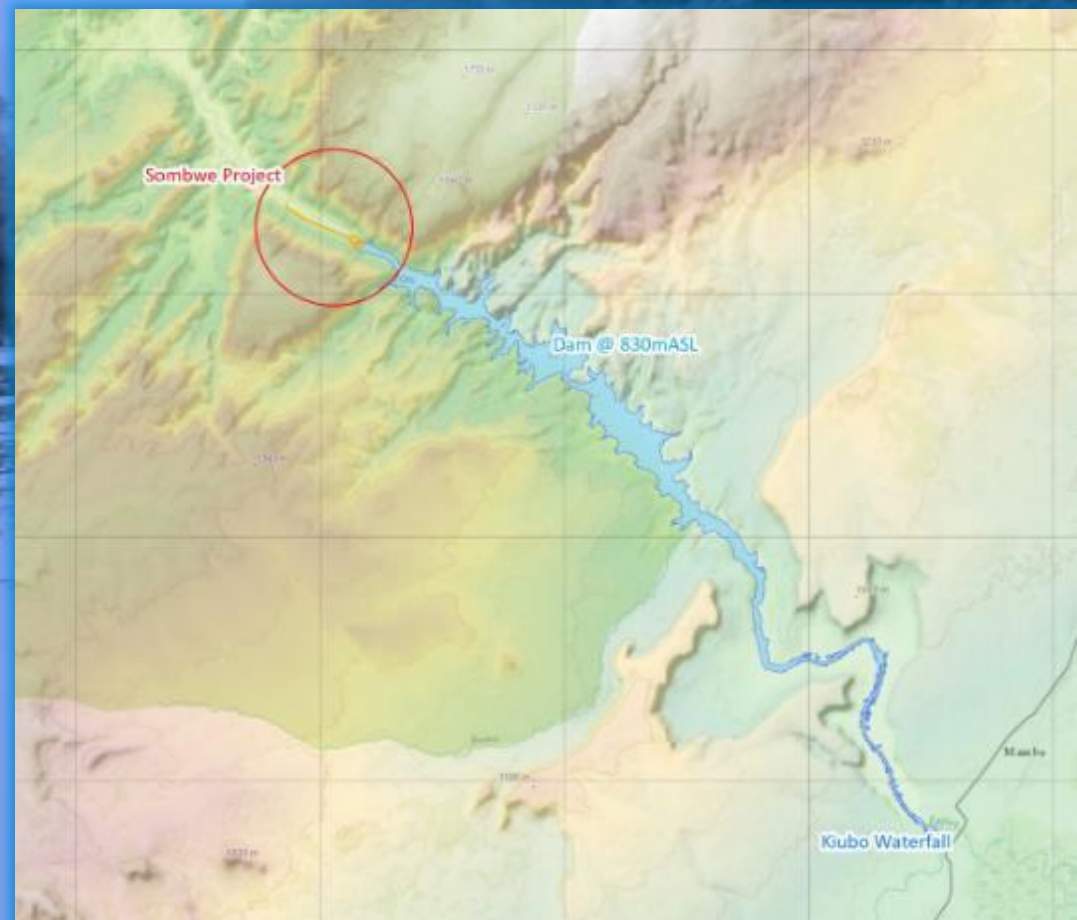
Sombwe

Feasibility Studies Results

Hydrology

Catchment area : 47.500 km²
Reservoir volume: 320 M m³
Reservoir surface : 2.000 ha

Estimated flow : 120 m³ /s
Sedimentation : low





Station météorologique



Interface visualisant instantanément les grandeurs mesurées par la station et permettant le téléchargement des données enregistrées sur l'ordinateur grâce au software WeatherSmart avec beaucoup de possibilités de réglage (paramétrage)



Echelle avant l'inondation



Echelles après l'inondation



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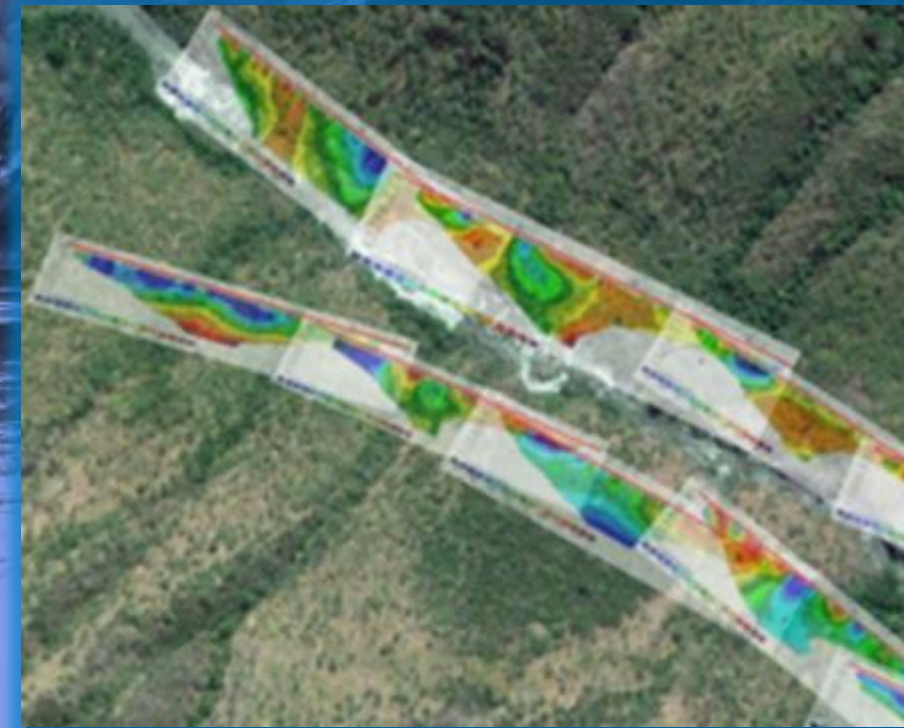


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Feasibility Studies Results

Geophysics

Done in cooperation with UNILU (University of Lubumbashi)





