



Offshore wind farm Lillgrund, Sweden

Seven kilometers off Malmö's coast, in the Öresund, Sweden's largest offshore wind energy farm Lillgrund is being constructed.

At what will be one of Europe's largest wind farms, Swedish power group Vattenfall plans to generate 350 gigawatt hours annually in future. This amount can supply about 60,000 homes with renewable energy. 48 large wind plants and one transformer will be built in the Öresund between Copenhagen and Malmö to realize these plans. A technical challenge is the high-precision placing of the foundation elements. The contract was therefore awarded to the business unit Civil Engineering and Marine Works, HOCHTIEF's compe-

tence center for harbor construction and marine works, and its joint venture partners.

Once again, HOCHTIEF Construction AG demonstrates its ability as a competent partner for offshore projects—having constructed the wind met mast Amrumbank as sole contractor as well as the Öresund Bridge as partner of a joint venture. The Öresund Bridge is located within the range of vision of the future wind farm Lillgrund.

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Producing the foundations

Project data

Client:

Vattenfall AB Nordic Countries,
Stockholm, Sweden

Execution:

Joint venture
HOCHTIEF Construction AG Civil
Engineering and Marine Works
E. PIHL & Søn A.S., Copenhagen,
Denmark

Technical data:

Concrete foundations

Height	10.30 – 14.30 m
Ø Cone	9.68 m
Ø Shaft	4.78 m
Ø Footing	19.00 m

Total:

Concrete	26,000 m ³
Formwork	2,000 m ²
Reinforcement	3,900 t

Offshore works

Excavation	75,000 m ³
Stone material	80,000 m ³

for stone bed, loading
and scour protection

Special crane

EIDE 5	
Bearing capacity	1,800 t

Construction period:

January 2006 to March 2007

Offshore competence

The required 49 concrete foundations, each weighing some 1,400 tons, are produced on special pontoons in Poland and brought by sea to their destination near the Swedish coast afterwards. Four (and once five) foundations are carried by one pontoon, the transport to the area Lillgrund is completed after twelve ship-pings. Using a special crane, the elements are placed very precisely

onto the stone base and loaded in water depths of up to eleven meters.

After commissioning the wind farm in 2007, the generated wind energy will be conducted ashore from the transformer station. It will then be transformed and fed into the power supply system.



Placing the foundation elements