HYDROGEN FUEL CELL PARTNERSHIP

GUIDING PRINCIPLES for HYDROGEN TRUCK MARKET DEVELOPMENT

Subject: Foundations for Hydrogen-Powered Truck Adoption
Date: June 8, 2026
Basis: Expert Panel Opinion Modeling
Context: Post-2024 election and the California Air Resources Board (CARB) Advanced Clean Fleets (ACF) pause

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Executive Summary

A cross-sector panel of industry experts applied structured cause-and-effect modeling to identify the critical barriers to hydrogen adoption in medium- and heavy-duty (MD/HD) trucking. The exercise identified five interrelated Core Issues that collectively determine hydrogen's competitiveness with diesel.

The political and regulatory shifts of 2025 (including CARB's withdrawal of its ACFwaiver request amid federal uncertainty surrounding California's vehicle emissions authority, as well as Congressional Review Act (CRA) actions seeking to nullify USEPA waivers supporting California's Advanced Clean Trucks (ACT), Advanced Clean Cars II (ACC II), and Omnibus Low-NOx regulation, in addition to cancellation of billions in the U.S. Department of Energy's (DOE) Hydrogen Hub funding) have since provided a real-world stress test of the model's conclusions.

While the legality and enforceability of these federal actions remain subject to significant legal dispute, the developments validate the report's central finding: ***the success of the hydrogen truck market must be built on sound economic fundamentals, not compliance mandates alone.***

The path forward requires a dual-track strategy:

- **Compliance-driven:** Leverage states that retain strong mandates and policy frameworks, stack incentives, and demonstrate early success stories.
- **Economics-driven:** Prioritize fleet aggregation, dispensed hydrogen cost reduction, infrastructure reliability, and business models that are resilient across political cycles.

Early policy-driven markets that produce economically self-sustaining outcomes are the most durable. For trucks, this means fleet economics and infrastructure efficiency must underpin every deployment decision. Within this framework, the dual-track approach includes: (a) investible and stable state-level policy frameworks to enable commercialization; and (b) sufficient state-level incentives that enable free-market adoption, with a mechanism for an offramp.

Five strategic priorities emerge from this analysis:

1. Develop dual-track hydrogen strategies (compliance-driven and economics-driven)
2. Accelerate aggregated demand programs anchored by fleet commitments
3. Deploy public funding strategically along freight corridors and nodal hubs
4. Harmonize incentives across technologies, protecting low-CI hydrogen pathways
5. Increase market transparency through published benchmarks and TCO modeling tools

Introduction & Methodology

Over the past two years, a panel of industry experts has convened to assess the market viability of hydrogen fuel cell electric trucks (FCETs) in a U.S. freight market dominated by diesel. Using ScMI's Scenario-Manager™, the panel conducted a systems-based scenario analysis to map qualitative cause-and-effect relationships among macroenvironmental factors and identify the forces most likely to shape hydrogen adoption over time.

The cross-sector expert panel represented:

- **OEMs & Technology Providers:** Toyota, Hyundai, Ford, GM, Honda, cellcentric, OPMobility
- **Hydrogen Suppliers & Infrastructure Developers:** Air Liquide, BP, Chevron, Shell, Iwatani, Fuel Cell Energy, Cavendish, Bayotech
- **Policy & Public Agencies:** California GO-Biz, CARB, SCAQMD, USEPA, EIN, H2FCP
- **Operations, Utilities & Engineering:** Anglo American, Atlas Copco, Symbio, SoCalGas

The panel identified 34 interrelated factors grouped into eight thematic categories: Total Cost of Ownership (TCO); FCET Performance; Hydrogen Supply Chain; Regulatory Support; Regulatory Mandates; Environmental Impact; Customer Knowledge and Confidence; and Operational Factors. From these, five Core Issues emerged as most critical to hydrogen's near-term and long-term competitiveness in MD/HD applications.