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Feasibility Studies Results

Geotechnics

Hard rock quartzite foundations

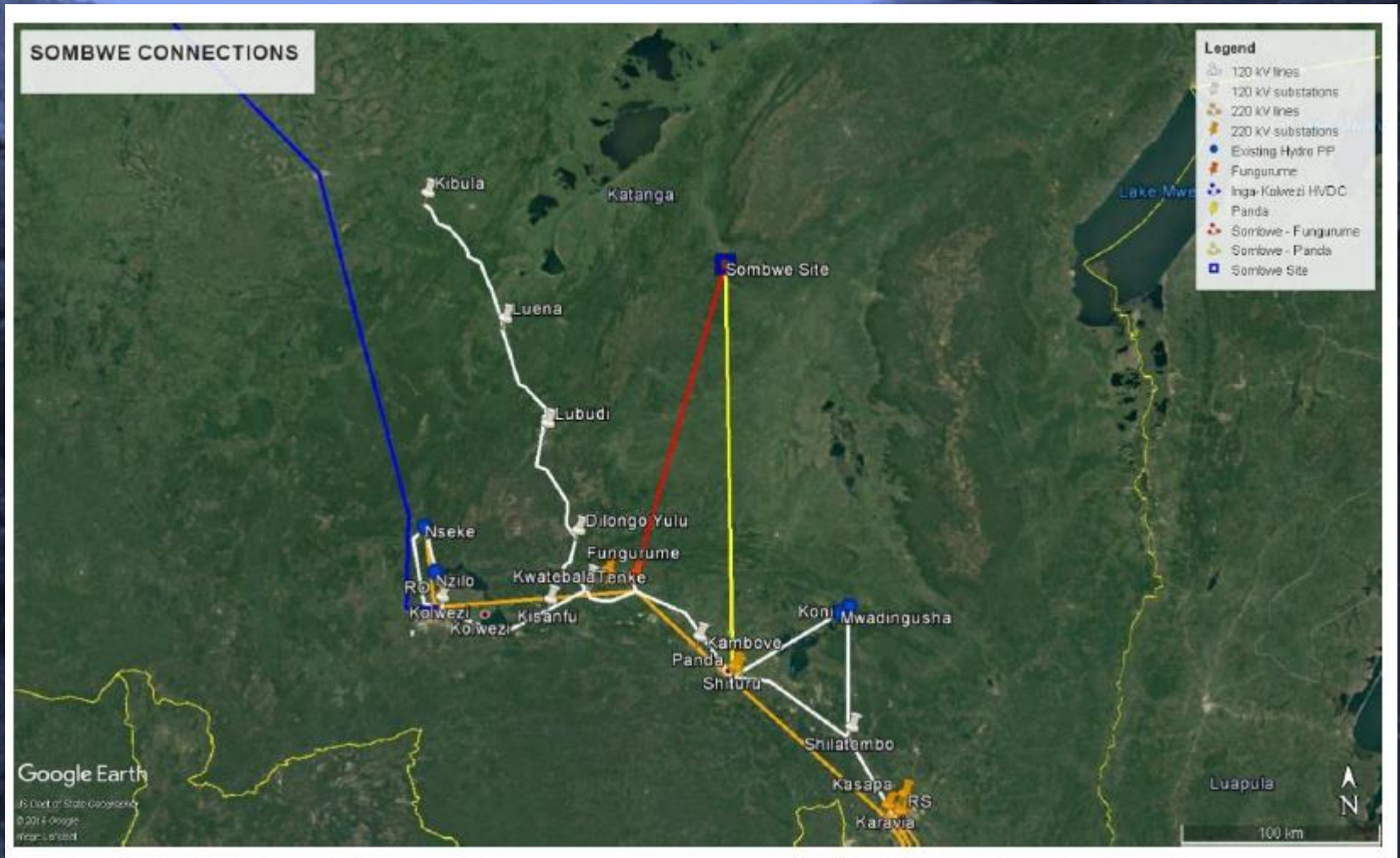




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Feasibility Studies Results

Transmission



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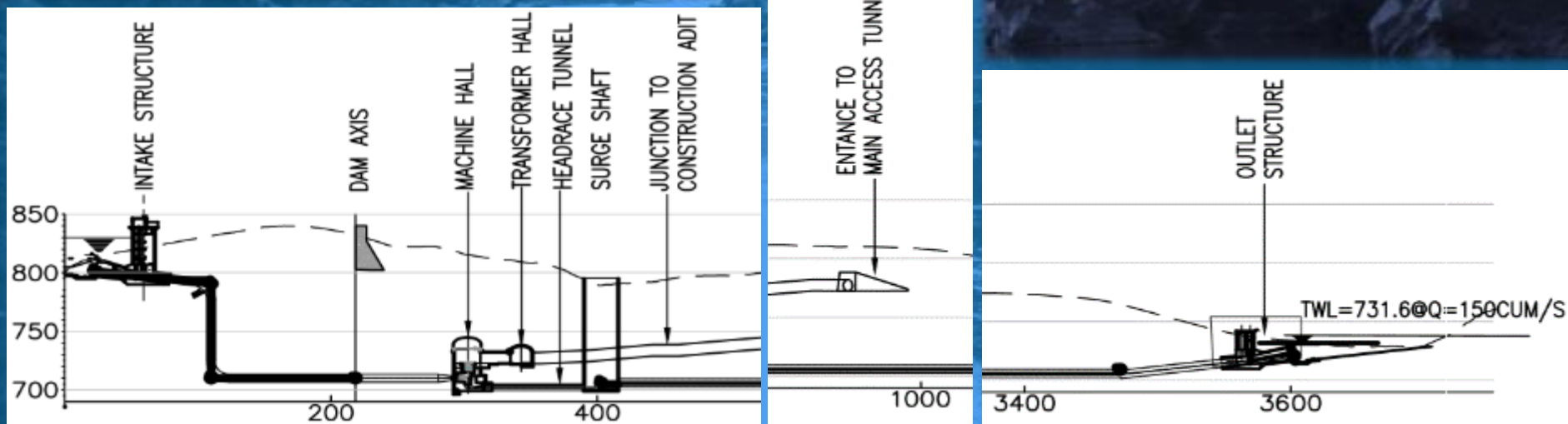
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Sombwe : The Underground Scheme

The underground with long tail race option was selected for an increased power production

Power transport line : from Sombwe to Tenke (approx. 120km)





QUICK INPUT

project name

SOMBWE HYDRO

scenario

832m - Underground - 150m³/s

project cost ↓

420 M\$

711 GWh

energy ↑

firm energy ↓

202.8 GWh

discount rate

10%

RESULTS

LEC

5.83 \$ cents / kWh

IRR

Minimum 29.78%

15 years 33.99%

Maximum 35.73%



Actions for the local communities

- Empower local workers
- Build modern facilities
- Improve existent infrastructures like schools, health care units, ...



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**Thank you
Aksanti
Merci
Dank u
Obrigado
Gracias**

