

FCDIC Report 43rd Issue (No.43)

“FCDIC Report No.43” is issued on 30th January 2025. Please refer to the following contents. The topics are Honda, new FCV Nissan Stationary SOFC, solution “Panasonic HX” and Toyota Woven-City. It is appreciated if you give us any comment on this new report.

1. “Fuel Cell RD & D in Japan 2023”, Annual Report of FCDIC

Annual Report will be published on December 24, 2024, including contribution by MEXT, Ministry of education, sports, science and technology-JAPAN.

2. Contents of “The Journal of Fuel Cell Technology”, Vol.24 No.3

It is issued on 30th January and is uploaded in the FCDIC web-site.

The contents are as follows ;

The Special Issue is “Initiatives for Green Growth Strategy”. Foreword, Essay, Contribution and Laboratory Introduction are also included.

Please refer to a web-site to be up-dated: <https://www.fcdic.jp/pdf/kikanshi/VOL24-3J.pdf>

3. Topics related to fuel cell and hydrogen energy : from November 30, 2024 to January 24, 2025

<METI, JOGMEC, Local Government (Tokyo, Yokohama), JETRO>

1) ”Yokohama's hydrogen fuel-cell systems undergoes verification, Toshiba H2One® fuel cell from 2015”, Dec. 6, 2025

URL: <https://www.jiffa.or.jp/en/news/entry-9182.html>

In English

Related Japanese URL

URL: <https://www.city.yokohama.lg.jp/city-info/koho-kocho/press/kowan/2024/20241205.html>

2) ”State Minister Koga holds meeting with Honourable Mr. Kgosientsho David Ramokgopa, Minister of Electricity and Energy of the Republic of South Africa”, Dec. 9, 2024

URL: https://www.meti.go.jp/english/press/2024/1209_002.html

In English

3) “What is the Tokyo Hydrogen Museum (Tokyo Suiso-miru)? ; Introduction of Hydrogen Museum, photo available”, Dec. 27 up-dated, 2024

URL: <https://www.tokyo-suisomiru.jp/language/en/>

In English

4) “Agenda for 7th mobility hydrogen government and private council to promote commercial vehicles, document 3”, Jan. 25, 2025

URL on document: https://www.meti.go.jp/shingikai/mono_info_service/mobility_hydrogen/pdf/007_03_00.pdf

URL on invitation: https://www.meti.go.jp/shingikai/mono_info_service/mobility_hydrogen/007.html

Both in Japanese



5) **“JOGMEC signed memorandum of understanding with Korea National Oil Corp., including Hydrogen, ammonia and CCS”**, Jan. 24, 2025

URL: https://www.jogmec.go.jp/english/news/release/news_08_00031.html

In English

6) **“Mitsubishi Corporation and JOGMEC announce investment in eFuels provider Infinium, Schematic figure for eFuels producing process available”**, Jan. 17, 2025

URL: https://www.jogmec.go.jp/english/news/release/news_08_00022.html

In English

<Business Papers>

[Honda]

1) **“Honda fuel to step-up from prototype to mass-production for the 4-application, passenger vehicles, commercial vehicles, stationary power source and construction machinery, production responsible to Fuel System Manufacturing, joint venture Honda and GM”**, Dec.3, 2024

URL: <https://xtech.nikkei.com/atcl/nxt/column/18/00050/00185/>

In Japanese

2) **“Fuel Cell on CR-V e:FCEV ship with many photos of separator, stack and so on”**, Dec. 13, 2024

URL: <https://www.webcg.net/articles/-/51199>

In Japanese

3) **“Next generation fuel cell production factory determined in Tochigi Prefecture, operated to be 2027,with the capacity of 30,000set/year”**, Dec. 18, 2024

URL: <https://car.watch.impress.co.jp/docs/news/1648630.html>

In Japanese

[Panasonic]

1) **“Panasonic starts “Panasonic HX”, to leverage hydrogen with fuel cell, solar cell and battery”**, Dec. 4, 2024

URL: <https://prtimes.jp/main/html/rd/p/000006032.000003442.html>

In Japanese

Related Japanese URL: <https://news.panasonic.com/jp/press/jn241203-1>

Panasonic HX Japanese-site URL: <https://re100-gx.panasonic.com.jp/>

2) **“Panasonic begins project to use 100% renewables at plant in Wales”**, Dec. 5, 2024

URL: <https://www.asahi.com/ajw/articles/15538107>

In English

3) **“Panasonic plant in U.K. to go fully renewable, in most detail eddescription , Dec. 4, 2024**

URL: <https://www.japantimes.co.jp/business/2024/12/04/panasonic-uk-plant/>

In English



- 4) **“Panasonic firstly demonstrated “Panasonic HX” to office-building in Germany including four10k fuel cells”**, Jan. 15, 2025

