

PACCAR Perspectives on H2-ICE

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What Does A Truck Need To Do?

Provide Reliable Goods Transport At Acceptable Rates

- Durable – 1 Million Miles +
- Reliable – High Uptime
- All Roads & Weather
- Workable Capital Cost
- Acceptable Operating Cost
- Available Fueling Infrastructure



ZEV/NZEV Technologies: Tailor Technology to Application

500 mi+



Distance



100 mi



16k lbs

Load



80k lbs+

HYDROGEN ICE & HYBRIDS



FUEL CELL ELECTRIC



BATTERY ELECTRIC VEHICLE



PACCAR

TOYOTA



**PACCAR
FUEL CELL ELECTRIC VEHICLES**

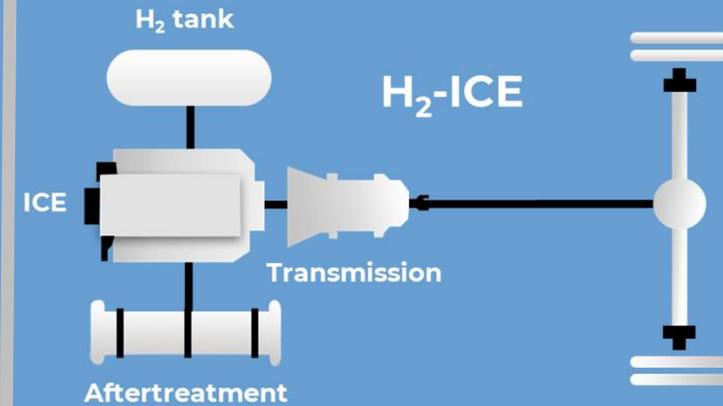
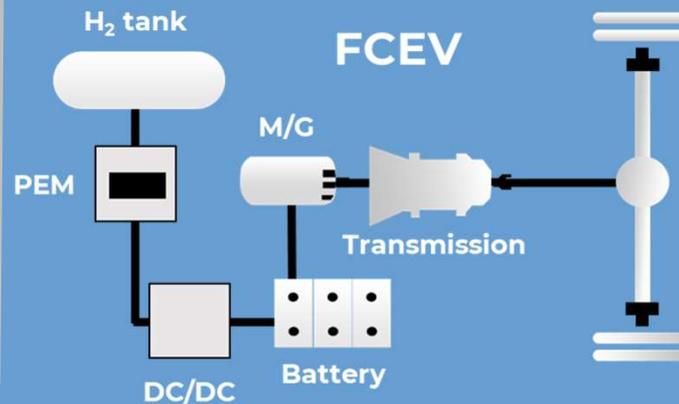
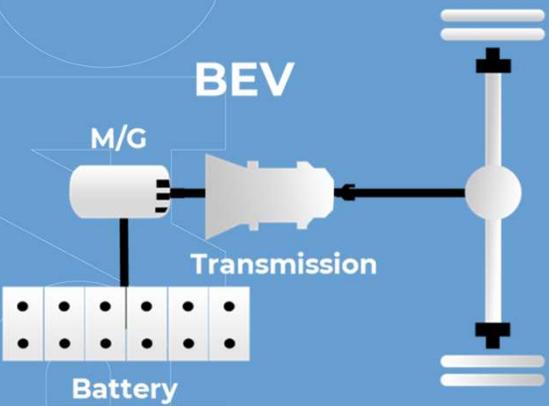
POWERED BY TOYOTA

