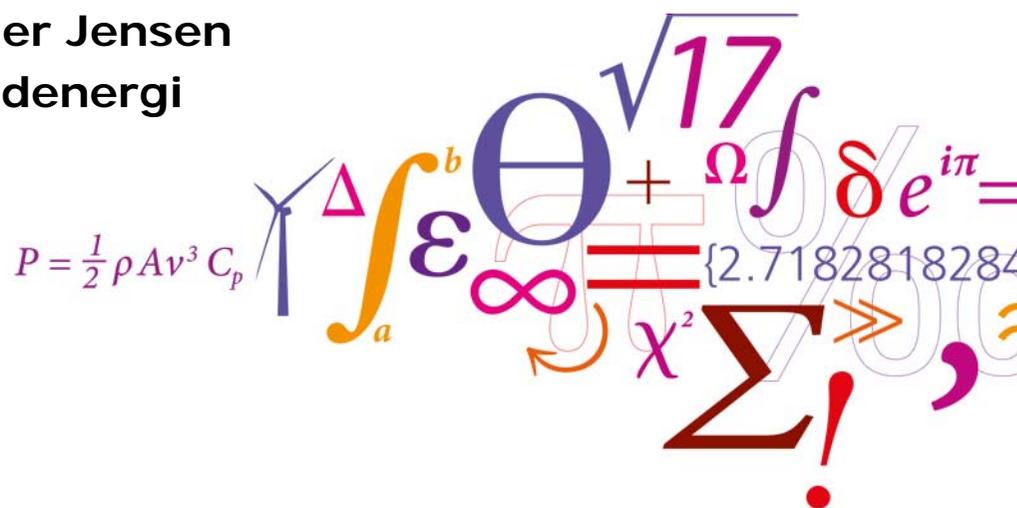
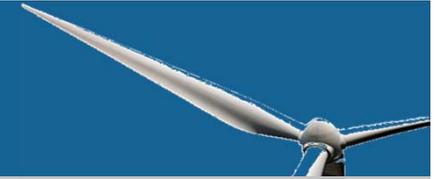


