Workshop Introduction and Objectives

Government and industry technology developers worldwide are realizing the potential for hydrogen rail applications and this workshop will help identify needed research to accelerate technology development and industry commercialization.

In collaboration with Department of Transportation’s Federal Railroad Administration and as part of Department of Energy’s H2@Scale Initiative, we welcome workshop participants and look forward to exploring opportunities for cooperation and collaboration on hydrogen rail areas of interest.

The objectives of this workshop are to:

- Assess the state of the art on electric rail power propulsion specifically using fuel cells
- Discuss operational requirements and lessons learned on early fuel cell rail projects
- Understand current technology gaps and identify collaborative R&D topics

Tuesday, March 26 | Day 1

Session I - Domestic Government Perspectives on Hydrogen Rail
Moderator: Pete Devlin, DOE-FCTO

1:00 PM  Welcoming Remarks from Michigan State University  
Sanjay Gupta, Dean of the Broad College of Business, Michigan State University

1:10 PM  Welcoming Remarks and H2@Scale/H2@Rail Overview  
Sunita Satyapal, Director, U.S. Department of Energy Fuel Cell Technologies Office (DOE-FCTO)

1:40 PM  FRA Program R&D Overview  
Melissa Shurland, Program Manager, Rolling Stock Research, U.S. Department of Transportation Federal Railroad Administration (DOT-FRA)

2:10 PM  Mark Maday and Phani Raj  
Staff Director – Hazardous Materials and General Engineer, DOT-FRA

2:40 PM  Break & Network

3:00 PM  Momoko Tamaoki  
Office Chief of Rail Equipment and Procurement, California State Transportation Agency
3:30 PM  Carrie Schindler  
Director of Transit and Rail, San Bernardino County Transportation Authority

4:00 PM  Session I Panel Discussion

4:30 PM  Wrap Up and Next Steps

5:00 PM  Adjourn

6:00 PM  No Host Dinner
Wednesday, March 27 | Day 2

7:30AM  Breakfast

Session II - Hydrogen Rail Status International Overviews
Moderator: Shuk Han Chan, DOE-FCTO

8:00 AM  Elena Hof  
Program Manager, German National Organization Hydrogen and Fuel Cell Technology

8:20 AM  Leanna Belluz  
Senior Engineer, Department of Transport Canada

8:40 AM  Seky Chang  
Chief Researcher, Korean Railroad Research Institute

9:00 AM  Session II Panel Discussion

9:30 AM  Break & Network

Session III – Industry Perspectives

Operators’ Perspectives
Moderator: Phani Raj, DOT-FRA

9:50 AM  Michael Fore  
Director – Technical Services, American Association of Railroads

10:10 AM  Michael Cleveland  
Senior Manager of Emerging Technology, BNSF Railway

10:30 AM  Mark Duve  
Manager of Locomotive Engineering, Norfolk Southern

10:50 AM  Session III Panel Discussion

Technology Developers’ Perspectives
Moderator: Dimitrios Papageorgopoulos, DOE-FCTO

11:20 AM  Reid Larson and Scott Nason  
Product Manager - Fueling System and Product Manager, Chart Industries

11:40 AM  Alan Mace  
Product Manager, Ballard
12:00 PM  Lunch & Network

1:00 PM  Rob Harvey  
Large Scale Infrastructure Project Manager, Hydrogenics

1:20 PM  Jens Steger  
Vehicle Lead Engineer, Stadler US Inc.

1:40 PM  Andreas Frixen  
Tender Manager Fuel Cell Trains, Alstom

2:00 PM  Session III Panel Discussion

2:30 PM  Break & Network

Session IV – Hydrogen Rail Assessment  
Moderator: Pete Devlin, DOE-FCTO

2:50 PM  Andreas Hoffrichter  
Burkhardt Professor in Railway Management, Michigan State University

3:10 PM  Total Cost of Ownership for Line Haul, Yard Switchers and Regional Passenger Locomotives  
Rajesh Ahluwalia, Senior Engineer, Argonne National Laboratory

3:30 PM  Hydrogen for Rail Applications  
Brian Ehrhart, Chemical Engineer, Sandia National Laboratories

3:50 PM  Session IV General Discussion

4:20 PM  Wrap Up and Next Steps

4:40 PM  Adjourn