



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

September 21-24, 2010
Sheraton Austin at the Capitol
Austin, Texas

PROGRAM AGENDA

Tuesday, September 21

7:30 am – 8:30 am

Registration & Continental Breakfast

Location: Capitol F Foyer and Capitol F, G, H Foyer

8:30 am – 5:00 pm

Day 1 – Introduction to Wind Energy and Wind Plants

Location: Capitol F&G

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 – 10:00 am

Session 2 – Status and Outlook for Wind Power in North America, Charlie Smith

10:00 am - 10:20 am

Coffee Break

Location: Capitol F, G, H Foyer

10:20 – 11:30 am

Session 3 – Global Development, Status, and Economic Drivers of Wind Power, Thomas Ackermann (energynautics)

11:40 am – 12:45 pm

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

12:45 pm – 1:45 pm

Lunch

Location: Capitol H

1:45 pm – 2:55 pm

Session 5 – Wind Power in the Danish and Spanish Power System, Thomas Ackermann

2:55 pm – 3:15 pm

Coffee Break

Location: Capitol F, G, H Foyer

3:15 pm – 4:05 pm

Session 6 – Wind Plant Design and Performance Considerations, Reigh Walling (GE)

4:15 pm – 4:45 pm

Session 7 – Reactive Power Control Options for Wind Plants, Reigh Walling (GE)

4:45 pm – 5:00 pm

Session 8 – Q&A Session

6:00 pm – 7:30 pm,

Reception

Location: Creekside I and Patio

Wednesday, September 22

7:30 am – 8:30 am

Continental Breakfast

Location: Capitol F, G, H Foyer

8:30 am – 5:15 pm

Day 2 – Grid Interconnection of Wind Plants

Location: Capitol F&G

8:30 am – 9:30 am

Session 9 – European Grid Codes, Thomas Ackermann

9:40 am – 10:20 am

Session 10 – Introduction to North American Grid Codes and Model Development, Bob Zavadil (EnerNex)

10:20 am – 10:40 am

Coffee Break

Location: Capitol F, G, H Foyer

10:40 am – 2:10 pm

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

Model Development, Testing and Validation, Kara Clark (GE) 10:40-11:30

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

12:30-1:30 pm

Lunch

Location: Capitol H

1:30-2:10

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

Short Circuit Modeling, Bob Zavadil

2:20 pm – 5:00 pm

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

Case Study 1: GE Colorado Green and related studies, Reigh Walling 2:20-3:00

3:00-3:20 pm

Coffee Break

Location: Capitol F, G, H Foyer

3:20 pm – 5:00 pm

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

Case Study 2: Field Test Experience, Martin Hogdahl 3:20-4:05

Case Study 3: Wind Plant Studies, Bob Zavadil 4:15-5:00

5:00 pm – 5:15 pm

Session 13 – Q&A Session

Group Dinner at The County Line on the Hill – Board Bus on 11th Street

Thursday, September 23

7:30 am – 8:30 am

Continental Breakfast

Location: Capitol F, G, H Foyer

8:30 am – 5:00 pm

Day 3 – Wind Plant Integration

Location: Capitol F&G

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 – Large-Scale Wind Integration: Dealing with Variability and Uncertainty, Kara Clark

10:20 am – 10:40 am

Coffee Break

Location: Capitol F, G, H Foyer

10:40 am – 11:30 pm

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

11:40 pm – 12:30 pm

Session 17 – Integration Case Study from a Cost-based Viewpoint, Bob Zavadil

12:30 pm – 1:30 pm

Lunch

Location: Capitol H

1:30 pm – 2:20 pm

Session 18 – Large-Scale Wind Integration: Power System Operations and Markets, Kara Clark

2:20 pm – 2:40 pm

Coffee Break

Location: Capitol F, G, H Foyer

2:40 pm – 3:30 pm

Session 19 – Determination of Capacity Value, Michael Milligan (NREL)

3:40 pm – 4:40 pm

Session 20 – Transmission Planning for an Energy Resource, Dale Osborn (MISO)

4:40 pm – 5:00 pm

Session 21 – Closing Panel Discussion

Dinner on Your Own for Those Staying Through Friday

Friday, September 24

7:30 am – 8:00 am

Breakfast

Location: Capitol F, G, H Foyer

8:00 am – 12:00 pm

Day 4 – Computer Analysis Platforms and Models

Location: Capitol F&G

8:00 am – 8:15 am

UWIG Modeling and Interconnection User Group Overview, Bob Zavadil

8:15 am – 9:00 am

PSLF Platform, Kara Clark

9:00 am – 10:00 am

PSS/E Platform, Ping-Kwan Keung (Siemens Power T&D)

10:00 am – 10:15 am

Coffee Break

Location: Capitol F, G, H Foyer

10:15 am– 12:00 pm

Transient Simulation Programs, Bob Zavadil

12:00 pm

Optional Program Adjourns

12:15 pm

ERCOT Tour Attendees Pick Up Box Lunches and Board Bus for Tour

Location: Lunch Pickup at Capitol F, G, H Foyer – Board Bus on 11th Street