A key insight from the modeling is that many FCET operational attributes (e.g., refueling time, depreciation, maintenance costs, and fuel carbon intensity) carry limited weight as system-level obstacles.

The modeling results were validated by a macroeconomic response to the 2024 election. The technology itself is not the primary barrier to adoption. Even in their nascency, FCETs are operationally viable and capable of competing with diesel in core performance areas. The real work lies in creating suitable market conditions, business models, and policy stability.

While the early market focus for FCETs has centered on Class 8 trucks in drayage and regional haul, medium-duty (Class 2–6) trucks represent a substantial and often overlooked segment. Applications requiring auxiliary power, payload capacity, and rapid refueling (e.g., delivery, utility, and municipal fleets) are well-suited to FCET platforms and should be included in deployment strategies to diversify risk and broaden stakeholder engagement.

NOTE: This paper represents the first public presentation of the study's findings. A summary of the modeling methodology and outputs will be provided in an appendix to a follow-on publication.

Core Issues & Strategic Synthesis

The five Core Issues below were selected for both their individual impact and their interdependence. No single factor determines hydrogen's success; instead, policy, cost, infrastructure, and technology reinforce or constrain each other in feedback loops.

For hydrogen fuel to be competitive, improvements must occur across the entire supply chain (e.g., from feedstock production to dispensing), and incentives must be harmonized across that chain to avoid bottlenecks. Certain factors, therefore, appear across multiple issues, reflecting their systemic importance rather than editorial repetition.

The five Core Issues:

1. Dispensed Hydrogen Cost vs. Diesel
2. Fleet Size & Total Fuel Consumption
3. Hydrogen Truck Fueling Station Network: Density, Cost & Reliability
4. Policy Targets for Air Quality & Climate
5. Regulatory Mandates for Fleet Adoption & Vehicle Sales

Commercial fleet decisions are based on total cost of ownership (TCO), which is most heavily influenced by the cost of dispensed hydrogen (Issue 1). Issues 4 and 5 (i.e., policy targets and regulatory mandates) are treated as distinct but closely related; both have been materially weakened by the post-2024 federal posture and are addressed together in the strategic recommendations.

Issue 1: Dispensed Hydrogen Cost vs. Diesel

Primary Conclusion: The cost of hydrogen at the pump remains the single most critical barrier to the adoption of commercial FCET. Achieving competitive dispensed prices requires improvements across the entire supply chain (from production to dispensing) with incentives harmonized at every link.

#	Key Factor	Discussion / Interpretation
1	Fleet Size & Total Fuel Consumption	Hydrogen economics depends on aggregated demand. Without scale, fixed costs of production, distribution, and station operations drive per-kg prices to uncompetitive levels. Large fleets, drayage operators, and regional consortia must act as anchor tenants, creating a predictable offtake that lowers costs across the supply chain. Fleet commitments and long-term offtake contracts are essential to de-risk private investment.
2	Incentives for Crop-Based Fuels (e.g., Renewable Diesel)	The economics of supply & demand drive down the LCFS traded credit value. The introduction of renewable diesel led to an abundant supply of LCFS credits, driving down prices and reducing the credit-based income stream for hydrogen stations. CARB's 2025 LCFS amendments raise CI reduction targets (30% by 2030, 90% by 2045), tighten sustainability rules for crop-based feedstocks, and require fossil suppliers to hold more carbon attributes, diminishing renewable diesel's compliance value and improving hydrogen's relative position. Hydrogen suppliers must ensure that pathways qualify for high credit value and advocate for consistent treatment of lifecycle emissions.
3	Liquid vs. Gaseous Fuel Dispensing	Both pathways will play a role in HD trucking. Liquid hydrogen enables high-throughput fueling but requires cryogenic handling and boil-off management. Gaseous hydrogen avoids boil-off but suffers from payload inefficiencies and higher distribution costs. A diversified supply approach that plans for both pathways and matches them to regional demand reduces system risk. Standardized equipment, redundant supply chains, innovation in hydrogen boiloff mitigation, and modular station design are necessary to maintain fleet confidence.
4	Number of Hydrogen Fueling Stations & Infrastructure Cost	HD stations (1,500+ kg/day; $10M+ per site) must be designed from the outset for dependable uptime and serviceability. Modular expansion, redundant systems, and decentralized production (e.g., on-site electrolysis, liquid delivery hubs, pipeline delivery) improve reliability while diversifying pathways. Demand aggregation, product diversification, and high station availability together allow the HD market to avoid the pitfalls of the LD rollout.

