

## Appendix D. List of Projects

### Oral Presentations

Project ID	Project Title	Principal Investigator Name	Organization
ARPAE-001	Co-Synthesis of Hydrogen and High-Value Carbon Products from Methane Pyrolysis	Matteo Cargnello	Stanford University
ARPAE-002	High-Power-Density Carbon-Neutral Electrical Power Generation for Air Vehicles	Rory Roberts	Tennessee Technological University
BES-001	Electrocatalysis in Alkaline Media at the Center for Alkaline-Based Energy Solutions (CABES)	Hector "Tito" Abruña	Cornell University
BES-002	Critical Importance of Renewable Hydrogen for Carbon-Neutral Carbon Dioxide Conversion	Jingguang Chen	Columbia University
FC-160	ElectroCat 2.0 (Electrocatalysis Consortium)	Deborah Myers and Piotr Zelenay	Argonne National Laboratory and Los Alamos National Laboratory
FC-167	Fiscal Year 2020 Small Business Innovation Research (SBIR) IIA: Multi-Functional Catalyst Support	Minette Ocampo	pH Matter, LLC
FC-323	Durable Fuel Cell Membrane Electrode Assembly through Immobilization of Catalyst Particle and Membrane Chemical Stabilizer	Nagappan Ramaswamy	General Motors, LLC
FC-326	Durable Membrane Electrode Assemblies for Heavy-Duty Fuel Cell Electric Trucks	John Slack	Nikola Motor Company
FC-327	Durable High-Power-Density Fuel Cell Cathodes for Heavy-Duty Vehicles	Shawn Litster	Carnegie Mellon University
FC-333	Advanced Membranes for Heavy-Duty Fuel Cell Trucks	Andrew Barker	Nikola Motor Company
FC-334	Extending Perfluorosulfonic Acid Membrane Durability through Enhanced Ionomer Backbone Stability	Gregg Dahlke	3M Company
FC-335	Additive Functionalized Polymers for Extended Heavy-Duty Polymer Electrolyte Membrane Lifetimes	Tom Corrigan	The Lubrizol Corporation
FC-336	A Systematic Approach to Developing Durable, Conductive Membranes for Operation at 120°C	Tom Zawodzinski	University of Tennessee, Knoxville

Project ID	Project Title	Principal Investigator Name	Organization
FC-337	Cummins Polymer Electrolyte Membrane Fuel Cell System for Heavy-Duty Applications	Jean St-Pierre	Cummins Inc.
FC-338	Domestically Manufactured Fuel Cells for Heavy-Duty Applications	John Lawler	Plug Power Inc.
FC-339	M2FCT: Million Mile Fuel Cell Truck Consortium	Rod Borup and Adam Weber	Los Alamos National Laboratory and Lawrence Berkeley National Laboratory
FC-353	Fuel Cell Cost and Performance Analysis	Brian James	Strategic Analysis, Inc.
FC-354	L'Innovator Program	Emory De Castro	Advent Technologies
FC-356	Fiscal Year 2021 Small Business Innovation Research (SBIR) I: Durable High-Efficiency Membrane and Electrode Assemblies for Heavy-Duty Fuel Cell Vehicles	Hui Xu	Giner, Inc.
FE-001	Subsurface Hydrogen Assessment, Storage, and Technology Acceleration (SHASTA)	Angela Goodman, Joshua White, and Nicolas Huerta	National Energy Technology Laboratory, Lawrence Livermore National Laboratory, and Pacific Northwest National Laboratory
FE-002	A Highly Efficient and Affordable Hybrid System for Hydrogen and Electricity Production	Ying Liu	Phillips 66 Company
FE-003	Performance Improvements for Reversible Solid Oxide Fuel Cell Systems	Hossein Ghezeli-Ayagh	FuelCell Energy, Inc.
FE-004	Performance Validation of a Thermally Integrated 50 kW High-Temperature Electrolyzer System	Tyler Westover	Idaho National Laboratory
FE-005	Comparison of Commercial, State-of-the-Art, Fossil-Based Hydrogen Production Technologies	Eric Lewis	National Energy Technology Laboratory
IA-001	H2@Rescue: Design and Deployment of Polymer Electrolyte Membrane Fuel Cell–Battery-Powered Hybrid Emergency Relief Truck	Archit Koti	Cummins Inc.
IN-015	Optimizing the Heisenberg Vortex Tube for Hydrogen Cooling	Jacob Leachman	Washington State University