WIND2050 Project meeting

19. August 2015 Campus Risø

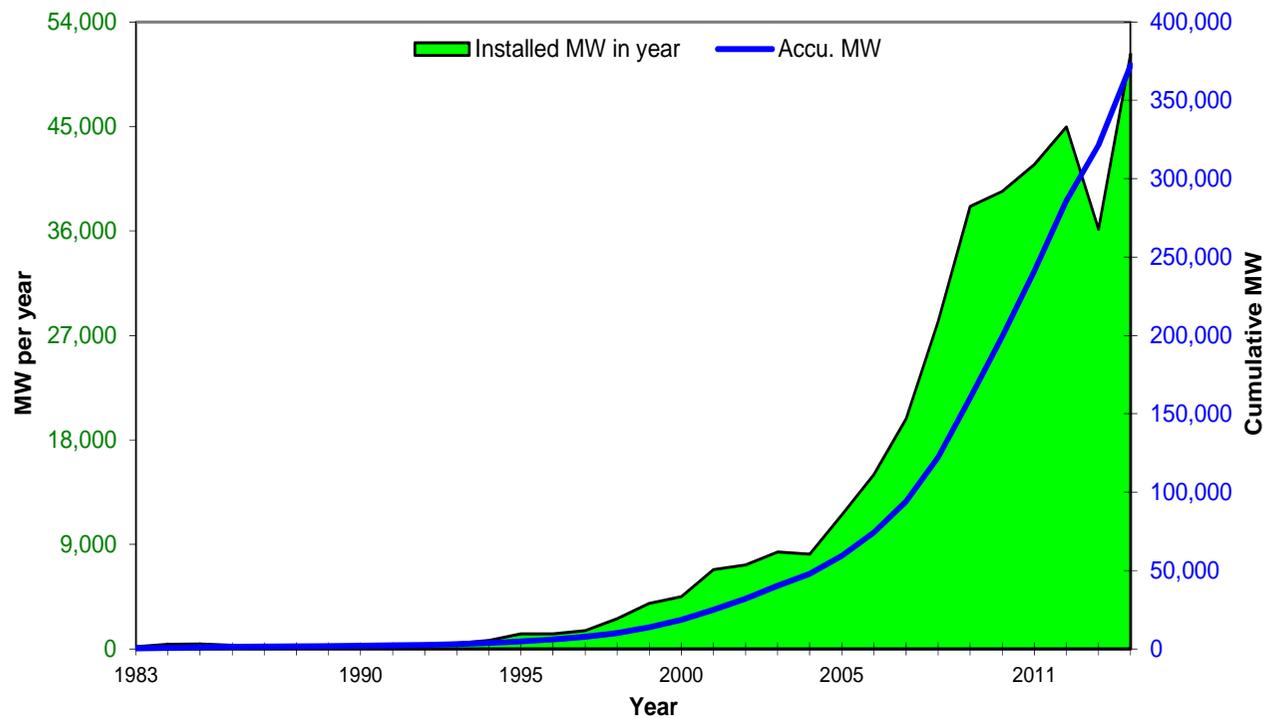
Peter Hjuler Jensen
DTU Vindenergi





Annual and Cumulative Wind Energy Development, World Markets: 1983-2014

Installed Wind Power in the World
- Annual and Cumulative -



Source: Navigant Research, March 2015



Highlights of Wind Power Development in 2014

- Global installations in 2014 of a record 51.2 GW, representing 42% growth over 2013 installations
- Vestas held on to the No. 1 position while Siemens jumped to second place
- China had a record year, with 23.3 GW of new wind power installed in 2014
- Offshore wind grid connection and weather-related delays halved new offshore installations from 1,712 MW in 2013 to 852 MW in 2014; a bumper 2015 is expected, as a significant part of the 2014 planned openings are happening in early 2015
- Direct drive turbine installations grew 30% and took 27% of the global market, a slight decline in market share compared to 2013 despite good overall performance
- Goldwind's GW1.5 MW was the most frequently installed wind turbine in 2014
- Wind power delivered at least 3.4% of the world's electricity in 2014, a figure expected to grow to 5.3% in 2019
- Wind power capacity installations in 2015 are expected to keep up the momentum and grow by 8.9%

Danish WIND PLANNING BY 2020

Offshore Goals

- + 1400 MW grid connected
 - 1,000 MW **(2017-2020)**
 - Horns Rev III 400 MW
 - Kriegers Flak 600 MW
- Near shore = 400 MW
 - (2014- 2015)
 - Grid connection from 2017

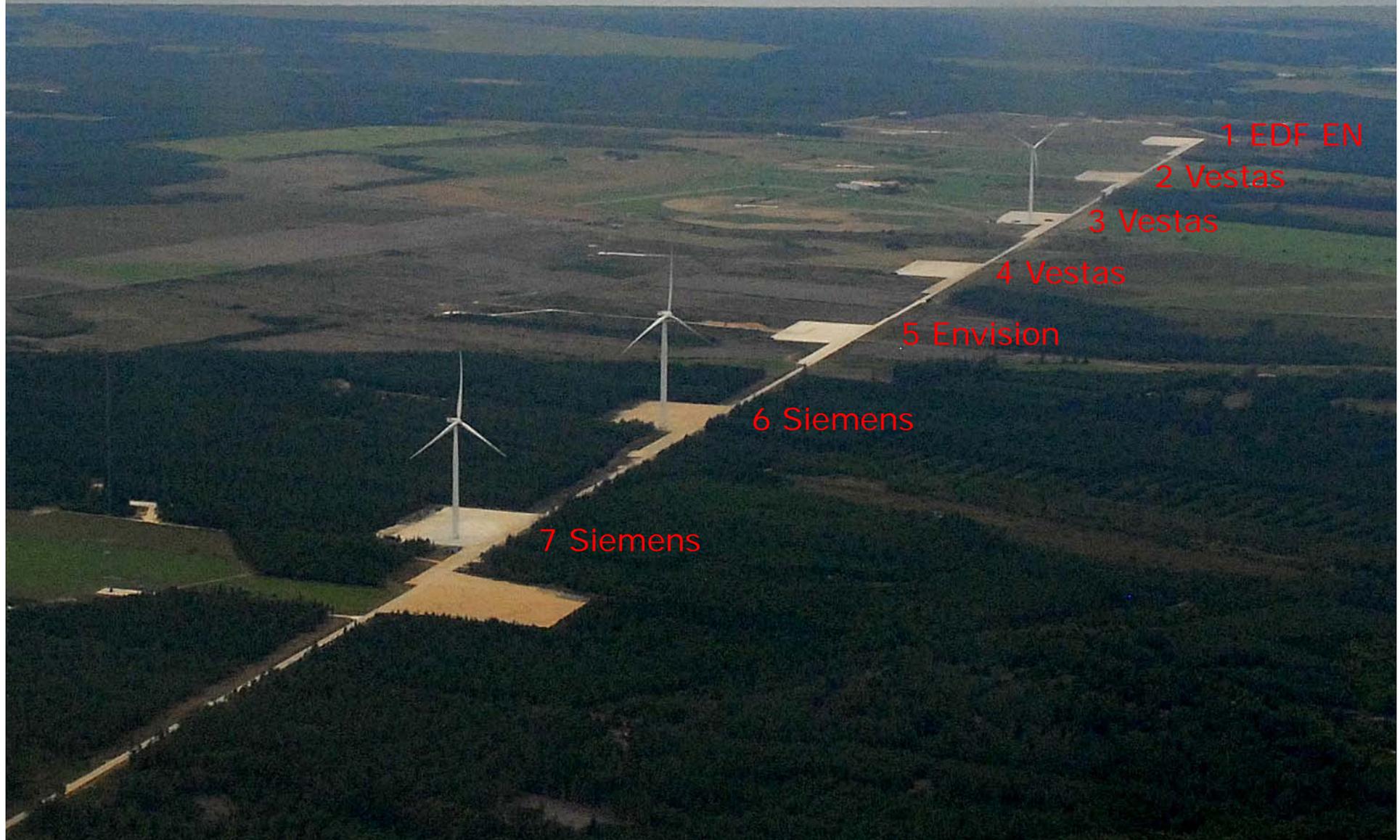


Land-based – 1800 MW

(1300 repowering)

Østerild Test Centre – Prototype Wind Turbines

7 Wind Turbines – Max. 16 MW each – Max. height 250 m



Testcenter Østerild



Testcenter Østerild August 2015

