

HFTO Sub-Program Perspectives

HFTO – Program Managers

Moderated by Eric L. Miller, HFTO Chief Scientist

2023 Annual Merit Review and Peer Evaluation Meeting

June 5, 2023 – Arlington, VA

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Miller*



*Dave
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*Ned
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*Dimitrios
Papageorgopoulos*



*Jesse
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*Neha
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The Hydrogen and Fuel Cell Technologies Office (HFTO)

<h2>Mission</h2>	<p>Support research, development and demonstration (RD&D) of hydrogen and fuel cell technologies to advance:</p>	<ul style="list-style-type: none"> • Clean Energy and Emissions Reduction Across Sectors • Job Creation and a Sustainable and Equitable Energy Future
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Office Sub-Programs		
Hydrogen Technologies	Fuel Cell Technologies	Systems Development & Integration
<div data-bbox="84 846 369 999">Hydrogen Production</div> <div data-bbox="84 1025 369 1178">Hydrogen Infrastructure</div> <div data-bbox="428 892 614 1078">  </div>	<div data-bbox="700 892 980 1078">Materials & Components Systems</div> <div data-bbox="1014 892 1179 1063">  </div>	<div data-bbox="1268 863 1821 1149"> Transportation Industrial and Chemical Applications Grid Energy Storage and Power Generation </div>
<p>Data, Modeling, Analysis, Safety, Codes and Standards</p>		

Enabling





HFTO Hydrogen Production Dream Team!



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Open Positions
Contractor



Open Positions
Contractor

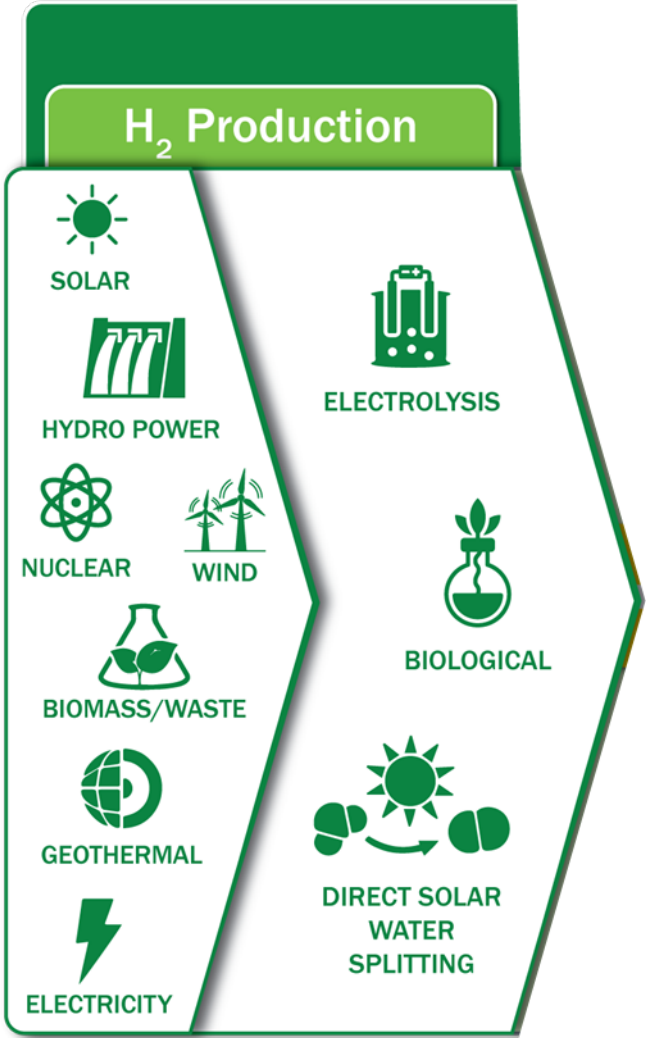







Open
Positions
Federal



Open Position
Fellow

Clean Hydrogen Production Overview



Near- to Mid-Term	Longer-Term
<ul style="list-style-type: none"> Water splitting through low- and high-temperature electrolysis leveraging renewable energy resources 	<ul style="list-style-type: none"> Microbial-based conversion of bio- and waste-stream feedstocks Direct solar water-splitting
<p>High Temp. Electrolysis</p>  <p>Low Temp. Electrolysis</p>  <p>Waste & Biomass Conversion</p>  <p><i>ELECTROLYSIS</i></p>	<p>Direct-Solar PEC/STCH</p>  <p>Waste & Biomass Conversion</p>  <p><i>PEC</i></p> <p><i>DIVERSE FEEDSTOCKS</i></p>

Focus on hydrogen production pathways that utilize renewable/clean resources

HFTO Hydrogen Infrastructure Technologies Dream Team!



