



Wind Generation in Power Systems: A Short Course on the Integration and Interconnection of Wind Power Plants into Electric Power Systems

September 26-29, 2006
Providence Marriott
Providence, Rhode Island

PROGRAM AGENDA

Tuesday, September 26

7:30 am – 8:30 am, Angel

Registration & Continental Breakfast

8:30 am – 5:15 pm, Angel

Day 1 – Introduction to Wind Energy and Wind Plants

8:30 am – 9:00 am

Welcome and Introduction, Charlie Smith (UWIG)

9:00 am – 9:30 am

Session 1 – Wind Turbine Orientation: Components and Systems, Steve Saylor (Vestas)

9:30 am-9:50 am, Angel

Coffee Break

9:50 am – 11:00 am

Session 2 – Global Development, Status, and Economic Drivers of Wind Power, Thomas Ackermann (energynautics)

11:10 am – 11:40 pm

Session 3 – Status and Plans for Wind Power in North America, Charlie Smith

11:50 am – 1:00 pm

Session 4 – Wind Turbine and Wind Plant Technology Overview, Thomas Ackermann

1:00 pm – 2:00 pm, Defiance/Republic

Lunch

2:00 pm – 2:50 pm

Session 5 – Wind Plant Design and Performance Considerations, Nick Miller (GE)

2:50 pm – 3:10 pm, Angel

Coffee Break

3:10 pm – 3:40 pm

Session 6 – Reactive Power Control Options for Wind Plants, Kara Clark (GE)

3:50 pm – 4:40 pm

Session 7 – Wind Power in the Danish Power System, Thomas Ackermann

4:50 pm – 5:15 pm

Session 8 – Panel Discussion

6:00 pm – 7:30 pm, Sessions

Welcome Reception

Wednesday, September 27

7:30 am – 8:30 am, Angel

Continental Breakfast

8:30 am – 5:30 pm, Angel

Day 2 – Grid Interconnection of Wind Plants

8:30 am – 9:20 am

Session 9 – Introduction to North American Grid Codes and Model Development, Bob Zavadil (EnerNex Corporation)

9:30 am – 10:20 am

Session 10 – European Grid Codes, Thomas Ackermann

10:20 am – 10:40 am, Angel

Coffee Break

10:40 am – 2:10 pm

Session 11 – Modeling and Simulation of Wind Turbines, Part I

Model Development, Testing and Validation, Nick Miller 10:40-11:30

Model Development, Testing and Validation, Martin Hogdahl 11:40-12:30

12:30-1:30 pm, Defiance/Republic

Lunch

1:30-2:10

Session 11 – Modeling and Simulation of Wind Turbines, Part II

Short Circuit Modeling, Bob Zavadil

2:20 pm – 3:00 pm

Session 12 – Case Study Results of Model Application and Interconnection Studies, Part I

Case Study 1: GE Colorado Green or Taiban Mesa, Nick Miller 2:20-3:00

3:00-3:20pm, Angel

Coffee Break

3:20 pm – 4:50 pm

Session 12 – Case Study Results of Model Application and Interconnection Studies, Part II

Case Study 2: Vestas Horns Rev, Hogdahl/Saylor 3:20-4:00

Case Study 3: Wind Plant Studies, Bob Zavadil 4:05-4:50

5:00 pm – 5:30 pm

Session 13 – Panel Discussion

Dinner in Newport

Depart Providence: 6 pm

Depart Newport: 10 pm

Thursday, September 28

7:30 am – 8:30 am, Angel

Continental Breakfast

8:30 am – 5:00 pm, Angel

Day 3 – Wind Plant Integration

8:30 am – 9:20 am

Session 14 – Power System Operations, Bob Zavadil

AGC, EMS, SCADA, control performance metrics, ancillary service requirements, operations planning

9:30 am – 10:20 am

Session 15 – Understanding Wind Plant Behavior, Nick Miller

10:20 am – 10:40 am, Angel

Coffee Break

10:40 am – 11:30 pm

Session 16 – Role of Wind Forecasting, Mark Ahlstrom (WindLogics)

11:30 pm – 12:30 pm, Defiance/Republic

Lunch

12:30 pm – 1:20 pm

Session 17 – Determination of Capacity Value, Michael Milligan (NREL)

1:30 pm – 2:20 pm

Session 18 – Integration Case Study from a Cost-based Viewpoint, Bob Zavadil

2:20 pm – 2:40 pm, Angel

Coffee Break

2:40 pm – 3:30 pm

Session 19 – Integration Case Study from Market-based Viewpoint, Kara Clark

3:40 pm – 4:30 pm

Session 20 – Transmission Planning Considerations for Wind Integration, Dale Osborn (MISO)

4:30 pm – 5:00 pm

Session 21 – Panel Discussion

Dinner on Your Own for Those Staying Through Friday

Friday, September 29

7:30 am – 8:00 am, Angel

Continental Breakfast

8:00 am – 12:15 pm, Angel

Day 4 – Computer Analysis Platforms and Models

8:00 am – 8:10 am

UWIG Modeling and Interconnection User Group Overview, Bob Zavadil

8:15 am – 9:00 am

PSLF Platform, Nick Miller

9:00 am – 9:45 am

PSS/E Platform, Yuri Kazachkov

9:45 am – 10:00 am, Angel

Coffee Break

10:00 am – 10:45 am

DigSilent Platform, DIGSILENT (invited)

10:45 am – 11:30 am

EMTP-RV Platform, Laurent Dube

11:30 am – 12:15 pm

PSCAD Platform, Bob Zavadil

12:15 pm

Adjourn