

EV Demonstrations

EV DEMONSTRATION PROGRAMS

EV sharing and rental programs linked to an intelligent transport system are expected to effectively demonstrate the environmental and practical advantages of electric vehicles and to create a new demand for pure and small size electric vehicles. Shared ownership or rental of electric vehicles in a limited area as an additional or alternative mode of transportation has specific advantages: freeing individuals from the vehicle cost and responsibility of maintenance; freeing the society from the burden of excessive private cars and their exhaust emissions and noise; and, improving traffic flow and parking space problems. When combined with private cars and existing public transportation, EVs would form a complete transportation network with many advantages. Several national demonstration projects and in-company projects for EV car-sharing systems were conducted, and newly developed commuter electric vehicles were demonstrated.

EV-SHARING & RENTAL PROJECTS

	EV+ITS City-Car	EV+ITS Second-Car	EV-sharing for business use	EV+ITS rent-a-car
Place	Yokohama	Inagi	Osaka	Kyoto
EV (unit)	Suzuki Alto EV Suzuki Every EV Nissan Hypermini (50)	Daihatsu Atrai EV (30)	Daihatsu Hijet EV (28)	Toyota e-com Nissan Hypermini (35)
Station	10	5	16	7
Member	~250	~250	100~500	~470
Features	Rental EV in midtown area for office workers	EV sharing in residential area	EV sharing for delivery business	EV rental in tourist resort
Term	1999/10~2002/3	1999/10~2002/3	1999/12~2002/3	2000/12~2003/1

COMMUTER EV SYSTEMS

COMPANY	HONDA Motor Co., Ltd.	Toyota Motor Corporation
SYSTEM	Intelligent Community Vehicle System (ICVS)	EV Commuter System "Crayon"
DEMONSTRATION	Field operation at Twin Rink Motegi motor sports complex, Tochigi (Aug. 1998~2000)	In-company demonstration program at Toyota city 35-50 vehicles, 300 members (May 1999~)
VEHICLE	City Pal, Step Deck, Mon Pal, Raccoon	e-com
SYSTEMS	IC card system; Real-time vehicle management through radio communication; Automatic vehicle reception, parking and charging; Automated platooning system	Reservation by Internet; IC card system; Control of state of charge, location management system; Information system by car navigation, mobile phone, and mobile network

KYOTO PUBLIC CAR PROJECT

Kyoto Public Car project was conducted from December 2000 to January 2003, funded by the METI. 20 Toyota e-coms and 15 Nissan Hyperminis were rented at 7 stations where the vehicles of both manufacturers can be recharged at the same inductive chargers. To reduce labor cost, the vehicles were not be manually reallocated among the stations, and requests for reservations were handled automatically through the Internet. The automated reservation system and the rental transaction system were proved to work well, while improvements are to be made to make the system more efficient and easier to use, e.g. better information on vehicle availability. As the second step of the project, a fee-charging experiment was conducted for about 3 months from September 2001. The rate was set at 20 yen (about 17 cents) per minute, which is approximately between bus and taxi fares. Fee-charging experiment resulted in decrease of vehicle utilization. The project clarified various issues to be solved to make an EV sharing system a self-supporting enterprise, i.e. viable toll system, personnel cost and vehicle cost, public awareness, etc. The project terminated in FY2002, without taken over to a business stage.



Kyoto Public Car Project: First Results [Dec.18, 2000 ~ March 20, 2001]

<i>Member</i>	355 Workers 67%, Students 10%, Homemakers 3%
<i>Vehicle</i>	35 20 e-coms and 15 hyperminis
<i>EV station</i>	6 35 chargers in total
<i>Mean utilization</i>	2.1 times per vehicle per day
<i>Usage</i>	Business: 43%, Shopping:18%, Commuting:10%, Sightseeing: 9%, Meeting & sending: 9%
<i>Travel distance</i>	~10km:46%, 10-20 km:29%, 20-30km:15% Mean travel distance: 15 km

CEV SHARING IN YOKOHAMA



In February 2002, taking over from the national City Car project the CEV Sharing Corporation was established in Yokohama to continue a feasibility study. The company is the only EV-sharing private business in Japan today. 80 member companies are sharing 24 electric vehicles for business usage at an the operating rate of about 20%. According to the company, the cost of using electric vehicles in a car-sharing system for 10 hours is about \$75 per month, which is less than one tenth of the cost of owing a conventional vehicle, which is about \$880 per month. With the theme "From possession to sharing" and "Economical and environmentally friendly automobile society," the company is expected to play a role in public education, and to grow as a financially viable business.



CEV SHARING					
Businesses	Car-sharing business (marketing, management & education), consulting, R&D, experiment contracting, advertising, fire & marine insurance agency				
Shareholders	ORIX Corp., ORIX Rent-a-car, Suzuki Motor Corp., NEC Corp., NEC Soft., etc.				
Vehicle	Nissan Hypermini (20 units) Suzuki Every EV (4 units)				
EV Station	8 stations with normal charging facilities				
ITS system	Unmanned, automatic rental system with smart card; Reservation handling, vehicle location monitoring and user authentication at operation center with packet communication; Application service provider system (operation center sharing system)				
Member	80 companies, consisting of 450 individual users				
Member fees	COMPANY				
	Registration fee	20000 yen			
	IC card	1500 yen (per card)			
	Monthly fee	Plan A	15000 yen	Plan B	4000 yen
	Rental fee per 15 min.	Round trip	100 yen	Round trip	200 yen
		One way	200 yen	One way	400 yen
	INDIVIDUAL				
	Registration fee	10000 yen			
	IC card	1500 yen (per card)			
	Monthly fee	Plan A	5000 yen	Plan B	2000 yen
	Rental fee per 15 min.	Round trip	100 yen	Round trip	200 yen
		One way	200 yen	One way	400 yen