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Open Position
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Open Position
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Open Position
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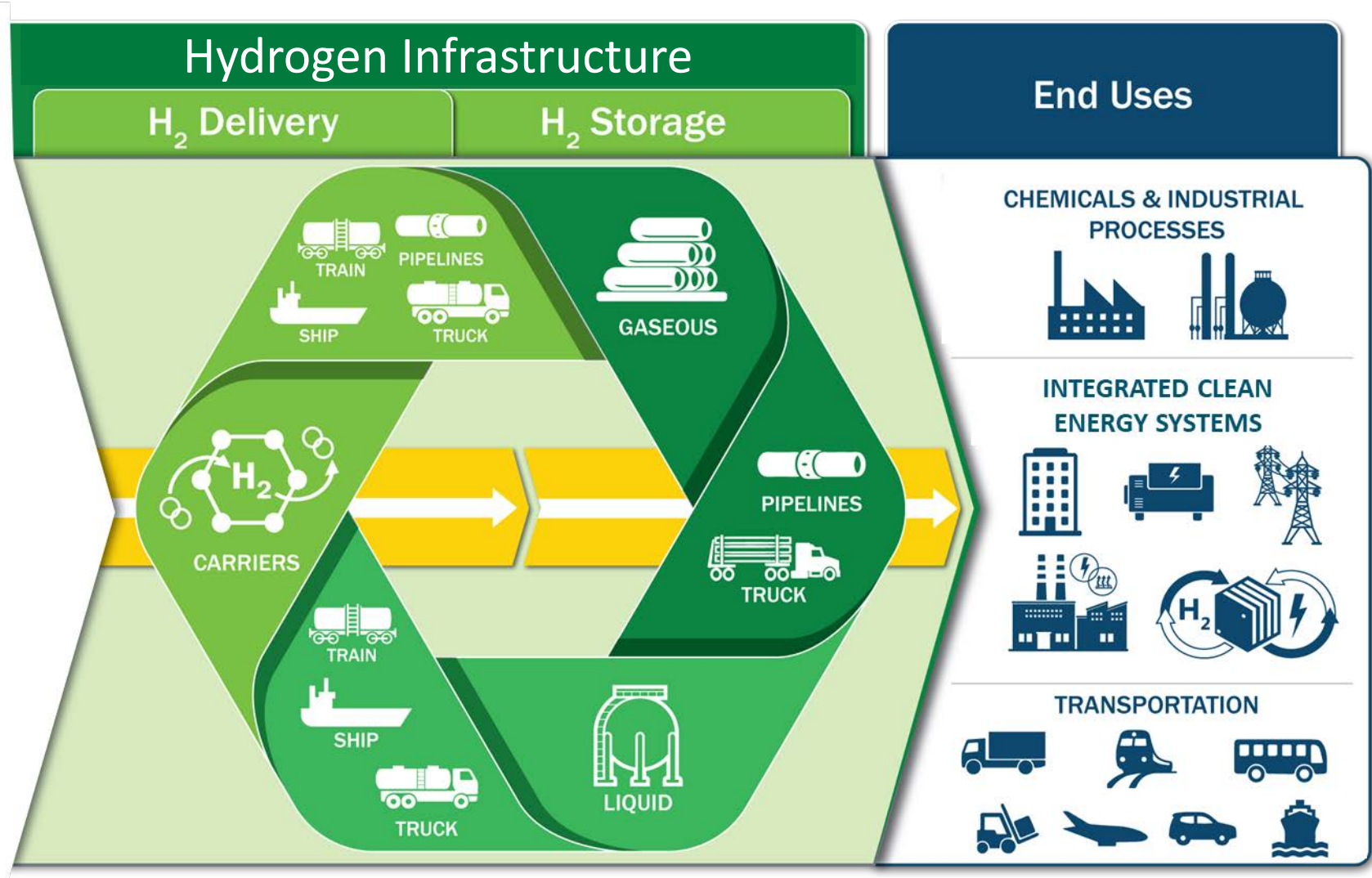