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IN-016	Free-Piston Expander for Hydrogen Cooling	Devin Halliday	Gas Technology Institute
IN-034	HyBlend: Pipeline Cooperative Research and Development Agreement Cost and Emissions Analysis	Mark Chung	National Renewable Energy Laboratory
IN-035	HyBlend: Pipeline Cooperative Research and Development Agreement Materials Research and Development	Chris San Marchi	Sandia National Laboratories
NE-001	Dynamic Nuclear Thermal Energy Integration for High-Temperature Electrolysis	Shannon Bragg-Sitton	Idaho National Laboratory
NE-002	Nuclear Hydrogen and Synthetic Diesel and Jet Fuel	Amgad Elgowainy and Richard Boardman	Argonne National Laboratory and Idaho National Laboratory
P-148	HydroGEN Overview: A Consortium on Advanced Water-Splitting Materials	Huyen Dinh	National Renewable Energy Laboratory
P-196	H2NEW Consortium: Hydrogen from Next-Generation Electrolyzers of Water	Bryan Pivovar and Richard Boardman	National Renewable Energy Laboratory and Idaho National Laboratory
P-197	Advanced Manufacturing Processes for Gigawatt-Scale Proton Exchange Membrane Water Electrolyzer Oxygen Evolution Reaction Catalysts and Electrodes	Andrew Steinbach	3M Company
P-198	Enabling Low-Cost Polymer Electrolyte Membrane Electrolysis at Scale Through Optimization of Transport Components and Electrode Interfaces	Chris Capuano	Nel Hydrogen
P-199	Integrated Membrane Anode Assembly and Scale-Up	Monjid Hamdan	Plug Power Inc.
SA-174	Life Cycle Analysis of Hydrogen Pathways	Amgad Elgowainy	Argonne National Laboratory
SA-175	Regional Hybrid Energy Systems Technoeconomic Analysis	Mark Ruth	National Renewable Energy Laboratory
SA-181	Global Change Analysis Model Expansion – Hydrogen Pathways	Page Kyle	Pacific Northwest National Laboratory
SA-182	Biomass Gasification Optimal Business Case Analysis Tool	Bridger Cook	Oregon State University

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SA-183	H2X: A Tool to Run Green Hydrogen Business Analysis Scenarios in Seconds	Sharun Kumar	University of California, Berkeley
SA-185	Hydrogen Business Appraisal Tool	Nicolas Alfonso Vargas	University of Southern California
SCS-010	Research and Development for Safety, Codes and Standards: Hydrogen Behavior	Ethan Hecht	Sandia National Laboratories
SCS-011	Hydrogen Quantitative Risk Assessment	Brian Ehrhart	Sandia National Laboratories
SCS-019	Hydrogen Safety Panel, Safety Knowledge Tools, and First Responder Training Resources	Nick Barilo	Pacific Northwest National Laboratory
SCS-021	National Renewable Energy Laboratory Hydrogen Sensor Testing Laboratory	William Buttner	National Renewable Energy Laboratory
SCS-028	Hydrogen Education for a Decarbonized Global Economy (H2EDGE)	Thomas Reddoch	Electric Power Research Institute
ST-236	Low-Cost, High-Performance Carbon Fiber for Compressed Natural Gas Storage Tanks	Xiaodong Li	University of Virginia
ST-237	Carbon Composite Optimization Reducing Tank Cost	Dylan Winter	Hexagon R&D LLC
ST-238	Low-Cost, High-Strength Hollow Carbon Fiber for Compressed Gas Storage Tanks	Matthew Weisenberger	University of Kentucky
ST-239	Melt-Spun Polyacrylonitrile Precursor for Cost-Effective Carbon Fibers in High-Pressure Compressed Gas Tankage	Erin Brophy	Collaborative Composite Solutions Corporation
ST-240	Cost-Optimized Structural Carbon Fiber for Hydrogen Storage Tanks	Amit Naskar	Oak Ridge National Laboratory
ST-241	First Demonstration of a Commercial-Scale Liquid Hydrogen Storage Tank Design for International Trade Applications	Jo-Tsu Liao	Shell
TA-001	Membrane Electrode Assembly Manufacturing Research and Development	Michael Ulsh	National Renewable Energy Laboratory

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TA-018	High-Temperature Electrolysis Test Stand	Micah Casteel	Idaho National Laboratory
TA-028	Demonstration of Electrolyzer Operation at a Nuclear Plant to Allow for Dynamic Participation in an Organized Electricity Market and In-House Hydrogen Supply	Uuganbayar Otgonbaatar	Exelon Corporation
TA-037	Demonstration and Framework for H2@Scale in Texas and Beyond	Rich Myhre	Frontier Energy, Inc.
TA-039	Solid Oxide Electrolysis System Demonstration	Hossein Ghezeli-Ayagh	FuelCell Energy, Inc.
TA-043	Electrolyzer Stack Development and Manufacturing	Olga Marina	Pacific Northwest National Laboratory
TA-044	System Demonstration for Supplying Clean, Reliable, and Affordable Electric Power to Data Centers using Hydrogen Fuel	Paul Wang	Caterpillar, Inc.
TA-045	Waterfront Maritime Hydrogen Demonstration Project	Narendra Pal	Hornblower Group
TA-048	Advanced Research on Integrated Energy Systems (ARIES) / Flatirons Facility – Hydrogen System Capability Buildout	Daniel Leighton	National Renewable Energy Laboratory
TA-049	High-Pressure, High-Flow-Rate Dispenser and Nozzle Assembly for Heavy-Duty Vehicles	Spencer Quong	Electricore Inc.
TA-051	Low Total Cost of Hydrogen by Exploiting Offshore Wind and Polymer Electrolyte Membrane Electrolysis Synergies	Hui Xu	Giner, Inc.
TA-052	Solid Oxide Electrolysis Cells Integrated with Direct Reduced Iron Plants for Producing Green Steel	Jack Brouwer	University of California, Irvine
TA-053	Grid-Interactive Steelmaking with Hydrogen	Ronald Omalley	Missouri University of Science and Technology
TA-054	Anion Exchange Membrane Water Electrolyzer for Hydrogen Production from Offshore Wind	Richard Masel	Alchemr, Inc.
TA-060	U.S. Wind-to-Hydrogen Modeling, Analysis, Testing, and Collaboration	Sam Sprik	National Renewable Energy Laboratory

