

# Offshore potentials and challenges

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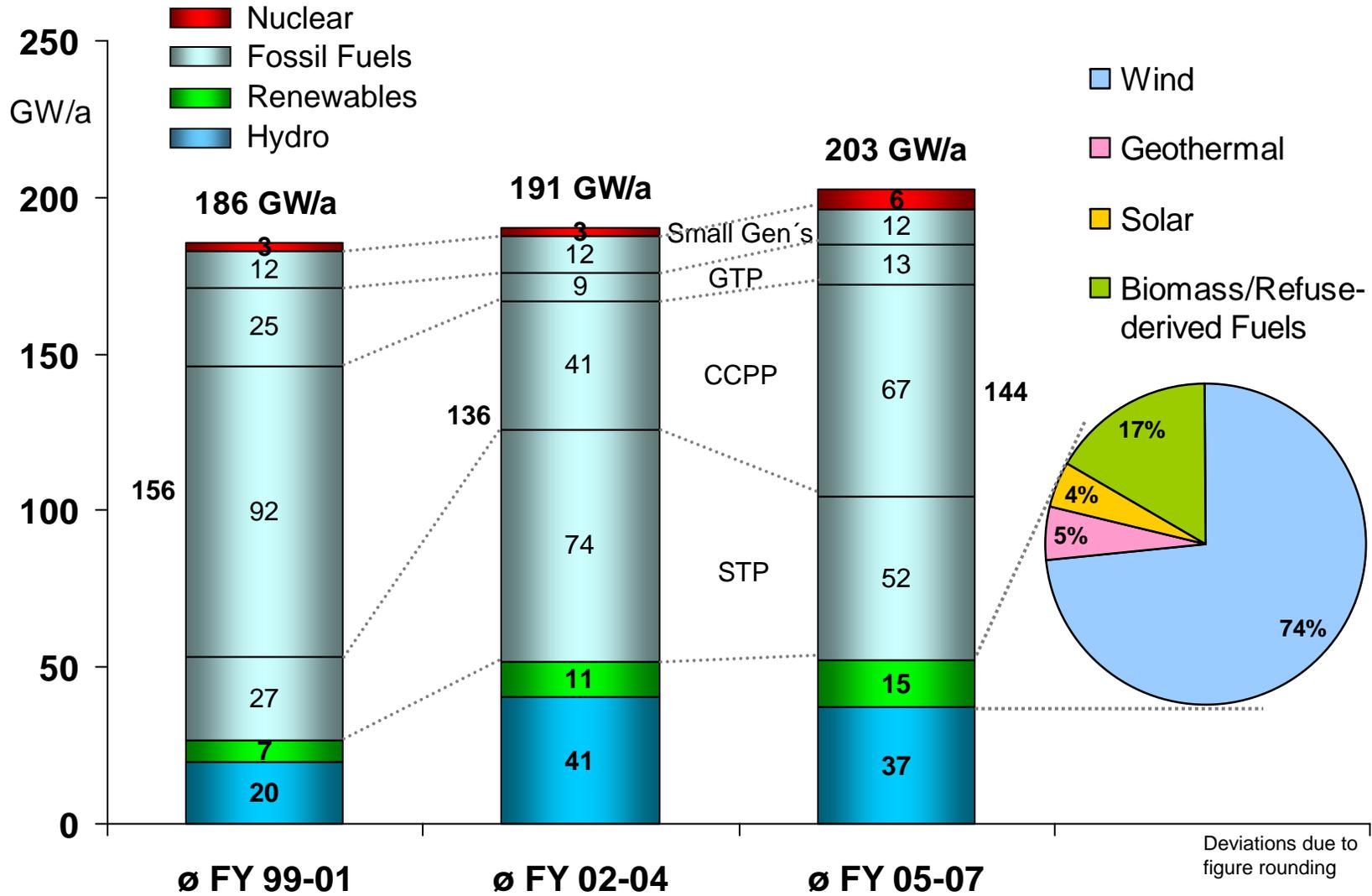
*Andreas Nauen*

