

The first electric vehicle rental project for tourists in Japan struggles to make a profit

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Researchers at the Cambridge Service Alliance at the University of Cambridge, have suggested new ways of increasing the uptake of electric car usage.

They have just published a new paper on a pioneering Electric vehicle (EV) rental service for holiday makers in Okinawa Japan, and found that low usage has led to a loss for the car rental companies. It is one of the first EV rental projects of its kind in the world and aims to help improve the [environmental sustainability](#) of tourism on the island of Okinawa, Japan.

The search for [alternative fuels](#) to reduce car CO2 emissions is an important part of the [climate change challenge](#). In Japan 18% of the total CO2 emissions are caused by road transportation. In the EU it is around 12%. In China car usage is expected to rise from 43 cars per 1,000 in 2010 to 320 cars per 1,000 in 2035, thereby increasing the pressure to find alternative sources of fuel.

The paper called: "Electric vehicle rental services: Project in Okinawa, Japan," written by PhD researcher Claire Weiller at the Department of Engineering, in collaboration with the Department of Systems Innovation, University of Tokyo, concludes:

"The Okinawa EV rental service at the end of its first three-year operational phase in 2013, missed its initial targets. Low usage rates mean rental companies are making a loss. Customers worry about insufficient recharging infrastructure. Sales of used rental cars are low."

Ms Weiller suggests an ecosystems approach, favoured by the Cambridge Service Alliance, whose partners include BAE Systems, Caterpillar, IBM, and Pearson. Such an approach could help turn around the project and help others wanting to introduce similar schemes in the future. She continued:

"By adopting an ecosystems approach we can look at all the companies involved in providing the service and that affect the outcome of the service, for instance we found there was a lack of information sharing between them all.

"The information was broken down into all the different components. The companies were keeping the data to themselves. Nissan kept information about the battery in the car, the travel agents kept information about the customers who book their holidays, but the charging company on the island, for example, doesn't have this

information, it doesn't know if the user is just one person or a family. Therefore it was difficult to tailor the service or improve it for the customer.

"If the customer worries about whether they will be able to drive from the airport on the South of the Island to the beaches on the North of the Island, and there is no-one in the value chain able to answer that question they will not feel reassured about the rental service. An ecosystems approach can change that. "

The Department's Professor Andy Neely, Director of the Cambridge Service Alliance said: "An ecosystems approach could be beneficial to those involved in the EV scheme in Okinawa, in Japan. All the partners involved need to think about how to capture value from the information they have in order to serve the customer better."

In a podcast interview on the Cambridge Service Alliance website Ms Weiller adds: "It is very conceivable that this type of rental service with electric vehicles will be offered by more and more countries, including the UK, where there are plans to develop the charging network to 70,000 stations by 2020.

"Electric vehicles really are a great option for the transportation of the future, for environmental reasons, to reduce greenhouse gas emissions and also for economic reasons. This makes them attractive because they have so much lower operating costs than gasoline vehicles. Electricity is cheaper and the fuel is more efficient.

"Electric vehicles are a great option for rental car companies, or taxi fleets, as well as for private users such as commuters or for people who want to sign up for car sharing schemes."

More information: The complete paper is available online:

www.ifm.eng.cam.ac.uk/uploads/...rces/Okinawa_HQP.pdf

Provided by University of Cambridge

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