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M&O Contractor, PNNL

H₂ Storage, Delivery & Dispensing Infrastructure Overview

Delivery Pathways:

- **Gaseous H₂**
 - *Tube trailers*
 - *Pipelines*
- **Liquid H₂**
 - *Tanker trailers*
 - *Rail cars*
 - *Maritime vessels*
- **H₂ Carriers**
 - *Pipelines*
 - *Tanker trailers*
 - *Rail cars*
 - *Maritime vessels*



HFTO Fuel Cell Technologies Dream Team!



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GEM Fellow 2023

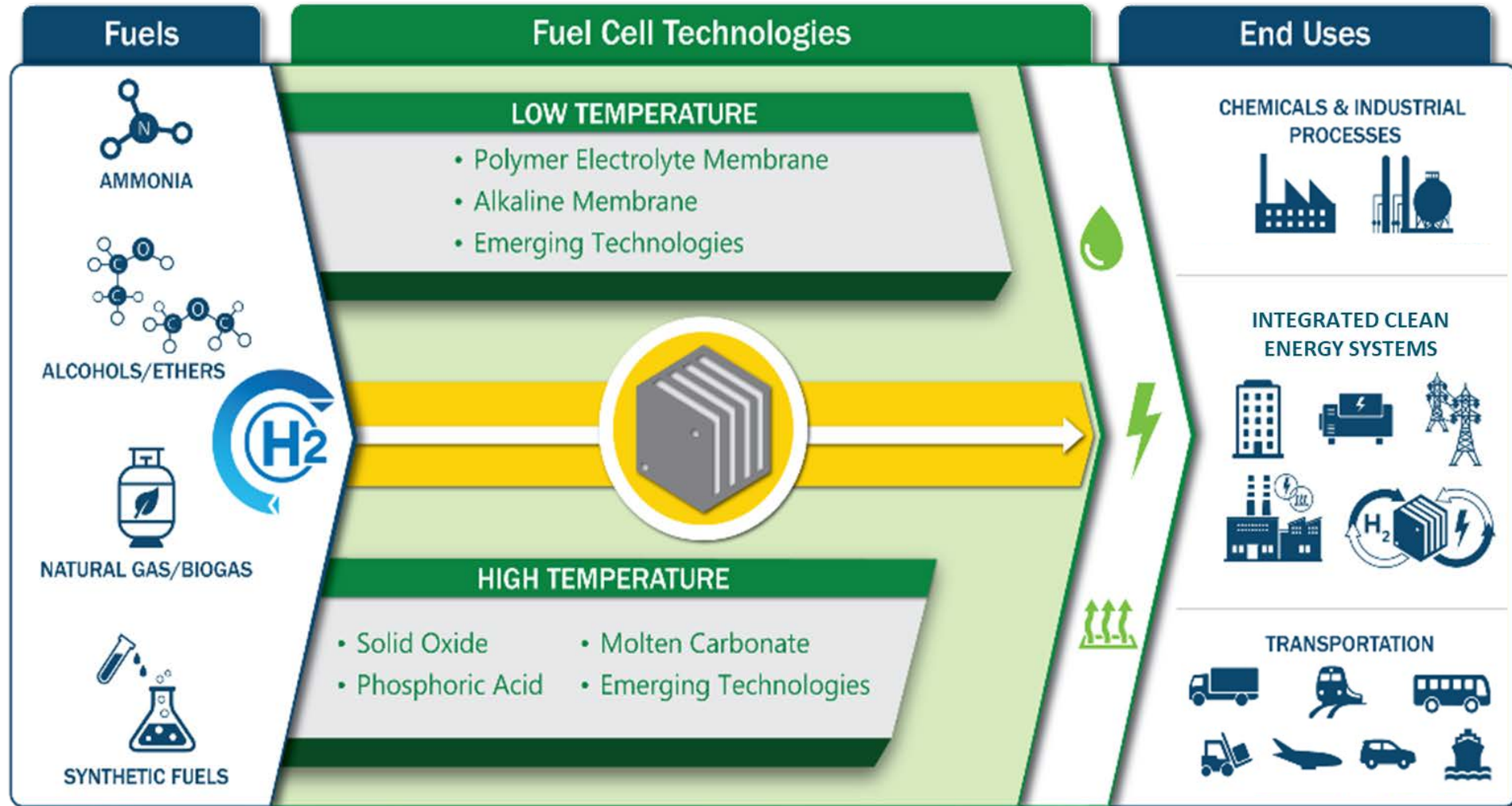


Open Positions for Technology Managers and Technical Program Officers



Open Position
Fellows

Fuel Cell Technologies Overview



Fuel cells use a wide range of fuels and feedstocks; deliver power for applications across multiple sectors; provide long-duration energy storage for the grid in reversible systems.

HFTO Systems Development & Integration Dream Team!