5	Policy Targets for Air Quality & Climate	While federal engagement has weakened, state programs and corporate sustainability goals remain powerful levers. The 2025 LCFS amendments demonstrate how policy can sharpen carbon differentiation and reward zero-emission pathways. However, policy targets alone cannot close the cost gap: hydrogen adoption strategies must combine policy benefits with robust business fundamentals to be durable across political cycles.

Fleets report that for hydrogen to be competitive with diesel (historically \$3–\$5/gallon DGE, or roughly \$3–\$6/kg energy-equivalent), dispensed prices need to fall in the range of \$5–\$12/kg, depending on duty cycle, energy efficiency of drive train, utilization, and TCO assumptions. Strict dollar-for-dollar parity is not required, but the gap must narrow to a level at which operational savings and policy incentives can offset the remaining premiums.

Transit agencies provide evidence that this is achievable: some agencies have maintained dispensed hydrogen near \$10/kg under long-term offtake contracts. By contrast, retail light-duty markets have seen wide volatility (\$13–\$36/kg), reflecting fragmented demand and immature supply chains. ***The early truck market opportunity lies in managing hydrogen demand through fleet aggregation, as demonstrated in transit, followed by controlled market expansion.***

California's retail hydrogen ecosystem functioned more predictably through 2021, supported by public grant funding and a favorable LCFS credit market.

The subsequent deflation of LCFS credit values (driven by reliance on crop-based renewable diesel and moderate CO_2 reduction targets), slower vehicle sales, and supply chain disruptions are the central factors behind today's elevated retail prices. The 2025 LCFS amendments begin to correct this trajectory.

In the longer term, establishing a connected, open-access pipeline network would significantly reduce hydrogen delivery costs to stations at scale, enabling more predictable operations and broader market adoption than trucked delivery.

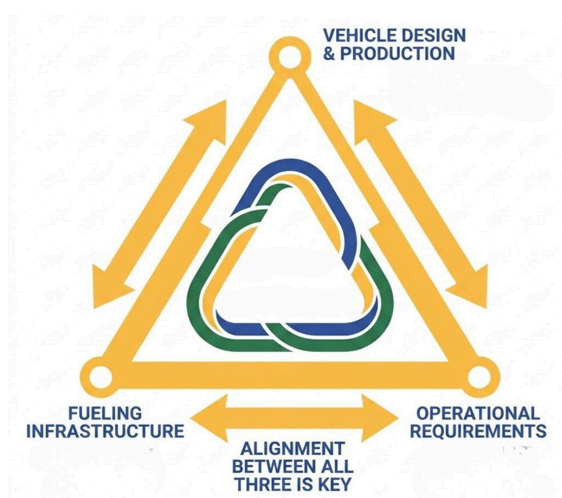
Issue 2: Fleet Size & Total Fuel Consumption

Primary Conclusion: Larger fleets are best positioned to adopt FCETs because higher fuel consumption improves hydrogen utilization and drives fuel cost reductions through scale. However, high vehicle costs, weakened demand signals, and policy uncertainty continue to slow market scale-up. Success hinges on improving lifecycle cost competitiveness, strengthening durable incentives, increasing fuel throughput, and building customer confidence through transparent TCO tools.

