

FCDIC Report 31st Issue (No.31)

To World Members

“FCDIC Report No.31” is issued on 30th January 2023. Please refer to the following contents. In this issue, there are many market information on fuel cell and hydrogen related fuel. So, market information is separately described.

It is appreciated if you give us any comment on this new report.

1. “Fuel Cell RD & D in Japan 2022”, Annual Report of FCDIC

Annual Report will be published on 20th December, including contribution by METI on strategy of Japan, involving the 5th hydrogen energy ministerial meeting.

2. Bulletin of “The Journal of Fuel Cell Technology”

Vol.22 No.3, edition is issued on 30th January 2023. It is specially issued on the procurement of hydrogen fuel for fuel cells.

3. Topics related to fuel cell and hydrogen energy : from 26th November, 2022 to 28th January, 2023

<Government, Local Government, METI, MLIT(Ministry of Land, Infrastructure, Transport and Tourism), MOFA(Ministry of Foreign Affairs of Japan), MEXT(Ministry of Education, Culture, Sports, Science and Technology), NEDO, JETRO, Tokyo, Yokohama City, JOGMEC>

1) “**Memorandum of cooperation on hydrogen between METI and The European Commission**”, 1st Dec., 2022

URL: [https:// www.meti.go.jp/press/2022/12/20221202004/20221202004-1.pdf](https://www.meti.go.jp/press/2022/12/20221202004/20221202004-1.pdf)

In English

2) “**C40 World Mayors Summit puts the spotlight on Tokyo's Green Energy Strategy on 22 Oct, 2022**”, 1st Dec., 2022

down loaded

URL: [https:// www.time-to-act.metro.tokyo.lg.jp/en/initiatives/221201-1](https://www.time-to-act.metro.tokyo.lg.jp/en/initiatives/221201-1)

In English

3) “**JOGMEC and the Gov. of Western Australia signed a MOU on mutual cooperation regarding natural resources, H2 etc.**”, 8th Dec., 2022 PDF available

URL: [https:// www.jogmec.go.jp/english/news/release/news_10_00022.html](https://www.jogmec.go.jp/english/news/release/news_10_00022.html)

In English

4) “**Kawasaki Heavy Industries, Ltd., and Nippon Yusen Kaisha Joined Japan Hydrogen Forum (JH2F) in the US**”, 7th Dec., 2022

URL: [https:// www.jetro.go.jp/usa/japan-hydrogen-forum/press-release-12072022.html](https://www.jetro.go.jp/usa/japan-hydrogen-forum/press-release-12072022.html)

In English

5) “**Japan-Belgium foreign minister's meeting including hydrogen fuel**”, 5th Dec., 2022

URL: https://www.mofa.go.jp/press/release/press6e_000430.html

In English

6) “**Committee of decarbonizing fuel, such as ammonia – internal summary- PDF available in Japanese, 136pp**”, 13th



Dec., 2022

URL: [https:// www.meti.go.jp/shingikai/enecho/shoene_shinene/suiso_seisaku/pdf/007_02_00.pdf](https://www.meti.go.jp/shingikai/enecho/shoene_shinene/suiso_seisaku/pdf/007_02_00.pdf)

In Japanese

7) **“MOC(Corporation) on economic and trade relations Japanese Gov. and US . Maryland”**, 12th Dec., 2022

URL: [https:// www.mofa.go.jp/files/100433132.pdf](https://www.mofa.go.jp/files/100433132.pdf)

In English

8) **“MLIT/Civil Aviation Authority of Singapore(CAAS) - fuel cell powered airside ground vehicles”**, 23th Dec., 2022

URL: [https:// www.mlit.go.jp/report/press/content/001580290.pdf](https://www.mlit.go.jp/report/press/content/001580290.pdf)

In English, contents of report written in English in spite of cover written in Japanese

9) **“Carbon-neutral port initiatives, Yokohama City”**, 10th Jan., 2023

URL: [https:// www.city.yokohama.lg.jp/lang/overseas/port/kankyo/cnp/initiatives.html](https://www.city.yokohama.lg.jp/lang/overseas/port/kankyo/cnp/initiatives.html)

