

# Arena Norwegian Offshore Wind (NOW)

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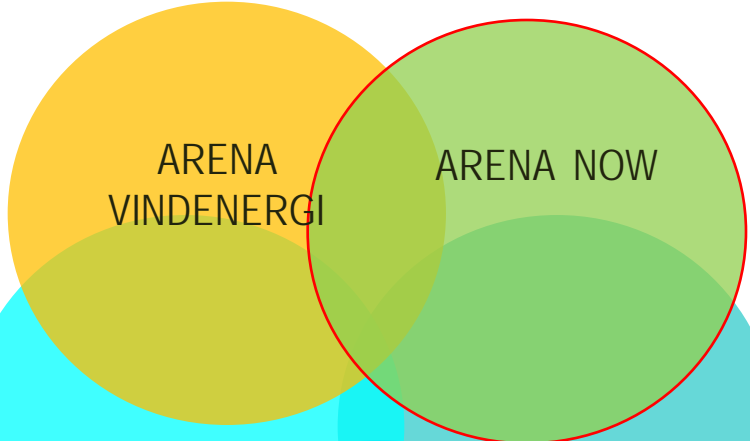


German Norwegian Offshore Wind Energy Conference  
Bergen, 4 May 2010  
Ivan Østvik, VP Business Development, NorWind

# Norwegian offshore wind clusters

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Industry network/arena



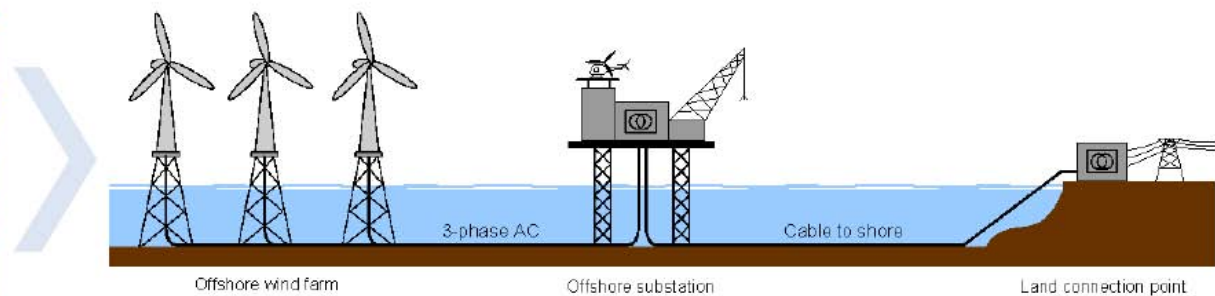
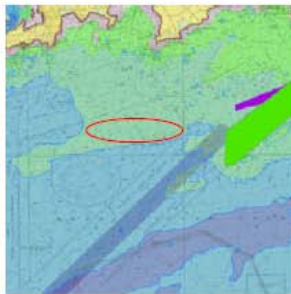
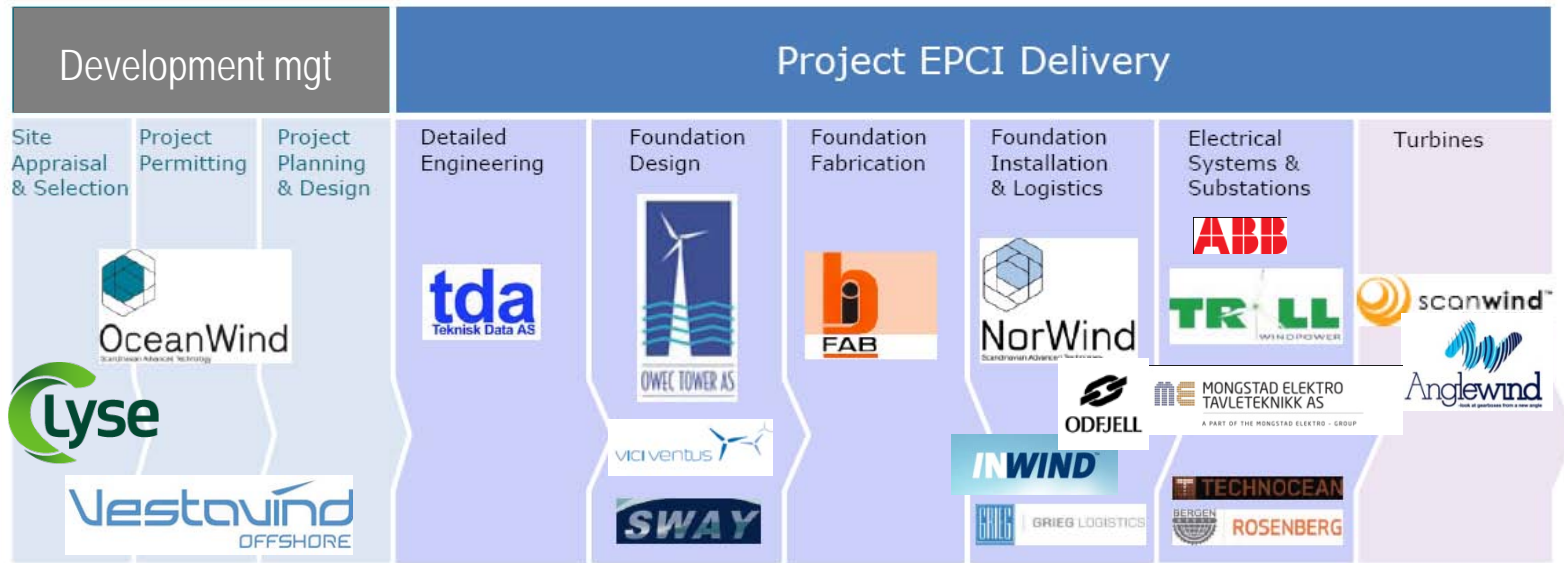
Norwegian Research Centre  
for Offshore Wind Technology

