



France-Ethiopia Business Forum

Paris, November 2014

VERGNET, Partner of Ethiopia

Wind with a vision



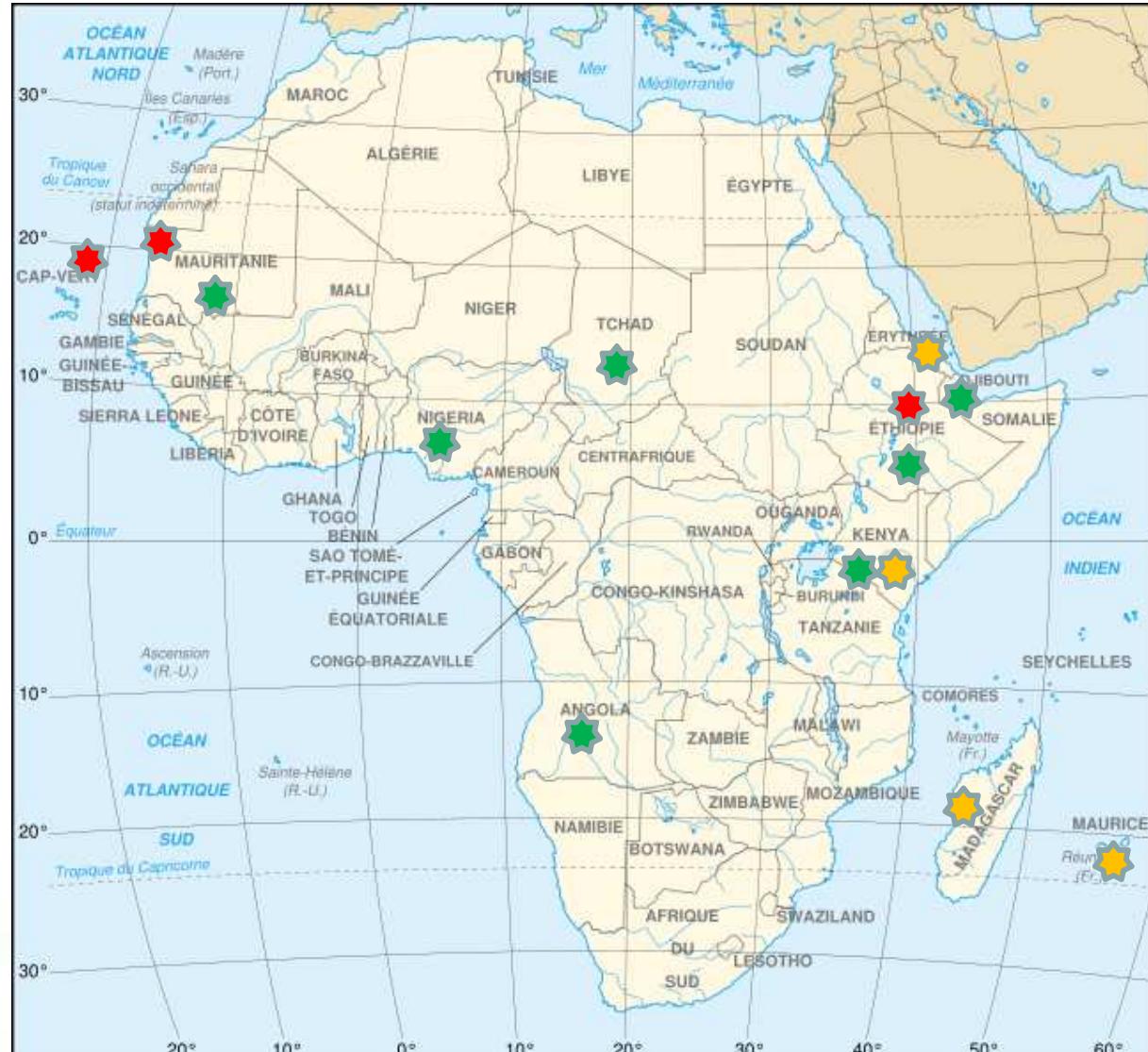
Vergnet african projects at a glance

- 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

