



SWM's Renewable Energies Expansion Campaign

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Munich City Utilities (SWM)

SWM as an economic factor

- Customers approx. 1.1 million (energy and water)
- Employees approx. 7,750
- Turnover 2010 EUR 3.8 billion



- Electricity approx. 16 TWh
- Natural gas approx. 39 TWh
- District heating approx. 4.4 TWh
- Water approx. 88 million cubic meters
- Transportation approx. 510 million passengers
- Public swimming pools approx. 3.9 million visitors



Ambitious SWM targets

- By 2015, SWM will produce enough power from renewable energy sources in its own plants and facilities to meet the needs of around 800,000 private households in the city (2 billion kWh/year).
- By 2025, enough to meet Munich's entire power requirements (7.5 billion kWh/year)
- These targets necessitate growth of 400 million kWh/year.
- From 2008 to 2025, SWM will invest EUR 500 million a year on average – amounting to a total of EUR 9 billion – in renewable energies.



The consistent implementation of the renewable energies expansion campaign can only be achieved by massive capital and resources deployment.

Initial situation 2008



A broad portfolio of facilities and installations for ecological power generation

- Water: 10 hydroelectric power plants (total output of around 125 MW)
- Wind: 1 Enercon WEA (1,5 MW)
- Solar: Various solar power installations (approx. 1 MW)
- Geothermal: Heat supply Riem, cogeneration plant in Sauerlach (under construction)
- Biogas: Cogeneration plant at Hellabrunn (40 kW)



Efficiency gains and the expansion of the existing portfolio are not sufficient to attain the ambitious power generation goals based on renewable energy sources.

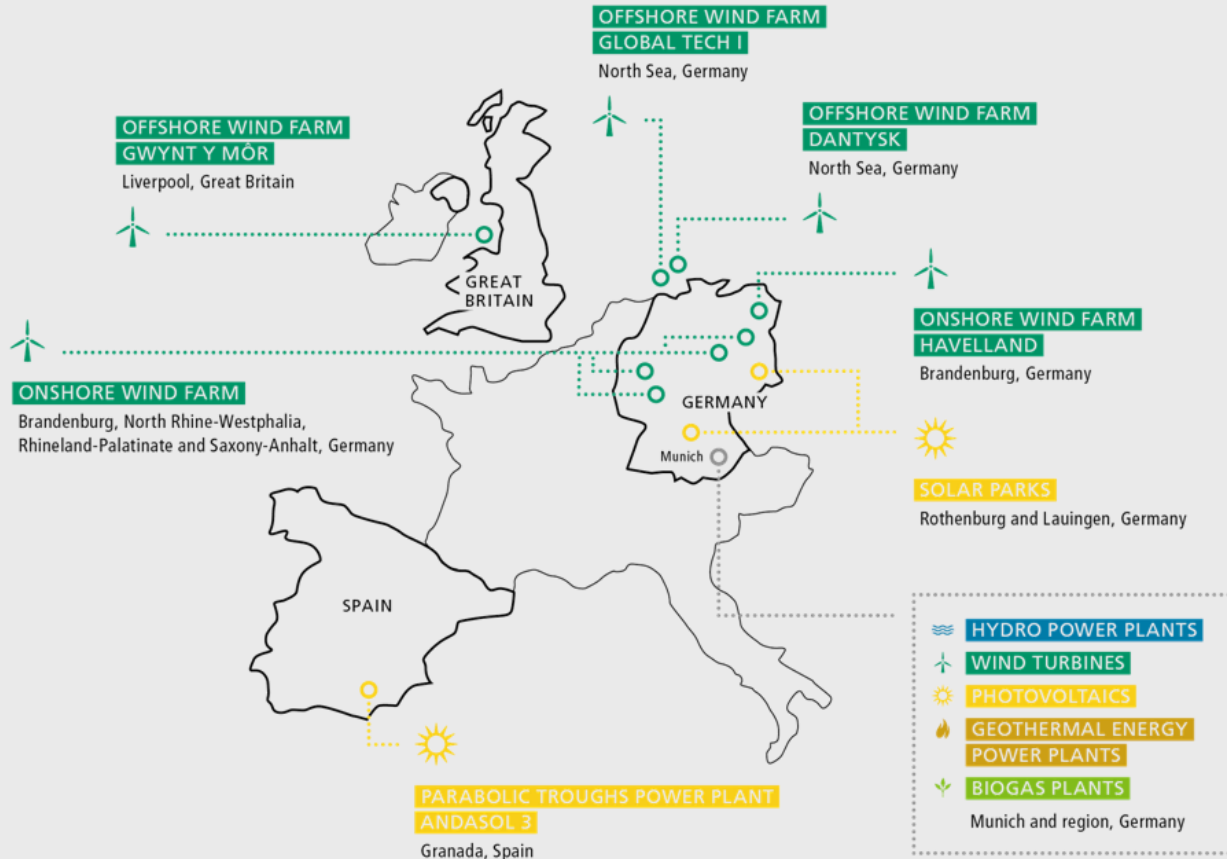
Participation management as instrument

- The substantial investments in renewable energy power plants represent “aggregated risks” – which can be reduced by way of joint investments.
- By engaging with international partners and/or local partners on location, the expansion into new regions can be achieved faster and at less risk.
- Many renewable energy technologies are developing at an extremely rapid pace. Specialized partners are called for in order to operate and invest in all areas in a “best in class” manner.
- The participation in existing facilities or plants can accelerate the access to “green electricity”.



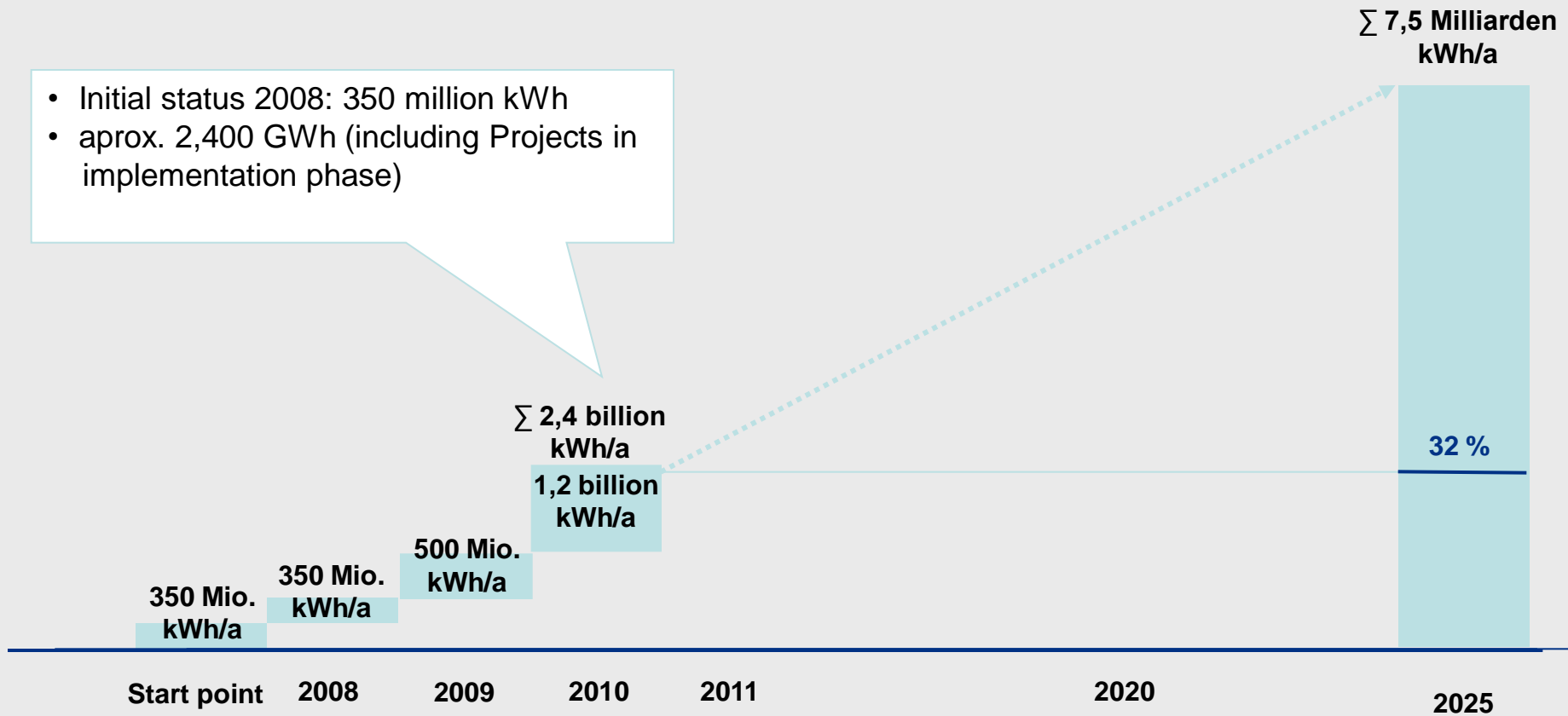
As a growth course, takeovers and participations require considerable input and resources – but the general conditions recommend such a course of action nevertheless.

The SWM Portfolio of renewable energy projects



The first steps have been taken ...

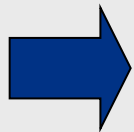
- Initial status 2008: 350 million kWh
- aprox. 2,400 GWh (including Projects in implementation phase)



... the major share of the path still lies ahead!

Market has changed – it's a „seller's market“ now

- Large institutional investors enter the market
- Stock market crisis and Euro crisis stimulated investments in „low-risk“ renewables investments
- Wind power generation becomes a mature market (project finance, turnkey project offering)
- Demand > Offer = price explosion



One potentially successful reaction would be to enter early stages in the value chain

SWM took a stake in the leading wind onshore developer in Europe



- Two pioneers within the sector of renewable energies, SWM and wpd AG, combine their know-how and their financial power, in order to develop wind energy in Europe.
- SWM holding a share of 33% in the wind-onshore activities of wpd Europe.
- wpd Europe is already active in 12 European states and Canada, with projects in different development stages.
- The goal within the next years is to realize the already committed wind park projects and also to plan, establish and operate several further wind parks with a combined output of several thousand megawatts.
- Therefore the partnership will initially invest 1 billion euros in new wind energy projects.

➔ ... to 2020 - SWM expect a proportionate electricity yield of 1.2 billion kWh/a from this co-operation

wpd europe is not just a visionary of the future...

 **SWEDEN**

Windprojects in development **250 MW**

 **BELGIUM**

Windprojects installed **9 MW**

 **FRANCE**

Windprojects installed **60 MW**

Windprojects in development **400 MW**

 **SPAIN**

Windprojects installed **64 MW**

Windprojects in development **900 MW**

 **PORTUGAL**

PV-Project installed **2.15 MWp**

 **ITALY**

PV-Projekt installed **3 MWp**

Windprojects in development **370 MW**

 **FINLAND**

Windprojects in development **200 MW**

 **POLAND**

Windprojects in development **970 MW**

 **ROMANIA**

Windprojects in development **250 MW**

 **BULGARIA**

Windprojects in development **292 MW**

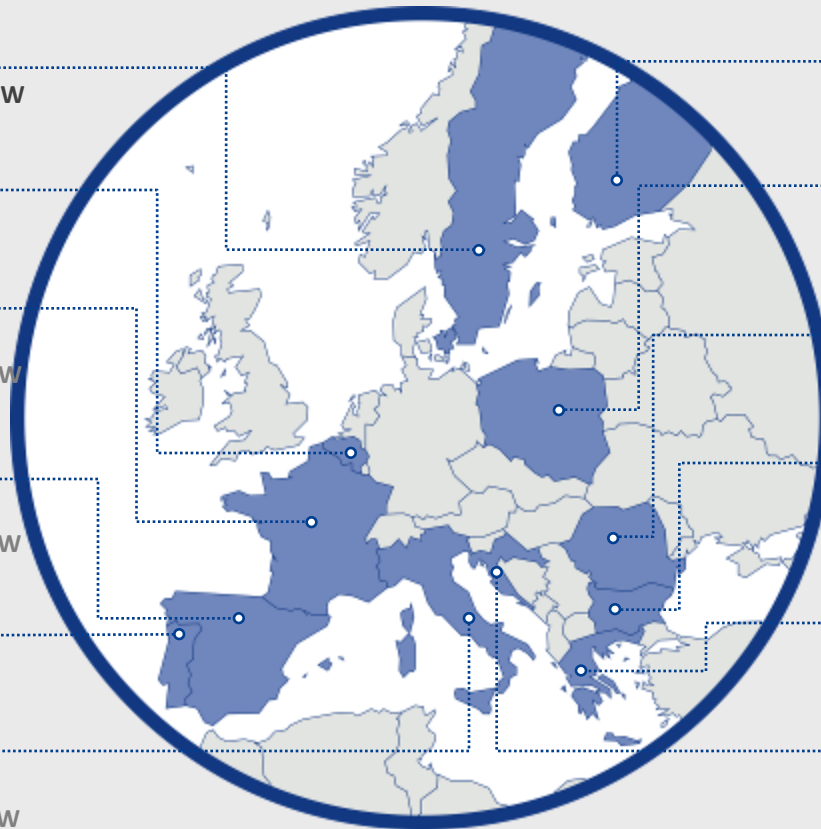
 **GREECE**

Windprojects in development **470 MW**

 **CROATIA**

Windprojects installed **21 MW**

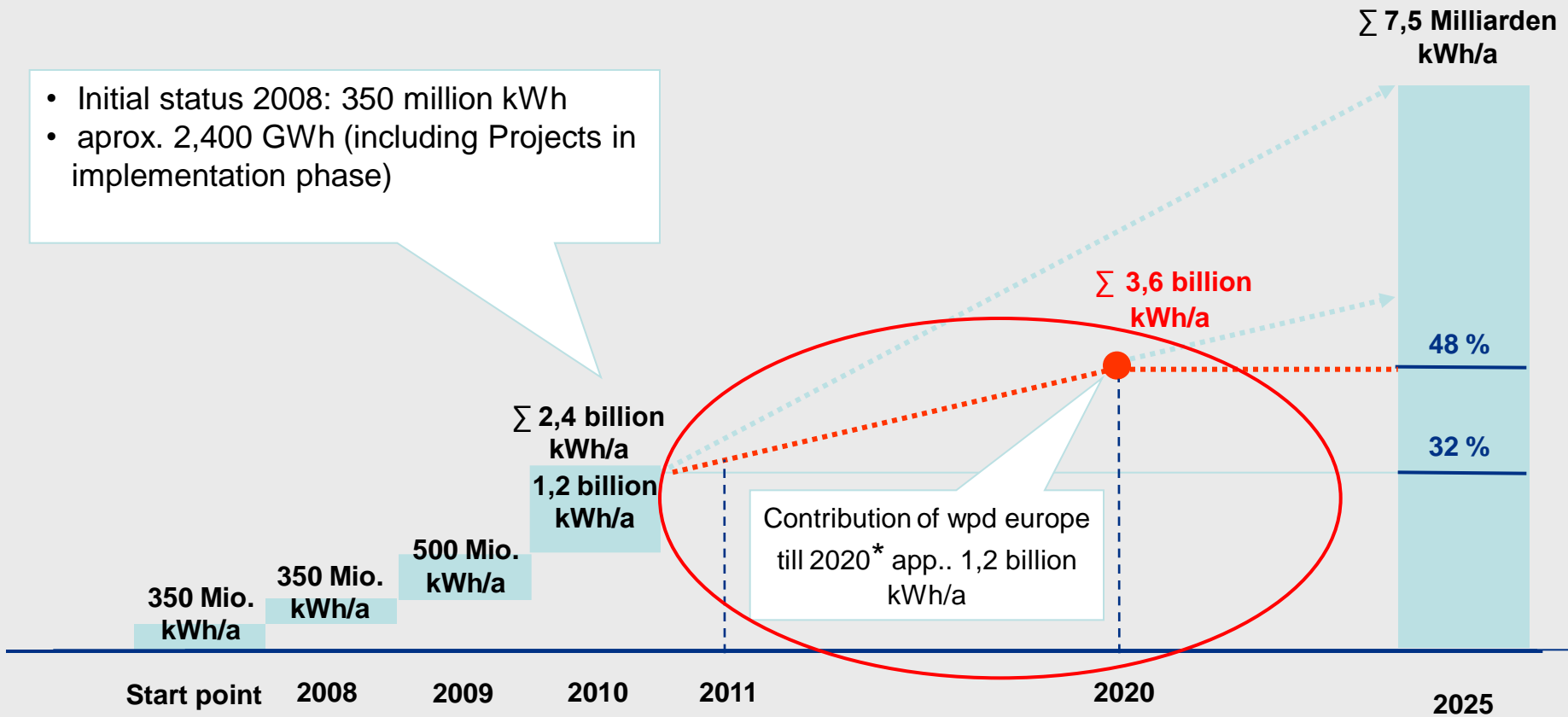
Windprojects in development **114 MW**



... the infrastructure is already there

The gap is closing ...

- Initial status 2008: 350 million kWh
- aprox. 2,400 GWh (including Projects in implementation phase)



Contribution of wind power in Europe till 2020* approx. 1,2 billion kWh/a

* after 2020 there will be projects built by wind power in Europe as well!



... the major share of the path still lies ahead!

Thank you for your attention