26.10.2005

**Siemens Wind Power**

# Power market development

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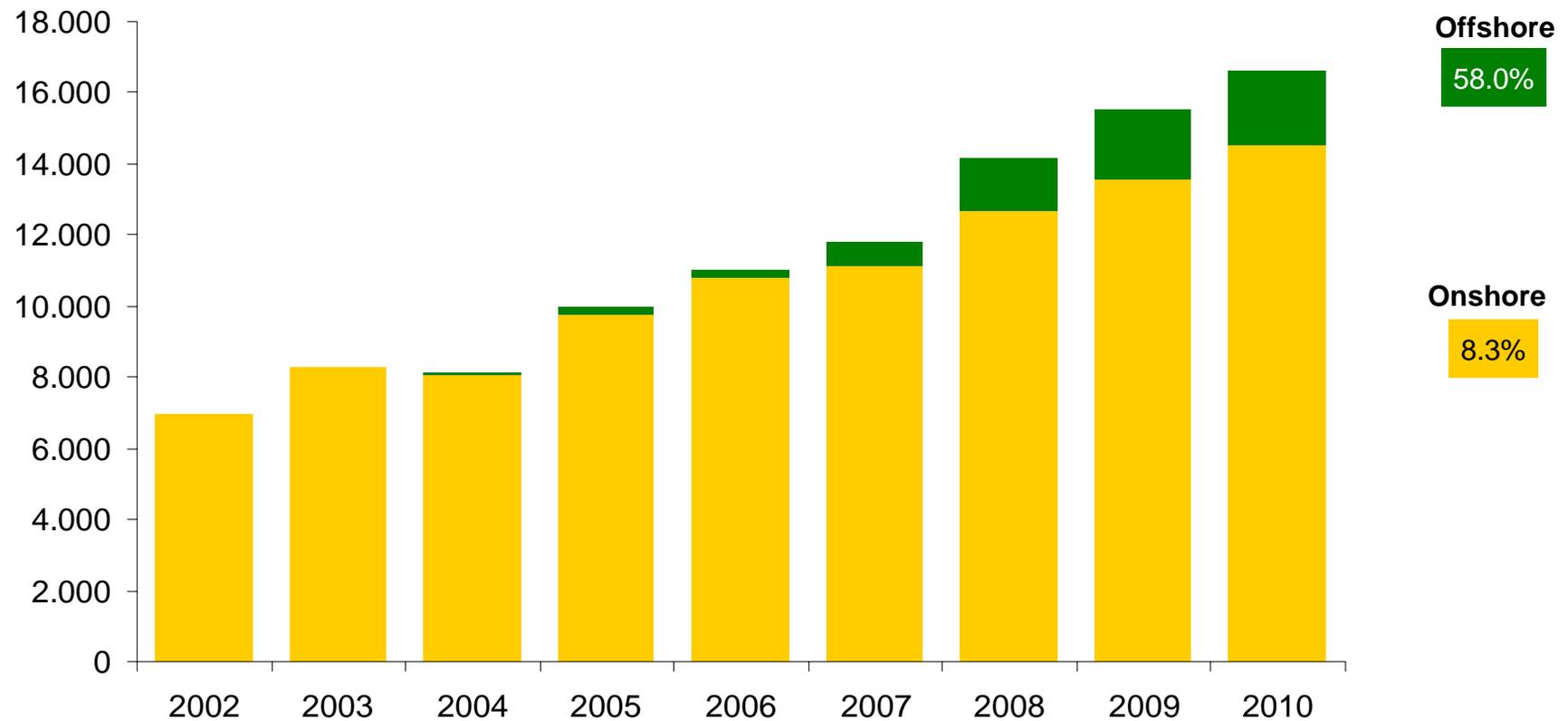