Project ID	Project Title	Principal Investigator Name	Organization
TA-065	Total Cost of Ownership Analysis of Hydrogen Fuel Cells in Off-Road Heavy-Duty Applications – Preliminary Results	Rajesh Ahluwalia	Argonne National Laboratory

## Poster Presentations

Project ID	Project Title	Principal Investigator Name	Organization
AMO-000	Advanced Manufacturing Office Overview of Hydrogen-Related Activities	Joe Cresko	U.S. Department of Energy, Advanced Manufacturing Office
AMO-001	Flexible Natural Gas/Hydrogen Engine for Combined Heat and Power Applications	Jaswinder Singh	Caterpillar, Inc.
AMO-002	Smart Gas Quality Sensor for HyBlends in Support of Combined Heat and Power Demonstration in District Energy Systems	Sreenath Gupta	Argonne National Laboratory
ARPAE-000	ARPA-E Hydrogen and Fuel Cell Portfolio	Grigorii Soloveichik	U.S. Department of Energy, Advanced Research Projects Agency – Energy
ARPAE-003	A Hybrid Electrochemical and Catalytic Compression System for Direct Generation of High-Pressure Hydrogen at 700 bar	Chengxiang Xiang	California Institute of Technology
ARPAE-004	Solid Oxide Fuel Cell–Turbine Hybrid Power System	Scott Swartz	Nexceris, LLC
ARPAE-005	Adaptive Solid Oxide Fuel Cell for Ultra-High-Efficiency Systems	Hossein Ghezel-Ayagh	FuelCell Energy, Inc.
ARPAE-006	Micro-Hybrid Development with Enabling Controls	David Tucker	National Energy Technology Laboratory
ARPAE-007	Metal-Supported Solid Oxide Fuel Cells for Ethanol-Fueled Vehicles	Mike Tucker	Lawrence Berkeley National Laboratory
ARPAE-008	Hybrid Solid Oxide Fuel Cell–Turbogenerator for Aircraft	Chris Cadou	University of Maryland
ARPAE-009	Ammonia: Key to Expanding Deployment and Utilization of Green Hydrogen	Colin Wolden	Colorado School of Mines

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ARPAE-010	Carbon-Dioxide-Free Hydrogen and Solid Carbon from Natural Gas via Metal Salt Intermediates	Jonah Erlebacher	Johns Hopkins University
ARPAE-011	Channeling Engineering of Hydroxide Ion Exchange Polymers and Reinforced Membranes	Chulsung Bae	Rensselaer Polytechnic Institute
ARPAE-012	Bipolar Membranes with an Electrospun Three-Dimensional Junction	Peter Pintauro	Vanderbilt University
ARPAE-013	High-Efficiency and Low-Carbon Energy Storage and Power Generation System for Electric Aviation	Nguyen Minh	University of California, San Diego
BES-000	Office of Basic Energy Sciences Overview of Hydrogen-Related Activities	John Vetrano	U.S. Department of Energy, Office of Science
FC-170	ElectroCat: Durable Manganese-Based Platinum-Group-Metal-Free Catalysts for Polymer Electrolyte Membrane Fuel Cells	Hui Xu	Giner, Inc.
FC-172	ElectroCat: Highly Active and Durable Platinum-Group-Metal-Free Oxygen Reduction Reaction Electrocatalysts through the Synergy of Active Sites	Yuyan Shao	Pacific Northwest National Laboratory
FC-304	ElectroCat: Fuel Cell Membrane Electrode Assemblies with Platinum-Group-Metal-Free Nanofiber Cathodes	Peter Pintauro	Vanderbilt University
FC-307	Cyclic Olefin Copolymer-Based Alkaline Exchange Polymers and Reinforced Membranes	Chulsung Bae	Rensselaer Polytechnic Institute
FC-308	Advanced Anion Exchange Membranes with Tunable Water Transport for Platinum-Group-Metal-Free Anion Exchange Membrane Fuel Cells	Michael Hickner	The Pennsylvania State University
FC-309	Polymerized Ionic Liquid Block Co-Polymer/Ionic Liquid Composite Ionomers for High-Current-Density Performance	Joshua Snyder	Drexel University
FC-314	Efficient Reversible Operation and Stability of Novel Solid Oxide Cells	Scott Barnett	Northwestern University
FC-317	Stationary Direct Methanol Fuel Cells Using Pure Methanol	Xianglin Li	University of Kansas
FC-328	Fiscal Year 2019 Small Business Innovation Research (SBIR) II: Novel Fluorinated Ionomer for Polymer Electrolyte Membrane Fuel Cells	Hui Xu	Giner, Inc.