URL: <https://project.nikkeibp.co.jp/ms/atcl/19/news/00001/04731/?ST=msb>

In English

[Nissan]

- 1) **“Nissan opens SOFC generation system PR facility in Tochigi factory”**, Dec. 27 down-loaded, 2024

URL:

<https://www.nomurakougei.co.jp/achievements/page/nissanmotor-tochigifactory-sofc-architecturalbuilding/>

In Japanese

[Woven City/Toyota]

- 1) **“Woven City to officially launch this fall--Akio outlines Toyota's "Test course for mobility" ”**, Jan. 9, 2025

URL: https://toyotatimes.jp/en/toyota_news/1071_1.htm

In English

- 2) **“Toyota's experimental smart city nearly ready to roll”**, Jan. 7, 2025

URL: <https://www.asahi.com/ajw/articles/15538107>

In English

[General topics]

- 1) **“Toyota contracts JAXA for technical development on regenerative fuel cells on Lunar, design condition and overview available”**, Nov. 30, 2024

URL: <https://www.drone.jp/news/20241130122036104979.html>

In Japanese

- 2) **“Horison announces world's first 5MW AEM electrolyser targeting large green hydrogen projects”**, Dec. 3, 2024

URL: <https://menafn.com/1108953627/Horizon-Announces-Worlds-First-5MW-AEM-Electrolyser-Targeting-Large-Green-Hydrogen-Projects>

In English

- 3) **“Airbus, Toshiba team up for hydrogen-fueled aircraft research”**, Dec. 10, 2024

URL: <https://www.asahi.com/ajw/articles/15543876>

In English

- 4) **“Toyota explores possibilities for liquid hydrogen power”**, Dec. 13 down-loaded, 2024

URL: <https://tandlonline.com/sustainability/ev-hydrogen/toyota-explores-possibilities-for-liquid-hydrogen-power/>

In English

- 5) **“TOCOM partners with Tokyo Metropolitan Government on trial trading of green hydrogen: Tokyo Commodity Exchange, Inc.”**, Dec. 12, 2024

URL: <https://www.jpx.co.jp/english/corporate/news/news-releases/0060/20241129-01.html>

In English

6) **“Revolutionizing energy: The game-changer in hydrogen production, Nel and Samsung C&T Gas”**, Dec. 11, 2024

URL: https://www.osakagas.co.jp/en/whatsnew/_icsFiles/afieldfile/2024/10/15/241015.pdf

In English

7) **“Toyota's fuel cell and water electrolysis system production plan certified as a METI support program for building GK supply chains”**, Dec. 18, 2024

URL: [https://www.jcnnewswire.com/pressrelease/94674/3/Toyota&apos-Fuel-Cell-and-Water-Electrolysis-System-Production-Plan-Certified-as-a-METI-Support-Pro](https://www.jcnnewswire.com/pressrelease/94674/3/Toyota%27s-Fuel-Cell-and-Water-Electrolysis-System-Production-Plan-Certified-as-a-METI-Support-Pro)

In English

Japanese URL: <https://response.jp/article/2024/12/19/389932.html>

8) **“Nippon Steel Trading Corporation and Honda to begin research project toward establishment of “Local production for local consumption” hydrogen utilization model in Thailand, PDF available”**, Dec. 20, 2024

URL: https://www.nst.nipponsteel.com/en/news/2024/241220_1402.html

In English

9) **“DBJ becomes a shareholder in Stegra-Investment in the Swedish green steel producer that aims to decarbonize the steelmaking process- DBJ: Development Bank of Japan Inc”**, Dec. 18, 2024

URL: https://www.dbj.jp/en/topics/dbj_news/2024/html/dbj_becomes_a_shareher_in_stegra-investment_in_the_swedish_green_steel_producer_that_aims_to_deca.html

In English

10) **“Kurita Water Industries: Microbial fuel cell successfully generates 5-days continuously demonstrated with toilet waste-water ; Photo available”**, Dec. 24, 2024

URL: <https://www.itmedia.co.jp/smartjapan/articles/2412/24/news052.html>

In Japanese

11) **“H2 refueling project carried out at Nagoya Port, FC Folk lift JIFFA: Japan International Freight Forwarders Association Inc.”**, Dec. 27, 2024

URL: <https://www.jiffa.or.jp/en/news/entry-9215.html>

In English

Relevant Japanese URL: <https://www.logi-today.com/706498>

12) **“Toho studios adopts hydrogen-fired power in 1st Japan commercial use: Toho/ the creator and film producer”**, Dec. 22 2024

URL: <https://mainichi.jp/english/articles/20241222/p2g/00m/0bu/007000c>

In Japanese

13) **“Working Group assesses scenarios for Japan's future power-generation costs; JAIF; Japan Atomic Industrial Forum, Inc. ♪”**, Dec. 25 2024