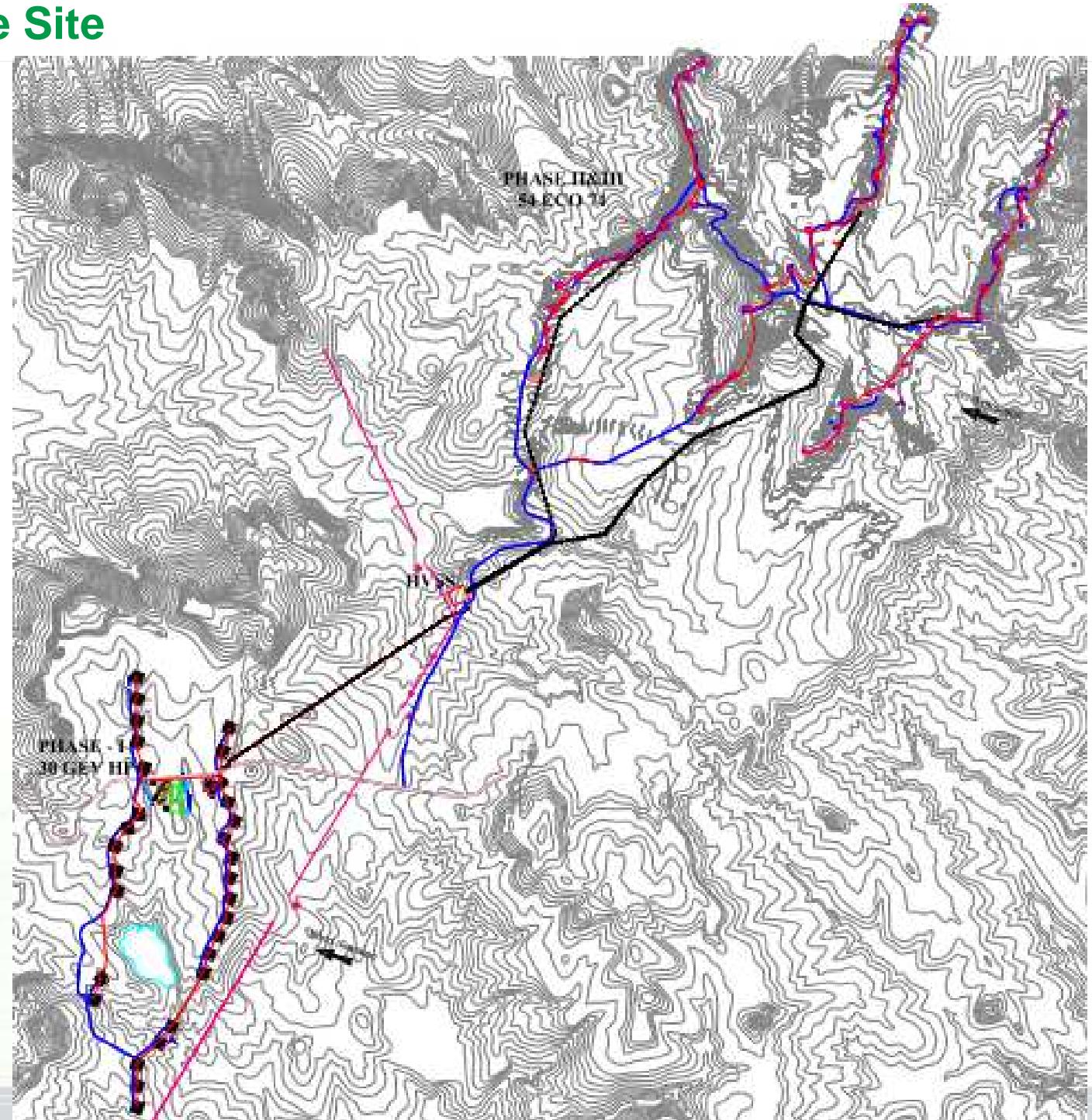


Ashegoda Wind Farm – The Site

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



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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

