EnBW market entry offshore wind in Taiwan:
- Acquisition of 37.5% stake in 2 GW pipeline
- Joint development with Macquarie Capital & Swancor

Press Call 12.02.2018
Dirk Güsewell, SVP Generation/Portfolio Development
Stefan Kansy, Director Generation/New Projects
Marcel Münch, Head of Mergers & Acquisitions
EnBW Energie Baden-Württemberg AG
One of the largest energy supply companies in Germany.

- Business segments: renewable energies, grids, sales, generation and trading
- Annual revenue: more than 19 billion euros
- Customers: around 5.5 million
- Employees: around 20,000
EnBW 2020 strategy
Focused on a new energy world – growth in wind on-/offshore and grids.

<table>
<thead>
<tr>
<th>Business segments</th>
<th>Status in 2012</th>
<th>Target for 2020</th>
<th>Shares of result 2020</th>
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</thead>
<tbody>
<tr>
<td><strong>Focus of growth</strong></td>
<td></td>
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<tr>
<td>Renewable Energies</td>
<td>€0.2 billion</td>
<td>+250%</td>
<td>30%</td>
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<tr>
<td>Grids</td>
<td>€0.8 billion</td>
<td>+25%</td>
<td>40%</td>
</tr>
<tr>
<td>Sales</td>
<td>€0.2 billion</td>
<td>+100%</td>
<td>15%</td>
</tr>
<tr>
<td>Generation and Trading</td>
<td>€1.2 billion</td>
<td>-80%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Adjusted EBITDA
€2.4 billion
€2.4 billion
EnBW onshore wind portfolio
Becoming a leading player in the German onshore wind market.
EnBW offshore wind portfolio
An experienced offshore wind developer and operator with a highly attractive growth outlook.

Germany

In operation
Baltic 1: 48 MW
Baltic 2: 288 MW

Under construction
Hohe See: 497 MW
Albatros: 112 MW

Development stage
He Dreiht: 900 MW

MW

In operation 31.12.16
336

New installation 2017
0

In operation 31.12.17
336

Installation ongoing 31.12.2017
609

Development pipeline 31.12.2017
900

Target 2020
945
EnBW offshore wind portfolio

Offshore wind projects Hohe See (497 MW) and Albatros (112 MW) on their way – in time, quality and budget.

Development

› Design ready and certified
› Partner on board
› Final investment decision in 2017

Fabrication

› Fabrication started for FOU, OSS and IAG
› Fabrication OTM to start shortly
› Fabrication WTG nacelle to start mid 2018

Installation

› Installation 2018: scour protection; FOU, OSS and IAG (1. campaign)
› Installation 2019: WTG, OTM und IAG (2. campaign)
› Start of operation by end of 2019

OTM = Offshore transformer module; FOU = Foundations; IAG = Internal array grid; OSS = Offshore substation; WTG = wind turbine generators
EnBW offshore wind portfolio
Offshore wind project He Dreiht (900 MW) - the first zero-subsidy project is taking shape.

Auction for feed-in-tariff
› Won the first German offshore wind auction in April 2017 with zero-subsidy-bid

Permitting
› Relevant application for permit documents ready and to be submitted in April 2018

Tender process
› Invitation to tender in preparation

Final investment decision
› Expected 2023

He Dreiht – winner of the highly competitive first German tender with a bid of 0 €/MWh
Current technological developments confirm the bid’s underlying assumptions, e.g. offshore wind turbines with a capacity of 10+ MW announced by several manufacturers
Offshore wind markets
Traditionally a European business - future growth prospects on a global scale.

Established European markets

- Developed supply chain
- Auction-based tender procedure
- Limited potential for future growth beyond existing projects under development

Developing markets

- USA
  - Significant technical potential
  - First projects under development (esp. East coast)
- Asia (esp. Taiwan)
  - First projects under development in Taiwan
  - Supply chain under development
  - High-growth market with challenging conditions

Europe

- Established supply chain
- Auction-based tender procedure
- Limited potential for future growth beyond existing projects under development

USA

- 0.1 GW in 2016, 3 GW in 2020

Asia (esp. Taiwan)

- 0.6 GW in 2016, 12 GW in 2020
Transition of the Taiwanese energy market
Market liberalization, nuclear phase-out and offshore wind development.

