

# Siemens North Sea Energy Study

Collaborative project to explore the potential of the North Sea to reduce our carbon footprint and lower the cost of energy supply to Europe









The background features a 3D isometric diagram of an energy system. It includes offshore oil and gas platforms, onshore power generation plants with cooling towers, wind turbines, solar panels, and a network of power lines connecting these elements. Labels 'Oil & Gas', 'Power Generation', 'Renewables', 'Power Transmission', and 'Power Distribution' are placed near their respective components.

**Dr. Georg Fronja**

**Head of Strategy of Energy Sector  
Siemens AG**

# Siemens Energy Sector – Organizational structure

Division	Oil & Gas	Fossil	Renewables	Service	Transmission	Distribution
						
Portfolio	<ul style="list-style-type: none"> <li>Gas turbines (&lt; 50 MW)</li> <li>Steam turbines (≤ 200 MW),</li> <li>Compressors</li> <li>Oil &amp; gas solutions (Up-, Mid- and Downstream, power supply systems for the oil &amp; gas industry)</li> <li>Municipal and industrial power generation solutions</li> </ul>	<ul style="list-style-type: none"> <li>Products (e.g. utility gas and steam turbines, generators)</li> <li>Energy solutions (e.g. turnkey power plants)</li> <li>Instrumentation &amp; controls</li> <li>Fuel cells, gasifier technology, post combustion</li> </ul>	<ul style="list-style-type: none"> <li>Wind turbine generators (on- and off-shore) as well as services</li> <li>Large scale photovoltaic power plants</li> <li>Concentrated solar power plants</li> <li>Other renewables</li> </ul>	<ul style="list-style-type: none"> <li>Services for oil &amp; gas and industrial applications</li> <li>Operating plant services (e.g. spare parts, long-term service contracts, maintenance and repair, modernization and upgrades)</li> <li>Environmental systems and services</li> <li>TurboCare</li> </ul>	<ul style="list-style-type: none"> <li>High-voltage AC and DC transmission systems (turnkey substations, gas insulated switchgear, gas insulated lines, circuit breakers, non switching devices, instrument transformers</li> <li>Power transformers</li> <li>Distribution transformers</li> </ul>	<ul style="list-style-type: none"> <li>Medium-voltage equipment and solutions (components, gas- and air-insulated circuit breakers, switchgear)</li> <li>Solutions for the automation of power grids and substations, protection and control</li> <li>Services, consulting, network planning</li> </ul>
Revenue in bn € <sup>1)</sup>	4.0	8.2	2.1		5.5	3.2
Profit in %	8.7%	-1.1%	11.6%		10.3%	11.5%
Markt-position	Nr. 2	Nr. 4 <sup>2)</sup>	Nr. 5 <sup>3)</sup>	Nr. 2	Nr. 1	Nr. 2