#	Key Factor	Discussion / Interpretation
1	Vehicle Purchase Price Differential (FCET vs. Diesel)	FCETs are currently priced at 115–170% of comparable diesel units. Fleets evaluate the total cost of ownership (vehicle acquisition (MSRP+tax+insurance), fuel, and O&M), not sticker price alone. Early market subsidies and financial tools (buy-downs, leasing models) can bridge the lifecycle cost gap until scale reduces unit costs. (See Issue 1 for fuel cost dynamics.)
2	CO_2 Credits & Carbon Intensity Programs	Fleets do not directly generate LCFS credits, but if station operators pass through credit value, it can lower retail hydrogen prices. Credit market volatility and political uncertainty reduce confidence in this as a reliable cost offset. Bottom line: hydrogen must achieve competitiveness even without heavy reliance on credits. (See Issue 1, Factor 2 for full LCFS discussion.)
3	Regulatory Mandates (e.g., California's ACT and ACF regulations)	California's ACT regulation, which requires truck manufacturers to produce zero-emission trucks for sale, and ACF regulation, which is a fleet ZEV purchase requirement, were both designed to provide clear demand signals for ZE HDV adoption. CARB's suspension of its ACF waiver request and the revocation of CARB's waiver to enforce ACT together weaken those signals and highlight the vulnerability of compliance-driven adoption. Without strong, durable mandates or equivalent long-term market signals, securing private capital investment is more difficult. (See Issue 4 for full regulatory mandate analysis.)
4	Training & Techno-Economic Tools (Customer Awareness)	Fleet operators need confidence in the practical economics and operations of FCETs. Training programs, techno-economic modeling tools, and transparent cost/performance data reduce perceived risk and normalize FCETs beyond pioneer adopters.

Short-term deployment strategies should prioritize ports, drayage, short-haul, and return-to-base operations. These use cases maximize offtake per station, support continuous and predictable utilization, and generate the demand certainty infrastructure developers need to commit capital.

Repowering diesel trucks with fuel cell-electric powertrains should also be considered as an interim adoption pathway. Repowering enables fleets to benefit from zero-emission operations while leveraging existing chassis investments and reducing barriers to vehicle acquisition costs.



In all deployment scenarios, the 'golden triangle' of hydrogen infrastructure supplier, fuel cell integrator, and vehicle OEM must be engaged in coordinated planning to ensure alignment among vehicle design, fueling infrastructure, and operational requirements.

Misalignment at any vertex of this triangle has historically slowed adoption.

Issue 3: Hydrogen Truck Fueling Station Network: Density, Cost & Reliability

Primary Conclusion: Fleet commitments for FCET purchases and hydrogen offtake are the single strongest de-risking mechanism for infrastructure investment. Station development must precede or be tightly coordinated with truck deployment. An emerging fleet- or OEM-led investment model may break the historic chicken-and-egg market paralysis without relying on public subsidies.

#	Key Factor	Discussion / Interpretation
1	Fleet Commitments for FCET Purchases & Forecasted Hydrogen Demand	Anchor fleet commitments are the primary de-risking mechanism for station investment. When fleets signal clear demand volumes — through purchase orders, long-term offtake agreements, or coalition participation — developers can size and finance stations with confidence. Without this certainty, high CapEx and utilization requirements create stranded-asset risk. Hyundai's Georgia project and Toyota's Ontario facility demonstrate that fleet- and OEM-led commitments can unlock infrastructure without heavy public subsidies.
2	Public Funding for Hydrogen Stations	Each high-capacity HD station can cost $10M or more. Public support remains important in offsetting early capital costs and bridging utilization gaps. California's LCFS Hydrogen Refueling Infrastructure (HRI) credits and CEC's EnergIIZE program reduce investor risk. Going forward, public investment is most effective when layered on private commitments and deployed strategically along key freight corridors to enable a minimum viable network. Note: the HRI capacity credit is no longer bankable as a standalone business case while credit prices remain low and volatile.
3	Policy Targets for Air Quality & Climate	California's local air districts remain under pressure to meet ozone attainment requirements and reduce NOx emissions from diesel trucks, the largest contributors. These compliance pressures create demand signals for ZE truck adoption and, by extension, for fueling infrastructure. Aligning station deployment with regions where air quality mandates and freight flows converge (ports, rail yards, distribution hubs, freight corridors) amplifies both public health benefits and station utilization.