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Open

Position
Contractor



Open Positions

Federal



Open Positions

Federal



Open Position

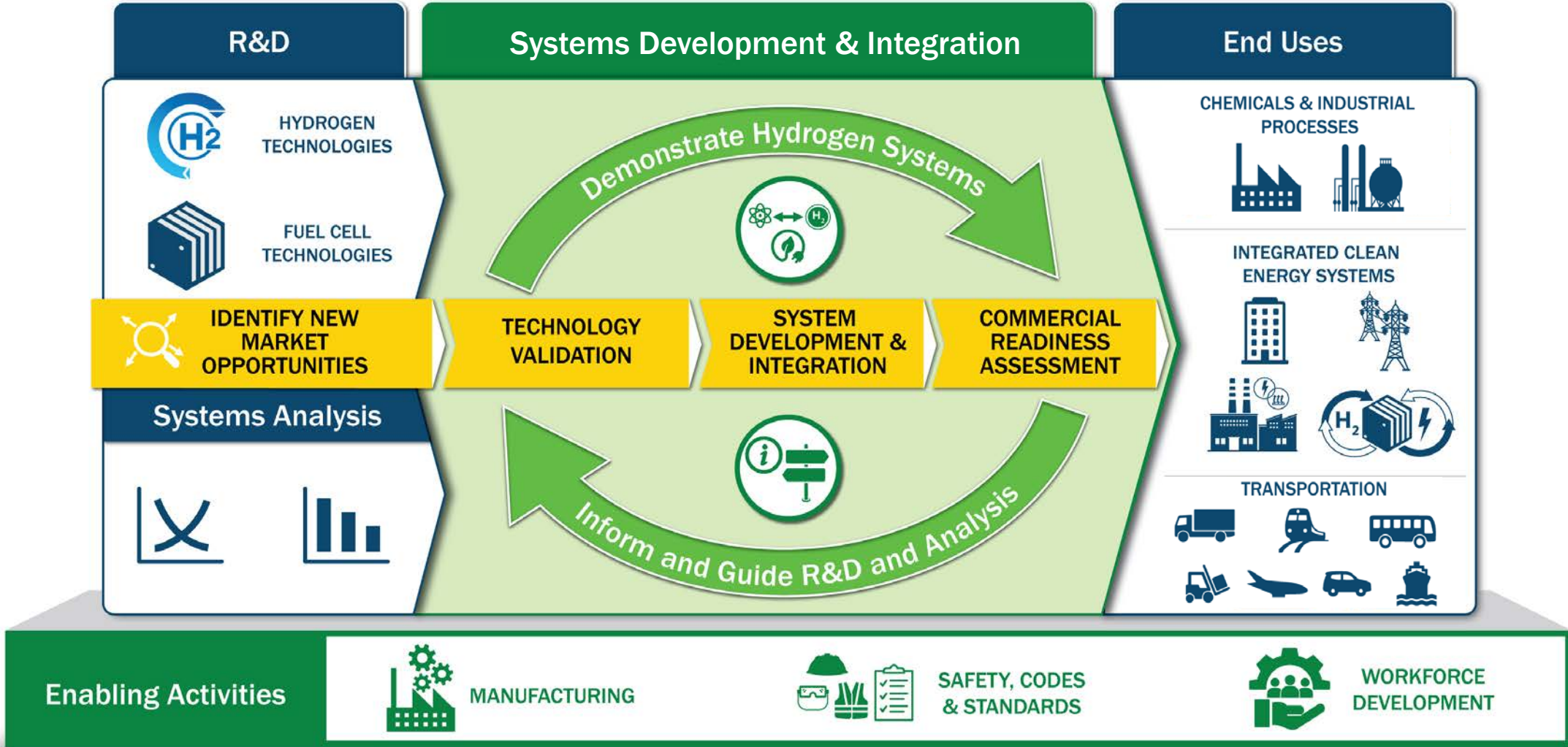
Fellows



Open Position

Fellows

Systems Development & Integration Overview



Bridging the Gap Between R&D and Deployments with First-of-a-Kind Integrated H₂ Demonstrations