URL: https://www.nitto-mfg.com/hre_report1_eng/

In English



14) **Decarbonization of bottle-car; DyDo DORINKO, INK(Vending Machine maker for bottle and can drink) firstly introduce FC truck from CJPT(Commercial Japan Partnership Technologies, consist of Toyota, Isuzu, Hino, Suzuki)**, Dec. 31, 2024

URL: <https://news.yahoo.co.jp/articles/a3dd43ec3ea04e6b9677e4db76b18494a53db279>

In Japanese

15) **Lawson firstly introduces FC truck for convenience-chain in Kyushu, truck specification available**, Jan. 9, 2025

URL: https://www.lawson.co.jp/company/news/detail/1497271_2504.html

In Japanese

16) **News Release; JFE Steel's new ferritic stainless steel for SOFC interconnects achieves oxidation resistance and conductivity without requiring coating/ comparison to conventional steel available with and without coating** Jan. 8, 2025

URL: <https://www.jfe-steel.co.jp/en/release/2025/01/250108.html>

In English

17) **MOL signs MOU with Madoqua Global Leaders to develop green corridor connecting Portugal to Northern Europe**, Jan. 9, 2025

URL: <https://www.mol.co.jp/en/pr/2025/25002.html>

In English

18) **Zero emission ship: Yanmar increases the production of hydrogen fuel system and hydrogen fuel engine**, Jan. 17 down-loaded, 2025

URL: <https://www.drone.jp/news/20250111105551108065.html>

In Japanese

19) **World's first liquid hydrogen powered turbine engine in light aircraft**, Jan. 14, 2025

URL: <https://newatlas.com/aircraft/liquid-hydrogen-turbine-safran-turbotech-air-liquide/>

In English

20) **IHI launches new bench-scale sustainable aviation fuel (SAF) test rig in Singapore with and A*STAR ISCS2**, Jan. 17 down-loaded, 2025

URL: https://www.ihi.co.jp/en/all_news/2024/technology/1201228_13699.html

In English

21) **Mitsubishi Power highlights power generation tech in Saudi Arabia**, Nov. 28, 2024

URL: <https://www.toyota-shokki.co.jp/news/2024/09/17/008715/index.html>

In English

22) **Development of ferrite-stainless 'JFE-FC1' for SOFC inter-connector without ceramic-coating; instead specified oxide coting, schematic figure available**, Jan.15, 2025

URL: https://www.arabnews.jp/en/business/article_139160/

In Japanese



23) **"Building a hydrogen future, together -- Super Taikyu Fuji Season Finale"**, Jan. 20, 2025

URL: https://toyotatimes.jp/en/toyota_news/hpe_challenge_2024/008.html

In English

24) **"Breakthrough in hydrogen fuel cell technology promises to change green energy"**, Jan. 23, 2025

URL: <https://menafn.com/1109123235/Breakthrough-In-Hydrogen-Fuel-Cell-Technology-Promises-To-Change-Green-Energy>

In English

25) **"Establishment of technology to reduce CO₂ emissions in blast furnaces using hydrogen achieved world's first 43% reduction in CO₂ emissions in a test furnace, reaching the development goal ahead of schedule; Nippon Steel Corp."**, Jan. 21, 2025

URL: <https://www.greins.jp/2025/01/21/establishment-of-technology-to-reduce-co2-emissions-in-blast-furnaces-using-hydrogen-achieved-worlds-first-43-reduction-in-co2-emissions-in-a-test-furnace-reaching-the-development-goal-ahead-of-sc/>

In English

26) **"Strategic energy plan for 2040: Three main challenges for Japan, Colum No.12 Renewable Energy Institute"**, Jan. 24, 2025

URL: <https://www.renewable-ei.org/en/activities/column/20250124.php>

In English

[Market]

1) **"Global market of back-up power supply by fuel cell, detailed contents and free sample available"**, Dec. 5, 2024

URL: <https://newscast.jp/news/8409471>

In Japanese

2) **"Automotive fuel cell market - Global industry size, share, trends, opportunity, and forecast, segmented by electrolyte type, by vehicle type, by power output, by region and comparison, 2029-2029FY -- Report written in English with 180 pp, free sample available"**, Nov. 30, 2024

URL: <https://www.gii.co.jp/report/tsci1601769-automotive-fuel-cell-market-global-industry-size.html>

In English

3) **"Hydrogen generation market to grow by USD 49.7 billion from 2024-2027, driven by fertilizer demand and AI-driven market transformation – Technavio / AI impact on market trends"**, Dec. 6 downloaded, 2024

URL: <https://menafn.com/1108962414/Hydrogen-Generation-Market-To-Grow-By-USD-497-Billion-From-2024-2028-Driven-By-Fertilizer-Demand-And-AI-Driven-Market-Transformation-Technavio>

