ENERGYEXECS

NREL Executive Energy Leadership Program

SYLLABUS, 2013 Energy Execs Course

Session 1 *May 29 – 31*	Introduction to NREL, National Energy Challenges, and Behind-the-Scenes NREL Tour
Session 2 *June 19 - 21*	Utility-Scale Renewable Power and Transmission, Energy Systems Integration, and the Renewable Energy Industry
Session 3 *July 17 - 19*	Economic Development and Communities of the 21st Century, Renewable Power, and High-Performance Buildings
Session 4 *August 14 - 16*	Energy-efficient Transportation and Biofuels, Putting it all together with available Tools and Resources
Session 5 *September 19 - 20*	Student Projects and Graduation

Session 1, May 29 - 31

Introduction to NREL; America's Energy Challenges and Opportunities

- Student introductions and networking
- *Meet the NREL Director*: Presentation by, and discussion
- *Field Trips*: NREL "Behind the Fence" tour and NREL National Wind Technology Center
- *Course Content:* Energy –The Big Picture, overviews on advancements in solar and wind technologies and utility-scale renewable electricity applications
- Hosted evening reception

Session 2, June 19-21

Utility-Scale Renewable Electricity and Energy Systems Integration; Sustainable Building Design

- *Day 1 Course Content:* What are the opportunities and barriers for utility-scale renewable energy generation, regional grid integration and associated manufacturing opportunities
- Day 2 Course Content: Systems integration, the Smart Grid and using NREL's sustainable campus building design as a living-laboratory
- *Field trips*: NREL new Energy Systems Integration facility, renewable energy manufacturing plant

Session 3, July 17-19

Economic and Community Development

- *Course Content:* The economic impacts of planned ultra-efficient communities and renewable energy power. Buildings account for 72% of America's electricity use. How can the power footprint be reduced and new models implemented? Ultra energy efficient neighborhoods and/or energy-producing buildings. How a community comes together to

rebuild a Greentown after disaster. Building design and construction, performance characteristics, analytical tools, and cost.

- *Field Trip:* Lamar Wind Site and Greensburg, Kansas

Session 4, August 14–16

Energy-efficient Transportation, Bringing it all together with Resources and Tools

- *Course Content, Transportation & Fuels:* How does America address the technological inefficiencies that also have critical implications for our national security? This unit will explore the challenges and opportunities in transportation; biofuels; and electric vehicles.
- *Course Content, Resources and Tools:* Analytical, economic and resource tools to aid in making informed energy decisions supporting planning and financial decisions.
- *Field Trips:* NREL Biofuels facilities, Vehicle Testing Facilities

Session 5, September 19-20

Class Projects and Graduation

- Student presentations of their projects
- Graduation
- *Field Trip: TBD*