

## Launch of “Fuel Cell Vehicle”

Fuel Cell Vehicle (FCV) is a type of Electric Vehicles (EVs) using a new power generation system (fuel cell) through reaction of oxygen with hydrogen. Unlike the EVs need storage batteries to charge electricity, the FCVs generate electric power by themselves, combining hydrogen and air (more precisely oxygen). The FCVs are known as the ultimate eco-friendly cars as it only discharges water.

### Point 1

#### Launch of “FCV” for the first time in the world Received over 1,500 orders in just a month

- In November 2014, Toyota Motor Corporation (TOYOTA) announced a start of the FCVs sales in Japanese market from December 2014. This is the first commercial sales of FCVs in the world. The price on the tag was JPY 7.236million or around (including consumption tax), however, the real price is lower than the original price considering the benefit of the JPY2million subsidy from the government and JPY0.23million tax reduction on automobile weight & acquisition taxes in the name of “Eco-car tax break”.
- According to the announcement by TOYOTA on January 22, the order for the FCVs surpassed their prior projection significantly, reaching more than 1,500 units just in a month after the launch. TOYOTA plans to start the FCV distribution also in the US and Europe from autumn of 2015. Honda Motor Co. is also planning to start its commercial sales of FCVs within FY 2015.

### Point 2

#### Installing hydrogen stations is a key to spread FCVs TOYOTA published its patents related to the FCV systems to third parties for free

- Installation of more hydrogen stations and further lowering the car price are the keys for further diffusion of the FCVs. We can travel about 650 km by an FCV with fully-loaded hydrogen. The Japanese government plans to install around 100 hydrogen stations nationwide in 2015. It is necessary to implement such promoting measures to enhance the level of user’s convenience in order to make the FCVs more popular.
- On January 6, TOYOTA made an epoch-making announcement that the company was willing to publish the patents related to the FCV systems for period till the end of year 2020. It is unusual to allow third parties to use the next generation technologies for free of royalty. It is thought that TOYOTA is to accelerate the FCV diffusion by supporting its competitors to develop more on its FCV related technologies. Once the production efficiency is enhanced through mass production, lower price can be expected.

## Spread of the FCVs would generate a new type of eco-friendly energy business in the future

### ■ The government is supporting for more diffusion of FCVs

The Japanese government is supporting the FCVs to be widely spread by setting a load-map. The load-map supposes the hydrogen fuel price to be lower than the fuel cost for the Hybrid Vehicles by around 2020, and the FCV car prices almost equivalent to those of the Hybrid Vehicles by around 2025. They are trying to help industrialisation of the new type of fuel batteries together with promoting the FCV business which will contribute to enhancing energy efficiency and avoiding deterioration in environments .

### ■ The FCV related technologies create new types of energy industries

The wide spreading of FCVs has a large potentiality of generating new types of industries to give a new energy source for electric power. The new energy is expected as a part of household use, not limited to the hydrogen stations and hydrogen production.

**Note: SMAM is NOT recommending or giving investment advise on TOYOTA or HONDA. These companies are shown only for information provision purpose.**

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