# Wind market development

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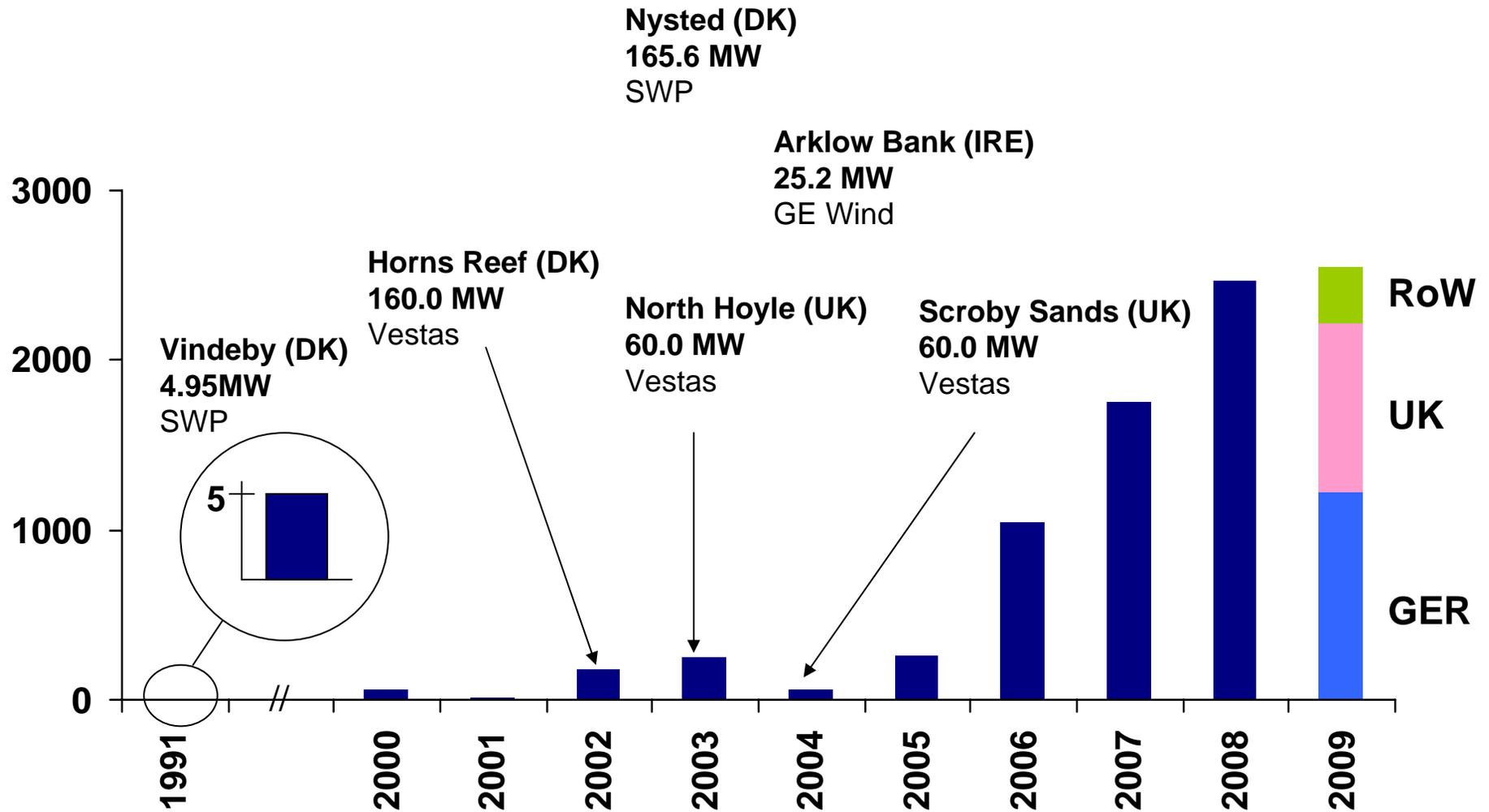
## Installations [MW]