2025 PRODUCTION START

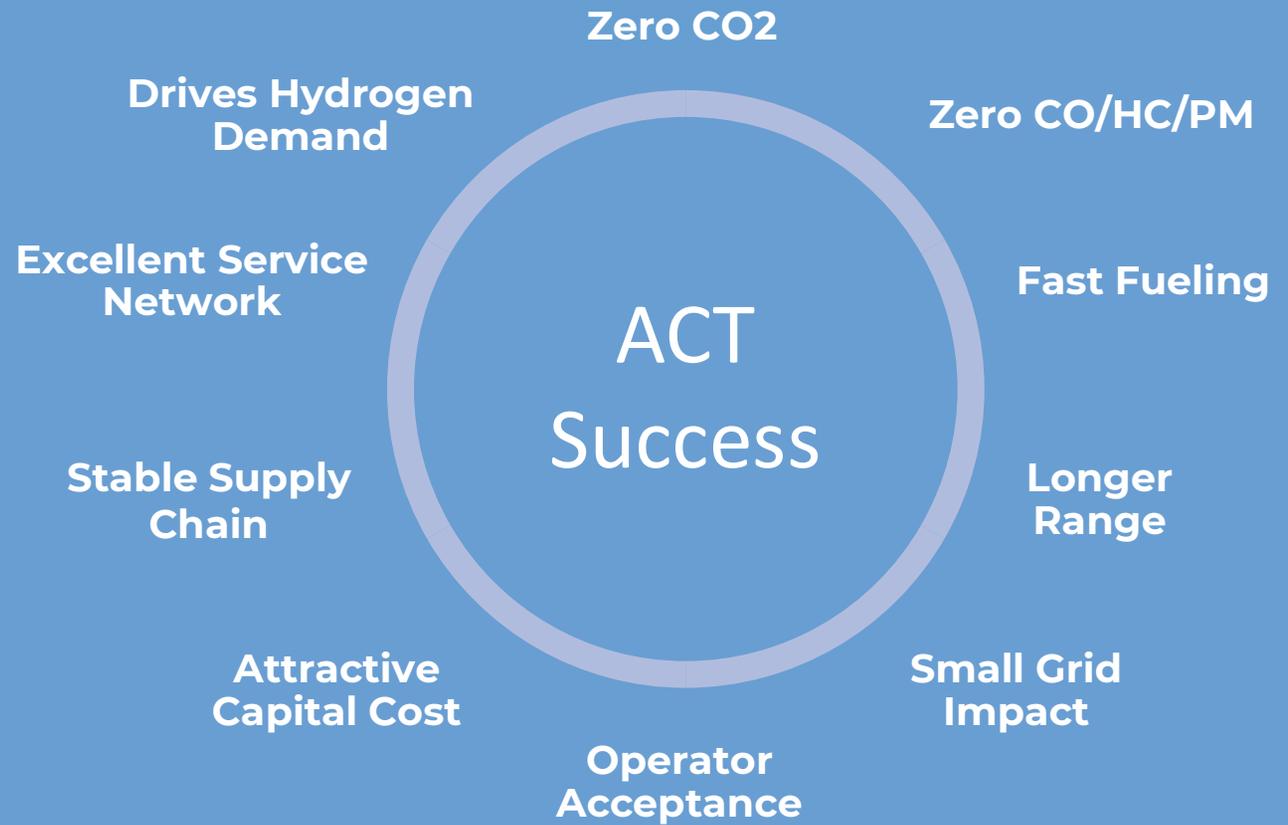
- UP TO 450 MILE RANGE
- QUICK REFILL TIME
- 82,000 GCWR



Powertrain Architectures



Why H₂-ICE?



H2 Infrastructure for Transportation



- H₂-ICE Represents a Cost Effective Zero Carbon Technology for Trucks
- Because of this, H₂-ICE can Help Drive Demand for Hydrogen
- Once Established, the Infrastructure Paves the Way for other Hydrogen-Based Technologies and Applications

PACCAR H₂-ICE

PACCAR POWERTRAIN

Demonstrator Based on Modified MY21 Engine:

- Leveraging Production Technology
- Spark Ignition

Findings

- Ultra-Low Emissions
 - >99% CO₂ Reduction
 - Ultra-Low NO_x
- Acceptable Performance



H2-ICE Indirect Benefits

PACCAR POWERTRAIN



H2-ICE	Which Provides
Reduces Peak Energy Demand (vs. BEV)	Reduced Peaker Plant Emissions
Is A Clean Technology Accepted By Customers	Turnover Of High Emitting Old Trucks In Hard To Abate Segments (Long Distance, Weight Sensitive)
Promotes Scaling Of H2 Infrastructure	Emissions Reduction In Adjacent Industries (Offroad, Rail)

Bridge To The Future

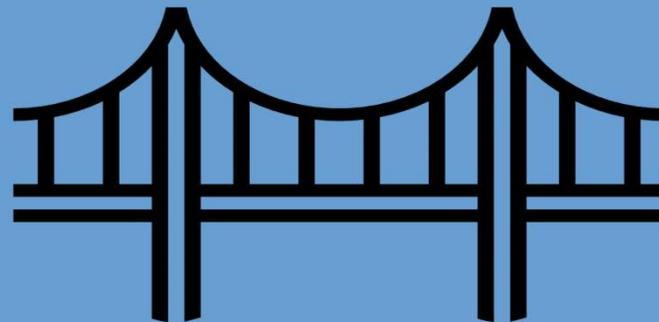
PACCAR POWERTRAIN



Diesel



H2-ICE



FCEV

THANK YOU