

Toyota, Nissan, Honda and Mitsubishi Agree to Joint Development of Charging Infrastructure for PHVs, PHEVs and EVs in Japan

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TOKYO, Japan (July 29, 2013) — Toyota Motor Corporation, Nissan Motor Co., Ltd., Honda Motor Co., Ltd., and Mitsubishi Motors Corporation jointly announced their agreement to work together to promote the installation of chargers for electricpowered vehicles (PHVs, PHEVs, EVs*) and build a charging network service that offers more convenience to drivers in Japan.

The move is in recognition of the critical need to swiftly develop charging infrastructure facilities to promote the use of electric-powered vehicles. Assisted by subsidies provided by the Japanese government, the four automakers will bear part of the cost to install the charging facilities. They will also work together to build a convenient and accessible charging network in collaboration with companies that are already providing charging services in which each of the four automakers already have a financial stake.

At present, there are about 1,700 quick chargers and just over 3,000* normal chargers in Japan, which is generally recognized to be insufficient. In addition, the lack of sufficient coordination among existing charging providers can be improved to offer better charging service to customers. The government announced subsidies for installation of charging facilities totaling 100.5 billion yen as part of its economic policy for fiscal year 2013 to quickly develop the charging infrastructure and expand the use of electric-powered vehicles using alternative energy sources. Currently, each prefecture in Japan is drawing up a vision for the use of the subsidies. With this strong support, the four automakers will work together to install the chargers. Previously, each automaker assessed possible locations for charging facilities on their own. Now, they have agreed to work jointly under the common understanding that the charging infrastructure has public value and that enhancing it should be done quickly during the limited period that the subsidies are available.

Currently, there are three charging methods for electric-powered vehicles: basic charging, where a car is charged at private homes or condominiums; destination charging, where a car is charged at locations such as shopping malls, do-it-yourself (DIY) stores and family restaurants for the return trip home; and en-route charging at locations including expressway roadside service areas, roadside stations (michi no eki), gas stations, and convenience stores. In both destination and en-route charging, normal charging is suitable for longer-duration stops, while quick charging is appropriate for shorter stops.

In terms of utility, PHVs and PHEVs would benefit from an expanded charging network because it would maximize these vehicles' EV driving performance and combined fuel economy. EVs, which provide an emissions-free, clean driving experience, could harness a larger charging network to extend their range during longer trips.

Under the agreement, the four companies will launch a joint project to work on the following actions:

1. Promote installation of chargers in Japan

Studies are underway to increase the number of normal chargers by 8,000 and quick chargers by 4,000. Normal chargers could be installed in commercial facilities (e.g. large shopping malls, DIY stores and

family restaurants), which are destination charging spots or en-route charging spots with longer duration stops (e.g. highway service areas and roadside stations) when a vehicle could be charged. Quick chargers are to be installed at en-route charging spots for shorter durations stops (e.g. highway parking areas, convenience stores and gas stations).

2. Promote charger installation by temporarily bearing part of the installation and maintenance costs
3. Build a charging infrastructure network which enables customers to use their PHVs, PHEVs and EVs more conveniently

Collaboration among companies currently providing charging services in which each automaker has already invested (Japan Charge Network Co., Ltd., Charging Network Development, llc and Toyota Media Service) would lead to the creation of a more convenient charging infrastructure network. One example is enabling the car's owner to charge his or her car at any charging spot with the same card.

4. 4. Work with government agencies and local governments

Electric-powered vehicles are the driving force of alternative energy initiatives. The government aims to expand the use of the next-generation of these vehicles and have PHVs, PHEVs and EVs achieve a ratio of 15 to 20 percent of new car sales in 2020. The four automakers are committed to developing a charging infrastructure for a more user-friendly infrastructure and to contribute to creating a society where electric-powered vehicle use can maximized.

^{*1} *Plug-in hybrid vehicles (PHV); plug-in hybrid electric vehicles (PHEV), electric vehicles (EV).*

^{*2} *Based on data collected from Toyota, Nissan, Honda and Mitsubishi.*