Ammonia for H2@Scale: Agenda (all times EDT/UTC-4)

Hydrogen and Fuel Cell Technologies Office
Office of Energy Efficiency and Renewable Energy
U.S. Department of Energy

This series of invitation-only virtual panels focuses on the growing opportunities for ammonia as a viable clean-hydrogen carrier serving diverse end uses, supporting important economic and environmental imperatives

DAY 1: Thursday, May 6th	
11:00 AM	**Introductory Remarks**
11:30 AM	**NH_3 Market and Policies Panel**
12:30 PM	**Break**
12:45 PM	**NH_3 Synthesis R&D Panel**
1:45 PM	**Break**
2:00 PM	**Panel: NH_3 Manufacturing Panel**
3:00 PM	**Breakout Session**
4:00 PM	**Adjourn**

DAY 2: Friday, May 7th	
12:20 PM	**Introductory Remarks**
12:30 PM	**NH_3 Utilization Panel**
1:30 PM	**Breakout Session**
2:30 PM	**Break**
2:45 PM	**NH_3 End Use Panel**
3:45 PM	**Wrap-up Remarks**

FIRST DAY PANELS	
PANEL 1 1130-1230	Ammonia Market and Policies: Market prospective, LCFS/fuel standards, codes, & safety
	Andrea Valentini/Argus; Ben Gerber/M-RETS; Jonathan Lewis /CATF; David Richardson/Airgas (moderator: Madhav Acharya/ARPA-E)
PANEL 2 1245-1345	Ammonia Synthesis R&D: Improved Haber Bosch; electrochemical and plasma routes
	John Hu/WVU; Joe Beach/Starfire; Karthish Manthiram/MIT; Ray Gorte/UPenn; Tomoyuki Koide/Tsubame BHB Co., Ltd (moderator: Grigorii Soloveichik/HFTO-ARPA-E)
PANEL 3 1400-1500	Ammonia Manufacturing: Industry trends and needs, as well as company roadmaps
	John Hansen &Pat Han/Haldor Topsoe; Ashraf Malik/CF Industries; Paolo Brunengo/KBR; Ermanno Filippi/Casale (moderator: Oliver Hatfield/Argus)
SECOND DAY PANELS	
PANEL 4 1230-1330	Ammonia Utilization: Turbines, ICE, fuel cells, with LCA
	Jeff Goldmeer /GE Gas Power; Hossein Ghezel-Ayagh/FCE; Josh Makepeace/U Birmingham; Will Northrop/UMN (moderator: Amgad Elgowainy/ANL)
PANEL 5 1445-1545	End Use: Green fertilizer, energy storage, maritime fuel, and other industrial uses
	David Hume/PNNL; Blake Adair/Nutrien; Camel Makhloufi/Engie; Keith Lovegrove/ITP Thermal (moderator: Trevor Brown/AEA)

Breakout Session Suggested Discussion Topics

Topics for Day 1 Session:

NH_3 Market and Policies

- Stakeholders Identification
  in key current and entry markets
- Certification Needs (e.g., carbon intensity)
- Expected role of incentives

NH_3 Synthesis R&D
including TRL, demonstration timelines, etc.

- Haber-Bosch Improvements
- Emerging synthesis routes
  e.g., electrochemical, plasma, etc.
- Role of government in technology development

Panel: NH_3 Manufacturing

- Distributed vs Bulk Scales
- Demonstration scales needed
- Integration considerations
  leveraging diverse energy and feedstock sources

Topics for Day 2 Session:

NH_3 Utilization and End Use

- Identification of best technology options
  for diverse end uses
- Status of current demonstration- and deployment-scale projects
  scope, scale, timelines, etc.
- Most promising 'low-hanging fruit'
  for the next demonstrations and deployments
- General technology development needs
- Roles of industry, government, and research institutes
- Key opportunities and challenges
  in promising pathways forward

Event Links and Logistics

Day 1: Thursday, May 6, 2021: 11:00 AM | (UTC-04:00) Eastern Time (US & Canada)

Day 1 WebEx Link Here

Meeting number (access code): 199 007 2657
Meeting password: FmmY2VJMf45

Day 2: Friday, May 7, 2021: 12:20 PM | (UTC-04:00) Eastern Time (US & Canada)

Day 2 WebEx Link Here

Meeting number (access code): 199 896 0619
Meeting password: 3smEnhtiZ54

In the event of any technical difficulties during the events, please contact:

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