



H2-PACE: Power And Control Electronics for Hydrogen Technologies

A U.S. DOE HYDROGEN SHOT EXPERTS VIRTUAL MEETING

December 2-3, 2021

with the DOE Hydrogen & Fuel Cell Technologies Office's H2NEW & M2FCT Consortia and NREL/ARIES

An invitation-only virtual meeting focusing on the opportunities for electronics-based technology advancement, product development, and cost reductions for growing electrolyzer and fuel cell industries

DAY 1: December 2nd (all times EST/UTC-5)

- 11:00 AM Motivational Plenary: DOE**
- 11:30 AM Panel 1: Electrolyzer Technologies**
(low- & high-temperature)
- 12:30 PM Panel 2: Fuel Cell Technologies**
(stationary & transportation)
- 1:40 PM Break**
- 1:50 PM Panel 3: Industrial Electronics**
(components & devices)
- 2:50 PM Panel 4: Commercial Systems**
(integration, scale & qualification)
- 3:50 PM Q&A with All Panelists**
- 4:30 PM Wrap-up & Logistics for Day 2**
- 4:45 PM Meeting Adjourn**

DAY 2: December 3rd (all times EST/UTC-5)

- 12:00 PM Motivational Plenary: Industry**
- 12:30 PM Parallel Breakout Sessions**
 - *Grid/microgrid systems*
 - *Off-grid integrated systems*
 - *Transportation systems*
 - *Cross-cutting topics*
- 2:30 PM Networking Break**
- 3:15 PM Breakout Session Reports**
- 3:45 PM Open Q&A and Discussion**
- 4:15 PM Wrap-up and Next Steps**
- 4:30 PM Meeting Adjourn**
- 4:30 PM *Optional Networking Session***

[H2-PACE: Meeting Website](#)

For technical assistance, please contact H2PE@ee.doe.gov or Ryan.Ingwensen@nrel.gov

DAY 1: DECEMBER 2nd

PLENARY: U.S. DOE Vision for Hydrogen Technologies & Meeting Objectives

Sunita Satyapal (Director) & Eric Miller (Senior Advisor), U.S. DOE Hydrogen and Fuel Cell Technologies Office

PANEL 1	Electrolyzer Systems: Status and Needs (Low- & High-Temperature) <i>moderators: M. Hubert, J. Vickers</i>					
	<i>Plug Power</i> M. Hamdan	<i>Nel</i> K. Ayers	<i>Teledyne</i> T. Valdez	<i>Bloom Energy</i> C. Cottuli	<i>FuelCell Energy</i> C. Brown	
PANEL 2	Fuel Cell Systems: Status and Needs (Stationary & Transportation) <i>moderators: G. Kleen, C. Gore</i>					
	<i>GM</i> A. Sarin	<i>Daimler</i> D. Rotz	<i>Hyzon</i> S. Hirano	<i>Doosan</i> G. Berntsen	<i>Cummins</i> M. Cai	<i>Nexceris</i> S. Swartz
PANEL 3	Industrial Electronic Components & Devices <i>moderators: B. Mather, M. Wieliczko</i>					
	<i>Infineon</i> T. McDonald	<i>Wolfspeed</i> K. Olejniczak	<i>Analog Devices</i> A. Yellepeddi	<i>Dynapower</i> T. Varhue	<i>VONK</i> B. de Vries	
PANEL 4	Commercial Systems Development & Qualification <i>moderators: W. Gibbons, D. Ho</i>					
	<i>GE Power Conversion</i> K. Delsol	<i>Hitachi Energy</i> J. Glassmire	<i>EPC Power</i> D. Fingleton	<i>Typhoon</i> M. Baker	<i>NREL-ARIES</i> R. Hovsopian	

DAY 2: DECEMBER 3rd

PLENARY: Industry Trends and Opportunities in Hydrogen Technologies

Daryl Wilson, CEO Hydrogen Council

BREAKOUT 1 GRID/MICROGRID-INTEGRATED SYSTEMS <i>moderators: M. Hubert, B. Mather</i>	BREAKOUT 2 OFF-GRID HYDROGEN SYSTEMS <i>moderators: K. Harrison, D. Peterson</i>
<ul style="list-style-type: none"> • Grid-powered electrolyzers • Grid-forming fuel cells 	<ul style="list-style-type: none"> • Direct coupling of renewables with electrolyzers • Fuel cells in backup power, CHP, etc.
BREAKOUT 3 TRANSPORTATION SYSTEMS <i>moderators: D. Papageorgopoulos, G. Kleen</i>	BREAKOUT 4 CROSS-CUTTING POWER & CONTROLS <i>moderators: E. Miller, W. Gibbons</i>
<ul style="list-style-type: none"> • Fuel cells in light- medium- and heavy-duty transportation applications 	<ul style="list-style-type: none"> • Power conditioning and control systems addressing unique requirements for electrolyzers and fuel cells

Common themes will include: TRL/MRL, scale & modularity, manufacturing, standardization, cost reduction, codes & standards, among others