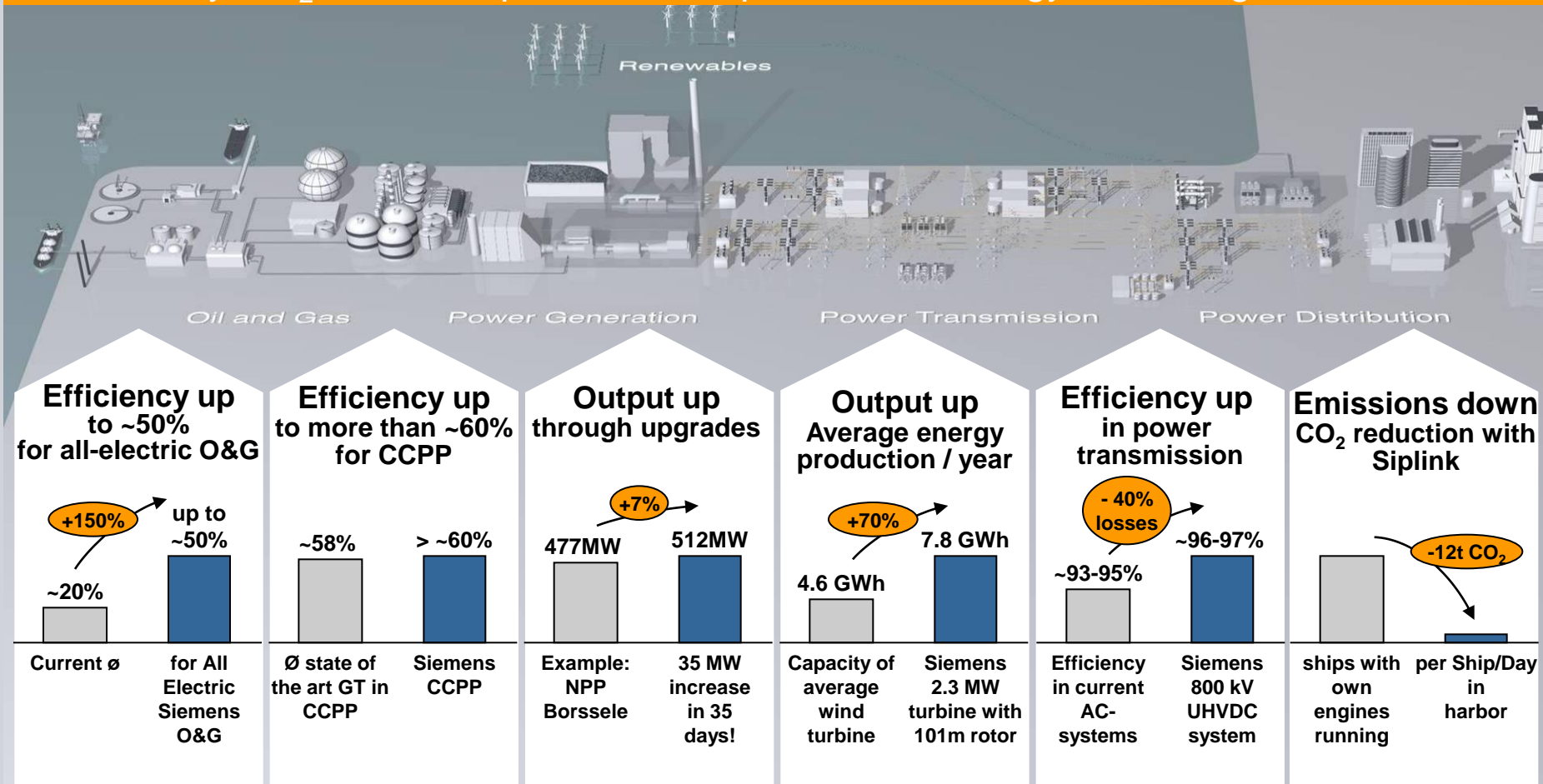
1) Fiscal Year 2008

2) Nr. 2 in Gasturbines

3) Nr. 1 in Offshore

## Efficiency along the entire energy conversion chain

Yearly CO<sub>2</sub> reduction potential of top Siemens Energy technologies: > 20%