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FC-330	High-Efficiency Reversible Solid Oxide System	Hossein Ghezeli-Ayagh	FuelCell Energy, Inc.
FC-331	A Novel Stack Approach to Enable High Round-Trip Efficiencies in Unitized Polymer Electrolyte Membrane Regenerative Fuel Cells	Katherine Ayers	Nel Hydrogen
FC-332	Reversible Fuel Cell Cost Analysis	Max Wei	Lawrence Berkeley National Laboratory
FC-341	Advanced Anion Exchange Membrane Fuel Cells through Material Innovation	Yu Seung Kim	Los Alamos National Laboratory
FC-342	Advanced Ionomers and Membrane Electrode Assemblies for Alkaline Membrane Fuel Cells	Bryan Pivovar	National Renewable Energy Laboratory
FC-343	Fiscal Year 2020 Small Business Innovation Research (SBIR) II: Improved Ionomers and Membranes for Fuel Cells	Chris Topping	Tetramer Technologies, LLC
FC-344	Low-Cost Corrosion-Resistant Coated Aluminum Bipolar Plates by Elevated Temperature Formation and Diffusion Bonding	J.V. Yang	Raytheon Technologies Research Center
FC-345	Development and Manufacturing for Precious-Metal-Free Metal Bipolar Plate Coatings for Polymer Electrolyte Membrane Fuel Cells	CH Wang	Treadstone Technologies, Inc.
FC-346	Fully Unitized Fuel Cell Manufactured by a Continuous Process	Jon Owejan	Plug Power Inc.
FC-347	Development of Low-Cost Thin Flexible Graphite Bipolar Plates for Heavy-Duty Fuel Cell Applications	David Chadderdon	NeoGraf Solutions, LLC
FC-348	Fuel Cell Bipolar Plate Technology Development for Heavy-Duty Applications	Siguang Xu	General Motors, LLC
FC-349	Foil-Bearing-Supported Compressor-Expander	Giri Agrawal	R&D Dynamics Corporation
FC-350	High-Efficiency and Transient Air Systems for Affordable Load-Following Heavy-Duty Truck Fuel Cells	Doug Hughes	Eaton Corporation
FC-351	Durable and Efficient Centrifugal Compressor-Based Filtered Air Management System and Optimized Balance of Plant	Mike Bunce	Mahle Powertrain, LLC



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FC-352	Leveraging Internal Combustion Engine Air System Technology for Fuel Cell System Cost Reduction	Rich Kruswyk	Caterpillar, Inc.
FC-355	Los Alamos National Laboratory Minority-Serving Institution Program	Tommy Rockward	Los Alamos National Laboratory
FC-357	Fiscal Year 2021 Small Business Innovation Research (SBIR) I: Nanocoating for Increased Nafion Membrane Durability and Efficiency	Corey Staller	Celedyne Technologies, Inc.
FC-358	Fiscal Year 2021 Small Business Innovation Research (SBIR) I: Fine Gradient Electrode and Microporous Layer Structures for Improved Heavy-Duty Fuel Cells	Barr Zulevi	Pajarito Powder, LLC
FC-359	Fiscal Year 2021 Small Business Technology Transfer (STTR) I: Optimizing Liquid Free Ionomer Binders for High-Temperature Polymer Electrolyte Membrane Fuel Cells for Heavy-Duty Vehicles	Chris Arges	Ionomer Solutions, LLC
FC-360	Fiscal Year 2021 Small Business Technology Transfer (STTR) I: Development of a Direct Fuel Cell for the Perhydrodibenzyltoluene/Dibenzyltoluene Fuel Pair	Guido Pez	Energy 18H, LLC
FE-000A	Hydrogen with Carbon Management Program – Program Overview	Bob Schrecengost	U.S. Department of Energy, Office of Fossil Energy and Carbon Management
FE-000B	Natural Gas Decarbonization and Hydrogen Technologies Program – Program Overview	Evan Frye	U.S. Department of Energy, Office of Fossil Energy and Carbon Management
FE-007	Geographical Assessment of Natural Gas Infrastructure and Pipeline Materials for Blended Gas Transport	Yarom Polsky	Oak Ridge National Laboratory
FE-008	Progress on Natural Gas Pyrolysis for Low-Carbon Hydrogen Production	Daniel Haynes	National Energy Technology Laboratory
FE-009	Optical Fiber Sensor Technologies for Subsurface Hydrogen Storage Monitoring	Ruishu Wright	National Energy Technology Laboratory
H2-041	H2@Scale Cooperative Research and Development Agreement: California Research Consortium (Reference Station, Fueling Performance Test Device, Station Capacity Model)	Sam Sprik	National Renewable Energy Laboratory