Key topics in the transition of the Taiwanese energy market are well-known to EnBW:

› So far, monopolistic structure of the energy market dominated by state-owned Taipower
› Liberalisation of the energy market as a major objective of the government
› Nuclear phase-out until 2025 resulting in a generation gap of 36 TWh per year
› Deficit to be closed by offshore wind, solar energy and gas-fired generation capacity
› Well-defined political roadmap and substantial subsidies for offshore wind
Project location Taiwan
A highly developed market economy based on democracy and the rule of law.

Taiwan - at a glance

› Reliable business partner with a highly skilled workforce, good transport, communication and IT-infrastructure
› Democratic political institutions which guarantee the rule of law
› Investment- and innovation-friendly conditions:
  – Credit Rating: AA-
  – Ease of Doing Business: 11 out of 190 countries
  – Global Competitiveness Index: 14 out of 138 countries
  – Corruption Perceptions Index: 31 out of 176 countries
  – Corporate Tax Rate: 17%
Taiwan’s offshore wind program
Long-term growth expected fuelled by ambitious targets.

- **First phase**
  - Demonstration projects
  - Six demo turbines in 2016, three demo wind farms by 2020
  - Government to provide subsidy for both equipment and development process

- **Second phase**
  - Transition phase
  - 36 potential offshore wind farm sites defined, to be developed until 2025
  - Fixed feed-in tariff for 3 GW and auction-based subsidy scheme for 2.5 GW (projects 2021-25)
  - Next auction expected in April 2018

- **Third phase**
  - Market integration (post 2025)
  - Full market integration expected based on an auction-based subsidy scheme
  - Long-term goal to develop a total capacity of up to 11 GW until 2030
Offshore wind projects: Formosa 3 (approx. 2,000 MW)
Excellent wind conditions, large development sites and highly attractive feed-in tariff.

Formosa 3 – three project sites with a total capacity of approx. 2,000 MW

Fixed 20-year PPA (power purchase agreement) with a feed-in tariff higher than European benchmarks

Advanced approval process for environmental impact assessment

Good wind energy potential facing prevailing winds and lower water depth

Technical solutions available for challenging geotechnical conditions, earthquakes and typhoons
A strong partnership with complementing capabilities creating synergies.

- Strong financial capability of a global infrastructure investor
- Experienced technical and development expertise
- Financial management and analysis
- Debt financing expertise in offshore wind
- First hand offshore experience in Taiwan

- European offshore wind development and operating experience
- Technical resourcing and in-house expertise
- Successful project bidding experience
- Access to capital and funding capability
- Leading European fully integrated utility

- Strong industrial knowledge and local network
- Leading the consent and permitting process
- Leading local offshore development and integration expertise through a preceding project (Formosa 1)
- Strong government and community relationships
- Close ties with domestic banks
EnBW’s holistic, industrial approach
Key success factor – in-house competencies across all stages of a project.

**Project development**
- Headquarter for offshore wind energy in Hamburg
- Best-in-class competencies in relevant engineering disciplines
- Comprehensive industrial network

**Operations and maintenance**
- Covering all regular aspects of maintenance services
- Early involvement during design and construction ensuring that O&M requirements are met

**Other services**
- State-of-the-art remote control center
- Operating offshore service harbors
- Procurement team, in-house project management and finance team
Next steps and outlook for EnBW’s activities in renewable energies

Next steps offshore wind Taiwan

› Obtaining merger control clearance

› Establishment of project development team with partners Macquarie and Swancor
  › Near-term focus on securing grid connection capacity for the three projects
  › Detailed project planning under way, invitation to tender in preparation

› Start of local recruitment and training program

Outlook 2018

› Extending strong position in the German renewable markets with a clear focus on projects being “in time” and “in budget”

› Further growth by expanding international activities
  › Onshore: French and Scandinavian markets
  › Offshore: Europe and North America