HFTO Systems Analysis, Codes & Standards Dream Team!

Modeling & Analysis



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Safety, Codes & Standards



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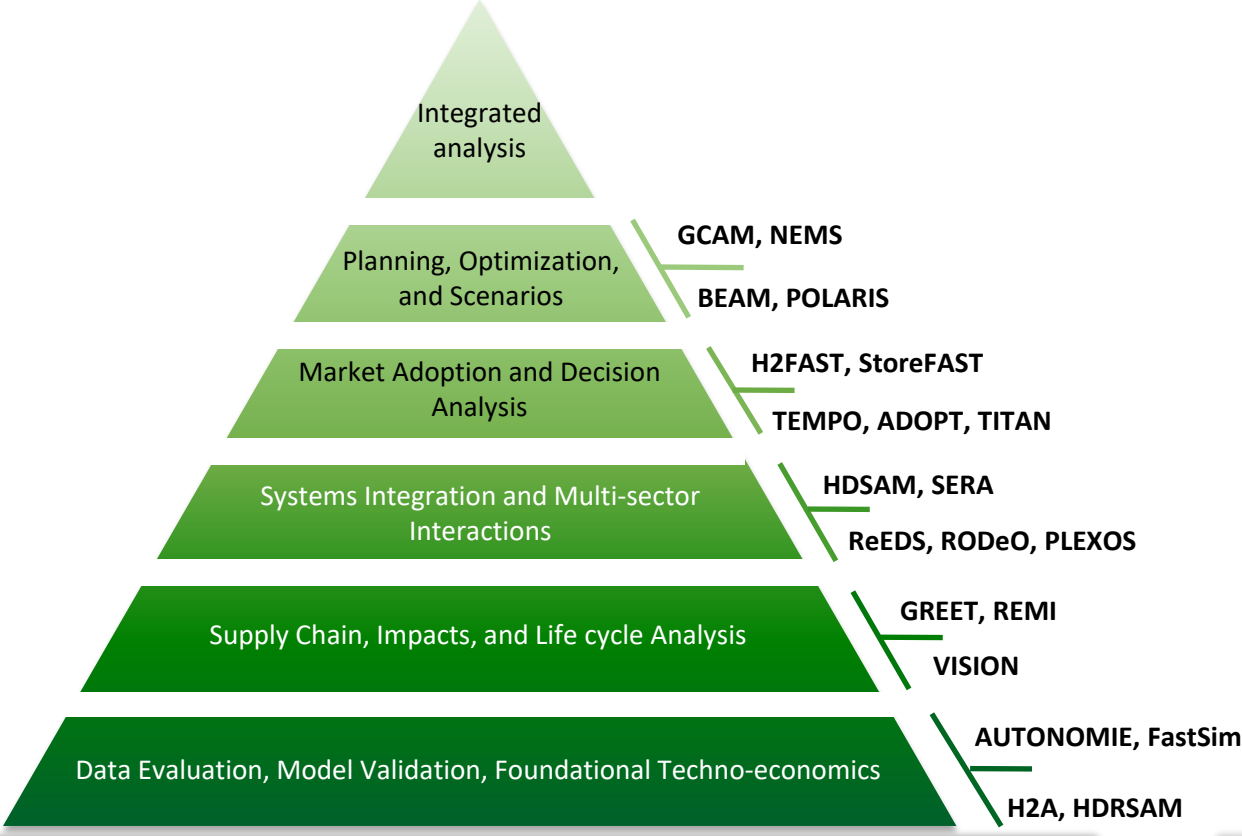
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Open Positions: *Feds, Fellows, and Contractors*