Historically, the HD hydrogen market was characterized by market paralysis: no fuel without trucks, and no trucks without fuel. CapEx barriers, uncertain demand, permitting delays, land-use challenges, bottlenecks, and long lead times for custom compression and storage systems all compounded the stalemate.

An emerging model may break this paralysis. Fuel cell pioneers Hyundai and Toyota are making private investments in hydrogen fueling infrastructure to support their own trucking logistics fleets, projects driven directly by the fleet/OEM and well-aligned with infrastructure development, and neither is reliant on public funding.

The success of these programs can validate that CapEx alone is not the barrier, but rather market certainty. ***Investment is de-risked when demand certainty exists, and clear fleet commitments provide financiers with assurance that the infrastructure will not be stranded.***

Without market and policy signals working in tandem, private investment in infrastructure will remain limited.

Issue 4a. Policy Targets for Air Quality & Climate

Primary Conclusion: California air quality policy under the federal Clean Air Act (Sections 209 and 177) is now an unreliable driver for zero-emission vehicle adoption under the current federal political cycle. Outside of voluntary targets, ZE truck adoption depends on state-level mandates (e.g., CARB's Innovative Clean Transit (ICT) regulation and ACF's state and local government provisions) or local criteria air pollution control measures (e.g., SCAQMD's Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program) and socioeconomic benefits.

#	Key Factor	Discussion / Interpretation
1	Executive Branch Environmental Posture	Federal priorities set the tone for the enforcement of air quality and climate regulations. The current administration has deprioritized climate action, weakening EPA oversight and delaying CAA Section 209/177 waivers for California and aligned states. While states may still set ambitious targets, the absence of federal enforcement undermines their durability and emboldens legal challenges from incumbent industries.

2	Inflation & Interest Rates	High interest rates increase the cost of capital for fleets and infrastructure developers. Projects that depend on low-cost financing (station construction, truck leasing) become harder to justify as borrowing costs rise. Elevated financing costs erode returns, delay adoption, and increase reliance on proven diesel operations, even when state or federal incentives are available.

4b. Regulatory Mandates for Fleet Adoption & Vehicle Sales

Primary Conclusion: Regulatory certainty has eroded for at least the next two years. Policies that require the sale or adoption of zero-emission vehicles are vulnerable to litigation and federal preemption. The future of hydrogen adoption will pivot away from compliance-driven models toward economically viable, self-reinforcing ecosystems, especially in non-mandate jurisdictions such as Texas and Louisiana.

#	Key Factor	Discussion / Interpretation
1	Executive Branch Support for Environmental Policy	Federal support can reinforce efforts by California and CAA Section 177 states to reduce transportation air pollution. The lack of federal support presents a significant hurdle, as OEMs hesitate to invest in compliance pathways due to reversed or delayed public policy. Legal challenges further limit private capital flows into vehicles and infrastructure.
2	Policy Targets for Air Quality & Climate	California's ACF and ACT regulations were designed to provide durable demand signals for long-term planning. With the waiver authority suspended, these rules are unenforceable for private fleets. States that adopted California's rules under CAA Section 177 face similar uncertainty. Diminished enforceability forces stakeholders to focus on market economics, corporate sustainability, and regional opportunity rather than compliance-based deployment.

In early 2024, California's policy momentum pointed toward aggressive decarbonization with established regulations around truck electrification (ACT, ACF). As of 2025: CARB's ACF enforcement authority has been voluntarily paused for private fleets; Congress revoked CARB's authority to enforce ACT in June 2025; federal alignment is absent; other states with ACT and ACF trigger laws are in legal limbo; and billions in DOE Hydrogen Hub funding have been canceled.

