



**France-Ethiopia Business Forum**

**Paris, November 2014**

**VERGNET, Partner of Ethiopia**

Wind with a vision



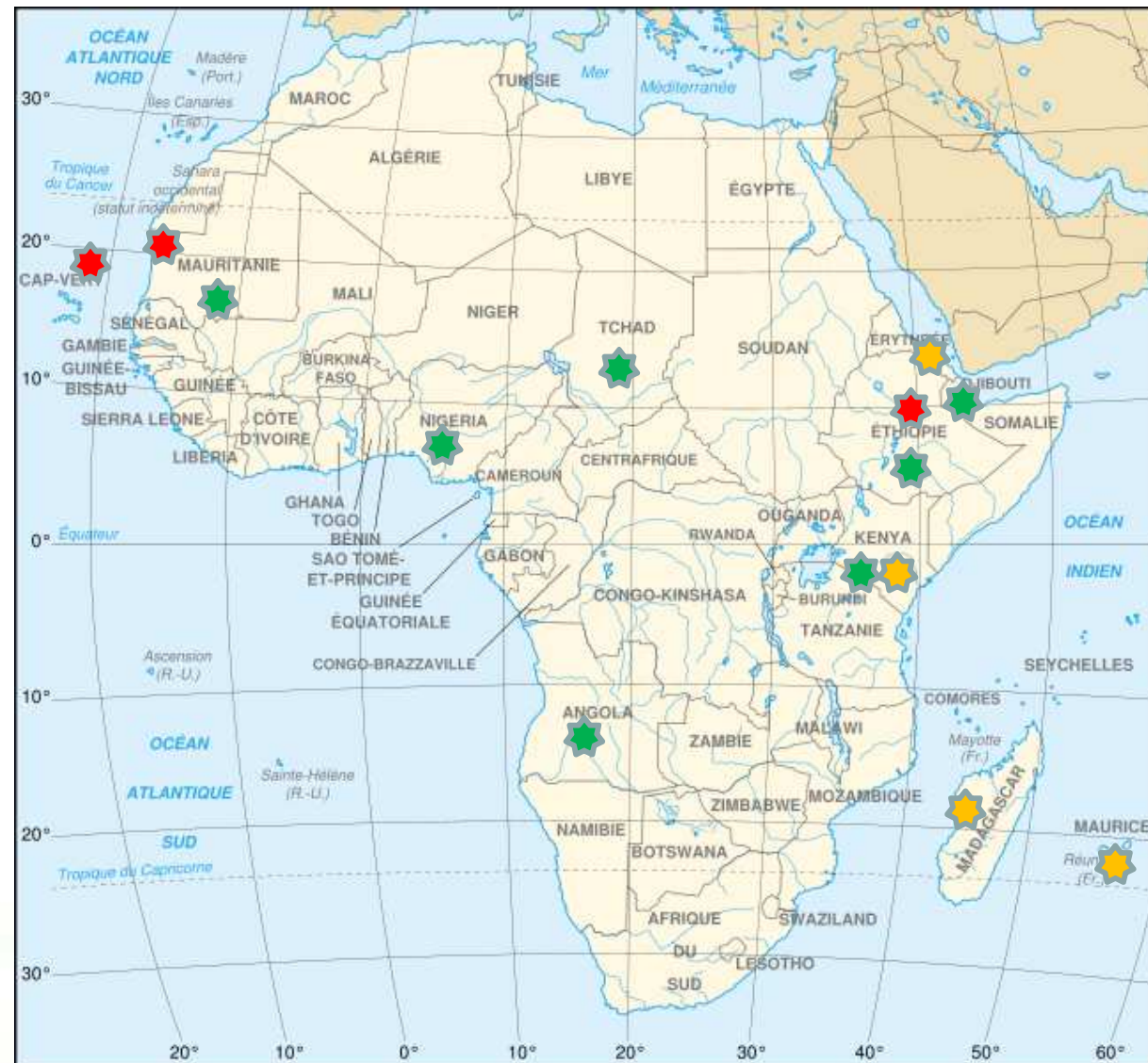
# Vergnet african projects at a glance

## 3 main projects implemented in Africa since 2008

- **Ethiopia** - Ashegoda: 120 MW, 210 MEUR, client: public electric utility (formerly EEPCO, now EEP), financing: loans
- **Nigeria** – Katsina: 10 MW, 21 MEUR, client: federal government (Ministry of Power), financing: equity with L/C on foreign portion
- **Mauritania** – Nouadhibou: 4.5 MW, 7.5 MEUR client: mining public company (SNIM), financing: equity

