# Connected Technology Bolstering Carbon Neutrality
~ Optimizing Placement of Hydrogen Refueling Stations ~

Background

Toyota aims to offer electrified vehicles that match the energy situation of each global market.

Data from connected cars reveals how electrified vehicles are used in each region. Toyota is using this data to build a "carbon neutrality data platform" for FCEV planning & development.

**Connected Cars & Carbon Neutrality Data Platform**

DCM: Data Communication Module
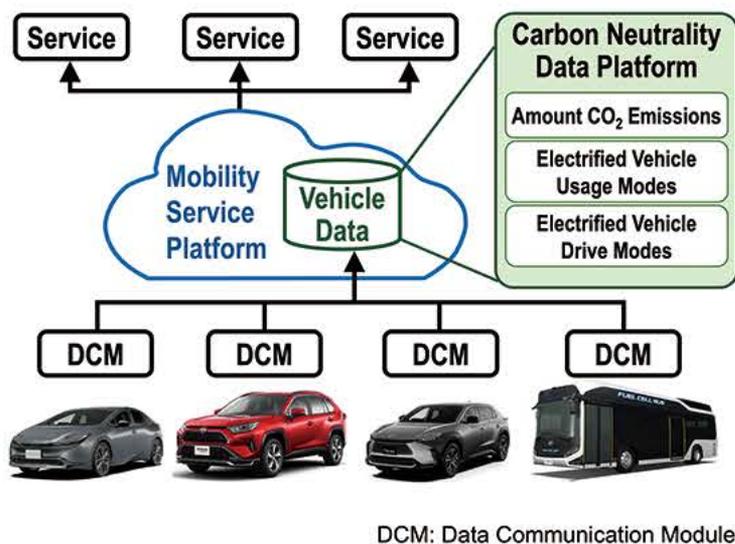
Analysis Items for Electrified Vehicle Usage & Drive Modes

|	HEV Hybrid Electric Vehicle	PHEV Plug-In Hybrid Electric	BEV Battery Electric	FCEV Fuel-Cell Electric
Japan	EV Driving Ratio	EV Cruising Distance		Hydrogen Cruising Distance
N.A.	Drive Power Ratio	Renewable Energy Charging Ratio		
China				
Europe	Synth. Fuel Refueling Ratio			Green Hydrogen Refueling Ratio
	Battery Recycling Ratio			
Emerging Markets	EV Driving Ratio			
	Alcohol Fuel Refueling Ratio			

Technologies & Services

Optimize placement and specifications of hydrogen refueling stations in cities and along transit routes, by understanding how commercial FCEV are used and refueled.

Hydrogen Refueling Frequency for Toyota Sora Bus

Refueling Times Per Month
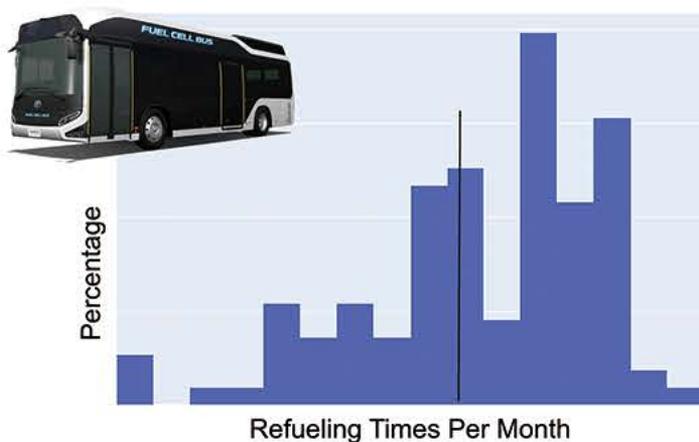
Understand refueling situation for commercial FCEV.

Predicting Best Hydrogen Refueling Areas in City
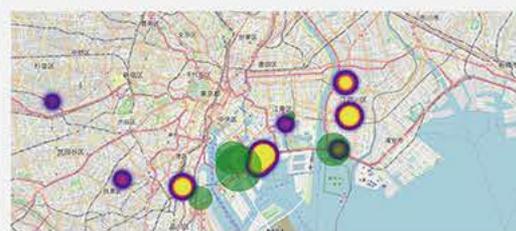
Understand geographic relationship between refueling stations and range of vehicle operation.

Predicting Best Hydrogen Refueling Areas for Long-Distance Transport
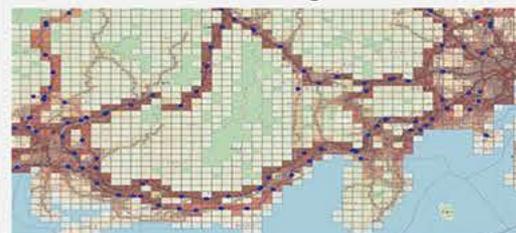
Predict best locations for refueling stations along transit routes.

Future Action

- Collect fixed-metric observational data on modes of use in representative regions (light-duty trucks, heavy-duty trucks, buses).

- Integrate with energy-management systems.

TOYOTA