In English

4) **"Hydrogen truck market assessment, by vehicle type, by range, by tank type, by application, by region, opportunities and forecast, 2018-2032F, Eng. 242 pages, free sample and abstract available"**, Dec. 9, 2024

URL: <https://www.gii.co.jp/report/mx1607775-hydrogen-truck-market-assessment-by-vehicle-type.html>

In English



5) "Global solid-state hydrogen storage technology market insights, forecast to 2030, 174pp, free sample available", Dec. 26, 2024

URL: <https://www.gii.co.jp/report/qyr1622158-global-solid-state-hydrogen-storage-technology.html>

In English

6) "Global photovoltaic hydrogen production market analysis (2025-2031), Sample report available", Jan. 2, 2025

URL: <https://lpi.muragon.com/entry/13285.html>

In English

7) "Global market on hydrogen fuel cell, contents, free sample available", Jan. 14, 2025

URL: <https://japan.cnet.com/release/31064398/>

In Japanese

8) "Fuel cell market expansion from \$4.13 billion in 2023 to \$39.0 billion by 2032 with 28.3% CAGR", Jan. 14, 2025

URL: <https://menafn.com/1109125021/Fuel-Cell-Market-Expansion-From-413-Billion-In-2023-To-3901-Billion-By-2032-With-283-CAGR>

In English

9) "Solid oxide fuel cell market growth accelerates with 37% CAGR, projected to hit \$15,760 million by 2032", Jan. 20, 2025

URL: <https://menafn.com/1109107998/Solid-Oxide-Fuel-Cell-Market-Growth-Accelerates-With-3707-CAGR-Projected-To-Hit-USD-1575982-Million-By-2032>

In English

<General papers & other publications>

1) "Power density of Magnesium air fuel cells composed of activated carbon derived from marine plastic waste and hydrochloric acid treated titanium dioxide, R. Osa and D. Tashima, Fukuoka Inst. of Technology, 2024 proceeding", Dec. 13 down loaded, 2024

URL: <https://>

In Japanese

2) "Press Release: Polymer electrolyte membranes of polystyrene with directly bonded alkylphosphate groups on the side chains, Moro Atsushi (Nagoya Univ.) DOI available, New design concept for response to PFAS", Dec. 13 down-loaded, 2024

URL: https://www.nagoya-u.ac.jp/researchinfo/result/upload_images/20241211_engg2_2.pdf

In English

3) "Determination of factors affecting the performance of sediment microbial fuel cells by long-term electricity generation using lactic acid bacteria-attached electrodes, DOI and Abstract available", Dec 13 down-loaded, 2024

URL: https://www.jstage.jst.go.jp/article/ijerd/15/1/15_177/_article/-char/ja

In English



- 4) **“Effects of sediment microbial fuel cells on CH₄ and CO₂ emissions from straw amended paddy soil** Y. Nishina/Okayama Univ, DOI and abstract available”, Dec. 13 down-loaded, 2024
 URL: https://www.jstage.jst.go.jp/article/jwet/22/6/22_24-044/_article/-char/en
 In English
- 5) **“Development status of high temperature conductors as SOFC/electrolysis cells materials: experimental and computational approaches, Prof. Ihara (Tokyo Science Univ), DOI available”**, Jan. 3 down-loaded, 2025
 URL: https://www.jstage.jst.go.jp/article/hess/48/2/48_99/_article/-char/en
 In English (Paper written in Japanese)
- 6) **“How to calculate and compare hydrogen supply cost? - An example of international hydrogen supply chain - PDF (In Japanese) and DOI available, Mizuno/IAE, released on 12/28 on JST”**, Jan. 3 down-loaded, 2025
 URL: https://www.jstage.jst.go.jp/article/hess/48/3/48_177/_article/-char/en
 In English
- 7) **“Bipolar membranes with controlled, microscale 3D junctions enhance the rates of water dissociation and formation, Nagoya Univ. - Abstract and DOI available”**, Dec. 29, 2024
 URL: <https://mosada-lab-nagoya.com/blog/bipolar-membranes-with-controlled-microscale-3d-junctions-enhance-the-rates-of-water-dissociation-and-formation/>
 In English

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

4. H2&FC Expo 2025 Spring in SMART ENERGY WEEK

The H2&FC Expo 2025 Spring is held on Feb. 19 ~ 21 in Tokyo Big-sight.

The H2&FC Expo 2025 Spring will be held on Feb. 19 ~ 21 in Tokyo Big-site, Tokyo.

Please refer to URL(Japanese page) : <https://www.wsew.jp/hub/ja-jp/about/fc.html>

And URL(English page) : <https://www.wsew.jp/hub/en-gb/about/fc.html>

5. Future Events

<International>

The 32nd Fuel Cell Symposium, May 22 ~ 23, 2025 by hybrid in Funabori, Tokyo and online
 Basically in Japanese. English presentation is acceptable.