Analysis, Codes & Standards Overview

Enabling activities to inform research, development, demonstrations and deployments



Systems Analysis identifies priority markets for hydrogen technologies and assesses impacts



Safety, Codes, & Standards informs safe design and operation of technologies, and addresses regulatory and permitting challenges.

Importance of Collaborations



AMR: HFTO Sub-Program Tracks

DOE Hydrogen Program 2023 AMR Preliminary Program-at-a-Glance																
	Tuesday, June 6					Wednesday, June 7						Thursday, June 8				
	Hydrogen Production Technologies	Hydrogen Infrastructure Technologies	Fuel Cell Technologies	Systems Development and Integration	Intra-Agency Activities	Hydrogen Production Technologies	Hydrogen Infrastructure Technologies	Fuel Cell Technologies	Systems Development and Integration	Interagency Activities	Intra-Agency Activities	Hydrogen Production Technologies	Fuel Cell Technologies	Systems Development and Integration	Analysis, Codes and Standards	Intra-Agency Activities
Room	Regency Ballroom CD	Regency Ballroom F	Regency Ballroom AB	Regency Ballroom E	Washington Room	Regency Ballroom CD	Regency Ballroom F	Regency Ballroom AB	Regency Ballroom E	Washington Room	Conference Theater	Regency Ballroom CD	Regency Ballroom AB	Regency Ballroom E	Regency Ballroom F	Washington Room
8:00 AM	Continental Breakfast					Continental Breakfast						Continental Breakfast				
9:00 AM	P000	IN000	FC000	SDI000	FE000	P191	TA049	FC337	TA001	IA001 IA002	WPTO001	P183	FC354	TA052	SA-SCS000	
9:30 AM	P148	ST127	FC160	TA042	FE001	P192	IN001a	FC338	TA043	IA004	SETO001	P179	FC333	TA053	SA174	
10:00 AM				TA017	FE002	P193	IN001b	FC167	TA018		SETO002	P184	FC336	SDI002	SA178	FE020
10:30 AM	Break					Break						Break				
11:00 AM	P197	ST238	FC339	TA045	FE003	P190	IN021	FC344	TA039	IA005 IA006	SETO003	P203	FC330	TA044	SA181	NE003
11:30 AM	P198	ST236		TA059	FE004	P176	IN022	FC345	NE002	IA007 IA008	WETO001	P202	FC331	TA062	SA186	NE004
12:00 PM	P199	ST237		TA016	FE005	P188	IN026	FC346		IA009 IA010	IEDO001		FC317	TA035	SCS019	NE005
12:30 PM	Lunch (provided)					Lunch (provided)						Lunch (provided)				
1:45 PM	P196	ST240	FC353	TA058	FE006	P204	IN030	FC347	TA028	TA009	ARPAE001			SDI005	SCS028	
2:15 PM		ST241	FC323	TA057	FE007	P186	IN020	FC348	TA048	IA011 IA012	ARPAE002				SCS010	
2:45 PM		IN025	FC326	TA056	FE008	P185	H2041	FC349	TA037	IA013	ARPAE003				SCS011	
3:15 PM	Break					Break						Break				
3:45 PM	P200	IN034	FC327	SDI004	FE009	P195	IN016	FC350	SDI001		ARPAE004				SCS001	
4:15 PM	P201	IN035	FC356	TA065	FE010	P194	IN019	FC351	TA060		ARPAE005				SCS021	
4:45 PM			FC355	LPO001	FE011	P170	IN040	FC352	TA061		ARPAE006				SCS031	
5:15 PM																
5:30 PM	POSTER SESSION					POSTER SESSION										

on Behalf of HFTO
Thank to All
& Welcome to AMR!

www.energy.gov/fuelcells
www.hydrogen.energy.gov