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H2-056	Hydrogen Safety Outreach to Expedite Hydrogen Fueling and Energy Project Deployment and Promote Public Acceptance for Zero-Emission Vehicles and Reliable Distributed Power Generation	Nick Barilo	Pacific Northwest National Laboratory
H2-057	Electrolyzer–Bioreactor Integration	Kevin Harrison	National Renewable Energy Laboratory
H2-059	Electrolytic Renewable Fuel Production Optimal Operation Investigation	Omar Guerra	National Renewable Energy Laboratory
H2-060	Hydrogen Blending into Natural Gas Pipelines	Chris San Marchi	Sandia National Laboratories
H2-061	Innovating Hydrogen Stations: Heavy-Duty Fueling	Shaun Onorato	National Renewable Energy Laboratory
IN-001a	Hydrogen Materials Consortium (H-Mat) Overview: Metals	Chris San Marchi	Sandia National Laboratories
IN-001b	Hydrogen Materials Consortium (H-Mat) Overview: Polymers	Kevin Simmons	Pacific Northwest National Laboratory
IN-004	Magnetocaloric Hydrogen Liquefaction	John Barclay	Pacific Northwest National Laboratory
IN-014	Non-Destructive Evaluation Techniques for Pressure Vessels (Small Business Innovation Research [SBIR]): Detection of Micron-Scale Flaws through Nonlinear Wave Mixing	Marcus Grimes	Luna Innovations Inc.
IN-018	Heavy-Duty Compressor Development	Kathy Ayers	Nel Hydrogen
IN-019	Ultra-Cryopump for High-Demand Transportation Fueling	Kyle Gross	RotoFlow
IN-020	Self-Healable Copolymer Composites for Extended-Service Hydrogen-Dispensing Hoses	Marek Urban	Clemson University
IN-021	Microstructural Engineering and Accelerated Test Method Development to Achieve Low-Cost, High-Performance Solutions for Hydrogen Storage and Delivery	Kip Findley	Colorado School of Mines

Project ID	Project Title	Principal Investigator Name	Organization
IN-022	Tailoring Carbide-Dispersed Steels: A Path to Increased Strength and Hydrogen Tolerance	Gregory Thompson	The University of Alabama
IN-025	Argonne National Laboratory – Hydrogen Delivery Technologies Analysis	Amgad Elgowainy	Argonne National Laboratory
IN-026	Tailoring Composition and Deformation Modes at the Microstructural Level for Next-Generation Low-Cost High-Strength Austenitic Stainless Steels	Petros Sofronis	University of Illinois Urbana-Champaign
IN-029	Reducing the Cost of Fatigue Crack Growth Testing for Storage Vessel Steels in Hydrogen Gas	Kevin Nibur	Hy-Performance Materials Testing LLC
IN-030	Micro-Mechanically Guided High-Throughput Alloy Design Exploration towards Metastability-Induced Hydrogen Embrittlement Resistance	C. Cem Tasan	Massachusetts Institute of Technology
NE-000	Office of Nuclear Energy – Overview of Hydrogen-Related Activities	Jason Marcinkoski	U.S. Department of Energy, Office of Nuclear Energy
NE-003	High-Temperature Steam Electrolysis Process Performance and Cost Estimates	Dan Wendt	Idaho National Laboratory
NE-004	High-Temperature Electrolysis Stack Manufacturing Cost Estimation	Brian James	Strategic Analysis, Inc.
P-152	Proton-Conducting Solid Oxide Electrolysis Cells for Large-Scale Hydrogen Production at Intermediate Temperatures	Prabhakar Singh	University of Connecticut
P-154	Thin-Film, Metal-Supported High-Performance and Durable Proton-Solid Oxide Electrolyzer Cell	Tianli Zhu	Raytheon Technologies Research Center
P-170	Benchmarking Advanced Water-Splitting Technologies: Best Practices in Materials Characterization	Olga Marina	Pacific Northwest National Laboratory
P-175	Intermediate-Temperature Proton-Conducting Solid Oxide Electrolysis Cells with Improved Performance and Durability	Xingbo Liu	West Virginia University
P-176	Development of Durable Materials for Cost-Effective Advanced Water-Splitting Utilizing All Ceramic Solid Oxide Electrolyzer Stack Technology	John Pietras	Saint-Gobain
P-179	BioHydrogen (BioH <sub>2</sub> ) Consortium to Advance Fermentative Hydrogen Production	Katherine Chou	National Renewable Energy Laboratory