In English

10) **“Introduction of Yokohama-City initiatives on hydrogen supply chain and utilization”**, 23th Jan., 2023 Up-dated

URL: [https:// www.city.yokohama.lg.jp/kurashi/machizukuri-kankyo/ondanka/etc/suiso20221226.html](https://www.city.yokohama.lg.jp/kurashi/machizukuri-kankyo/ondanka/etc/suiso20221226.html)

In Japanese

11) **“The world's first hydrogen passenger ship, powered by a mix of hydrogen and diesel”**, 23rd Jan., 2023

URL: [https:// www.tokyoupdates.metro.tokyo.lg.jp/en/post-890/](https://www.tokyoupdates.metro.tokyo.lg.jp/en/post-890/)

In English

12) **“Unification the regulations on FCV, amendment announced scheduled in June this year and execution December – High pressure act”**, 24th Dec., 2022 down loaded, Resume available (in Japanese)

URL: [https:// www.meti.go.jp/shingikai/sankoshin/hoan_shohi/koatsu_gas/pdf/023_01_00.pdf](https://www.meti.go.jp/shingikai/sankoshin/hoan_shohi/koatsu_gas/pdf/023_01_00.pdf)

In Japanese

13) **“Technology and market correlation diagram on Hydrogen, Mandara , explanation in English”**, 7th Jan., 2023 down loaded,

URL: [https:// www.mext.go.jp/stw/common/pdf/series/hydrogen/hydrogen_english.pdf](https://www.mext.go.jp/stw/common/pdf/series/hydrogen/hydrogen_english.pdf)

In English

<Business Papers and Sites>

[General topics]

1) **“Honda to make new fuel cell vehicle in U.S. from 2024”**, 30th Nov., 2022

URL: [https:// jen.jiji.com/jc/eng?g=ind&k=2022120100399](https://jen.jiji.com/jc/eng?g=ind&k=2022120100399)

In English

2) **“Four scenarios for a carbon neutral Japan – Report by Mitsubishi Research Inst”**, 30th Nov., 2022

URL: [https:// www.mri.co.jp/en/knowledge/mreview/202208.html](https://www.mri.co.jp/en/knowledge/mreview/202208.html)

In English

3) **“Unification of the name of synthetic methane to "e-methane" for the purpose of improving international recognition”**, 22^h Nov., 2022



URL: [https:// www.gas.or.jp/pdf/en/newsrelease/newsrelease_20221206.pdf](https://www.gas.or.jp/pdf/en/newsrelease/newsrelease_20221206.pdf)

In English

4) **“Toyota, Thailand's CP partner on hydrogen fuel -to work for carbon neutrality”**, 15th Dec., 2022

URL: [https:// www3.nhk.or.jp/nhkworld/en/news/20221215_14/](https://www3.nhk.or.jp/nhkworld/en/news/20221215_14/)

Japan's biggest automaker says it will work with a Thai conglomerate to promote hydrogen fuel as a way to achieve carbon neutrality.

Toyota Motor announced on Wednesday that it will explore collaboration with Charoen Pokphand Group, whose business includes retail and livestock farming. The companies plan to produce hydrogen from biogas derived from farm waste and use it to power delivery trucks.

Toyota President Toyoda Akio also disclosed that his company is developing electric pickup trucks for the Thai market.

Toyoda said, "There are many options for developing eco-friendly cars. Toyota will continue to take all options seriously. We also want to develop advanced technologies and become an auto company that offers affordability and freedom of movement to everyone."

The automaker has a 30-percent share in Thailand's new car market. The country is the automaker's biggest production base in Southeast Asia.