## Other small projects across the continent: Eritrea, Kenya, Mauritius, Madagascar

## Several potential projects in the future: Nigeria, Tchad, Mauritania, Angola, Djibouti, Ethiopia...



- ★ Main projects
- ★ Small projects
- ★ Potential projects

# Ethiopia - Ashegoda Wind Farm Project at a glance

- **120 MW capacity:** the biggest wind farm in sub-Saharan Africa when the Contract was signed
- **Expected production of 400 GWh / year**, eq. 10% of Ethiopia's total power production
- **EPC Contract (turnkey)**
  - ▶ Client: **EEPCo**
  - ▶ Contract value **210 MEUR**
    - 191 MEUR payable in EUR
    - Local portion: 260 METB
  - ▶ Foreign portion 100% financed by loans: bringing a financing scheme was part of the tender requirements
  - ▶ Completion time: **36 months**
  - ▶ Commencement date: **12 octobre 2009**
- **Status**
  - ▶ All turbines are commissioned and producing electricity
  - ▶ Taking-over for the whole windfarm reached on June 2014



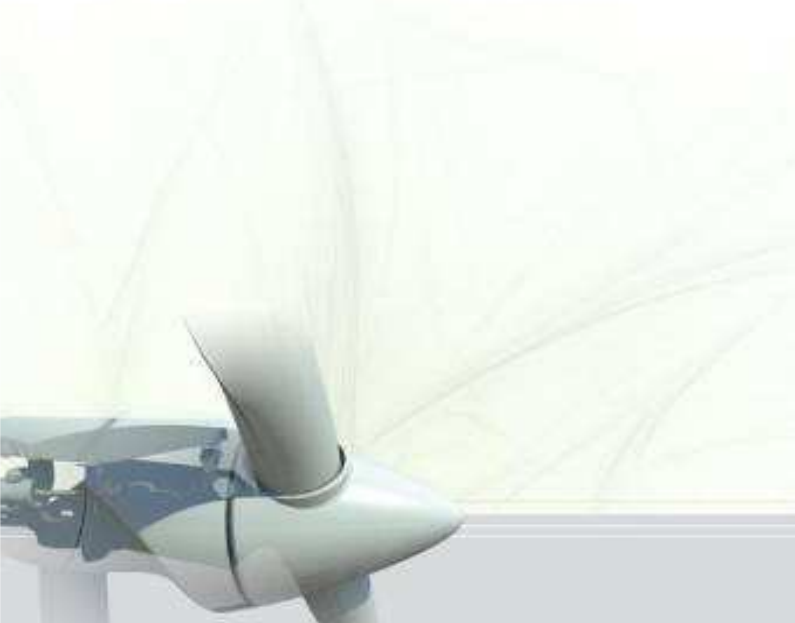
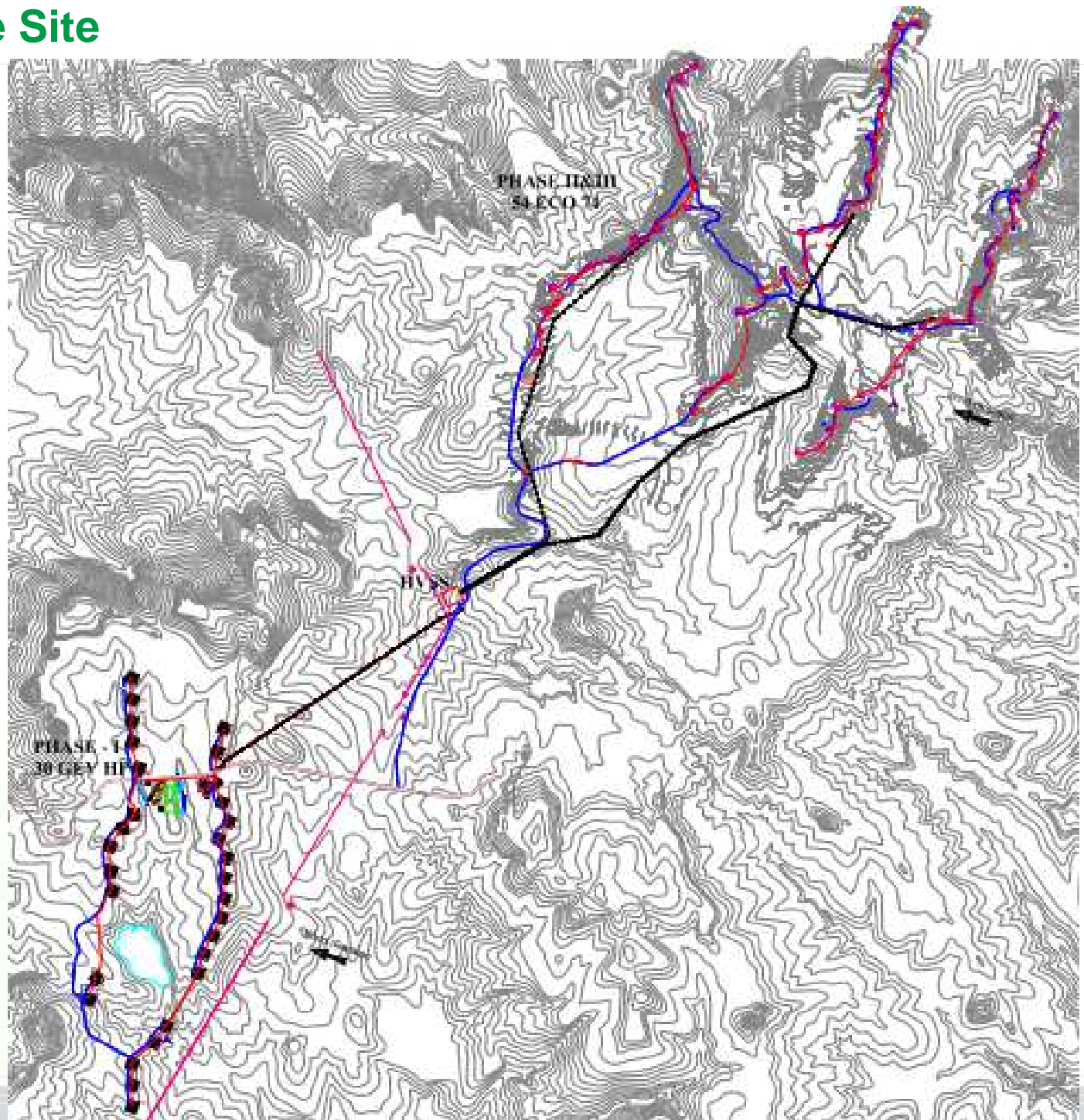