These developments validate the modeling exercise's central finding — that the hydrogen truck market must be built on sound economic fundamentals and policy frameworks that can withstand political transitions and are grounded in bipartisan support.

Strategic Recommendations

1. Develop Dual-Track Hydrogen Strategies

Compliance-Driven: leverage regulatory environments in states retaining strong mandates:

- Support California leadership: continue engagement with CARB, CEC, and local air districts to align vehicle adoption with infrastructure rollout.
- Cluster-based deployment: prioritize regions with CAA Section 177 adoption (Pacific Northwest, Northeast) where state-level mandates and incentives remain enforceable.
- Stack incentives strategically: combine HVIP vouchers, LCFS credits, and public grants (state and local) to lower fleet TCO while station networks scale.
- Align agencies and timelines: coordinate across transportation, energy, and air quality regulators to prevent gaps where trucks arrive before stations, or vice versa.
- Bridge uncertainty: maintain policy engagement through litigation or federal shifts, ensuring stakeholders are prepared to pivot if waivers are restored or preemption challenges resolved.

Economics-Driven: focus on business fundamentals that apply across all regions:

- Lower dispensed hydrogen costs by prioritizing scale, demand aggregation, and supply chain efficiency to narrow the gap with diesel.
- Anchor fleet demands use offtake agreements and coalitions to de-risk infrastructure investment.
- Reliable, scalable fueling: build high-uptime, modular stations that support long-haul and regional-haul operations.
- Regional advantages as accelerators: leverage low-cost supply and infrastructure hubs (e.g., Gulf Coast) while applying the same cost discipline in California and other markets.
- Durable economics across cycles: ensure strategies can withstand policy uncertainty by standing on market competitiveness alone.

2. Accelerate Aggregated Demand Programs

- Build on existing models in which fleet aggregation has proven effective (Shore to Store at the Port of Los Angeles, NorCAL ZERO at the Port of Oakland, and European H2Accelerate).
- Form regional fleet coalitions to coordinate demand for fueling stations.
- Develop shared-use depots and long-term offtake contracts modeled on transit fleets and multi-fleet logistics hubs.

3. Deploy Public Funding Strategically

- Prioritize truck fueling stations in heavy-duty corridors and nodal hubs anchored by fleet demand, ensuring each site contributes to a minimum viable fueling network.
- Align intrastate agencies (transportation, energy, air quality) to coordinate vehicle and infrastructure rollouts, avoiding gaps where trucks arrive before stations—or stations before trucks.
- Design programs to be stackable, allowing projects to combine state, local, and federal funding streams with private capital for maximum leverage.
- Use public dollars as a catalyst, focusing on first-mover corridors and clusters that de-risk investment and accelerate replication.

4. Harmonize Incentives Across Technologies

- Ensure that LCFS and other carbon-intensity–based programs maintain technology-neutral integrity.
- Protect credit value for truly low-CI fuels.
- Calibrate incentives so that hydrogen pathways are recognized fairly for their lifecycle carbon benefits.
- Align hydrogen station funding eligibility with market-based incentives (e.g., stacking CEC grant funding with LCFS credits) to enhance project bankability.

5. Increase Market Transparency

- Publish real-world hydrogen price benchmarks, fueling uptime data, and TCO results.
- Expand the use of techno-economic modeling tools to reduce adoption risk for fleets considering FCET deployment.

Emerging Opportunities

Gulf Coast: A Parallel Economic Path

A policy shift toward economics-first thinking may prove beneficial for hydrogen in the long run. The Gulf Coast illustrates this: despite federal regulatory stagnation, interest in hydrogen is strong, driven by abundant, low-cost hydrogen production; mature infrastructure and dedicated pipelines; heavy industrial off-takers (refineries, petrochemicals); political favor under current federal leadership; low electricity prices; and access to carbon capture assets.