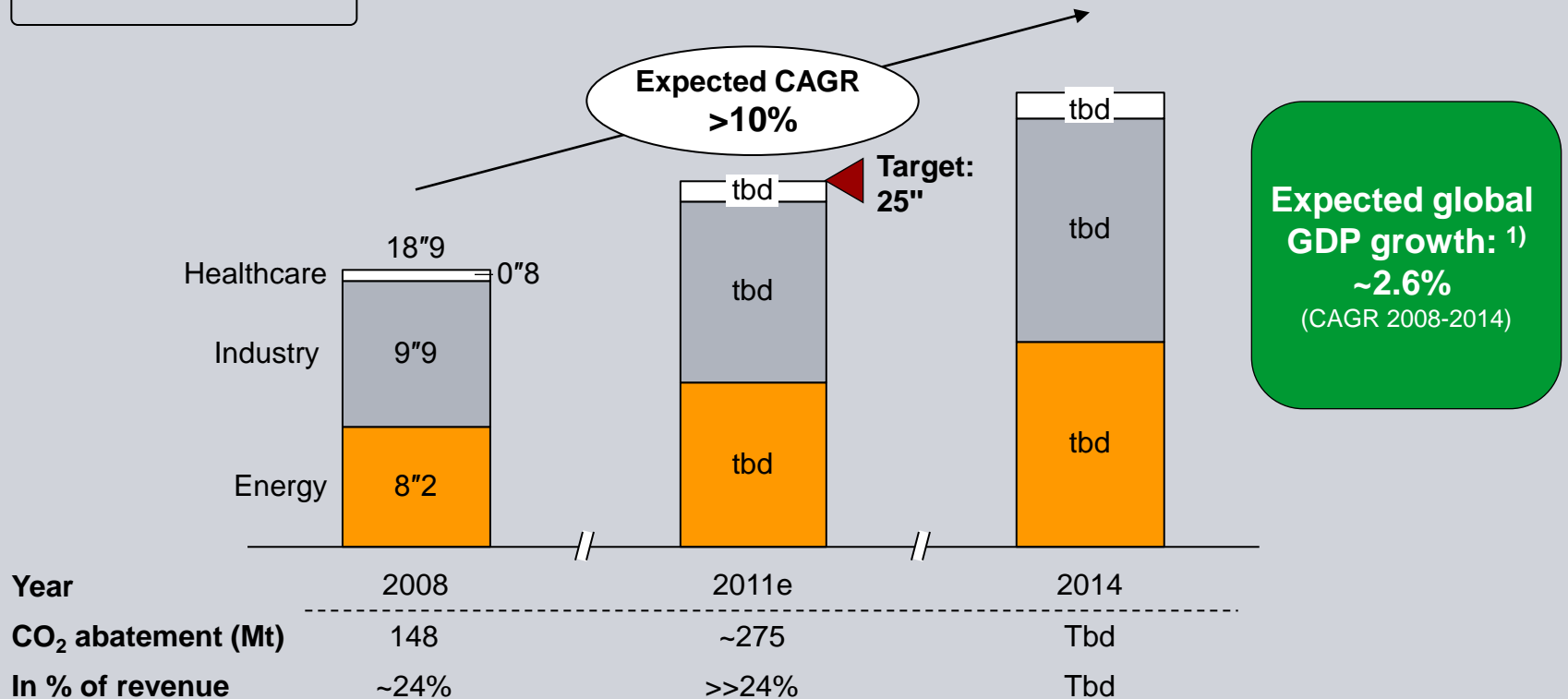


▶ Optimization with most advanced technology for intelligent grid management ◀

## Environmental Portfolio is major growth driver

Revenue with environmental portfolio, split by Sectors, 2008 - 11

**Illustrative -  
not to scale**



1) World Economic Outlook Database, April 2009 (IMF)

Source: CHR EHS EP PE; Team Sustainability

# A Game Changing Collaboration Opportunity: The North Sea European Energy Project

The North Sea region contains a wide range of energy sources:

- Reserves of oil & gas
- Hydroelectric power
- Wind
- Wave, Tide

The North Sea has passed its peak of oil and gas supply – and it needs to embark on a road to explore new energy sources

The EU has set new directives determining that 20% of its energy consumption shall come from renewable energy sources by 2020

1. Demand for clean energy will increase
2. Huge opportunities arise for stakeholders to collaborate along and across value chains by using smart transmission to realize a much larger integrated potential
3. A pre-competitive alliance can estimate the potential and lead the way on how to improve efficiency, introduce new technologies, co-locate and integrate growth solutions for a low carbon and competitive Europe