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P-182	Binary Chloride Salts as Catalysts for Methane to Hydrogen and Graphitic Powder	Eric McFarland	C-Zero, LLC
P-183	Extremely Durable Concrete Using Methane Decarbonization Nanofiber Co-Products with Hydrogen	Alan W. Weimer	University of Colorado, Boulder
P-184	Scalable and Highly Efficient Microbial Electrochemical Reactor for Hydrogen Generation from Lignocellulosic Biomass and Waste	Hong Liu	Oregon State University
P-185	High-Performance Anion Exchange Membrane Low-Temperature Electrolysis with Advanced Membranes, Ionomers, and Platinum-Group-Metal-Free Electrodes	Paul A. Kohl	Georgia Institute of Technology
P-186	Performance and Durability Investigation of Thin, Low-Crossover Proton Exchange Membranes for Water Electrolyzers	Andrew Park	The Chemours Company FC, LLC
P-187	Pure Hydrogen Production through Precious-Metal-Free Membrane Electrolysis of Dirty Water	Shannon Boettcher	University of Oregon
P-188	Advanced Coatings to Enhance the Durability of Solid Oxide Electrolyzer Cell Stacks	Emir Dogdibegovic	Nexceris, LLC
P-190	A Multifunctional Isostructural Bilayer Oxygen Evolution Electrode for Durable Intermediate-Temperature Electrochemical Water Splitting	Kevin Huang	University of South Carolina
P-191	Perovskite/Perovskite Tandem Photoelectrodes for Low-Cost Unassisted Photoelectrochemical Water Splitting	Yanfa Yan	The University of Toledo
P-192	Development of Composite Photocatalyst Materials That Are Highly Selective for Solar Hydrogen Production and Their Evaluation in Z-Scheme Reactor Designs	Shane Ardo	University of California, Irvine
P-193	Highly Efficient Solar Water Splitting Using Three-Dimensional/Two-Dimensional Hydrophobic Perovskites with Corrosion-Resistant Barriers	Aditya D. Mohite	William Marsh Rice University
P-194	New High-Entropy Perovskite Oxides with Increased Reducibility and Stability for Thermochemical Hydrogen Generation	Jian Luo	University of California, San Diego
P-195	A New Paradigm for Materials Discovery and Development for Lower-Temperature and Isothermal Thermochemical Hydrogen Production	Jonathan Scheffe	University of Florida
P-196a	Hydrogen from Next-Generation Electrolyzers of Water (H2NEW) Low-Temperature Electrolysis (LTE): Durability and Accelerated Stress Test Development	Deborah Myers	Argonne National Laboratory

Project ID	Project Title	Principal Investigator Name	Organization
P-196b	Hydrogen from Next-Generation Electrolyzers of Water (H2NEW) Low-Temperature Electrolysis (LTE): Benchmarking and Performance	Adam Weber	Lawrence Berkeley National Laboratory
P-196c	Hydrogen from Next-Generation Electrolyzers of Water (H2NEW) Low-Temperature Electrolysis (LTE): Manufacturing, Scale-Up, and Integration	Michael Ulsh	National Renewable Energy Laboratory
P-196d	Hydrogen from Next-Generation Electrolyzers of Water (H2NEW) Low-Temperature Electrolysis (LTE): System and Technoeconomic Analysis – Hydrogen from Next-Generation Electrolyzers	Mark Ruth	National Renewable Energy Laboratory
P-196e	Hydrogen from Next-Generation Electrolyzers of Water (H2NEW) High-Temperature Electrolysis (HTE): Durability and Accelerated Stress Test Development	Olga Marina	Pacific Northwest National Laboratory
P-196f	Hydrogen from Next-Generation Electrolyzers of Water (H2NEW) High-Temperature Electrolysis (HTE): Cell Characterization	David Ginley	National Renewable Energy Laboratory
P-196g	Hydrogen from Next-Generation Electrolyzers of Water (H2NEW) High-Temperature Electrolysis (HTE): Multiscale Degradation Modeling	Brandon Wood	Lawrence Livermore National Laboratory
P-200	Low-Cost Manufacturing of High-Temperature Electrolysis Stacks	Scott Swartz	Nextech Materials, Ltd.
P-201	Automation of Solid Oxide Electrolyzer Cell and Stack Assembly	Todd Striker	Cummins Inc.
P-202	Novel Microbial Electrolysis Cell Design for Efficient Hydrogen Generation from Wastewaters	Bruce Logan	The Pennsylvania State University
P-203	Novel Microbial Electrolysis System for Conversion of Biowastes into Low-Cost Renewable Hydrogen	Noah Meeks	Southern Company Services, Inc.
P-204	Hydrogen Production Cost and Performance Analysis	Brian James	Strategic Analysis, Inc.
PRA-001	Formulation Strategies for the Large-Scale Manufacturing of Crack-Free Electrodes	Carlos Baez-Cotto	National Renewable Energy Laboratory
PRA-002	High-Performing and Durable Electrodes for Polymer Electrolyte Membrane Fuel Cells	ChungHyuk Lee	Los Alamos National Laboratory
PRA-003	Protonic Ceramic Electrochemical Cells for Hydrogen Production and Electricity Generation	Wenjuan Bian	Idaho National Laboratory

