



Advanced Energy Storage Initiative Program Project Review Meeting

Energy Storage for Fossil Power Generation

Day 1 - Session 1 | Chemical Technology Projects | April 5, 2021

Time (EST)	Project ID	Project Title	Presenter/ Organization	Area of Interest
12:30 - 12:40 PM	Introduction			
MODERATOR: Jason Hissam				
12:40 - 12:50 PM	FE0032012	Hydrogen Storage for Flexible Fossil Fuel Power Generation: Integration of Underground Hydrogen Storage with Novel Gas Turbine Technology	<i>Jeff Mays</i> Gas Technology Institute	FOA 2332 AOI 1
12:50 - 1:00 PM	FE0032008	Hydrogen Storage for Load-Following and Clean Power: Duct-firing of Hydrogen to Improve the Capacity Factor of NGCC	<i>Jeff Mays</i> Gas Technology Institute	FOA 2332 AOI 1
1:00 - 1:10 PM	FE0032013	Integrated Hydrogen Energy Storage System (IHESS) for Power Generation	<i>William Benincosa</i> Gas Technology Institute	FOA 2332 AOI 1
1:10 - 1:20 PM	FE0032021	Hydrogen Based Energy Storage System for Integration with Dispatchable Power Generator—Phase I Feasibility Study	<i>Vince McDonell</i> University of California, Irvine	FOA 2332 AOI 1
1:20 - 1:30 PM	Summary/Questions			
1:30 - 1:40 PM	10-Minute Break			
MODERATOR: Omer Bakshi				
1:40 - 1:50 PM	FE0032006	Clemson Hydrogen Combined Heat and Power Storage System	<i>Thomas Koeppe</i> Siemens Energy, Inc.	FOA 2332 AOI 1
1:50 - 2:00 PM	FE0032028	Hydrogen Energy Storage Integrated with a Combined Cycle Plant	<i>Omar Rubio</i> Siemens Energy, Inc.	FOA 2332 AOI 1
2:00 - 2:10 PM	FE0032015	H-2-SALT: Storing Fossil Energy as Hydrogen in Salt Caverns	<i>Franciszek Hasiuk</i> University of Kansas	FOA 2332 AOI 1
2:10 - 2:20 PM	FE0032001	Economically Viable Intermediate to Long Duration Hydrogen Energy Storage Solutions for Fossil Fueled Assets	<i>Zhili Feng</i> WE New Energy, Inc.	FOA 2332 AOI 1
2:20 - 2:30 PM	FE0032032	Reversible SOFC Systems for Energy Storage and Hydrogen Production	<i>Hossein Ghezel-Ayagh</i> FuelCell Energy, Inc.	FOA 2332 AOI 1
2:30 - 2:40 PM	Summary/Questions			
2:40 - 2:50 PM	10-Minute Break			



Advanced Energy Storage Initiative Program Project Review Meeting

Energy Storage for Fossil Power Generation

Day 1 - Session 2 | Chemical Technology Projects | April 5, 2021

Time (EST)	Project ID	Project Title	Presenter/ Organization	Area of Interest
MODERATOR: Anthony Zinn				
2:50 - 3:00 PM	FE0032033	Advanced Hydrogen Compressor for Hydrogen Storage Integrated with a Power Plant	<i>Kirk Lupkes</i> Siemens Energy, Inc.	FOA 2332 AOI 2
3:00 - 3:10 PM	FE0032003	Development of an Advanced Hydrogen Energy Storage System using Aerogel in a Cryogenic Flux Capacitor	<i>Joshua Schmitt</i> Southwest Research Institute	FOA 2332 AOI 2
3:10 - 3:20 PM	FE0032022	Durable Low-Cost Pressure Vessels for Bulk Hydrogen Storage	<i>Ashok Saxena</i> WireTough Cylinders, LLC	FOA 2332 AOI 2
3:20 - 3:30 PM	FE0032023	Advanced Oxygen-Free Electrolyzer for Ultra-Low-Cost H ₂ Storage for Fossil Plants	<i>Pinakin Patel</i> T2M GLOBAL, LLC	FOA 2332 AOI 2
3:30 - 3:40 PM	Summary/Questions			
3:40 - 3:50 PM	10-Minute Break			
MODERATOR: Adam Payne				
3:50 - 4:00 PM	FE0032014	Ammonia-Based Energy Storage Technology (NH ₃ -BEST)	<i>Ted Aulich</i> University of North Dakota EERC	FOA 2332 AOI 3
4:00 - 4:10 PM	FE0032005	Reversible Methane Electrochemical Reactors as Efficient Energy Storage for Fossil Power Generation	<i>Pejman Kazempoor</i> University of Oklahoma	FOA 2332 AOI 3
4:10 - 4:20 PM	FE0032010	Low-Cost, Scalable Boron Nitride-Based Sorbents with Balanced Capacity-Kinetics-Thermodynamics for Hydrogen Storage in Fossil Fuel Power Plants	<i>Rouzbeh Shahsavari</i> C-Crete Technologies	FOA 2332 AOI 3
4:20 - 4:30 PM	Summary/Questions/Wrap Up			



