



Joint News Release

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BASF and Envision Energy enter a collaboration to drive sustainable energy solutions

- **Collaboration to accelerate conversion of green hydrogen and CO₂ to e-methanol**
- **BASF's new SYNSPIRE™ catalyst technology to be combined with Envision Energy's process package**
- **E-methanol holds significant potential as sustainable energy carrier replacing fossil fuels in various industries**

Ludwigshafen, January 29, 2024 – BASF process catalysts, a leading provider of innovative catalyst technology, today announced a new collaboration with Envision Energy, a leading green technology provider of comprehensive net zero solutions. The collaboration aims to further develop the conversion of green hydrogen and CO₂ into e-methanol through an advanced, dynamic process design.

Backed by their respective expertise, the two companies aim to optimize the process of producing e-methanol from green hydrogen and CO₂, paving the way for a more sustainable energy landscape. This collaboration will see BASF provide its cutting-edge SYNSPIRE™ catalyst technology, which Envision Energy will integrate with its innovative energy management system. The two organisations plan to demonstrate the viability of the advanced process design next year, at Envision Energy's Chifeng site in Inner Mongolia, China.

The new catalyst developed by BASF represents a significant breakthrough in sustainable energy solutions. It enables the efficient conversion of green hydrogen and CO₂ into e-methanol. Methanol (or e-methanol when produced with renewable energy)

is one of the most versatile and clean-burning fuels. E-methanol offers immense potential to replace fossil fuels and their derivatives gasoline and kerosene by providing an alternative source of energy for road, shipping and air transport, as well as other industries. Not only can e-methanol be used without a change in infrastructure, but its inherent stability also allows it to be stored at room temperature and ambient pressure, giving it an indefinite shelf life, thereby to reduce greenhouse gas emissions and promote a more sustainable energy ecosystem.

Envision Energy will design a process package that maximizes the efficiency of the catalyst technology while fully enabling the dynamic conversion of green hydrogen and CO₂ into e-methanol, in sync with the onstream time of wind power. Envision Energy will leverage its pioneering AIoT (Artificial Intelligence of Things) platforms to optimize the novel, dynamic mode of chemical plant operation.

Detlef Ruff, Senior Vice President, process catalysts at BASF, said: “BASF process catalysts looks forward to working with Envision Energy in our shared mission to drive sustainable energy solutions. By combining our innovative catalyst technology with Envision Energy’s deep expertise, we are confident we can unlock the full potential of green hydrogen and CO₂ conversion to e-methanol.”

Frank Yu, Vice President of Envision Energy added: “Driving and delivering sustainable energy solutions can only be achieved through organizations coming together. This collaboration demonstrates our commitment to bringing innovative advances to the sustainable energy value chain, to create sustainable energy solutions that are economically viable and environmentally friendly. For Envision Energy, it is all about optimizing our clients and partners’ environmental sustainability, as we work towards becoming the leading provider of green hydrogen and its derivatives.”

This collaboration exemplifies the spirit of partnership and innovation that is necessary to address the challenges of the global energy transition. By leveraging their respective strengths, BASF and Envision Energy aim to accelerate the adoption of renewable energy sources and contribute to a greener and more sustainable future.

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About BASF process catalysts

BASF is a leading global manufacturer of catalysts for the chemical industry, with solutions across the chemical value chain. The business comprises chemical catalysts and adsorbents, refinery catalysts and custom catalysts. In the process catalysts business, priority is given to developing new and improved products that enable the chemical industry transformation to net-zero emissions.

The division's portfolio also includes battery materials and recycling solutions, as well as environmental catalysts and metal solutions. Customers from a variety of industries including Automotive & Transportation, Chemicals, Plastics or Energy & Resources benefit from our innovative solutions. Further information on BASF's Catalysts division is available on the Internet at www.catalysts.basf.com.

About BASF

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. More than 111,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €87.3 billion in 2022. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the United States. Further information at www.basf.com.

About Envision Energy

Envision Energy is a world-leading green technology company, providing renewable energy system solutions for global enterprises, governments and institutions. With the mission of 'solving the challenges for a sustainable future', Envision Energy continuously reduces the production, storage, and synergy costs of renewable energy through technological innovation. Encompassing three major business sectors - Smart Wind Turbines, Energy Storage, and Green Hydrogen Solutions, Envision Energy collaboratively constructs comprehensive solutions for energy transformation. Today, Envision Energy leverages its global network of R&D and engineering centers across China, the United States, UK, France, Germany, Denmark, etc. to continuously lead global green technology development. Envision Energy joined the Science Based Targets initiative (SBTi) and committed to achieving the "Business Ambition for 1.5°C" in 2021. It has achieved carbon neutrality across its global operations by 2022 and will achieve carbon neutrality throughout its value chain by 2028.