## NORTH SEA LOW CARBON ENERGY STUDY

### MAIN BENEFITS

- Energy supply
- Reduced CO<sub>2</sub>

### UNIQUE OPPOR- TUNITY NOW

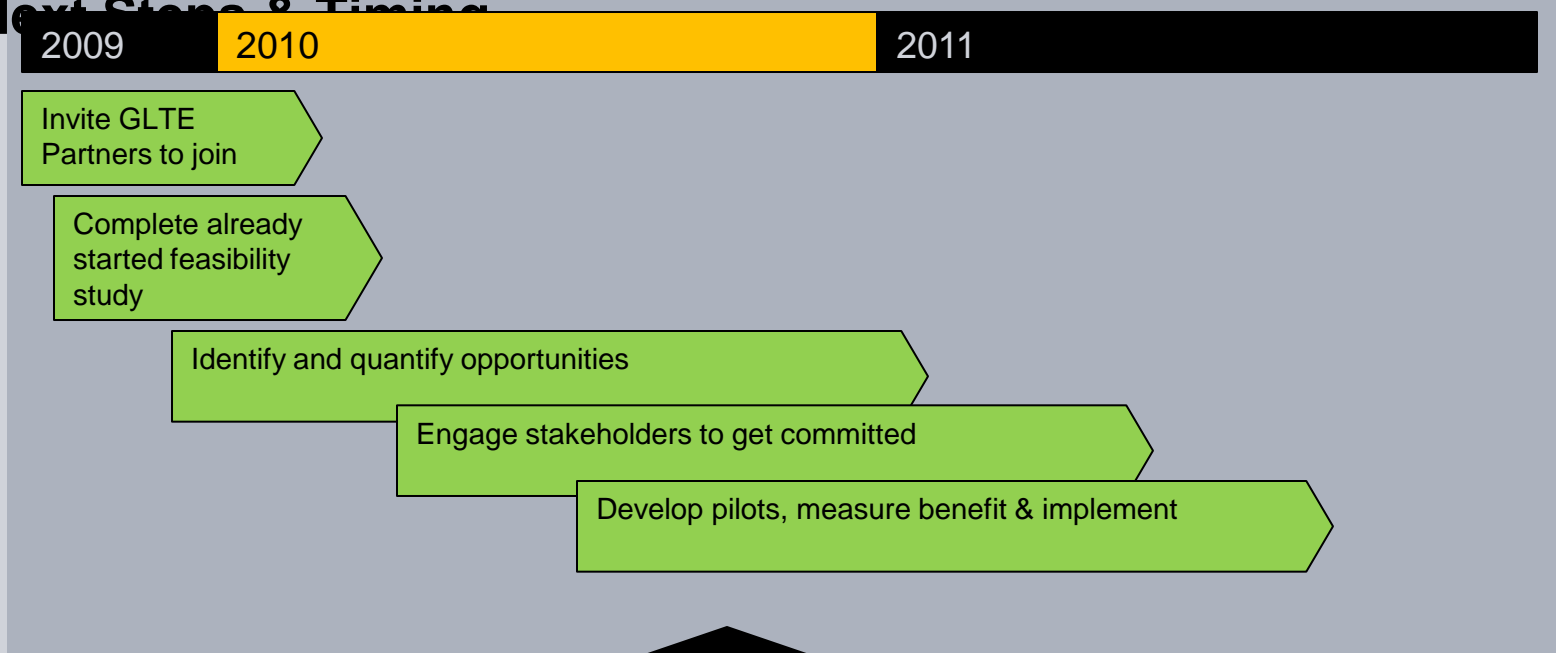
- Technological feasibility
- Available resources

### ACTIONS REQUIRED

- Collaboration of countries, industries, stakeholding

# North Sea European Energy Project

## Next Steps & Timing



**Support from Steering Committee\* and GLTE**

Technology Innovation

Collaborative Innovation

Policy Innovation

New Business Models

\*) Mr. Wolfgang Dehen, CEO Siemens Energy  
Dr. Osvald Bjelland, Chairman, Xyntéo  
+ 1-2 more