# Ashegoda Wind Farm – The Site

**Phase I** *(completed)*: 30MW  
30 GEV HP 1MW

**Phase II/III** *(completed)* : 90MW  
54 ECO74 1,7MW

**High Voltage Sub-Station**  
33kV/230kV *(completed)*



## Ashegoda – Concrete foundation casted night and day





## Ashegoda – VERGNET GEV HP wind turbine erection





## Ashegoda – VERGNET GEV HP wind turbine erection





## Ashegoda – VERGNET GEV HP wind turbine





## Ashegoda – VERGNET GEV HP wind turbine Nacelle erection



# Ashegoda Wind Farm / Vergnet Technology / Wind turbine for remote area

**The VERLIFT designed for the GEV HP  
by VERGNET**





## Ashegoda – Challenge : 850 kms from Djibouti before reaching the Site





## Ashegoda – Challenge : 850 kms from Djibouti before reaching the Site





## Ashegoda Wind Farm / Vergnet Technology / Wind turbine for remote area



**GEV HP -> easy to install and ground maintenance**

## Ashegoda Wind Farm / Vergnet Technology / Wind turbine for remote area





## Ashegoda – 30 VERGNET GEV HP – Phase 1 – 30 MW





## Ashegoda – VERGNET team fully dedicated to the Project





## Ashegoda – VERGNET working with our best local staff







## Ashegoda – Transport of ASLTOM tower sections





## Ashegoda Wind Farm – Phase II & III – Balance of Plant





## Ashegoda Wind Farm – Phase II & III – Transportation





## Ashegoda Wind Farm – Phase II & III – WEC erection activities





## Ashegoda – Transport of ASLTOM tower sections





## Ashegoda – ASLTOM wind turbines (Phase 2 & 3)





# Ashegoda Wind Farm – Key Figures (All Phases)

## ● Safety:

- ▶ **Nobody injured on Site over the last 3 years.**

## ● Civil Works:

- ▶ 33 kms Access Roads
- ▶ 22.000 m<sup>3</sup> of concrete

## ● 33kV Networks:

- ▶ 30 km of buried line
- ▶ 29 km of Over Head Line

## ● Wind Turbines

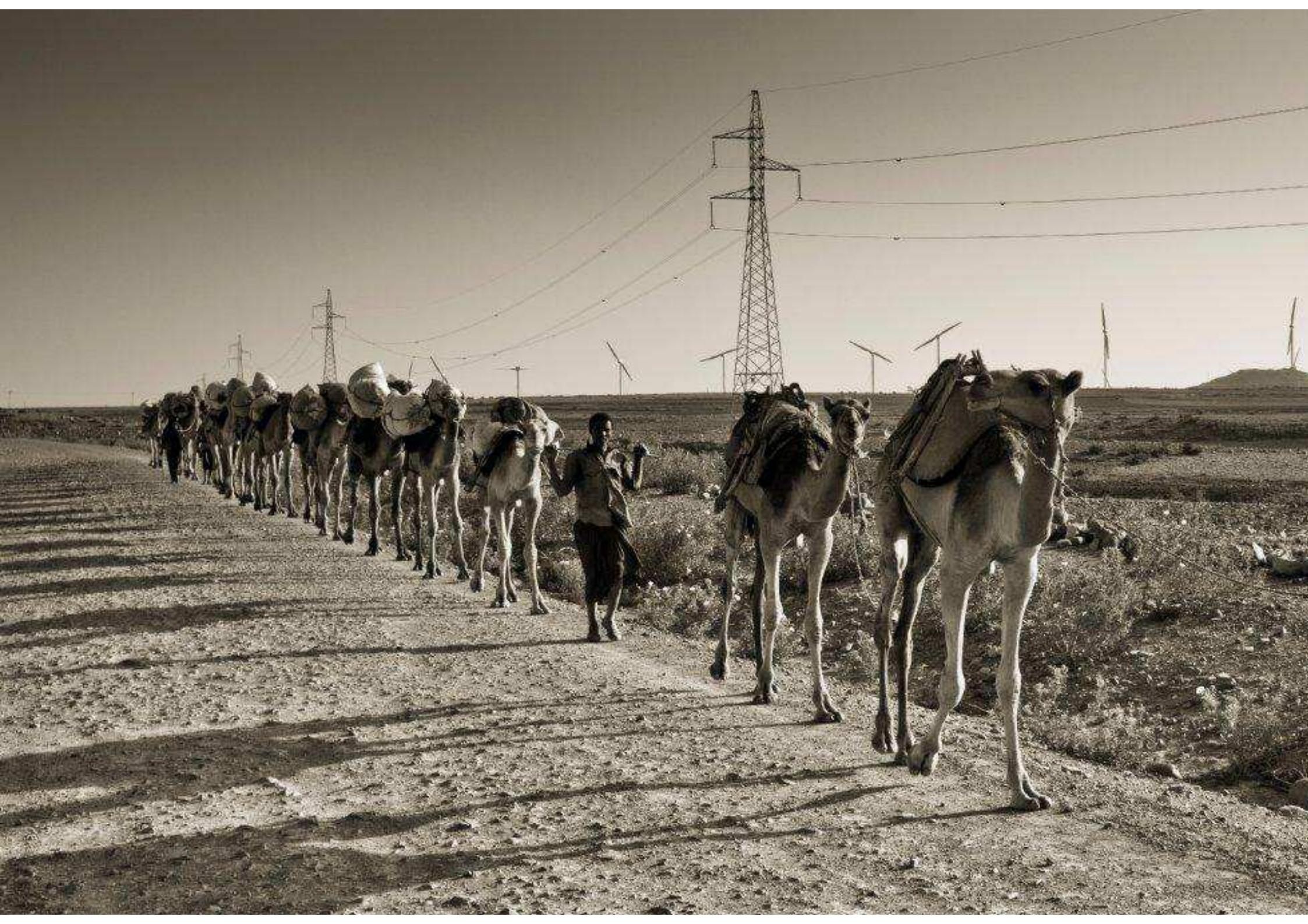
- ▶ Approx. 21.000 tonnes of material installed = Eiffel Tower x 2 !

## ● Energy production: 400 GWh/year for the next 20 years

- ▶ *10% of the Ethiopian Power Production*
- ▶ *Electric Energy Consumption of approx. 1 000 000 Ethiopian households*

























## Ashegoda : Renewable Energy... from the Wind