In English

5) **“Hydrogen-solar panels that convert air moisture to hydrogen enter commercialization in 2026”**, 12th Dec., 2022

URL: [https:// www.energytrend.com/news/20221213-30475.html](https://www.energytrend.com/news/20221213-30475.html)

In English

6) **“Instructions manual on MIRAI”**, 24th Dec., 2022 down loaded

URL: [https:// manual.toyota.jp/mirai/2212/fcev/ja_JP/contents/vhch02se010401.php](https://manual.toyota.jp/mirai/2212/fcev/ja_JP/contents/vhch02se010401.php)

In English

7) **“TTOCHU announces capital investment and business alliance with next-generation fuel cell manufacturer; Upstart Power Inc.”**, 19th Dec., 2022

URL: [https:// www.itochu.co.jp/en/news/press/2022/221219.html](https://www.itochu.co.jp/en/news/press/2022/221219.html)

In English

8) **“Showa Denko's low-carbon ammonia produced from used plastics reduces CO₂ emission by more than 80%”**, 20th Dec., 2022

URL: [https:// www.sdk.co.jp/english/news/2022/43634.html](https://www.sdk.co.jp/english/news/2022/43634.html)

In English

9) **“This is how our hydrogen engine development begun Report 10pages available by PDF 1,100 Japanese Yen, published In Dec 2022”**, 24th Dec., 2022 down loaded

URL: [https:// tech.jsae.or.jp/paperinfo/en/content/st202205.02/](https://tech.jsae.or.jp/paperinfo/en/content/st202205.02/)

In Japanese

10) **“Fukuoka Prefecture and CJPT enter partnership to implement FC mobility expansion initiatives Aiming to develop a practical and sustainable hydrogen society”**, 26th Dec., 2022

URL: [https:// www.isuzu.co.jp/world/newsroom/details/20221226_01.html](https://www.isuzu.co.jp/world/newsroom/details/20221226_01.html)



- 11) **“Toyota plans to test liquid hydrogen car in 2030 endurance races”**, 7th Jan., 2023
URL: [https:// www.japantimes.co.jp/news/2023/01/05/business/corporate-business/toyota-hydrogen-fuel-car/](https://www.japantimes.co.jp/news/2023/01/05/business/corporate-business/toyota-hydrogen-fuel-car/)
In English
- 12) **“Honda Contracts with JAXA to develop power supply on moon”**, 28th Jan., 2023.
URL: [https:// japannews.yomiuri.co.jp/business/companies/20230123-85712/](https://japannews.yomiuri.co.jp/business/companies/20230123-85712/)
In English
Schematic drawing available in a next URL of Japanese article
URL: <https://newsswitch.jp/p/35492>
- [Market information of hydrogen and hydrogen]
- 13) **“Green hydrogen global market report 2022: Government sustainability initiatives worldwide drive growth”**, 2nd Jan., 2023
URL: [https:// menafn.com/1105259802/Green-Hydrogen-Global-Market-Report-2022-Government-Sustainability-Initiatives-Worldwide-Drive-Growth](https://menafn.com/1105259802/Green-Hydrogen-Global-Market-Report-2022-Government-Sustainability-Initiatives-Worldwide-Drive-Growth)
In English
- 14) **“Global stationary fuel cell power station market insight , forecast to 2028”**, 5th Dec., 2022
URL: <https://www.gii.co.jp/report/qyr1166731-global-stationary-fuel-cell-power-station-market.html>
In English, -- Sample is available Report written in English/108 pages
- 15) **“Automotive fuel cell market growing at a rapid pace by 2028: Trend and future forecasting”**, 7th Dec., 2022
URL: <https://menafn.com/1105282175/Automotive-Fuel-Cell-Market-Growing-At-A-Rapid-Pace-By-2028-Trends-And-Future-Forecasting>
In English
- 16) **“Market forecast of bicycles to be up to about 20 billion US\$”**, 7th Jan., 2023
URL: <https://newscast.jp/news/2590285>
In Japanese
Free sample page is to be referred to URL: reportocean.com/industry-verticals/sample-request?report_id=bwcc16988
- 17) **“Advanced fuel cells market growth rate, trends and future growth predictions till 2028”**, 17th Dec., 2022
URL: menafn.com/1105303677/Advanced-Fuel-Cells-Market-Growth-Rate-Trends-And-Future-Growth-Predictions-Till-2028
In English
- 18) **“Market: hydrogen generation market report with executive summary, size, analysis and forecast to 2022-2031”**, 15th Dec., 2022
URL: [https:// menafn.com/1105316906/Hydrogen-Generation-Market-Report-With-Executive-Summary-Size-Analysis-And-Forecast-To-2022-2031](https://menafn.com/1105316906/Hydrogen-Generation-Market-Report-With-Executive-Summary-Size-Analysis-And-Forecast-To-2022-2031)
In English
- 19) **“Market size of FCV forecasted up to 24 billion US\$ in 2030”**, 19th Dec., 2022
URL: [https:// newscast.jp/news/8575737](https://newscast.jp/news/8575737)



