



U.S. DEPARTMENT OF  
**ENERGY**



## Crosscutting Research and Advanced Energy Systems Project Review Meeting Transformative Power Generation Virtual Session Agenda

All times designated in Eastern Daylight Time

**Tuesday, May 11, 2021**

**9:00 AM**      **Welcome & Overview of NETL Supported Topics in Transformative Power Generation**  
Dave Lyons, National Energy Technology Laboratory

### **Advanced Combustion Key Technologies I**

Moderator: Steve Markovich

- 9:30 AM**      **Advanced Cost-Effective Coal-Fired Rotating Detonation Combustor for High Efficiency Power Generation (FE0031545)**  
Kareem Ahmed, University of Central Florida
- 10:00 AM**      **Particle Separator for Improved Flameless Pressurized Oxy-Combustion (FE0031549)**  
Joshua Schmitt, Southwest Research Institute (SwRI)
- 10:30 AM**      **Characterizing Impacts of Dry Coal Feeding in High Pressure Oxy-Coal Combustion Systems (FE0029162)**  
Andrew Chiodo, Reaction Engineering International
- 11:00 AM**      **Development of Enabling Technologies for a Pressurized Dry Feed Oxy-Coal Reactor (FE0029157)**  
Andrew Fry, Brigham Young University
- 11:30 AM**      **Low-Cost and Recyclable Oxygen Carrier and Novel Process for Chemical Looping Combustion (FE0031534)**  
Junior Nasah, University of North Dakota Energy and Environmental Research Center (UNDEERC)
- 12:00 PM**      **BREAK**

### **Advanced Combustion Key Technologies II**

Moderator: Jason Montgomery

**12:30 PM**      **Direct Combustion of Fine Coal from Coal Waste (SC0018502)**  
Fei Yi, TDA Research, Inc.

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**1:00 PM      Combustion Modeling for Direct Fired Supercritical CO<sub>2</sub> Power Cycles (SC0017235)**  
William Calhoun, Combustion Research and Flow Technology, Inc.

**1:30 PM      Development and Commercialization of IDAES-Based Performance Monitoring and  
Optimization System (SC0020794)**  
Rodney Gay, MapEx Software, Inc.

### **Energy Storage Key Technologies**

Moderator: Matthew Adams

**2:00 PM      Flexible Coal Power Plant Operation with Thermal Energy Storage Utilizing Thermosiphons  
and Cementitious Materials (FE0031755)**  
Sudhakar Neti, Lehigh University

**2:30 PM      Concrete Thermal Energy Storage Enabling Flexible Operation Without Coal Plant Cycling  
(FE0031761)**  
Scott Hume, Electric Power Research Institute

**3:00 PM      Hybrid Gas Coal Combustion System with Energy Storage (SC0020863)**  
Srivats Srinivasachar, Envergex, LLC

**3:30 PM      Mathematical Models of Energy Storage Technologies Used with Coal FIRST Power  
Generators (SC0020852)**  
Anoop Mathur, Terrafore Technologies, LLC



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**Wednesday, May 12, 2021**

**9:45 AM**      **Arrive/ Assemble, Agenda Review, and Introductory Remarks**  
Dave Lyons, National Energy Technology Laboratory

**Improvements for Existing Plants/Systems**  
Moderator: Richard Dalton

**10:00 AM**      **Extended Low Load Boiler Operation to Improve Performance and Economics of an Existing Coal Fired Power Plant (FE0031546)**  
Allan Ferry, GE Steam Power, Inc.

**10:30 AM**      **Integrated Boiler Management through Advanced Condition Monitoring and Component Assessment (FE0031683)**  
Kent Coleman, Electric Power Research Institute

**11:00 AM**      **Energy Technology Systems and Market Analyses (FWP-1022461 - Task 2)**  
John Brewer, National Energy Technology Laboratory

**11:30 AM**      **Plasma Ignition and Combustion Stabilization Technology to Improve Flexible Operation, Reliability and Economics of an Existing Coal Fired Boiler (FE0031766)**  
Dennis Barlow, GE Steam Power, Inc.

**12:00 PM**      **Transient Efficiency Flexibility and Reliability Optimization of Coal Fired Power Plants (FE0031767)**  
Mustafa Dokucu, General Electric (GE) Company

**12:30 PM**      **BREAK**

**Improvements for Existing Plants/Condensers**  
Moderator: Debalina Dasgupta

**1:00 PM**      **Advanced Anti-Fouling Coatings to Improve Coal-Fired Condenser Efficiency (FE0031533)**  
Matthew Nakstsuka, Oceanit Laboratories, Inc.

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- 1:30 PM      Investigation of Technologies to Improve Condenser Heat Transfer and Performance in a Relevant Coal-Fired Power Plant (FE0031762)**  
Andy Howell, Electric Power Research Institute
- 2:00 PM      Anti-Biofouling Surface Treatments for Improved Condenser Performance for Coal-Based Power Plants (FE0031764)**  
Mustapha Soukri, Research Triangle Institute (RTI)

### **Improvements for Existing Plants/Ash Deposition**

Moderator: Debalina Dasgupta

- 2:30 PM      Ash Fouling Free Regenerative Air Preheater for Deep Cyclic Operation (FE0031757)**  
Kunlei Liu, University of Kentucky
- 3:00 PM      Mitigation of Aerosol Impacts on Ash Deposition and Emissions from Coal Combustion (FE0031756)**  
Nicole Nguyen, Barr Engineering