

## Outreach activities on JHFC 2

Chie Watanabe<sup>1</sup>, Takakuni Iwase<sup>2</sup>, Shoji Tange<sup>3</sup>

*Japan Automobile Research Institute, 1-1-30 Shiba-daimon, Minato-ku, Tokyo, Japan, wchie@jari.or.jp*

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### Abstract

In the Japan Hydrogen and Fuel Cell Demonstration project (shortly named JHFC), outreach activities play an important role for promoting public awareness and acceptance for Fuel Cell Vehicle (FCV) and hydrogen, which is one of major objectives in the project. JHFC 2 project is now being conducted from 2006FY to 2010FY. In this paper, various outreach activities such as FCV school for kids and the FCV test-ride are described. And the big event, "JHFC in Hokkaido 2008" which was performed under cold weather was also shown. Investigation results of public awareness about hydrogen and FCV are shown as well. The result indicates that public awareness about FCV reached more than 80% in Japan. Outline of future plans are also described.

*Keywords:* communication, demonstration, education, fuel cell, hydrogen

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### 1 Introduction

The Japan Hydrogen and Fuel Cell Demonstration project (JHFC) is a part of fuel cell system demonstration study subsidized by the Ministry of Economy, Trade and Industry(METI).The Japan Automobile Research Institute (JARI) has been taking charge of the fuel cell vehicle (FCV) and hydrogen ICV demonstration study, and the Engineering Advancement Association of Japan (ENAA) has been taking charge of the hydrogen infrastructures demonstration study. JHFC project started since 2002 FY and will be continued until 2010 FY.

#### 1.1 JHFC overview

The JHFC project is the world's first national project to obtain FCV driving test data systematically through demonstration testing. The main objectives of the JHFC project are to clarify energy efficiency of FCVs and hydrogen refueling stations, and to investigate effects on environment. In the JHFC project,

demonstration tests by FCVs submitted from 8 car manufacturers (Toyota, Nissan, Honda, Mercedes-Benz, General Motors, Hino(FC bus), Suzuki, and Mazda(hydrogen ICV)) have been underway to acquire the data by using 12 hydrogen stations in Tokyo area, Aichi and Osaka region, Japan.

### 2 Outreach activities on JHFC

Another main objective of the JHFC project is to raise public awareness, understanding, and acceptance regarding FCVs and hydrogen stations. In order to promote the public awareness following outreach activities have been performed.

#### 2.1 Activities on JHFC Park

The JHFC Park represents the world's first "complex facility of FCVs and Hydrogen Station" and consists of the JHFC Yokohama-Daikoku hydrogen refueling station, FCV garages, a maintenance room and showroom, which were built on March, 2003(Fig.1). It features two aspects: first as the FCV test base

for the demonstration project, and secondly as the facility to study about the fuel cell and hydrogen. It is our main place for outreach activities. The automobile manufactures use the garages and maintenance room for the testing and maintenance of FCVs. The visitors can take the lectures on FCVs and hydrogen at showroom, and enjoy hydrogen refueling station facility tours and FCV test-ride. The special events are held periodically.



Figure1: The JHFC Park (Yokohama)

### 2.1.1 Open house on weekdays

The JHFC Park is open for public at 10:00-17:00 on weekday and every 3rd Sunday. The 2 hours facility tours are available in the morning and in the afternoon twice in a day. People can join the tour by reservation on website in advance. Many people had been longing for this facility tour, applicants are from diverse fields such as energy, engineering, construction and heavy industries, automakers, passenger transportation companies, universities and news media came on tour. The staff would explain kindly what is the FCV, what is hydrogen energy and what is the hydrogen station through lectures and facility tours. The visitors can also enjoy FCV test-ride on every Wednesday and Thursday.

### 2.1.2 Special events of JHFC Park

One of the popular events held by JHFC Park is "FCV school for kids and parents". We have this class room for the families on every 3rd Sunday and during the spring and summer breaks, and we have 20 families everytime. The children who once learn the wonderful power of fuel cell would never forget it.

### 2.1.3 Visiting class in elementary school in Yokohama city

In 2008FY, the JHFC Park has started to held an education programs in cooperation with the traffic environmental countermeasures department, environment creation bureau of Yokohama city. The JHFC park staff and Yokohama city staff drive the FCV and visit several elementary schools in Yokohama city. We try to make school children to think about air pollution through our easy-to-understand lecture, construction of FCV mini-model cars and the test-ride of Yokohama city's lease FCV.

## 2.2 JHFC Special Events

In the JHFC project, years time holding of the business trip event which gets people general about FCV or hydrogen energy to deepen an understanding also in places other than a JHFC park is carried out. The object although a schoolchild to businessman is broad, the program whose candidate each suited is constituted. It aims at carrying out and having significant experience obtained.

### 2.2.1 FCV School for kids

It is important that children should be familiar to hydrogen and FCV, because they would be main users of FCV in hydrogen economy in near feature. It is the reason that FCV school for kids is regarded as one of major outreach activities in our project. Fig. 2 and 3 indicate examples of the FCV school for kids.



Figure2: Lecture session of FCV and hydrogen (Nagoya)



Figure3: JHFC hydrogen station tour (Fukuoka)

This school consists of 3 parts, lecture about hydrogen and fuel cell, building FCV mini model and car race using the mini model, and FCV test-ride. Investigation results after the FCV school for kids indicated that it was very useful and effective for promoting children's awareness and understanding about hydrogen and FCV.

### 2.2.2 JHFC in Hokkaido 2008

One of the big events in 2008 held by JHFC project was "JHFC in Hokkaido 2008". In February, JHFC project had several FCV promotion events in Hokkaido where is the northern island in Japan. There were two major reasons for visiting Hokkaido. One was the investigation of the startability and durability of FCV under below-zero degrees Celsius temperature environment. The other was the Hokkaido Toyako Summit was going to be held in Hokkaido in July. 5 FCVs and a hydrogen ICV stayed there for a week and had the FCV test-ride in the venue of Sapporo snow festival (Figure4).



Figure 4: Venue of Sapporo snow festival

We also visited local elementary schools in Sapporo city and Toyako town to show the green vehicles to the children. We performed cold start-up ability tests of FCVs for two nights and minimum temperatures recorded -10 degrees Celsius. Afterwards, we came back to Hokkaido for "G8 Hokkaido Toyako Summit" and "Junior 8 Summit Chitose Shikotsuko" in July (Figure5). We participated in "Integrated Exhibition of the Environment" in celebration of the Hokkaido Toyako Summit" in Sapporo Dome. Also we visited the Universities and the Junior college, the Industrial high schools and the Elementary schools to have FCV workshop and test-ride.



Figure 5: International media center, G8 Summit

### 2.2.3 G8 Hokkaido Toyako Summit

Since Japan decided to hold the G8 summit, the JHFC began to FCV promotion activities positively. In the first, we had FCVs and hydrogen study group for news medias to let them to report about environment-friendly FCVs and hydrogen in the articles. One of the unique PR activities we did was an airport pick-up by FCVs for attendance of G20 CHIBA Gleneagles Dialogue 2008 in February and G8 KOBE Environment Ministers Meeting 2008 in May. In G8 Hokkaido Toyako Summit had FCVs and hydrogen ICVs exhibition and test-ride were performed in International Media Center, and 5 FC buses were operated for official shuttle. The JHFC's 5 relocatable hydrogen refueling stations were operated for 12 days in G8 summit site to refuel official FCVs and 5 FC buses.

### 2.2.4 Exhibitions

FCVs have been sent to various shows in Japan for display, such as "FC EXPO" (Figure 6). We try many people to opportunities to see directly

FCVs which still has only several sets are prepared for Japan. There are poster exhibitions that describes the structure of FCV and measure of project are preformed annually.

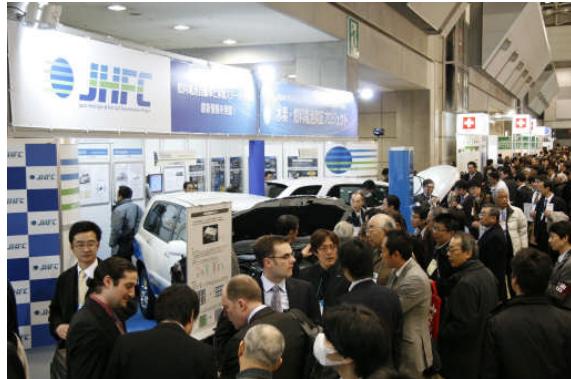


Figure 6: FC EXPO 2009 (Tokyo)



Figure 7: AT International 2008 (Chiba)

### 2.3 JHFC seminar

The "JHFC seminar" which can be also called generalization of a JHFC project is held in every March. Figure 8,9 show the 7th JHFC seminar 2008FY. The number of attendee was over 350.

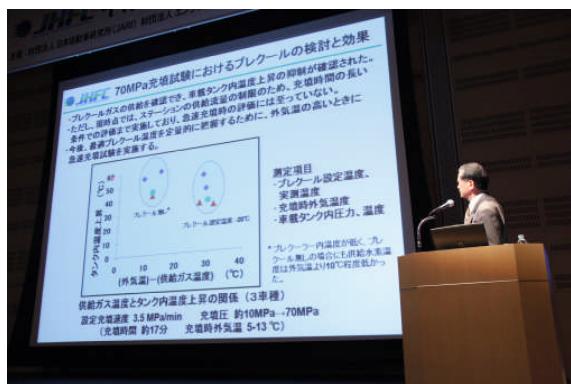


Figure 8: JHFC seminar - Lecture session

There were 3 parts of composition which is a lecture session including the annual reports of JHFC projects, and also the special keynote sessions presented by DOE and NOW(Germany) were included, exhibition of newest FCVs in outside. The JHFC seminar is getting popular and also many people are participating.



Figure 9: JHFC seminar - FCVs exhibition

### 3 Publicity Materials

Publicity materials including pamphlets and promotion videos were published by JHFC project for general use. Japanese version and English version were prepared. We made pamphlets for children as well because there are strong demands in schools. Figure 9 shows what pamphlet for children look like.





Figure 9: Pamphlet for children " FCV runs with hydrogen"

## 4 JHFC website

We believe that the JHFC website is one of the most important public-relations items. We work hard to attract people by our website contents. For example, an interview with the Mayor of Yokohama city which uses lease FCV. Also we had interviews with motor journalist, professor who researches FCV in university.

## 5 Public opinion survey

Public awareness investigations in Tokyo area have been conducted every year since JHFC project has been started. This investigation is survey of public awareness about FCV and hydrogen economy. Our result of survey in 2007FY, the public awareness about FCV increased from 72% to 80% , which is very high level in the world. The investigation result also showed that awareness in young people and women still stay low level and their main information source is TV, not newspaper. This result indicates that outreach activity using broadcast program would be effective to increase the public awareness.

## 6 Future plan

The next year 2009FY, new hydrogen stations will open in Kyushu area where locates at south west of Japan. JHFC project are planing to have the FCV long distance caravan from Tokyo to Kyushu by using several JHFC hydrogen refueling stations in Tokyo, Yokohama, Aichi and Osaka region. That distance is going to be about 1,000km. In the future, our outreach activity area will be extended to various districts in Japan, and

public awareness and acceptance of hydrogen and FCV will be increased in the whole countries.

## Authors

Chie Watanabe, Engineer,  
Planning & Demonstration Group, FC-EV Research Division,  
Japan Automobile Research Institute,  
1-1-30 bldg.12F. Shibadaimon,  
Minatoku, Tokyo 105-0012, Japan  
phone. +81-3-5733-7927  
fax. +81-3-5473-0655  
e-mail. wchie@jari.or.jp



Takakuni Iwase,  
Deputy Director, Senior Researcher,  
FC-EV Research Division,  
Japan Automobile Research Institute,  
1-1-30 bldg.12F. Shibadaimon,  
Minatoku, Tokyo 105-0012, Japan  
phone. +81-3-5733-7927  
fax. +81-3-5473-0655



Shoji Tange, Visiting Resercher,  
FC-EV Research Division,  
Japan Automobile Research Institute,  
1-1-30 bldg.12F. Shibadaimon,  
Minatoku, Tokyo 105-0012, Japan  
phone. +81-3-5733-7927  
fax. +81-3-5473-0655