20) **“Market data of stationary FCs now on sale written in English”**, 22nd Dec., 2022

URL: [https:// www.dreamnews.jp/press/0000272863/](https://www.dreamnews.jp/press/0000272863/)

In Japanese

21) **“Fuel cell market analysis industry specific opportunities and trends affecting the growth”**, 21st Dec., 2022

URL: [https:// menafn.com/1105335988/Fuel-Cell-Market-Analysis-Industry-Specific-Opportunities-And-Trends-Affecting-The-Growth](https://menafn.com/1105335988/Fuel-Cell-Market-Analysis-Industry-Specific-Opportunities-And-Trends-Affecting-The-Growth)

In English

22) **“Fuel cell vehicle market research report by type, vehicle, region - Global forecast to 2027 - Cumulative impact of COVID-19”**, 23rd Dec., 2022

URL: [https:// menafn.com/1105347433/Fuel-Cell-Vehicle-Market-Research-Report-By-Type-Vehicle-Region-Global-Forecast-To-2027-Cumulative-Impact-Of-COVID-19](https://menafn.com/1105347433/Fuel-Cell-Vehicle-Market-Research-Report-By-Type-Vehicle-Region-Global-Forecast-To-2027-Cumulative-Impact-Of-COVID-19)

In English

23) **“Solid oxide fuel cells market insights industry dynamics, new technologies and forecast to 2030”**, 5th Jan., 2023

URL: [https:// www.marketwatch.com/press-release/solid-oxide-fuel-cells-market-insights-industry-dynamics-new-technologies-and-forecast-to-2030-2023-01-05?mod=search_headline](https://www.marketwatch.com/press-release/solid-oxide-fuel-cells-market-insights-industry-dynamics-new-technologies-and-forecast-to-2030-2023-01-05?mod=search_headline)

In English

24) **“Hydrogen fuel cell vehicle market size, share, industry trends, top companies, forecast report 2022-2028”**, 2nd Jan., 2023

URL: [https:// menafn.com/1105374078/Hydrogen-Fuel-Cell-Vehicle-Market-Size-Share-Industry-Trends-Top-Companies-Forecast-Report-2022-2028](https://menafn.com/1105374078/Hydrogen-Fuel-Cell-Vehicle-Market-Size-Share-Industry-Trends-Top-Companies-Forecast-Report-2022-2028)

In English

25) **“Hydrogen fuel cell market revenue, major players, consumer trends, analysis & forecast industryarc”**, 11th Jan., 2023

URL: menafn.com/1105415787/Hydrogen-Fuel-Cell-Market-Revenue-Major-Players-Consumer-Trends-Analysis-Forecast-Industryarc

In English

26) **“Liquid hydrogen market latest research, industry analysis, driver, trends, business overview, key value, demand and forecast 2023-2028”**, 9th Jan., 2023

[https:// www.marketwatch.com/press-release/liquid-hydrogen-market-latest-research-industry-analysis-driver-trends-business-overview-key-value-demand-and-forecast-2023-2028-2023-01-09](https://www.marketwatch.com/press-release/liquid-hydrogen-market-latest-research-industry-analysis-driver-trends-business-overview-key-value-demand-and-forecast-2023-2028-2023-01-09)

In English

<General papers & other publications>

1) **“J. Japan Society for safety Eng., titled by "response of FCV for H2 safety after traffic accidents and fires”**, 17th Dec., 2022 Down loaded

URL: [https:// www.jstage.jst.go.jp/article/safety/61/6/61_422/_article/-char/en](https://www.jstage.jst.go.jp/article/safety/61/6/61_422/_article/-char/en)

In Japanese, journal written in Japanese

2) **“JTEKT Technical Report; Development of high pressure hydrogen regulator for FCV”**, 17th Dec., 2022 Down loaded, Full article available
URL: [https:// www.jtekt.co.jp/e/engineering-journal/1013/1013-13.html](https://www.jtekt.co.jp/e/engineering-journal/1013/1013-13.html)
In English, journal written in English

3) **“JTEKT New product; High pressure hydrogen valve and regulator”**, 17th Dec.,2022 down loaded, Full article available
URL: [https:// www.jtekt.co.jp/e/engineering-journal/1013/1013-19.html](https://www.jtekt.co.jp/e/engineering-journal/1013/1013-19.html)
In English, journal written in English

4) **“Journal; Role of pyridinic nitrogen in the mechanism of the oxygen reduction reaction on carbon electrocatalysts Angewandte Chem. International Ed. Published on 4th Jan., 2021”**, 17th Dec. 2022, down loaded
URL: www.nature.com/nature-index/article/10.1002/anie.202014323
In English

5) **“Journal; Development of hydrogen sensing technology for severe environments by SuZuki Shokan and Nagoya Univ. Material Japan 2020 published”**, 17th Dec. 2022, down loaded
URL: www.jstage.jst.go.jp/article/materia/59/2/59_99/_article/-char/en
In English

6) **“Simultaneous analytical system of electrochemical reaction rate and operando hard X-ray photoemission spectroscopy – Prof. Inukai/University of Yamanashi”**, 7th Jan., 2022 down loaded
URL: www.spring8.or.jp/pdf/en/res_fro/21/068-069.pdf

<Press Releases and other publications by FCDIC members*>

*Member list: <https://www.fcdic.com/member-list/>

1) **“Commencement of FY2022 renewable energy aggregation demonstration experiment –Improvement of imbalance avoidance and new method of power generation forecast”**, Toshiba Energy Systems & Solutions Corporation, 1st Dec., 2022
URL: <https://www.global.toshiba/ww/news/energy/2022/12/news-20221201-01.html>
In English

2) **“MHI Tech. Review Vol.59 No.4 Dec. 2022: Development of hydrogen and ammonia engine that contributes to decarbonized society”**, Mitsubishi Heavy Industries Ltd., 3rd Dec. ,2022 down-loaded
URL: <https://www.mhi.co.jp/technology/review/pdf/e594/e594050.pdf>
In English

3) **“MHI Tech. Review Vol.59 No.4 Dec. 2022/ Development of hydrogen/ammonia-firing gas turbine for carbon neutrality”**, Mitsubishi Heavy Industries Ltd., 24th Dec. ,2022 down-loaded
URL: [https:// www.mhi.co.jp/technology/review/pdf/e594/e594040.pdf](https://www.mhi.co.jp/technology/review/pdf/e594/e594040.pdf)
In English

4) **“Participating in a Scotland to Rotterdam LOHC-MCH hydrogen highway project”**, Chiyoda Corporation, 22nd Dec., 2022



URL: https://www.chiyodacorp.com/media/221222_e_3.pdf

In English

5) “**Iwatani's value creation process**”, Iwatani Corporation, 31st Dec., 2022 Down loaded

URL: https://www.iwatani.co.jp/eng/ir/pdf/integrated_report_e02.pdf

In English

**The URLs are not always permanent. The article and its URL are examined this month.*

4. New FCDIC Members

The following members were admitted to join FCDIC at the Board Members Meeting on 24th Jan., 2023.

URL: <https://www.fcdic.com/member-list/>

Regular member

Carl Zeiss Co., Ltd.

URL: <https://www.zeiss.co.jp/corporate/home.html>

<https://www.zeiss.com/corporate/int/home.html>

Mitsubishi Corporation RtM Japan Ltd.

URL: <https://www.mitsubishicorp.rtm.com/japan/english/>

5. Future Events

<International >

FC Expo 2023 Spring, 15th to 17th March, 2023 in Tokyo

URL: <https://www.wesw.jp/hub/en-gb/about/fc.html>

FCDIC co-organizes and exhibits every year.

The 30th Fuel Cell Symposium, 25th to 26th May, 2023 in Tokyo

Basically in Japanese. English presentation is acceptable. It could be held by hybrid at venue and on-line.

Sponsorship opportunities: Gold, Silber, Bronze