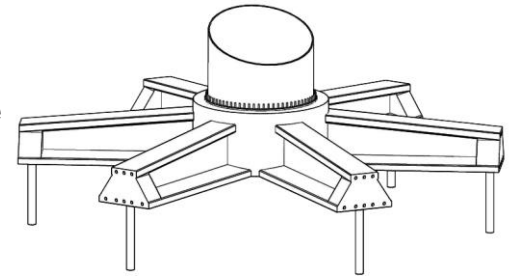


An Efficient Wind Tower Footing Design for Utility-Scale Wind Farms to Benefit the Environment and Your Bottom Line

RUTE Foundation Systems Technology Summary

The RUTE Foundation is a structural foundation for utility scale wind towers. RUTE provides a turnkey foundation through the wind farm owner's regular balance of plant contract – and lowers schedule risk for both the owner and the general contractor.

The foundation anchors to the sub-surface per RUTE Engineering. RUTE interfaces with the BOP's engineer of record. The high strength beams connect to a hub which adapts to the OEM base section bolt pattern.



RUTE yields:

- A more cost effective foundation works delivery
- Faster work sequence - shorter bridge expense
- 60% reduction in concrete – a 6M pound reduction in CO2 emissions per 100MW
- A structure that may be fully decommissioned



SPECIFICATIONS

SYSTEM WEIGHT: 730,000 lbs for typical conditions, e.g. 2.5 MW 80m HH turbine

DELIVERY: 13 – 20 precast components delivered to WTG site by RUTE

SITE PREPARATION, EXCAVATION: 9-ft below final grade, same cubic yard excavation as the spread

SITE PREPARATION, BASE PREPARATION: Per RUTE Engineering. RUTE footing may require augmented soil bearing conditions

INSTALLATION OF ANCHORS: Design Build subcontract per RUTE Engineering report and Foundation Design specifications

INSTALLATION OF BEAM AND HUB ASSEMBLY: By RUTE assembly crew, including on-site Post-Tensioning work

COMMISSIONING: RUTE technicians monitor beam performance through the erection of the turbine tower and issue Foundation System Compliance Report to General Contractor to commission the structure

RUTE Foundation System's engineering, investment, and logistics partners:

