



# Japan's approach to hydrogen economy

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# Why Hydrogen?

- **Clean energy**: achieving higher level of energy security and zero emission
- **Flexible energy carrier**: made from various energy sources and used in every energy demand
- **Long experience in H2 development**: Japan has more than 30 years experience in H2 R&D including commercial sale of FC system

# 3 steps to Hydrogen Economy

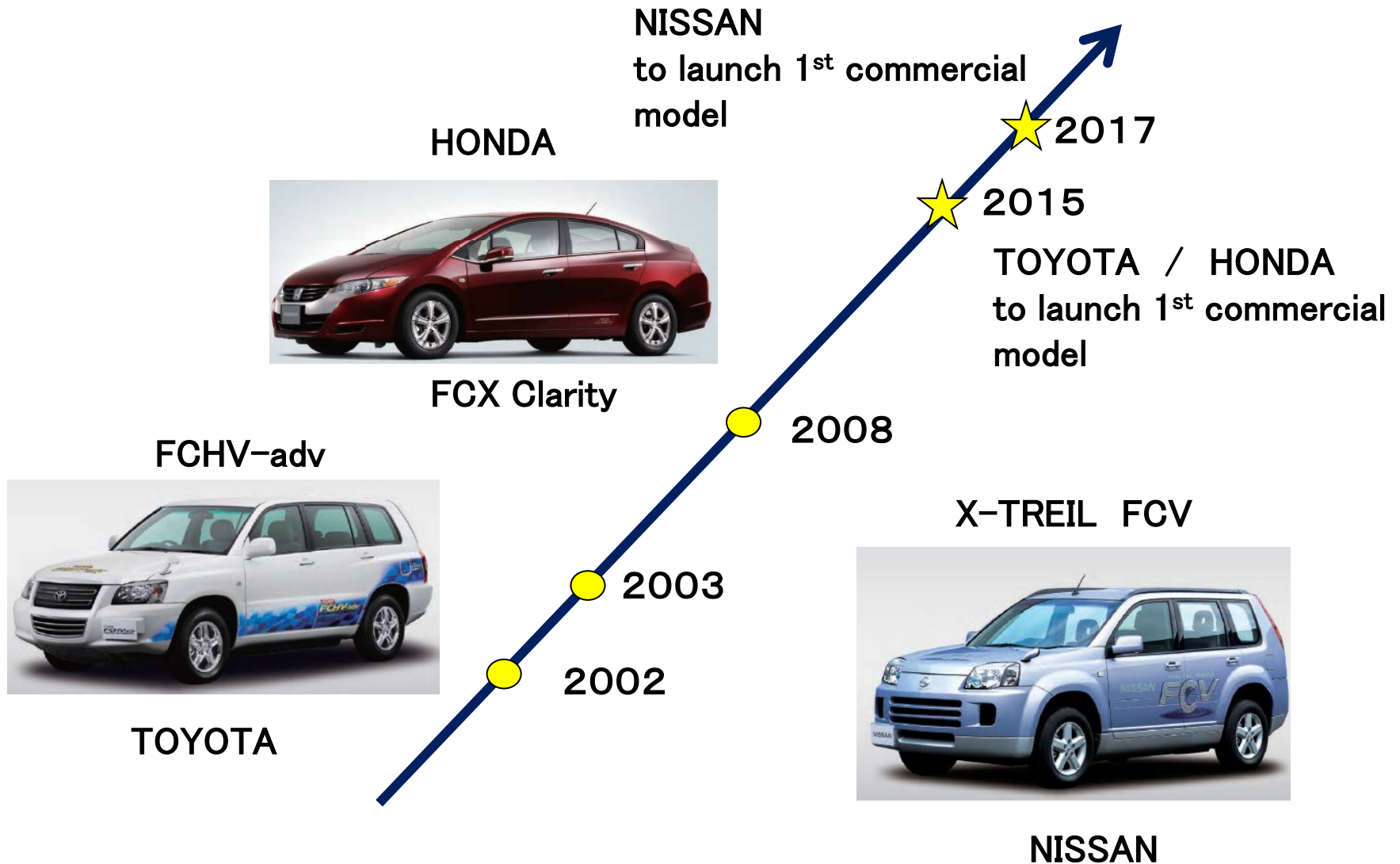
1. Residential FC co-generation system (Ene-Farm)
2. Fuel Cell Vehicle + H<sub>2</sub> supply infrastructure
3. Broader use of H<sub>2</sub> in Energy system

# Ene Farm

- 700W FC cogeneration system for households
- NG/LPG dual fuel
- Total efficiency 90%, 10 years warranty
- Commercial sale since 2009
- 50% capex subsidy by government
- More than 50,000 installations by March 2013



# History of Japanese FCV development

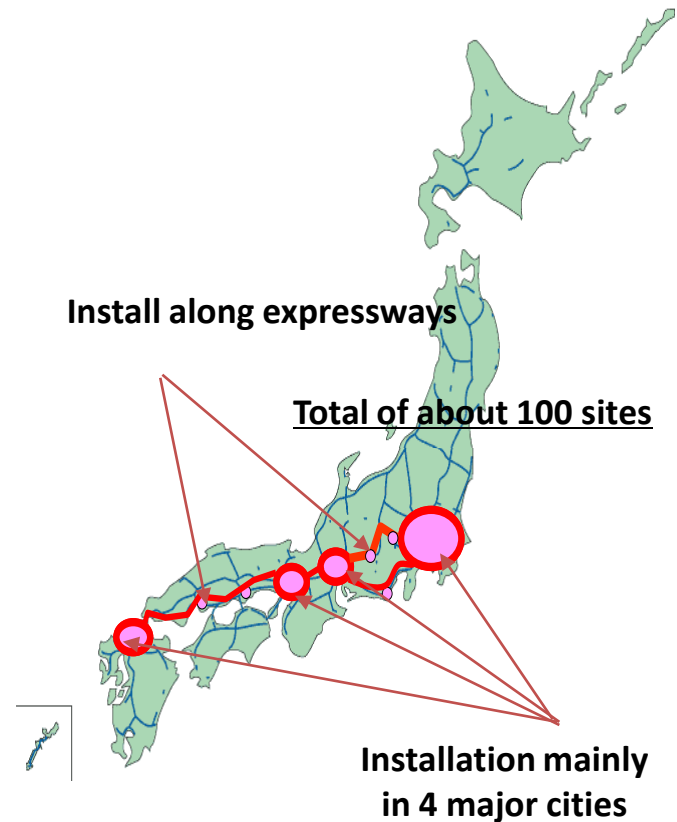


# FCV and H2 station: Chicken or egg?

- In January 2011, three automakers and 10 energy companies came to agreement for the commercialization of FCV which includes as following:

(1) FCV to be introduced to market in 2015

(2) In advance, 100 hydrogen stations to be constructed mainly in four populated area (Tokyo Metropolitan Area, Chukyo, Kansai , North Kyusyu)

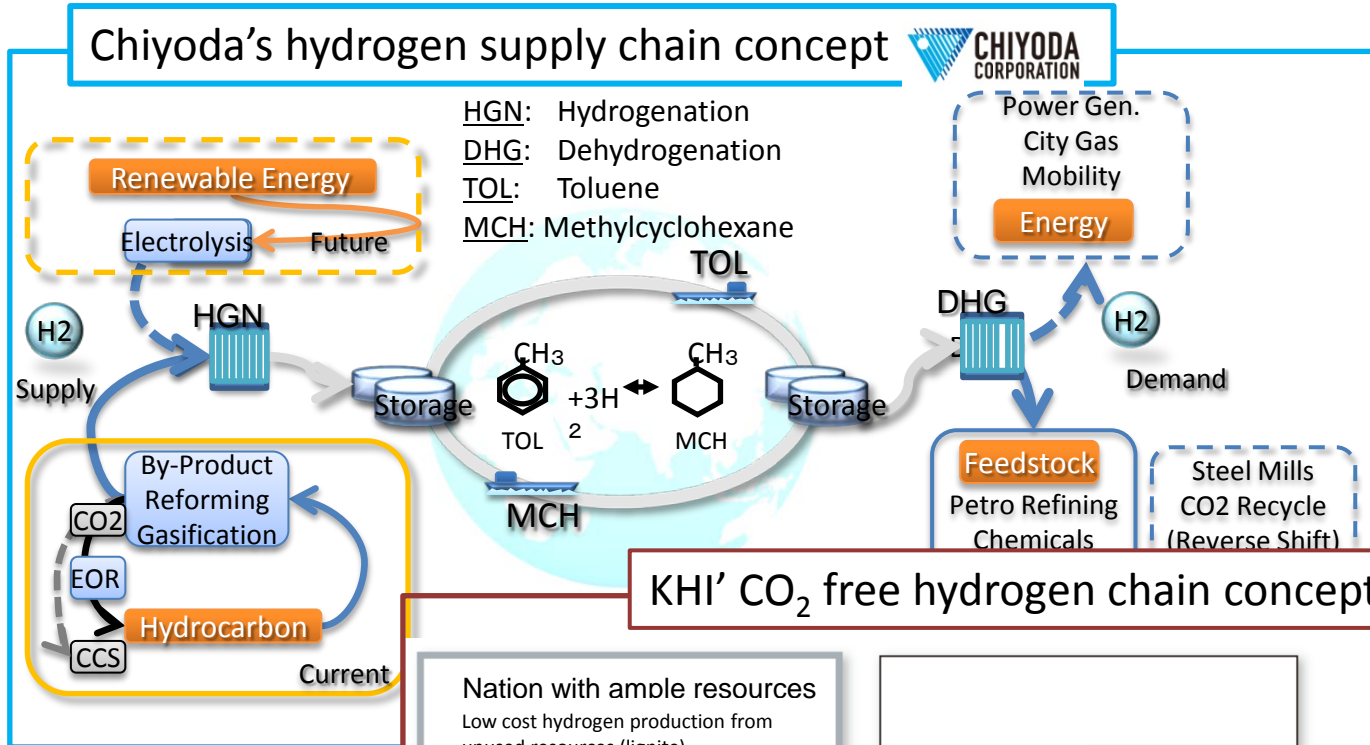


# NEDO's role in FCV development

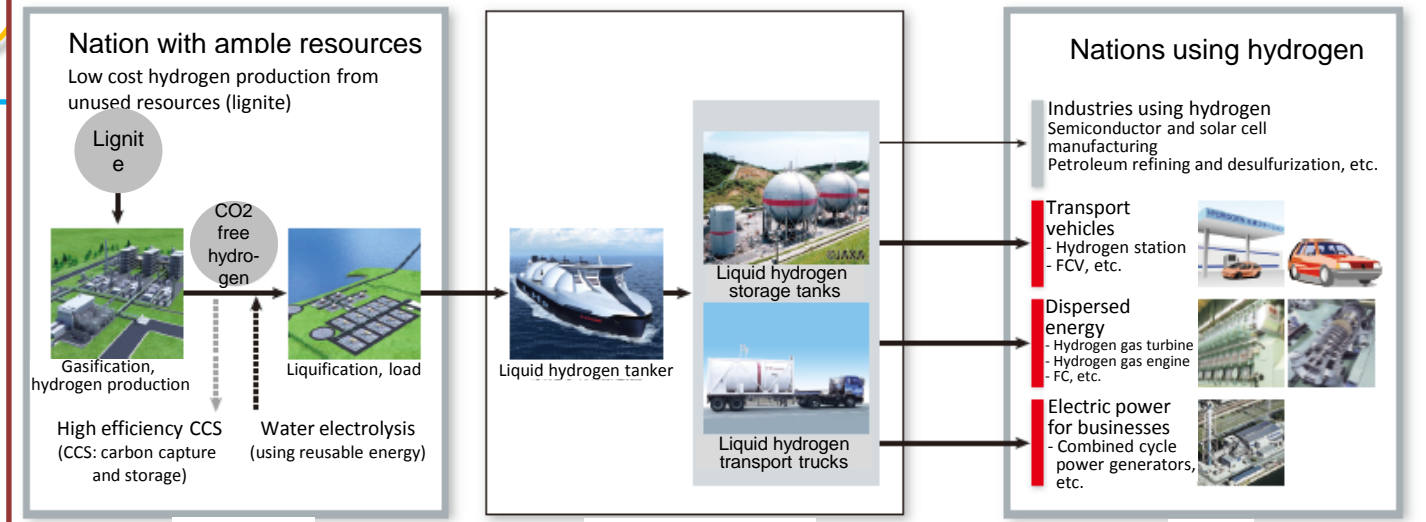
- Developing common evaluation method for fuel cell
- R&D for reducing the use of platinum
- Developing international standards, fostering international harmonization
- Support to the demonstration of FCV fleets and H2 station through JHFC projects

# What's next?

## Chiyoda's hydrogen supply chain concept



## KHI' CO<sub>2</sub> free hydrogen chain concept





# IPHE 20<sup>th</sup> SC in Fukuoka



# Conclusion

- H2 is useful not only as zero emission fuel but also flexible energy carrier that contribute to energy security.
- Not just energy perspective, H2 is hopeful as a new industrial sector that will boost national economic growth
- Japan has been successful in developing residential FC CHP system. Key of the success was the cooperation of suppliers and energy providers in launching market
- Many H2 business is still in pre competition phase. International efforts to launch new market will be essential.



**Thank you for your attention**

**[www.nedo.go.jp](http://www.nedo.go.jp)**

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