CAGR '05-'10



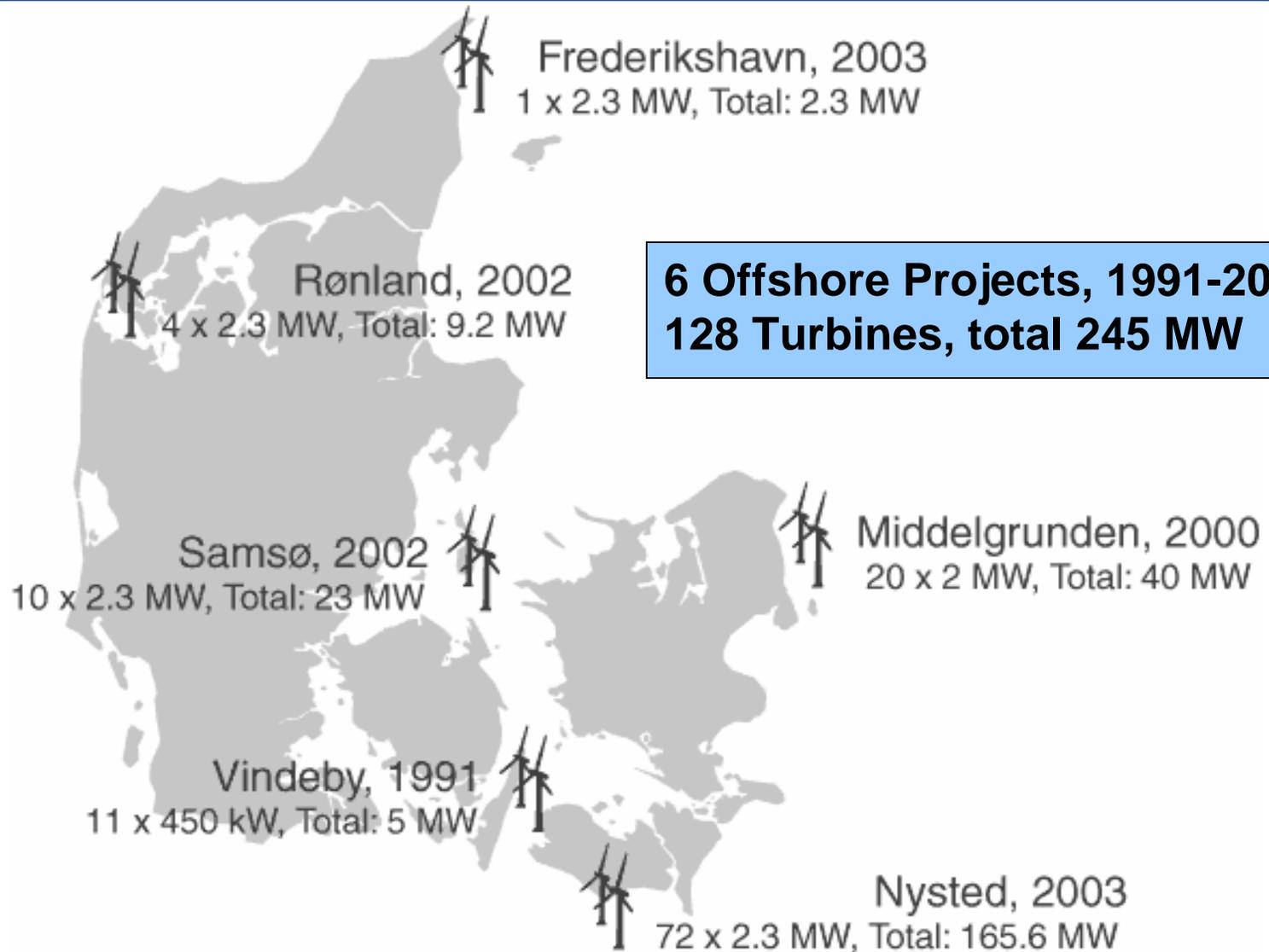
# Offshore market development

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# Siemens Offshore projects in operation

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# Nysted – World's Largest Offshore Farm

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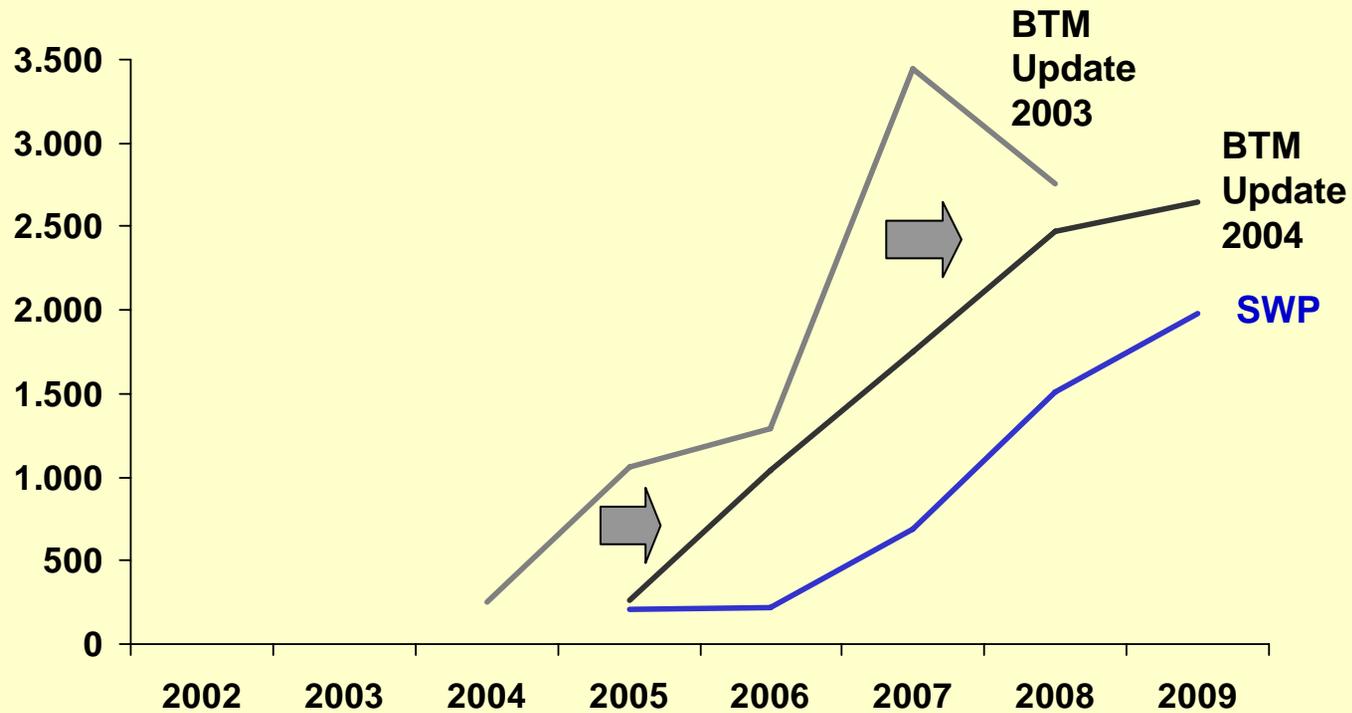


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# So far offshore market has been postponed... **SIEMENS**

## Offshore market forecasts has been moved back ...



... but larger scale kick-in likely by 2008

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**... but increasing likelihood of realistic kick-in in 2008**

