RAMBOLL OFFSHORE WIND
THE RAMBOLL GROUP

- Established in Denmark 1945 as “Rambøll & Hannemann”
- Has approx. 13,000 employees at 300 locations in 35 countries
- Owned by a foundation and is independent of external interests or shareholders
OFFSHORE WIND AT RAMBOLL

• Has been involved in offshore wind since 1989
• A dedicated offshore wind organisation was created in 2002.
• Operates out of offices in Copenhagen and Esbjerg (DK), London (UK) and Hamburg (DE). Will establish a presence in Shanghai (CN) during 2017
• Core services are related to structural engineering and design of foundations for offshore turbines and substations.
• Has provided the Detailed Foundation Design for approx. 65% of the offshore wind capacity in operation or under construction worldwide, approx. 12 GW and 2800 individual foundations
• In addition to this...
PROJECT DEVELOPMENT

• Pre/Feasibility Studies, CAPEX and OPEX Estimates, Due Diligence
• Wind resource assessments, layout/micro-siting, yield calculations
• Risk analyses, incl. Monte Carlo simulations
• Planning and time schedules for project development and implementation
• Input to permitting and Environmental Impact Assessment processes
• Technical Advisory and Owner’s Engineer services.
SURVEYS AND INVESTIGATIONS

- Geotechnical and Geophysical Investigations (Specifications, supervision, data processing, interpretation)
- Metocean studies, data procurement, analyses, modelling
- Environmental surveys; flora, fauna, benthic, cultural/archaeological, noise measurements and modelling
- Environmental Impact Statements/Assessments
- Wind measurement campaigns; met masts and LIDAR
STRUCTURAL ENGINEERING AND DESIGN

- Foundation Concept Studies
- Detailed Foundation Design for offshore turbines; monopiles, jackets (on piles & suction buckets) gravity base
- Detailed Design of substation foundations and topsides.
- Detailed Design of met-masts and foundations
- Seismic load analyses
- Design of floating substructures and mooring systems
- Structural monitoring systems
- Turbine load calculations
- Supervision of fabrication and installation
- AND

- Turbine Supply Agreements – specifications and evaluation
- O&M/Asset Management strategy and planning
- LV/MV/HV Electrical system design and analysis
- SCADA (for substation and structural monitoring systems)
- Engineering and design services re. installation vessels
- Logistics and installation process studies
- Port, vessel and equipment specification and evaluations
- Research & Development programmes at national and EU levels, sponsoring Ph.ds
- Involved in DNVGL JIP and IEC’s work on floating substructures
- Decommissioning Plans
THANK YOU

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