Though the current Gulf Coast supply is high-carbon-intensity, these conditions offer a viable springboard for heavy-duty mobility pilots, especially if linked to regional hydrogen hubs, market-led deployments by oil & gas fleets, and a longer-term transition to lower-CI production.

The development of hydrogen combustion engines as a bridge technology is also worth monitoring. While not achieving true zero-emission levels, conventionally manufactured combustion engines can rapidly lower costs and accelerate infrastructure adoption. The cautionary note: to realize long-term infrastructure benefits, fuel cell-grade hydrogen quality (SAE J2719) must not be compromised. In cases of cryogenic liquid hydrogen delivery, this is unlikely to be an issue.

Corporate Sustainability & Global Market Signals

On a global scale, CO_2 compliance is being driven by regional sustainability mandates and corporate supply chain commitments. Global logistics players increasingly need to demonstrate carbon reduction throughout their operations. This creates the possibility of green logistics at marginal cost (where hydrogen is the lowest-cost compliance pathway) and a de facto global carbon-trading market for green-certified services, including export terminals serving European markets.

Local regulations may not demand green logistics, but global companies operating across jurisdictions may require sustainable supply chains regardless of regional rules. These conditions offer viable regional sustainable logistics models that do not depend solely on domestic policy support.

Comparative Pathways: Fuel Cell-Electric and Battery-Electric Trucks

Battery-electric trucks (BETs) are often presented as a parallel pathway to zero-emission trucking. Both BETs and FCETs carry a cost premium over diesel today, but their infrastructure requirements, operational characteristics, and use-case suitability differ significantly.

In drayage and regional haul, BETs face operational limits tied to extended charging times and energy throughput. Megawatt Charging System (MCS) infrastructure aims to reduce these constraints but entails grid capacity upgrades, high site capital costs, and real estate requirements for charging depots. These constraints are particularly acute in multi-shift or high-utilization freight operations, where vehicle downtime translates directly into lost productivity.

FCETs offer fast refueling and scalable depot or corridor fueling solutions that support continuous uptime. Hydrogen's higher energy density makes it better suited to applications where payload, range, and rapid turnaround are critical, particularly in the early stages of infrastructure development, when centralized BET charging depots may be harder to site, and grid upgrades may lag demand growth.

These differences support an important policy conclusion: incentive and regulatory frameworks should not default to a one-size-fits-all model. Incentives should account for use-case advantages, ensuring that both BETs and FCETs are deployed where they deliver the greatest value.

Final Takeaway

Hydrogen's onramp into the U.S. trucking sector will no longer be mandate-led alone.

With the suspension of California's ACF enforcement and the current federal posture, the economics of hydrogen must stand on their own (even in early market stages), anchored by low-cost supply, public/private investment, and fleet collaboration.

Hydrogen fuel cell trucks shine in multi-shift operations, rapid refueling, and regions where charging capacity or siting is limited: advantages that directly align with long-haul and high-utilization fleet needs.

The key to unlocking scale is regional coordination, demand aggregation, and a sharp focus on lowering dispensed fuel costs, while preserving a long-term vision for zero-emission goods movement. ***The most resilient strategies will thrive across political cycles: grounded in fleet economics, infrastructure efficiency, and business fundamentals.***

Achieving this outcome will require the industry, policymakers, and investors to move in concert, aligning incentives, accelerating infrastructure buildout, and prioritizing solutions that work for on-the-ground fleets.

Now is the moment to commit to strategies that deliver durable economics and scalable zero-emission freight, ensuring that California and the U.S. remain competitive in the global clean transportation market.

Appendix (Forthcoming)

A. ScMI Scenario-Manager™ Modeling Methodology & Factor Map
B. Full 34-Factor / 8-Category Framework
C. Expert Panel Participant List

Content to be added by H2FCP staff prior to final publication.