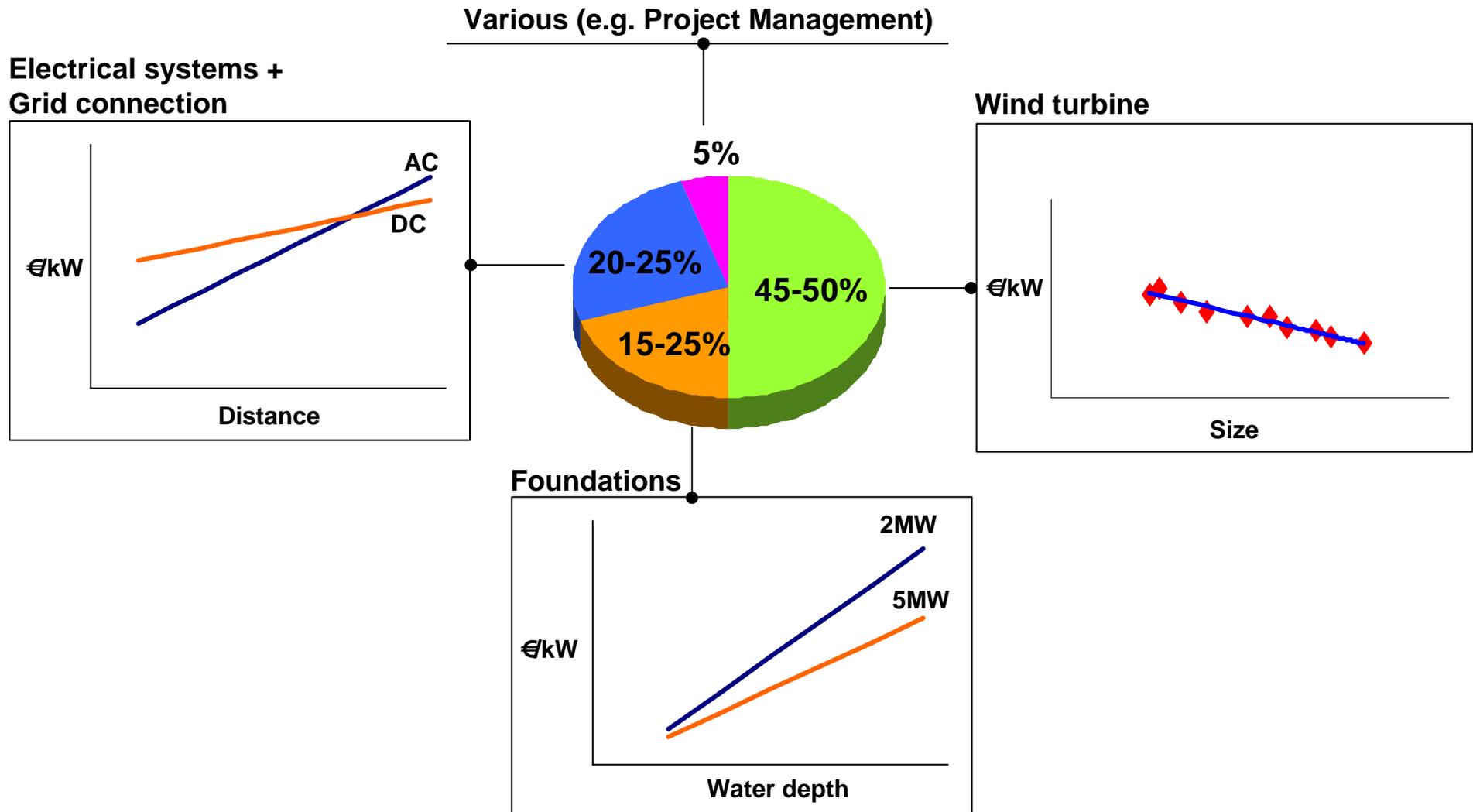
- Adequately sized turbines (> 3 MW) enter serial production from all larger turbine manufacturers
- Large utilities with sufficient financing capacities engage in offshore development
- Increasing sizes of approved projects indicates political support
- Consolidation in turbine OEM market has created players able to cope with complex offshore projects
- Suitable onshore locations decreasing in leading wind markets like UK and Germany

**... However, limiting factors remain**

- Slower than expected granting of planning approvals
- Grid connection limitations
- Wind market boom in the US
- Solid onshore business in several countries
- Acquisition of financing due to risks difficult
- Still lower feasibility of offshore projects especially deep water projects in UK and Germany
- Investment costs still too high