Advanced Energy Storage Initiative Program Project Review Meeting
Energy Storage for Fossil Power Generation

Day 2 - Session 1 | Thermal Technology, Mechanical, and Innovation Technology Projects | April 6, 2021

Time (EST)	Project ID	Project Title	Presenter/ Organization	Area of Interest
12:30 - 12:40 PM	Introduction			
MODERATOR: Barbara Carney				
12:40 – 12:50 PM	FE0032017	Modular, Crushed-Rock Thermal Energy Storage Pilot Design	<i>Horst Hack</i> Electric Power Research Institute, Inc.	FOA 2332 AOI 1
12:50 – 1:00 PM	FE0032024	Sand Thermal Energy Storage (SandTES) Pilot Design	<i>Andrew Maxson</i> Electric Power Research Institute, Inc.	FOA 2332 AOI 1
1:00 – 1:10 PM	FE0032016	Liquid Salt Combined-Cycle Pilot Plant Design	<i>Scott Hume</i> Electric Power Research Institute, Inc.	FOA 2332 AOI 1
1:10 – 1:20 PM	FE0032007	Low Cost Sulfur Thermal Storage for Increased Flexibility and Improved Economics of Fossil-Fueled Electricity Generation Units	<i>Karthik Nithyanandam</i> Element 16 Technologies, Inc.	FOA 2332 AOI 1
1:20 – 1:30 PM	Summary/Questions			
1:30 – 1:40 PM	10-Minute Break			
MODERATOR: Maria Reidpath				
1:40 - 1:50 PM	FE0032031	Integration of Pumped Heat Energy Storage with Fossil-Fired Power Plant	<i>Natalie Smith</i> Southwest Research Institute	FOA 2332 AOI 1
1:50 - 2:00 PM	FE0032029	Combined Cycle integrated Thermal Energy Storage	<i>Thorsten Wolf</i> Siemens Energy, Inc.	FOA 2332 AOI 1
2:00 - 2:10 PM	FE0032019	Illinois Compressed Air Energy Storage	<i>Hannes Leetaru</i> University of Illinois	FOA 2332 AOI 1
2:10 - 2:20 PM	FE0032018	Natural Gas Based Energy Storage at Abbott Power Plant	<i>Kevin Obrien</i> University of Illinois	FOA 2332 AOI 1
2:20 - 2:30 PM	FE0032020	Energy-Storing Cryogenic Carbon Capture™ for Utility- and Industrial-scale Processes	<i>Larry Baxter</i> Sustainable Energy Solutions	FOA 2332 AOI 1
2:30 - 2:40 PM	Summary/Questions			
2:40 - 2:50 PM	10-Minute Break			



Advanced Energy Storage Initiative Program Project Review Meeting

Energy Storage for Fossil Power Generation

**Day 2 - Session 2 | Thermal Technology, Mechanical, and Innovation Technology Projects |
April 6, 2021**

Time (EST)	Project ID	Project Title	Presenter/ Organization	Area of Interest
MODERATOR: Vito Cedro				
2:50 - 3:00 PM	FE0032011	Titanium-Cerium Electrode-Decoupled Redox Flow Batteries Integrated with Fossil Fuel Assets for Load-Following, Long-Duration Energy Storage	<i>Benjamin Kumfer</i> The Washington University of Saint Louis	FOA 2332 AOI 2
3:00 - 3:10 PM	FE0032004	Repurposing Fossil-Fueled Assets for Energy Storage	<i>Benjamin Bollinger</i> Malta, Inc.	FOA 2332 AOI 3
3:10 - 3:20 PM	FE0032030	Development of an All-Aqueous Thermally Regenerative Redox Flow Battery to Support Fossil Fuel Assets	<i>Derek Hall</i> Pennsylvania State University, University Park	FOA 2332 AOI 3
3:20 - 3:30 PM	FE0032002	Liquid Air Combined Cycle for Power and Storage	<i>Aaron Rimpel</i> Southwest Research Institute	FOA 2332 AOI 3
3:30 - 3:40 PM	Summary/Questions			
3:40 - 3:50 PM	10-Minute Break			
MODERATOR: Jason Hissam				
3:50 - 4:00 PM	SC0021478	Pumped-Storage Hydropower using Abandoned Underground Mines as an Innovative Energy Storage Technology for Fossil-Integrated Systems	<i>Kevin Ellett</i> Carbon Solutions, LLC	FOA 2359 26A
4:00 - 4:10 PM	SC0021489	Integration of Superconducting Magnetic Energy Storage (SMES) Systems Optimized with Second-Generation, High-Temperature Superconducting (2G-HTS) Technology with a Major Fossil-Fueled Asset	<i>Tony Morris</i> American Maglev Technologies of Florida, Inc.	FOA 2359 26A
4:10 - 4:20 PM	SC0021566	Low-Cost Metal-Supported Metal Halide Energy Storage Technology	<i>Neil Kidner</i> Nexceris, LLC	FOA 2359 26A
4:20 - 4:30 PM	Summary/Questions/Wrap-Up			