Project ID	Project Title	Principal Investigator Name	Organization
PRA-004	Characterizing Hydrogen Storage Materials Using Neutron Scattering Techniques	Ryan Klein	National Renewable Energy Laboratory
SA-177	Analysis of Hydrogen Export Potential	Mark Chung	Argonne National Laboratory
SA-178	Cradle-to-Grave Transportation Analysis	Amgad Elgowainy	Argonne National Laboratory
SA-180	Advanced neTwork anaLysis of hydrogen fuel cell Automated vehicleS for goods delivery (ATLAS) – Total Cost of Ownership of Autonomous Fuel Cell Fleet Vehicles	Tim Lipman	Lawrence Berkeley National Laboratory
SCS-001	Component Failure Research and Development	Kevin Hartmann	National Renewable Energy Laboratory
SCS-005	Research and Development for Safety, Codes and Standards: Materials and Components Compatibility	Joe Ronevich	Sandia National Laboratories
SCS-007	Fuel Quality Assurance Research and Development and Impurity Testing in Support of Codes and Standards	Tommy Rockward	Los Alamos National Laboratory
SCS-022	Fuel Cell and Hydrogen Energy Association Codes and Standards Support	Karen Quackenbush	Fuel Cell and Hydrogen Energy Association
SCS-030	MC [Total Heat Capacity] Formula Protocol for H35HF Fueling	Taichi Kuroki	National Renewable Energy Laboratory
SCS-031	Assessment of Heavy-Duty Fueling Methods and Components	Shaun Onorato	National Renewable Energy Laboratory
SCS-033	Risk Assessments of Design and Refueling for Hydrogen Locomotive and Tender	Brian Ehrhart	Sandia National Laboratories
SETO-000	Solar Energy Technologies Office Overview of Hydrogen-Related Activities	Avi Shultz	U.S. Department of Energy, Solar Energy Technologies Office
ST-001	System-Level Analysis of Hydrogen Storage Options	Rajesh Ahluwalia	Argonne National Laboratory
ST-008	Hydrogen Storage System Modeling: Public Access, Maintenance, and Enhancements	Matt Thornton	National Renewable Energy Laboratory

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ST-127	Hydrogen Materials Advanced Research Consortium (HyMARC) Overview	Mark Allendorf	Sandia National Laboratories
ST-148	Novel Plasticized Melt Spinning Process of Polyacrylonitrile Fibers Based on Task-Specific Ionic Liquids	Sheng Dai	Oak Ridge National Laboratory
ST-202	Hydrogen Materials Advanced Research Consortium (HyMARC)— National Renewable Energy Laboratory Activities	Tom Gennett	National Renewable Energy Laboratory
ST-204	Hydrogen Materials Advanced Research Consortium (HyMARC)— Pacific Northwest National Laboratory Activities	Tom Autrey	Pacific Northwest National Laboratory
ST-207	Hydrogen Materials Advanced Research Consortium (HyMARC)— Lawrence Livermore National Laboratory Activities	Brandon Wood	Lawrence Livermore National Laboratory
ST-209	Hydrogen Materials Advanced Research Consortium (HyMARC) Seedling: Theory-Guided Design and Discovery of Materials for Reversible Methane and Hydrogen Storage	Omar Farha	Northwestern University
ST-210	Hydrogen Materials Advanced Research Consortium (HyMARC) Seedling: Metal–Organic Frameworks Containing Frustrated Lewis Pairs for Hydrogen Storage at Ambient Temperature	Shengqian Ma	University of South Florida
ST-211	Hydrogen Materials Advanced Research Consortium (HyMARC) Seedling: Optimal Adsorbents for Low-Cost Storage of Natural Gas and Hydrogen: Computational Identification, Experimental Demonstration, and System-Level Projection	Don Siegel	University of Michigan
ST-212	Hydrogen Materials Advanced Research Consortium (HyMARC) Seedling: Methane and Hydrogen Storage with Porous Cage-Based Composite Materials	Eric Bloch	University of Delaware
ST-213	Hydrogen Materials Advanced Research Consortium (HyMARC) Seedling: Uniting Theory and Experiment to Deliver Flexible Metal–Organic Frameworks for Superior Methane (Natural Gas) Storage	Brian Space	University of South Florida
ST-214	Hydrogen Materials Advanced Research Consortium (HyMARC) Seedling: Heteroatom-Modified and Compacted Zeolite-Templated Carbons for Gas Storage	Nicholas Stadie	Montana State University
ST-216	Hydrogen Materials Advanced Research Consortium (HyMARC) Seedling: Hydrogen Release from Concentrated Media with Reusable Catalysts	Travis Williams	University of Southern California

