

Transcript of International News mini-documentary on natural hydrogen, screened NHK TV April 19.

Studio

(Anchor 1) Today's "spotlight" is on a new energy resource that is gathering such promise that it "may revolutionize the world's energy situation. That is "white hydrogen". It is a natural hydrogen that exists in nature and has a high concentration.

(Anchor 2) Hydrogen, which is currently being commercialized as a next-generation energy source, is artificially produced, and its high cost has been an issue. This "white hydrogen," however, is said to have the advantage of being produced at a low cost because it exists in large quantities in nature. Last year, the discovery of "white hydrogen" was nominated as Breakthrough of the year by the scientific journal "Science". It has attracted a lot of attention at once.

(Anchor 3) What kind of potential does "white hydrogen" hold? We covered the scene in Australia, where pioneering research is underway.

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Voiceover, images of Gold Hydrogen's South Australian land

"It is a 3-hour drive from Adelaide, a city in the southern part of Australia. This is the site of the "White Hydrogen" dig on the Yorke Peninsula, where a three-year-old startup company has found hydrogen.

"This was the first time the media was allowed to cover the excavation work in progress."

Interview with Gold Hydrogen managing director Neil McDonald, not transcribed

Voiceover

"The company turned its attention to an old oil and gas drilling site that was used more than 90 years ago. Samples were taken using pipes. They have been searching for "white hydrogen" lying underground.

"And last year, they discovered a high concentration of white hydrogen, as much as 86%. This was enough to supply the energy consumed by the region for a long period of time."

Interview with Neil McDonald, not transcribed

Voiceover

“Hydrogen, the lightest of the elements, has long been considered to be absent in nature in a coherent form.

“In 2011, however, a Canadian company investigated a well in Mali, Africa, where there had been an explosion, and discovered highly concentrated hydrogen. The following year, the company succeeded in generating electricity using the discovered hydrogen, raising hopes for its practical application at once.

“The process of how white hydrogen is produced in nature is currently being elucidated.

“Researchers are focusing on rock changes.”

Interview with CSIRO expert, not transcribed

Voiceover

“This is one of the currently considered processes of formation. Underground igneous rocks such as granite and basalt react chemically with water to produce hydrogen. White hydrogen is believed to be buried around the world by being blocked by limestone and other geological formations that trap the gas.

“A researcher says the challenge is to identify where and how much is buried.”

Interview with science expert, not transcribed

Voiceover

“Where are the large quantities of "white hydrogen" reserves that could be commercially produced? Drilling surveys have begun in the U.S., Europe, China, and South Korea. And last year, a large layer of "white hydrogen" was discovered in the Lorraine Basin in France. A start-up company has raised \$91 million, or about 14 billion Japanese yen, from investors such as Bill Gates.

“Furthermore, in the U.S. Congress, the head of energy policy made the following statement.”

Shots of expert Dr Wang testifying, not transcribed

Voiceover

“Why is "white hydrogen" attracting so much attention? The biggest reason is its low cost.”

Interview with Neil McDonald, not transcribed

Voiceover

“This company independently estimated production costs based on drilling costs in Mali, Africa. As a result, it became clear that while artificially produced hydrogen costs \$5~10 per kg, "White Hydrogen" could be produced at \$1, by far the lowest cost.

“They aim to commercialize the product in Australia and export it overseas.”

Interview with Neil McDonald, not transcribed

Voiceover

“The local government has also taken note of the economic benefits of this "white hydrogen". They are encouraging companies by relaxing rules for drilling surveys.

Interview with South Australian Govt official, not transcribed

Voiceover

“In this context, Japan has also begun to gather information. In the middle of last month, a representative of an independent Japanese government agency visited Australia.

“This organization, which has been responsible for the stable supply of energy resources, is now focusing on "white hydrogen”.”

Interview with Japanese expert: “I can't reveal the name of the company, but I've been secretly consulting with them. Some Japanese companies are even considering it. As long as Japanese companies are interested, we need to know how much.”

Voiceover

“We visited an area with a large depression, about 2 hours drive from Perth. This is where an Australian national research institute regularly measures the concentration of hydrogen.

Japanese experts speak:

Mr. Miyoshi: "The Development Division might be interested.”

Suehiro: "The equipment isn't too big either.”

Miyoshi: "That's right. That's why it's easy to start.”

Voiceover

“According to a national research institute, hydrogen has been found to be much higher than normal.

“This independent administrative agency will continue to keep in touch with the local and try to grab information for Japanese companies as quickly as possible.”

Interview with Japanese expert: “There is a lot we don't know (about white hydrogen), so Japan still has a chance to catch up. Even if natural hydrogen is a good thing, I don't think companies will step forward unless they have some idea of how they can develop it, so we would like to gather information that will contribute to that.”

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Back to studio

(Anchor 1) I felt that this low-cost, eco-friendly, and ubiquitous energy resource has great potential in the midst of the worldwide struggle for energy resources. It is now known that there are reserves of white hydrogen all over the world, and in Japan, its existence has been confirmed in Hakuba Village in Nagano Prefecture.

(Anchor 2) "White Hydrogen" is gathering much anticipation, but we asked experts about future challenges to its commercialization.

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External video, Mr. Yu Kato, Consultant, The Japan Research Institute Limited:

“We don't know how much natural hydrogen itself can be mined, how much natural hydrogen can be extracted? And even if it can be extracted, at what cost? And how long it will take to commercialize it? I think that's a big challenge.

“In such a situation, if you work on natural hydrogen only after the prospect of extracting it has been established, there is a high possibility that you will be left behind. In the case of shale gas, Japanese companies invested in shale gas after it attracted attention and were forced to buy it at a very high price, and then lost money when energy prices fell. I think it is necessary to make preparation now to be able to keep track of important information.”

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Back to Studio

(Anchor 3) Energy supplies are becoming increasingly unstable with Russia's invasion of Ukraine and the temporary freeze on U.S. LNG exports. It remains to be seen to what extent "white hydrogen" will be commercialized at this point, but it seems that Japan will need to keep a close watch on the trend of this new energy source.