Opportunities and Challenges of Adopting Alternative Fuel Vehicles (AFV) in Shared Mobility

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BACKGROUND & OBJECTIVE
Can Shared Mobility be a path to increased adoption of AFVs?

Background: Urban mobility faces transformation given the rise of shared and electric mobility and the need for fuel efficiency as well as improved mobility for everyone. Toyota has committed to a 90% reduction in fossil fuel fleet emissions by 2050, and aims to increase sales of AFVs while improving access to mobility globally.

Objective: (1) Identify opportunities/challenges to introduce AFVs in shared mobility, (2) improve mobility for underserved people.


ANALYSIS
Is Shared Mobility Sustainability-Oriented Innovation (SOI)? Yes.

Businesses profitable and scalable
- Mobility more efficient

Customer mobility needs met

SCENARIO ANALYSIS
Can Shared Mobility with AFVs be SOI? Not today.

Shared Mobility with Electric and Plug-in Hybrid Vehicles are costly, inconvenient, and difficult to scale

FINDINGS & RECOMMENDATIONS
The Future of Shared Mobility is not Electric, but Hybrid.

- Shared Mobility is unlikely a sustainable path to increased adoption of AFVs in the near future
- Shared Mobility can help improve mobility for underserved communities in conjunction with public transportation. Highly cost and fuel efficient (hybrid) vehicles are needed
- Opportunities: (1) Expand Hybrid Portfolio for Shared Mobility, (2) Expand pilots with Electric Two-Seaters (i.e., iRoad), (3) Shared Mobility pilot with long-range/fast charging AFVs & public private partnerships, (4) Evaluate SOI w/ Fuel Cell Vehicles, (5) Autonomous Electric Vehicles
- Challenges: Charging Infrastructure, Costs, Scalability, Acceptance, Standards, Range Anxiety