

Katsina Wind Farm – The First Wind Farm in Nigeria

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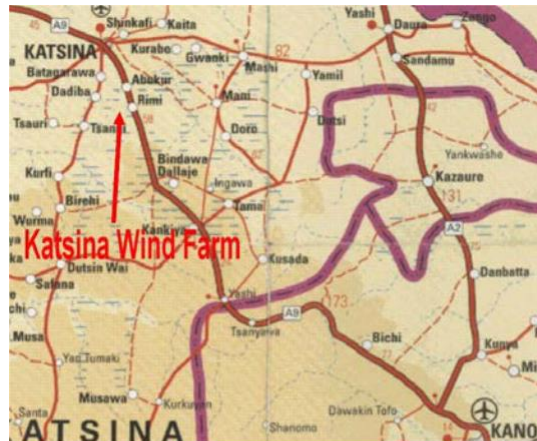
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Introduction

A wind farm generates electrical power from the wind without any other source of fuel. The technology of wind turbines is an ascending power source all over the world. In Africa several countries have started the usage of wind technology. Now the Katsina Wind Farm Project, which comprises the installation, commissioning and operation of the first wind farm in Nigeria, is close to commissioning. The project site is located next to the village Rimi on the road between Katsina and Kano in Katsina State and has a total capacity of 10 MW. Since it is a pilot project, a reliable turbine was chosen which is easy to maintain and already in operation around the globe.

Location

The wind farm is located in the north of Katsina State around 15km from the city of Katsina on the road between Kano and Katsina.

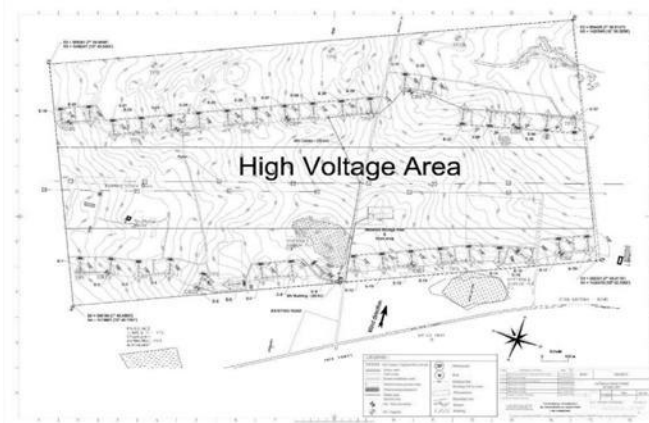


Uncommissioned 2 blade rotor Vergnet WTG



Layout and Key Data of the Wind Farm

- Wind farm consists of 37 turbines with 275 kW each
- Total output power 10 MW
- Arrangement of the turbines in two rows



Turbine Technology

- Turn-key contractor: Vergnet S.A. France
- 2 blade rotor technology on a teetering hub
- Rated power: 275 kW
- 2 speed asynchronous generator
- 32 meter rotor diameter
- Guyed tubular mast, hub height: 60 meter
- More than 350 turbines of this type installed world wide
- Rate of availability > 95%



Grid Connection

- Wind farm internal voltage: 33 kV
- Connection to Katsina substation and to the village of Liyafa
- Underground cabling inside the wind farm
- Overhead line between the wind farm



Internal Fibre optics in the Windfarm



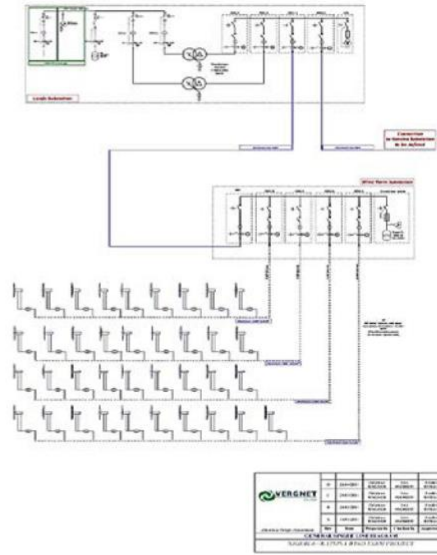
33/11kV line route from the Windfarm to Katsina substation



Overhead line from the Katsina Wind Farm to Katsina S/S

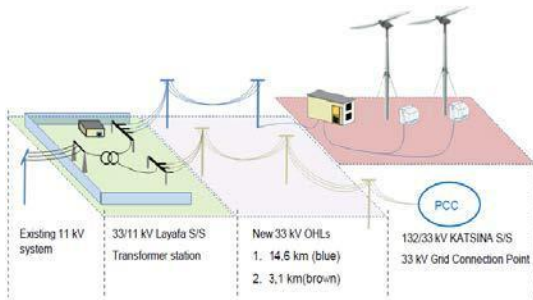


Stringing of the overhead line in progress



Overview of the 37 WTGs in the Windfarm

Construction Impressions



Drilling of micropiles



Control Room of the Wind Farm



Casting of foundations



Grounding installations



Turbine lifting



Low voltage connections



Nacelle installation



Electrical shelter installation



Factory acceptance test

Presentation of the Consultant

Terrawatt Planungsgesellschaft mbH



As a planning, engineering and consulting company, Terrawatt has established itself as a full-service provider in the domain of renewable energy and services for many well-known project developers and investors. Thus, Terrawatt can look back on the experience of over 250 wind power projects with more than 1400 wind turbines.

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