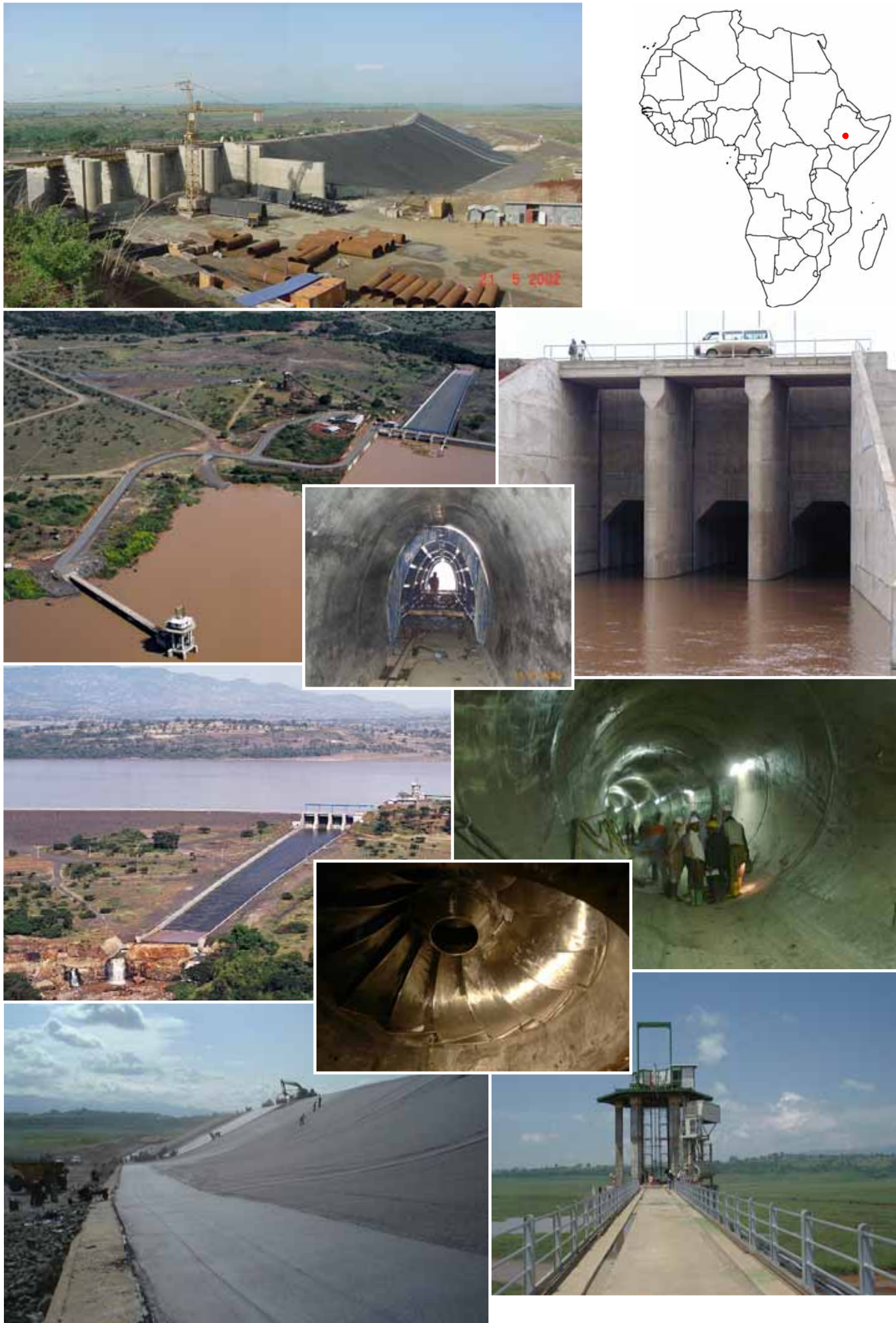




HYDROELECTRIC POWER PLANT 200 MW – Installed power

ROCKFILL DAM WITH BITUMINOUS FACE

ETHIOPIA



GILGEL GIBE

LOCATION : Oromia, ETHIOPIA

PROJECT : Hydroelectric Power Plant (installed power = 200 MW) including rockfill dam with bituminous face, underground power house and auxilliary works

WORKS :

• **Reservoir**

- Catchment Area..... 4,250 km²
- Total Storage Capacity850 Mm³
- LIVE Capacity660 Mm³

• **Dam**

- Height..... 40 m
- Crest Length.....,704 m
- Crest Width..... 8 m
- Embankment Volume2.5 Mm³
- Plastic Diaphragm 17,000 m²
- Grouting Curtain 40,000 m²

• **Bituminous Facing**

- Bituminous Facing Area105,000 m²

• **Bottom Outlet:**

- Length 220 m
- Pipe Diameter..... 1.5 m
- Discharge Flow 25 m³/s

• **Surface Outlet**

- Spillway Length 48 m
- Gates Type Flap
- Gates Number4 n°
- Gates Dimensions..... 12 x 8.5 m
- Chute Length..... 635 m
- Chute Width.....56.50 - 30 m
- Design Flow.....2,250 m³/s

• **Power Tunnel**

- Length.....8.78 Km
- Internal Diameter..... 5.5 m

• **Penstock**

- Diameter 5 m
- Length..... 405 m

• **Surge Shaft**

- Surge Shaft Height 110 m
- Surge Shaft Diameter..... 14 m

• **Underground Power Plant**

- Power Plant Dimensions. 83 x 22.5 x h 41 m
- Turbines Type Francis
- Unit Number..... 3 n°
- Power of Each Group..... 65 MW
- Firm Energy 650 GWh/y
- Design Flow 100 m³/s
- Total Head..... 223.4 m
- Total Installed Power 200 MW

• **Tailrace Tunnel**

- Length..... 519 m
- Diameter..... 6.25 m

• **Haighway Addis Ababa – Jima Relocation**

- Length..... 17.5 Km

COST :

- Amount (year 1999)..... 250 M US\$

STUDIO PIETRANGELI SERVICES (with ENEL – ELC)

- Feasibility study..... 1995
- Final Design (with ENELPOWER s.p.a.)..... 1976 - 98
- Supervision of Geotechnical Investigations..... 1997
- Tender Documents and Tender Supervision 1998 - 99
- Supervision of construction 1999 – In Progress

CLIENT :

Enelpower s.p.a.

BENEFICIARY :

E.E.P.C.O.