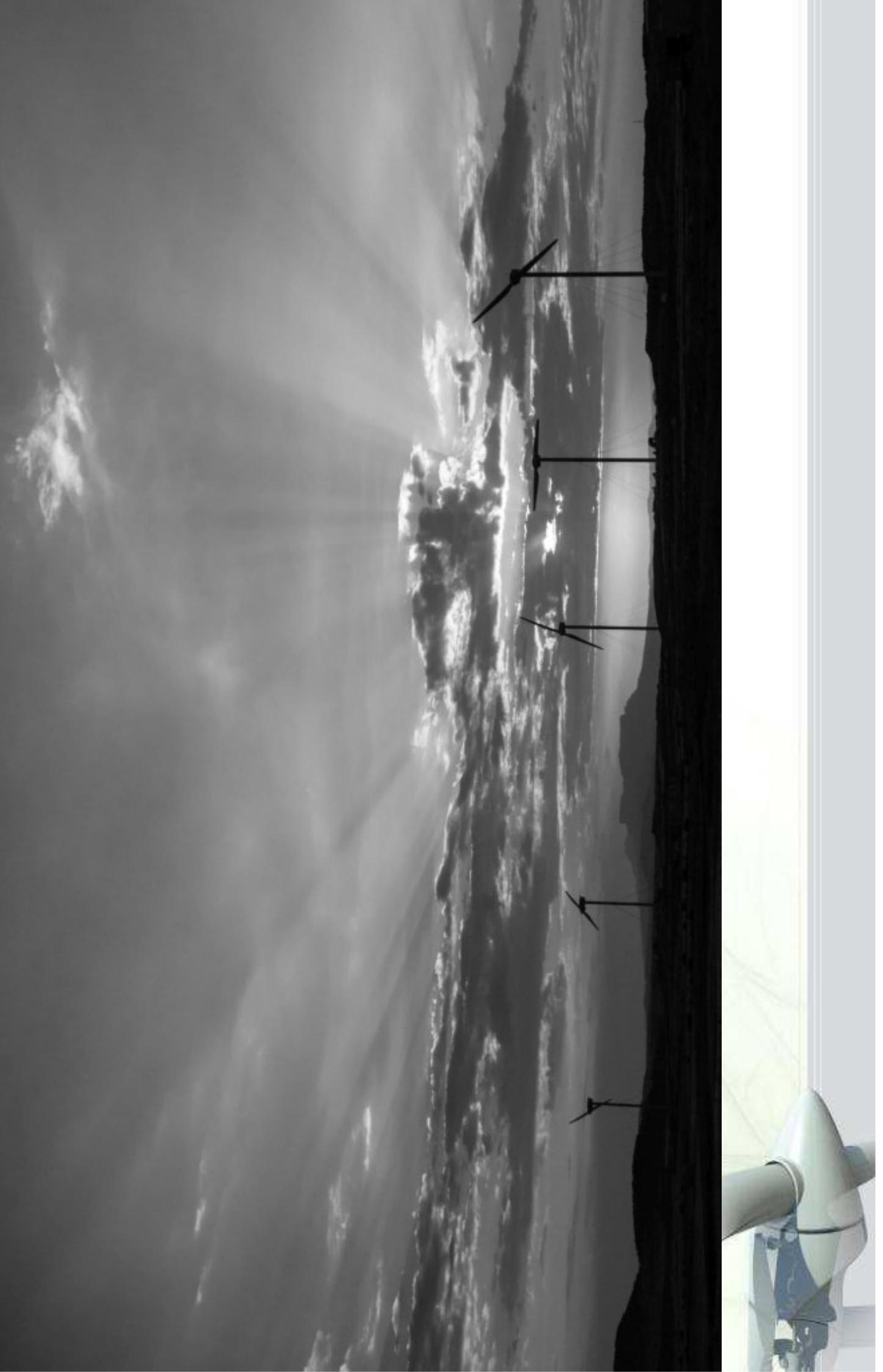


Ashegoda – VERGNET team fully dedicated to the Project



Ashegoda – VERGNET working with our best local staff

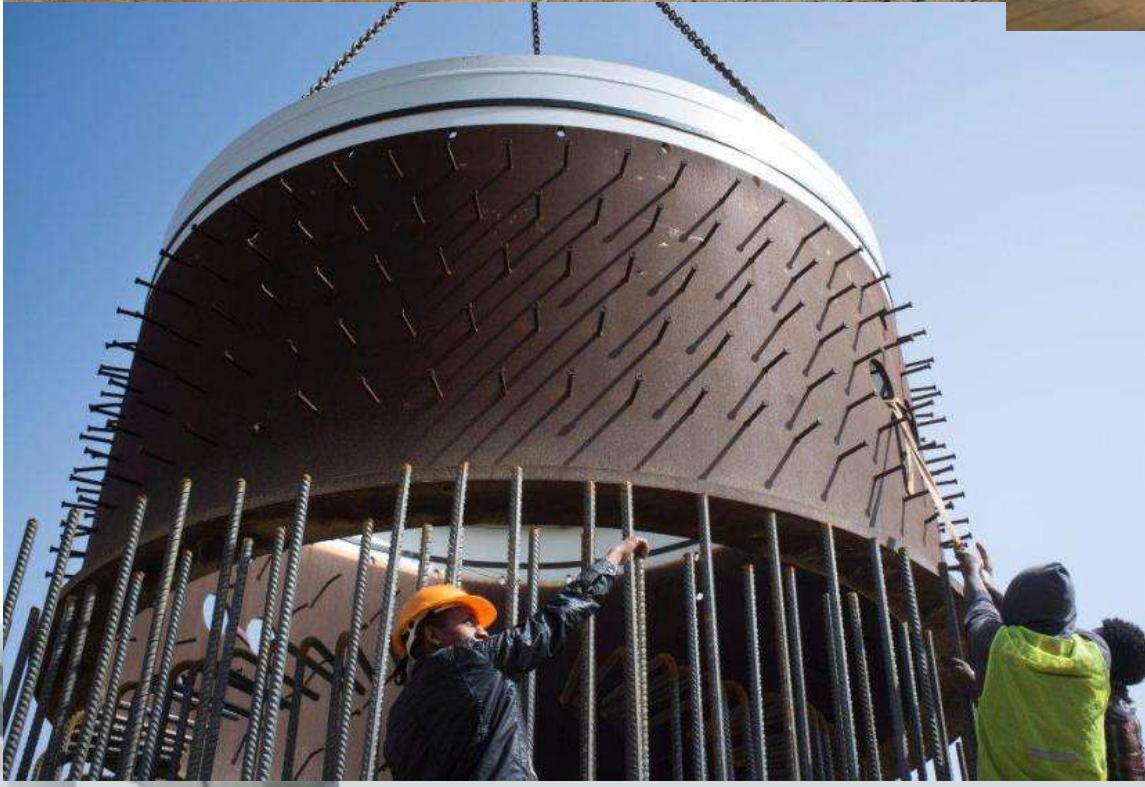




Ashegoda – Transport of ASLTON tower sections



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 ASLTONM tower sections