Project ID	Project Title	Principal Investigator Name	Organization
ST-217	HyMARC Seedling: A Reversible Liquid Hydrogen Carrier System Based on Ammonium Formate and Captured Carbon Dioxide	Hongfei Lin	Washington State University
ST-218	Hydrogen Materials Advanced Research Consortium (HyMARC) Seedling: High-Capacity Step-Shaped Hydrogen Adsorption in Robust, Pore-Gating Zeolitic Imidazolate Frameworks	Michael McGuirk	Colorado School of Mines
ST-222	Hydrogen Materials Advanced Research Consortium (HyMARC): Characterization of Hydrogen Storage Materials at Oak Ridge National Laboratory's Spallation Neutron Source	Anibal Ramirez-Cuesta	Oak Ridge National Laboratory
ST-224	Hydrogen Materials Advanced Research Consortium (HyMARC)—Lawrence Berkeley National Laboratory Activities	Jeffrey Long	Lawrence Berkeley National Laboratory
ST-225	Hydrogen Materials Advanced Research Consortium (HyMARC)—Lawrence Berkeley National Laboratory/Advanced Light Source Activities	David Prendergast	Lawrence Berkeley National Laboratory
ST-233	HyMARC—Sandia National Laboratories Activities	Mark Allendorf	Sandia National Laboratories
ST-234	Development of Magnesium Borane Containing Solutions of Furans and Pyroles as Reversible Liquid Hydrogen Carriers	Craig Jensen	University of Hawaii
ST-235	Hydrogen Storage Cost and Performance Analysis	Cassidy Houchins	Strategic Analysis, Inc.
ST-242	Dimethyl Ether as a Renewable Hydrogen Carrier: Innovative Approach to Renewable Hydrogen Production	Troy Semelsberger	Los Alamos National Laboratory
ST-243	Fuel Additives for Solid Hydrogen (FLASH) Carriers for Electric Aviation	Steven Christensen	National Renewable Energy Laboratory
ST-244	Hydrogen Carriers for Renewable Energy Farm Application	Rajesh Ahluwalia	Argonne National Laboratory
TA-005	In-Line Quality Control of Polymer Electrolyte Membrane Materials	Andrew Wagner	Mainstream Engineering
TA-009	Maritime (Pierside Power) Fuel Cell Generator Project	Lennie Klebanoff	Sandia National Laboratories
TA-013	Fuel Cell Bus Evaluations	Matthew Post	National Renewable Energy Laboratory



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TA-016	Fuel Cell Hybrid Electric Delivery Van	Jason Hanlin	Center for Transportation and the Environment
TA-017	Innovative Advanced Hydrogen Mobile Fueler	Sara Odom	Electricore Inc.
TA-027	Catalyst Layer Design, Manufacturing, and In-Line Quality Control	Radenka Maric	University of Connecticut
TA-035	Power Electronics for Electrolyzer Applications to Enable Grid Services	Robert Hovsopian	National Renewable Energy Laboratory
TA-041	Truck Duty Cycle Analysis	Jason Lustbader	National Renewable Energy Laboratory
TA-042	Next-Generation Hydrogen Station Analysis	Genevieve Saur	National Renewable Energy Laboratory
TA-050	Overall Research on Electrode Coating Processes (OREO)	Michael Ulsh	National Renewable Energy Laboratory
TA-056	Ultra-Efficient Long-Haul Hydrogen Fuel Cell Tractor	Derek Rotz	Daimler Trucks North America
TA-057	High-Efficiency Fuel Cell Application for Medium-Duty Truck Vocations	Stan Bower	Ford Motor Company
TA-058	Freight Emissions Reduction via Medium-Duty Battery Electric and Hydrogen Fuel Cell Trucks with Green Hydrogen Production via a New Electrolyzer Design and Electrical Utility Grid Coupling	Kurt Wellenkotter	General Motors, LLC
TA-059	Medium-Duty Vehicle Total Cost of Ownership and Target Development	Ram Vijayagopal	Argonne National Laboratory
TA-061	Optimal Wind Turbine Design for Hydrogen Production	Chris Bay	National Renewable Energy Laboratory
TA-062	Validation of Interconnection and Interoperability of Grid-Forming Inverters Sourced by Hydrogen Technologies in View of 100% Renewable Microgrids	Kumaraguru Prabakar	National Renewable Energy Laboratory
TA-063	High-Efficacy Validation of Hydride Mega Tanks at the ARIES [Advanced Research on Integrated Energy Systems] Lab (HEVHY METAL)	Steven Christensen	National Renewable Energy Laboratory

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TA-064	Hydrogen Production, Grid Integration, and Scaling for the Future	Sam Sprik	National Renewable Energy Laboratory
TA-066	In-Line Membrane Thickness Mapping with Real-Time Data Processing	Peter Rupnowski	National Renewable Energy Laboratory
WETO-000	Wind Energy Technologies Office Overview of Hydrogen-Related Activities	Jian Fu	U.S. Department of Energy, Wind Energy Technologies Office
WETO-001	Clusters of Flexible Photovoltaic–Wind–Storage Hybrid Generation (FlexPower)	Vahan Gevorgian	National Renewable Energy Laboratory
WPTO-000	Water Power Technologies Office Overview of Hydrogen-Related Activities	William McShane	U.S. Department of Energy, Water Power Technologies Office