

Concrete Drilled Monopile Alternative foundation installation

Carrying the burden II

WINDKRACHT 14

Rotterdam, 22 January 2014



A **concrete** – instead of steel - monopile foundation for offshore windturbines

Installed on a alternative method: **drilling**

With the spinn off of another alternative installation method: **vibrating**

Why:

- Staying competitive
- Cost reduction

How:

- Concrete: cheaper and stable marketprices
 - > Industrial (pre) fabrication close to load out harbor
- Drilling instead of hammering is essential for CDM
 - > Spin off: less sound (< 160 dB)

Drilling as installation technique for laterally loaded monopile foundations for windturbines is **not certified** (yet), as is **vibrating**

High industry wide attention for vibrating and drilling as alternative installation techniques

Industry wide supported **research project** in order to get **drilling and vibrating certified** by certifying bodies

Supported by Dutch Government through FLOW programme

Onshore tests with:

3 hammered, 3 vibrated and 3 drilled steel piles

In the Netherlands

Reviewed and supported by DNV GL

Supported by industry and utilities

‘Financial close’ in February 2014

Preparation of test: spring 2014

Actual test: summer 2014

Test results: september 2014

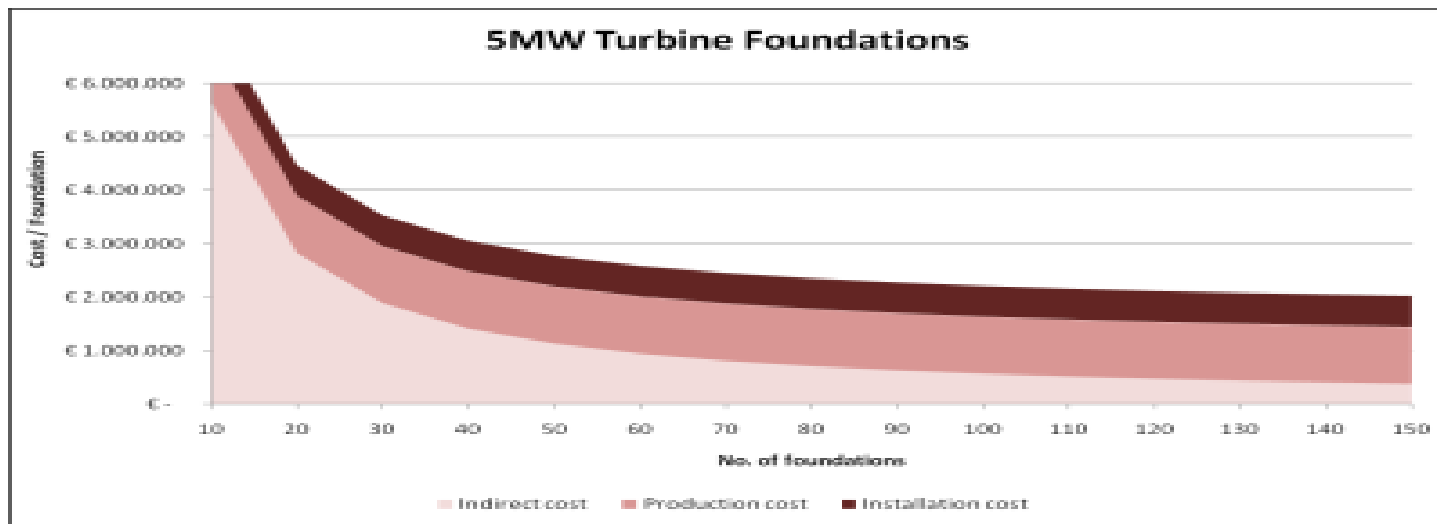
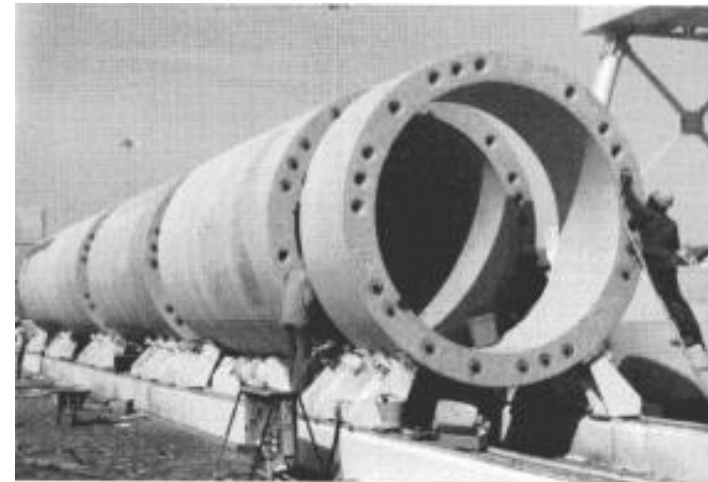
Certificate for vibrating and drilling as installation technique for monopile foundations for windturbines: end 2014

Noise reduction > *cost reduction*

Concrete i.s.o. steel > *cost reduction*

Industrial (pre)fabrication 'on the spot' > *cost reduction*

Thank you !





Realiseren van blijvende kwaliteit