

Gibson Bay Wind Farm

Eastern Cape, South Africa

Ground improvement using dynamic compaction and installation of CFA piles to Turbine Tower Bases at Gibson Bay Wind Farm.



The project

This project entailed piling and the dynamic compaction of in-situ soils of typically wind blown and cemented sands within the undulating high dunes which run parallel to the nearby coastline.

The challenge

While carrying out the piling and dynamic compaction works the challenges included heavy rains, long moves between towers on steep pathfinder tracks, high coastal winds, unforeseen ground conditions, unusual testing criteria, design of piles by others and archaeological relic discoveries.

The solution

The piling works comprised of the installation of 360 No. 750mm diameter continuous flight auger (CFA) piles to an average depth 14m.

Ground improvement using dynamic compaction for 14 no. turbine towers with an average area of 380m² per foundation. This equated to 5320m² of soil improvement.

Project facts

Owner(s)

ENEL Green Power

Keller business unit(s)

Keller South Africa

Main contractor(s)

NORDEX - c/o Power Construction

Engineer(s)

QUNU Consulting

Solutions

Bearing capacity / settlement control
Heavy foundations

Markets

Power

Techniques

Dynamic compaction
CFA piles (auger cast)

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