



ISO/TC 197
Hydrogen technologies

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USA presentation 2 of 2 ISO TC 197 Plenary HD NWIP

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Background: Please find attached 2 of 2 presentations made by USA for NWIP related to communciations and HD HF Fuelling protocol.

Committee URL: <https://isotc.iso.org/livelink/livelink/open/tc197>



New Work Item Proposal

High Flow Hydrogen Fueling Protocol for Heavy Duty Applications

ISO TC197 Plenary

Grenoble, FR - December 12, 2019

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Motivators: HD Fuel Cell Electric Trucks Reduce Emissions Over Diesel

- Transportation is responsible for 27% of total carbon emissions, and medium- and heavy-duty trucks account for 23% of transportation's total carbon output. *(source: US DOE)*
- 33% of smog forming NOx emissions come from diesel trucks *(source: Cal EPA)*
- Freight volume in the will grow by 29 billion tons by 2040 — 45% increase. *(source: US DOE)*
- European regulations require 30% GHG emission reductions by 2030

NWIP: HF Fueling Protocol for HD Applications

Scope

- Develop a versatile high-flow (above 60 g/s) fueling protocol
- Specific for heavy duty (HD) applications and systems with high throughput hydrogen
- **Focus on 70MPa** and allow for other NWPs (35/50MPa)

Lead Countries:

- US (Convener-Nikola) & Germany (Co-Convener-Shell)

ISO Fueling Protocol Harmonization with:

- ISO TC 197 WGs 5, 24, etc. / SAE / CSA / GTR, etc.

Note: The priority for publishing this standard focuses on H70HF fueling. Additional effort may include H35HF and H50HF concurrently.

Approach

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- Science based and empirically validated fueling protocols coordinated with high-flow (HF) nozzle, receptacle and communications for HD vehicles
- Adopt best practices for fueling
- Coordinate with established and other relevant standards groups
- Consider the results and findings of the European Commission project “Protocol for Heavy-Duty Hydrogen Refueling” (PRHYDE)
- Open for input from P-Member countries

Timeline

- Develop an empirically-based H70HF fueling protocol standard in 3 years. Include other NWPs if available within the 3-year timeline.

THANK YOU!

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