

CHALMERS ENERGY CONFERENCE

Electricity for tomorrow
March 28-29 2012

WEDNESDAY MARCH 28

9:30 **REGISTRATION**

10:00 **INTRODUCTION AND SETTING THE SCENE**

Chair: Helena Malmqvist, ABB

Introduction and welcome

Karin Markides, President Chalmers & Thore Berntsson, Director Chalmers Energy Area of Advance

Global, European and Swedish challenges

How can electricity make a difference?

Tomas Käberger, Chalmers Energy Area of Advance

Overview electrification of road transport

Mats Alaküla, Lund/Volvo

Use and recycling of critical materials in electrified vehicles

Maria Ljunggren Söderman, Department of Energy and Environment, Chalmers and IVL Swedish Environmental Research Institute

The future of wind power

Helge Aagaard Madsen, Technical University of Denmark

12:00 **LUNCH**

13:20 **RENEWABLE POWER
GENERATION**

Wind + Offshore

Chair: Åsa Elmqvist, Arwen Konsult

Wind power research at Chalmers

Ola Carlson, Department of Energy and Environment, Chalmers

Offshore Wind Power

Göran Dalén, WPD

Current research issues on the wind

Thomas Abrahamsson, Department of Applied Mechanics, Chalmers turbine mechanics

Wind power from a component industry perspective

Olle Bankeström, SKF

**ELECTRIFICATION OF ROAD TRANSPORT
Vehicles and Powertrains**

Chair: Bo Egardt, Department of Signals and Systems, Chalmers

Vehicles and powertrains

Ali Rabiei, Department of Energy and Environment, Chalmers

Optimal dimensioning and control of HEV powertrains via convex optimization

Nikolce Murgovski, Department of Signals and Systems, Chalmers

Volvo Cars, Plug-In Hybrid Concept Development

Klas Niste, Volvo Cars

Safe efficient vehicle solutions (SEVS) - results from an interdisciplinary scenario study

Else-Marie Malmek, Malmeken AB and Anders Grauers, Department of Signals and Systems, Chalmers

14:40 **COFFEE**

15:00 **Solar + Ocean**

Chair: Maria Grahn, Department of Energy and Environment, Chalmers

PV power - Technologies and trends

Marika Edoff, Ångströmlab Uppsala

Polymer PV - Status and challenges

Mats Andersson, Department of Chemical and Biological Engineering, Chalmers

Ocean Energy Overview - Status and Challenges

Oskar D Fängström, Pöyry SwedPower

Ocean Energy - from Research to Patents

Mats Leijon, Uppsala Universitet

Electromobility

Chair: Fredrik Persson, Göteborg Energi

Plugin and electric buses

Edward Jobson, Volvo Buses

Effects of plug-in electric vehicles on electrical distribution systems

David Steen, Department of Energy and Environment, Chalmers

Driving patterns matter

Sten Karlsson, Department of Energy and Environment, Chalmers

PrimoveCity - Electric Mobility in Public Transportation

Neil Walker, Bombardier, Germany

16:20 **COFFEE**

16:40 **Grid Integration**

Chair: Stefan Lundberg, Department of Energy and Environment, Chalmers

Wind power integration

Lennart Söder, KTH

Grid connection of Renewable Energy

Per Halvarsson, ABB Power Systems, FACTS

Integration of wind power to regional and local grids - issues and challenges

Peiyuan Chen, Department of Energy and Environment, Chalmers

Energy Storage - batteries and fuel cells

Chair: Per Jacobsson, Department of Applied Physics, Chalmers

Lithium-ion batteries - a family of chemistries with many possibilities

Kristina Edström, Uppsala Universitet

New material strategies for old and new battery concepts

Patrik Johansson, Department of Applied Physics, Chalmers

Fuel cells - when comes the next hype?

Anna Martinelli, Department of Chemical and Biological Engineering, Chalmers

17:40 **SUM UP AND DISCUSSION**

Chair: Maria Grahn, Department of Energy and Environment, Chalmers

SUM UP AND DISCUSSION

Chair: Per Jacobsson, Department of Applied Physics, Chalmers

18:00 **CONFERENCE DINNER**

THURSDAY MARCH 29

9:00

EMERGING TECHNOLOGIES - INTERNATIONAL PERSPECTIVES

Chair: Lars Holmquist, Göteborg Energi

Smarter power grid operations with synchrophasors

Jay Giri, Alstom Grid, USA

Concentrated Solar Power (CSP) - Technologies and challenges

Manuel Romero, IMDEA Energy, Spain

Magnetic Confinement Fusion - Status and challenges

Friedrich Wagner, Max-Planck-Institut for Plasma Physics, Germany

10:10

COFFEE

10:30

NEXT GENERATION NUCLEAR POWER

Generation IV, the role of nuclear

Chair: Teodora Retegan, Department of Chemical and Biological Engineering, Chalmers

Multi-physics modelling of nuclear reactor systems

Christophe Demaziere, Department of Applied Physics, Chalmers

ELECTRA-FCC, an R&D centre for Generation IV systems in Sweden

Janne Wallenius, KTH

The noble art of catching nuclear rowdies - today and in the future

Ane Håkansson, Uppsala Universitet

Implications from Fukushima & stress tests

Magnus Reinsjö, Vattenfall

SMART GRID

Chair: Lina Bertling Tjernberg, Department of Energy and Environment, Chalmers

Electrification key for Sustainable Road Transport

Bo Normark, Power Circle

The SmartGrid as a Distributed Cybersystem

Marina Papatriantafidou, Department of Computer Science and Engineering, Chalmers

Ensuring Reliability and Economic Efficiency Through Scheduling of Smart-Grid Resources

Christopher Saunders, Department of Energy and Environment, Chalmers

The future role of energy consumers: The value of flexibility

Magnus Brolin, SP

11:50

LUNCH

12:50

TOMORROW, POLICY INSTRUMENTS, BUSINESS MODELS & PRICING

Chair: Tomas Kåberger, Chalmers Energy of Advance

Sustainable energy future

Filip Johnsson, Department of Energy and Environment, Chalmers

Business models and pricing, energy services

Lars Holmquist, Göteborg Energi

The Business Model as enabler for commercializing technology innovations

Mats Williander, Viktoriainstitutet

The role of policy in the transformation of the energy sector – the case of offshore wind power

Staffan Jacobsson, Department of Energy and Environment, Chalmers

14.10

COFFEE

14:30

SUM UP AND DISCUSSION

- 15.30

Chair: Tomas Kåberger, Chalmers Energy of Advance