Norwegian Centre for  
Offshore Wind Energy

CEDREN

Centre for Environmental Design of Renewable Energy

# Arena NOW – an experienced cluster for realising next generation offshore wind farm solutions





## An industrial cluster of suppliers and operators working together to develop and deliver complete wind power park solutions offshore

Arena Norwegian Offshore Wind (NOW) comprises companies along the entire offshore wind value chain from prospecting and environmental studies via project development, engineering, supply of infrastructure, installation to operation of wind farms. The cluster aim to supply both services and products with a particular emphasis on marine and offshore operations where the Norwegian industry holds a strong position resulting from 40 years accumulated experience from the offshore oil and gas activity in the North Sea.

## Activities

01.02.10

Lorum ipsum offshore nyheter vestlandet  
[info informasjon >](#)

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## arena NOW

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For registration contact: [info@anow.no](mailto:info@anow.no)

# www.arenanow.no

Will be launched in May 2010

## Offshore wind – What can Norway offer?

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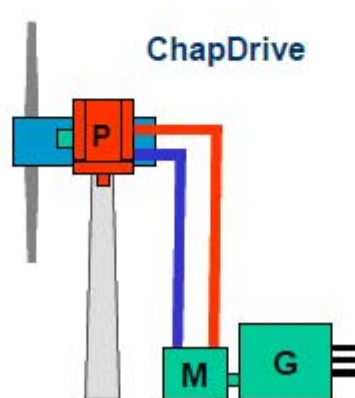
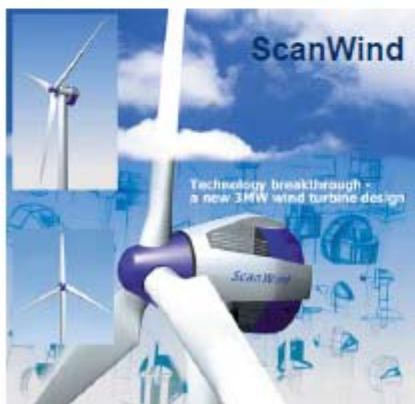
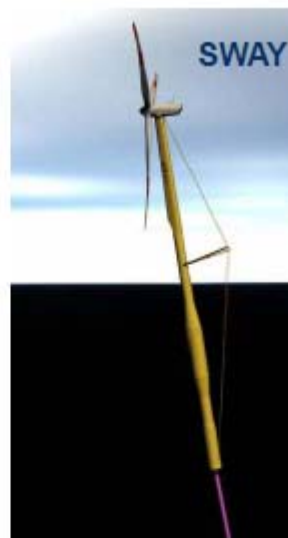
- 40 years accumulated experience from development and operations of offshore oil & gas installations
- Strong Norwegian oil & gas and maritime industry clusters with global outreach
- Strong renewable energy sector based on hydro power



- Norwegian industry is well positioned to service the emerging global offshore wind energy market

# Norway develops and supplies advanced offshore wind solutions and concepts

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# Bottom-fixed foundations - a current solution/reference!

