

NOWITECH

Norwegian Research Centre for
Offshore Wind Technology

Generator

“What can we learn from the great hydro power period and bring into the wind energy period?”

It is a pleasure to invite you to an one-day seminar with focus on generator technology. Our purpose with this seminar is to communicate knowledge and experience from work with hydropower generators to participants within the wind power sector.

We will deal with electrotechnical, mechanical and production issues, see the programme.

The participants are also invited to a common dinner the evening prior to the seminar. This dinner will take place at Rica Nidelven Hotell in Trondheim.

Registration to the seminar and dinner to Randi Aukan, Randi.Aukan@sintef.no, telephone + 47 73597297.

Entry deadline: friday june 4 2010.

Programme:

10.00	Introduction to the seminar	Anngjerd Pleym
10.10	State of the art for wind power generators <ul style="list-style-type: none">• New types of generators• Dimensions• What knowledge is transferrable from hydro power generators to wind power generators?	Robert Nilssen
10.30	Turbine technology <ul style="list-style-type: none">• Internationally leading, Norwegian owned technology• Industrial thinking. How did Kværner manage to create their strong position?• Important possibilities and limitations that will govern the choice and design of the turbine• Critical requirements for interplay between turbine and generator	Hermod Brekke
11.00	Break	
11.15	The generator – historical development <ul style="list-style-type: none">• The first hydro power stations• Larger generators – up till World War II• The modern generator – the period after World War II• Barriers and break throughs• The generator in a larger context• New operational patterns, more dynamic operation.	Johan L. Amundsen
12.00	Lunch	
13.00	Stator windings <ul style="list-style-type: none">• One layer versus two layer windings• Voltage level and insulation – the development• Special windings – fractional windings• Connection/soldering• Influence from pollution/external environment	Johan L. Amundsen
13.30	Mechanical dimensioning <ul style="list-style-type: none">• Stator core and stator housing• Vibrations• Thermal expansion• Bearings	Paul-Robert Kaspersen
14.00	Break	
14.15	Temperature conditions and ventilation <ul style="list-style-type: none">• Loss mechanisms• Temperature conditions• Air cooling• Water cooling• Experience with cooling systems	Paul-Robert Kaspersen
14.45	Production and installation <ul style="list-style-type: none">• Special solutions versus standard solutions• Logistics• Transition from production in factory to production/assembly on site• Optimization focusing on production costs• The construction process, transport and assembly	Øyvind Holm
15.15	The connection from the hydro power experience to the wind power world: Can the good wind power generator be built in Norway?	Torolf Pettersen
15.45	Closure	