



Press release

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Bekaert and Toshiba sign Memorandum of Understanding to develop global partnership around MEA for PEM electrolysis

Bekaert Toshiba Energy Systems and Solutions Corporation Toshiba Corporation

Driven by the opportunities arising from the energy transition and decarbonization trends, Bekaert and Toshiba Corporation's energy arm, Toshiba Energy Systems & Solutions Corporation (Toshiba ESS), are accelerating their growth strategies in renewable energy markets, particularly in green hydrogen production utilizing Hydrogen Production Technology with Reduced Iridium¹ developed by Toshiba.

Recently Yves Kerstens, CEO of Bekaert, welcomed Taro Shimada, President and CEO of Toshiba to the Bekaert Headquarters in Zwevegem, Belgium, and they discussed cooperation opportunities in green hydrogen electrolysis technologies. Bekaert and Toshiba ESS signed a Memorandum of Understanding to formalize their commitment in developing a partnership by the end of this year.

Bekaert has a leading market position in Porous Transport Layers (PTL), a key component in the MEA (Membrane Electrode Assembly) of water electrolyzers, and has established a global commercial and manufacturing network.

Toshiba ESS is developing MEAs for high-performance, large-capacity PEM water electrolyzers. Toshiba ESS is proud of its iridium-saving technology, which reduces the amount of iridium, an expensive and rare precious metal, essential for MEA devices to one-tenth, while achieving high water electrolysis performance and durability.

Bekaert and Toshiba ESS have agreed to study the possibility of a global partnership to jointly develop the production and sales of MEAs by leveraging their technological, manufacturing and commercial network strengths.

Yves Kerstens, CEO of Bekaert commented: "Bekaert has been successfully bringing new technologies to the green hydrogen market in the last few years and has a clear growth strategy for the coming years to meet global demand. We are delighted to be partnering with Toshiba, a prestigious name in many industries, including in renewable energy, and together accelerate the use of green hydrogen to decarbonize industries globally."

¹Toshiba's new large-scale production technology for electrolysis electrodes for hydrogen production from renewables cuts iridium use to 1/10th - promoting PEM water electrolyzers for power to gas technology that will contribute to realization of a hydrogen economy.

Taro Shimada, President and CEO of Toshiba commented: "Toshiba has been a leader in hydrogen production technologies for many years. The rapidly-growing, global need for green hydrogen is evident and we are therefore excited to be partnering with Bekaert, a technology leader in PTL, to accelerate our talks towards joint development and sales of electrolyzer components."



Yves Kerstens, CEO of Bekaert and Taro Shimada, President and CEO of Toshiba at Bekaert's Headquarters

About Bekaert

Bekaert's ambition is to be the leading partner for shaping the way we live and move, and to always do this in a way that is safe, smart, and sustainable. As a global market and technology leader in material science of steel wire transformation and coating technologies, Bekaert also applies its expertise beyond steel to create new solutions with innovative materials and services for markets including new mobility, low-carbon construction, and green energy. Founded in 1880, with its headquarters in Belgium, Bekaert (Euronext Brussels, BEKB) is a global company whose 27 000 employees worldwide together generated almost € 7 billion in combined revenue in 2022.

About Bekaert Hydrogen

Bekaert's ultrathin metal fiber porous media are used as porous transport layers enhancing the durability and performance of electrochemical devices such as water electrolyzers for the production of green hydrogen. Bekaert has established a technology and market leadership position in Porous Transport Layers (PTL) for both PEM and AEM electrolyzers with the brandname <u>Currento</u>[®]. The company invests in the development of next generations of innovative solutions for green hydrogen production as well as in expanding its production footprint to multiple GW capacity over the coming years.

About Toshiba ESS

Toshiba Energy Systems & Solutions Corporation (Toshiba ESS), a wholly owned subsidiary of Toshiba Corporation, handles Toshiba Group's energy businesses. With its long experience and expertise in a wide range of power generation and transmission systems, and in energy management technologies, the company delivers innovative, reliable, and efficient energy solutions across the globe. Toshiba ESS was separated from Toshiba in October 2017.

Find out more about Toshiba ESS at https://www.global.toshiba/ww/company/energy.html

About Toshiba

Toshiba Corporation leads a global group of companies that combines knowledge and capabilities from almost 150 years of experience in a wide range of businesses–from energy and social infrastructure to electronic devices–with world-class capabilities in information processing, digital and AI technologies. These distinctive strengths support Toshiba in building infrastructure that everyone can enjoy, and a connected data society, and in achieving the Company's ultimate goal, a future that realizes carbon neutrality and a circular economy. Guided by the Basic Commitment of the Toshiba Group, "Committed to People, Committed to the Future," Toshiba contributes to society's positive development with services and solutions that lead to a better world. The Group and its 110,000 employees worldwide secured annual sales of 3.4 trillion yen (US\$25.1 billion) in fiscal year 2022. Find out more about Toshiba at https://www.global.toshiba/ww/top.html

More information on Bekaert's technology leadership in solutions for green hydrogen production

- <u>17 April 2023</u>: Bekaert expands manufacturing and research capacity in electrolysis technologies for green hydrogen production
- <u>17-21 April 2023</u>: Bekaert exhibits at Hannover Messe in Hall 13: <u>Hydrogen and Fuel Cells</u>
- 22 March 2023: Bekaert joins Solar Impulse Foundation as a partner to advance sustainability efforts
- January 2023: Bekaert became a member of Hydrogen Europe
- Bekaert Website: <u>Currento® PTL</u> for hydrogen production
- Bekaert is a partner of ECO2Fuel
- <u>22 September 2022</u>: Bekaert concludes partnership with Pajarito Powder, Albuquerque, US, to accelerate the development of spearheading innovations in the market of green hydrogen production
- <u>26 April 2022</u>: JM, Bekaert, TNO and Schaeffler partner to boost the efficiency of renewable hydrogen production
- <u>31 May 2021</u>: Flemish expertise centers join forces with industry to push green hydrogen production forward

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Bekaert - Investor Relations

Guy Marks T +32 56 76 74 73 E-mail: <u>guy.marks@bekaert.com</u>

Bekaert - Press & Media

Katelijn Bohez T +32 56 76 66 10 E-mail: <u>katelijn.bohez@bekaert.com</u>

bekaert.com

Toshiba - Media Relations Office

T +81-3-3457-2100 E-mail: media.relations@toshiba.co.jp