Ashegoda – ASLTONM 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 m³ of concrete

- **33kV Networks:**

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

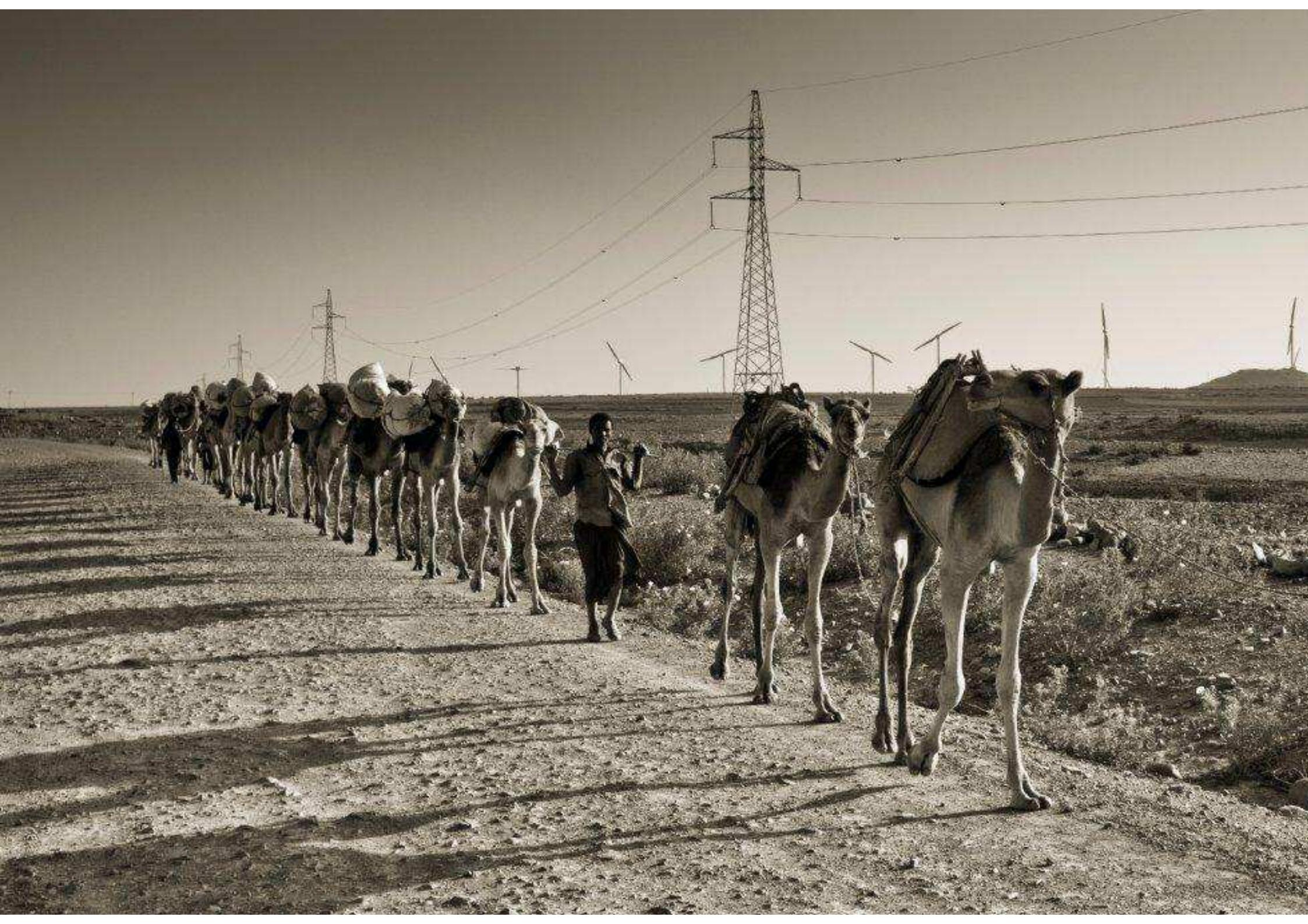
- **Wind Turbines**

- ▶ 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