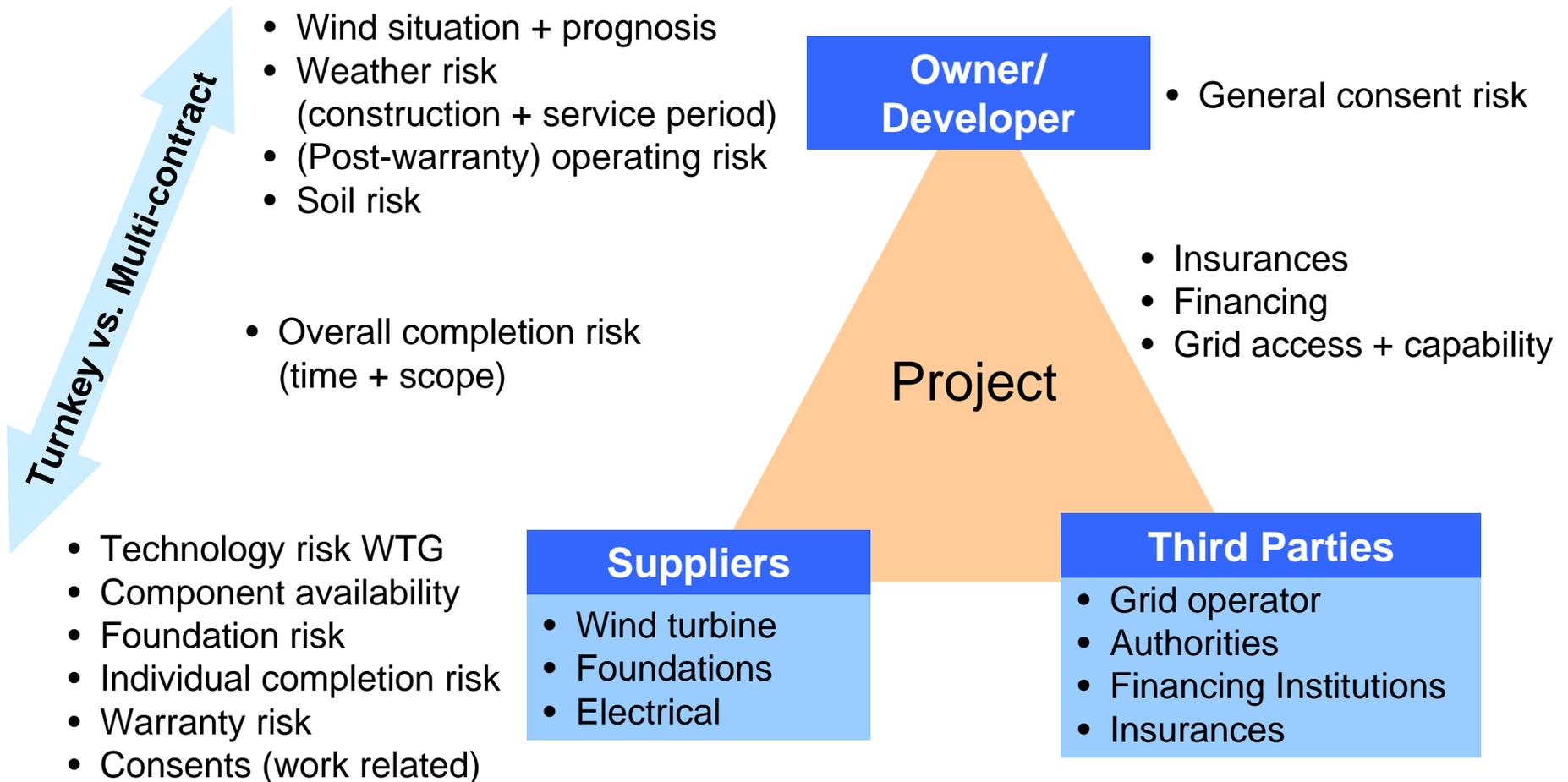
# Typical investment for an Offshore Windpark

