

Carbon Neutrality Solutions for Commercial Logistics

~ Promoting Regional CN in Japan & Thailand as starting points ~

Improving Logistics Efficiency

Promoting Commercial Electrified Vehicles

Integrating with Regional Communities

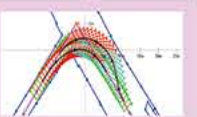
Improving Loading Percentages



Optimizing Operations

Better Accuracy (Big Data)

Volume Data + Characteristics Data



Real-Time Updates

Information Updating Every 60s + New Route Display After 90s



Providing Diverse Electrified Vehicles



FCEV



BEV



H2 Engine



e-Fuel



Cartridge Battery

Customer Options

Pursuing CN Solutions Tailored to Each Region

Energy

Thailand Example
Producing hydrogen with biogas from poultry farms.

CN
Carbon Neutrality

Mobility

Data



BIOGAS

Connected Technology (MSPF)

Real-Time Traffic Information

Vehicle Probe Data

Navigation

Arrival Time Estimation

Cruising Distance Estimation

Logistics Info. (Load, Other)

H2 Station Information

Charger Information

Other Company/Region Data

Vehicle Big Data

Infrastructure Data

Highly Efficient Logistics Solutions

Energy Management

Stronger Data Platform

Goals

Reduce CO2 emissions by shortening lead-time and improving loading percentages.

Provide systems that minimize the down time of commercial electrified vehicles.

Create new values by increasing big data volume and integrating with connected technology.

Key Technology

- Plan efficient delivery routes.
- Support logistics operations at every step.



Delivery Planning System

- Optimize charging/refueling routes for FCEV/BEV transit operations.
- Factor in remaining energy when managing vehicle operations.

Energy Management System

(Infrastructure Information: Chargers, H2 Refueling Stations)

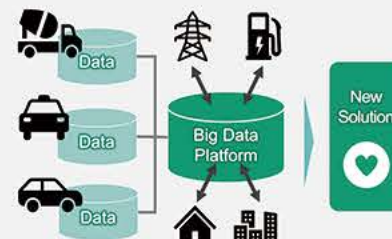
Propose delivery plans that consider charging/Refueling timing.

Provide vehicle information (location, status, remaining energy...).

Operations Management

(Logistics Companies)
Heavy/Light-Duty FC Trucks, Light BEV Trucks & Light Vans

- Build data platform that spans multiple business/industries.
- Enhance existing solutions and create new values & services.



Status & Future

- Started projects & services targeting the logistics industry.
- Plan to study required functions based on true customer needs.

- Launched validation projects in Japan market.
- Plan to further refine solutions based on validation results.

- Started projects in collaboration with partners in Thailand.
- Plan to refine model business case and deploy to other regions.