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NorWind/BiFab/OWEC Tower



Aker Verdal



Vici Ventus

# Alpha Ventus – the first offshore wind project based upon pre-piling of jacket foundations

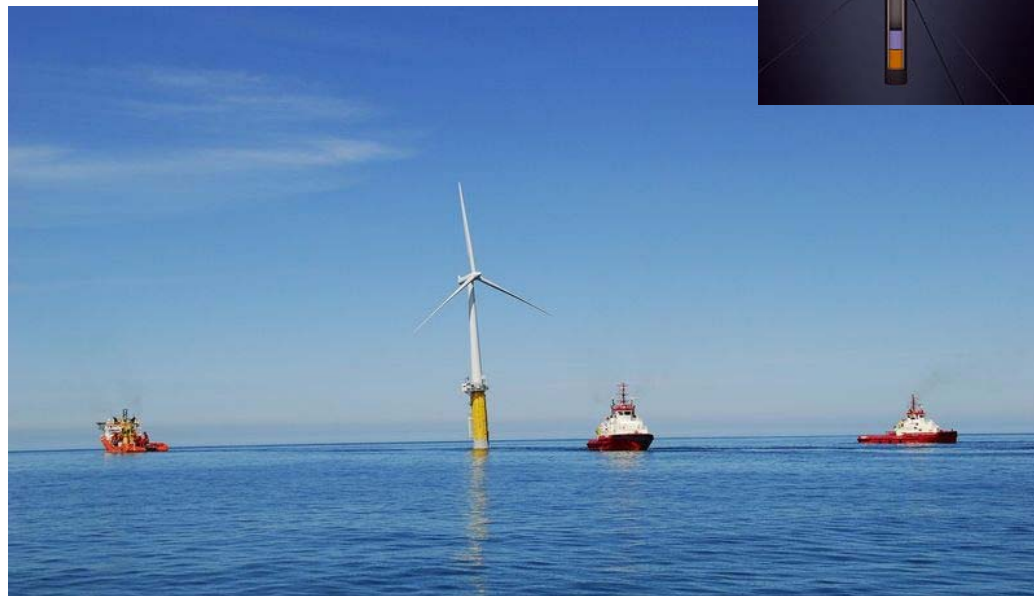
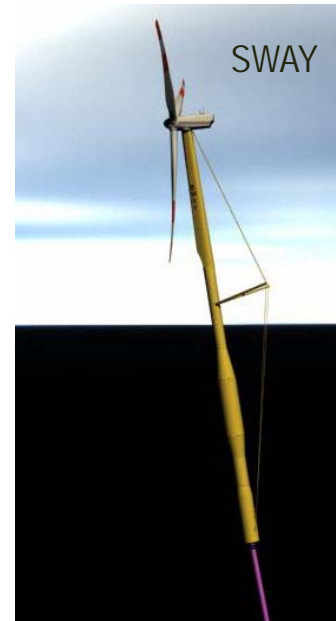
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- NorWind conducted engineering, procurement, construction and installation (EPCI) of 6 jacket foundations to first offshore project in Germany
- Client was the DOTI consortium of Vattenfall, Eon and EWE



# Floating wind turbines - a solution for the future!

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- ▶ HyWind 2,3 MW test in operation Sept. 2009
- ▶ Still a long way to go before large scale commercial deployment of floating wind turbines

# WTGs

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- SWAY
  - New 10 MW WTG prototype under development and to be tested on land near Bergen.
- GE/ScanWind
  - 4MW WTG developed and tested on land, further developments taking place in Verdal.



Courtesy SWAY

# Offshore substations

- A modular system with several advantages:
  - It makes planning easier and saves time
  - The equipment can be ordered in early stage
  - Necessary analyses can be done in advance
  - Flexible design – easy to expand

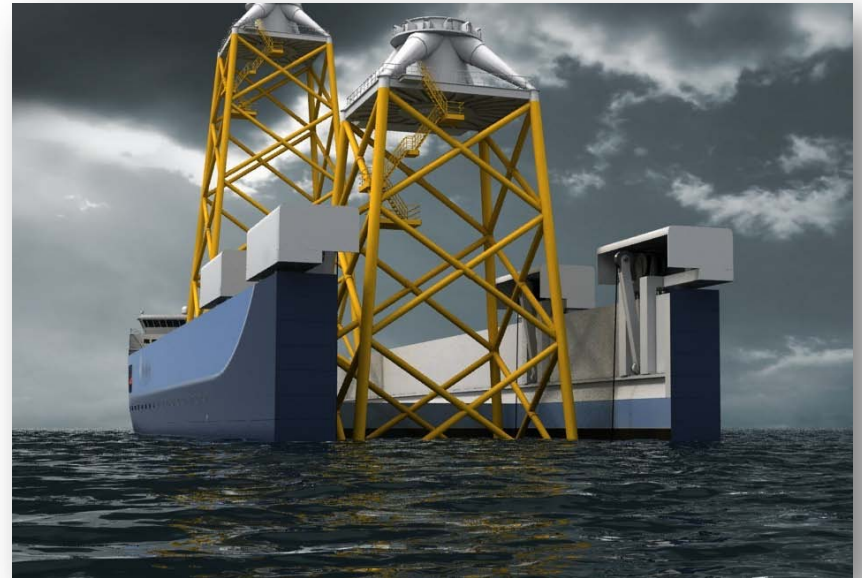


# Special purpose installation vessels being developed

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Master Marine – under construction for Sheringham Shoal work



NorWind - patent pending

# Pilot offshore wind farm in Norway

The need to develop a pilot offshore wind farm in Norway is being argued for towards Norwegian politicians from the Norwegian industry clusters and R&D Centres as Norway's Alpha Ventus.

Such a pilot is a key requisite to qualify Norwegian technology towards the large offshore wind markets in the UK and Germany.

A pilot offshore wind farm must include the development of a full scale system as well as testing out various components of offshore wind technology.