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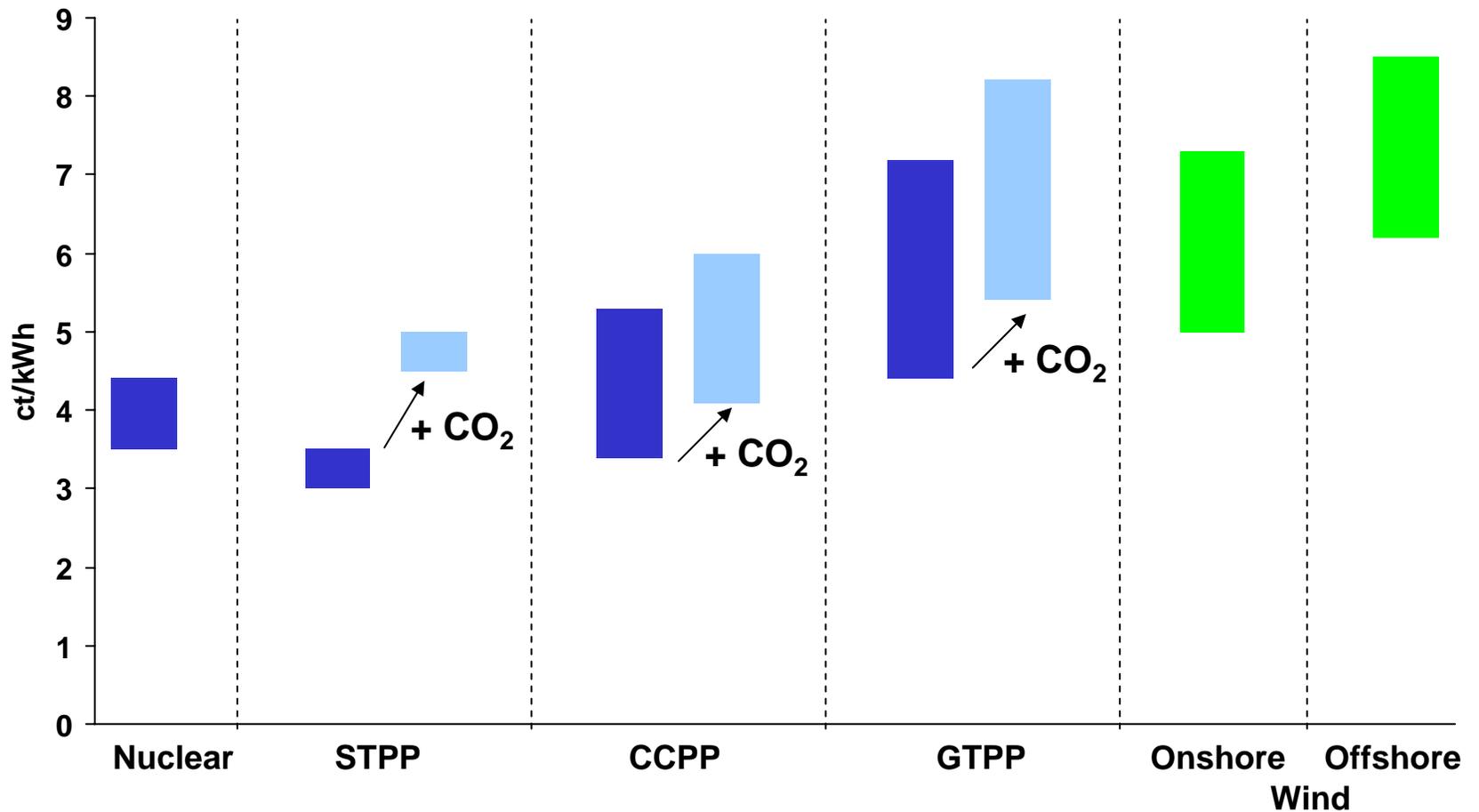
# Risk and risk allocation for an Offshore-Windpark

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# Electricity generation costs (Ranges)

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But we can jointly make it work!

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- 1. Success of the 1st Round of UK-projects will be key**
- 2. All players have gone through a learning curve and have (nearly) found their roles and responsibilities**
- 3. Site selection is critical. Let us not be too ambitious, but do one step at a time (Turbine size, water depth, weather + wind conditions, distance to shore)**
- 4. Investment cost must and will go down – all participants have to contribute (and this is what the conference is about)**

Backup

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