

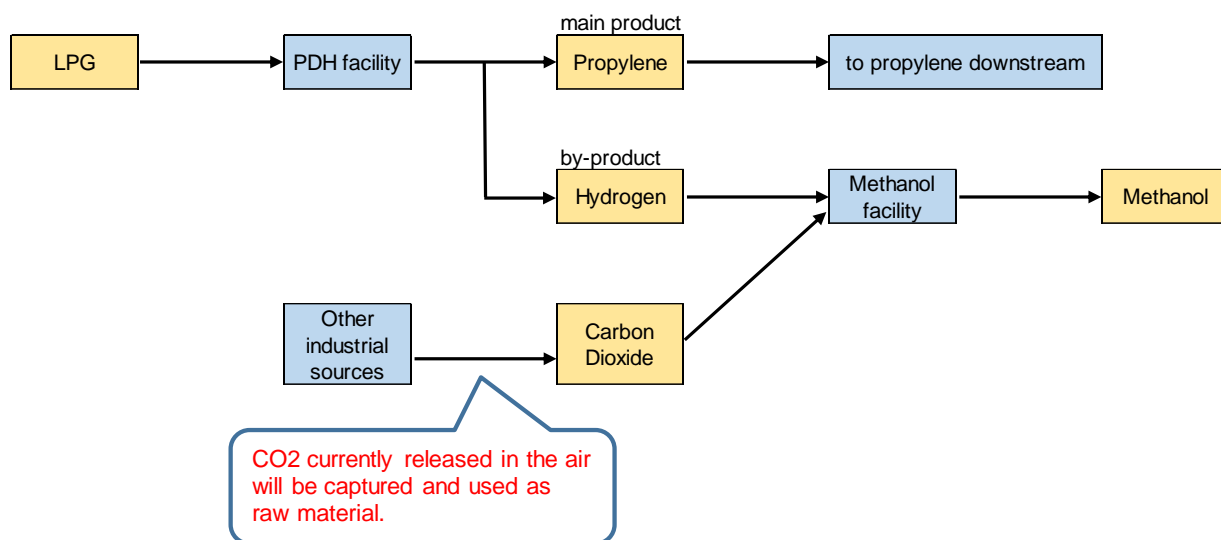
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Sumitomo Chemical to Examine the Combination of Propane Dehydrogenation Technology with CO₂ Utilization Technology in Singapore, Aiming to Improve both Economic Activity and Eco-friendliness

Sumitomo Chemical has begun exploring a possible combination of a propane dehydrogenation (PDH) technology that converts propane gas into propylene, with another technology that efficiently synthesizes methanol, using hydrogen and carbon dioxide (CO₂), by-products from PDH. This initiative is under consideration in Sumitomo Chemical's petrochemical complex in Singapore, and supported by the Singapore Economic Development Board (EDB) as it can increase economic activity and reduce greenhouse gas emissions.

Petrochemical products including ethylene and propylene are used as raw materials for synthetic resins, such as polyethylene and polypropylene, and are mainly manufactured through naphtha cracking. Recently, the number of ethane cracking facilities that use shale gas-derived ethane as their raw material has been on the rise. Since ethane cracking produces less co-products besides ethylene, compared to naphtha cracking, the increase in ethane cracking is fuelling concerns over a relative shortage of propylene. Therefore, Sumitomo Chemical believes that PDH technology may provide a possible solution to the shortage of propylene. Meanwhile, effective use of CO₂ is vital to control total emissions from industrial activities so that global warming can be addressed. Sumitomo Chemical is undertaking a joint research project with Shimane University concerning a technology to synthesize methanol from CO₂ in a highly efficient manner. Since this synthesizing process requires hydrogen (a by-product of PDH technology), the company is considering a possible application of these two technologies so that both hydrogen and CO₂ can be effectively used.

Because PDH technology is already well established, Sumitomo Chemical believes that a technology to efficiently synthesize methanol using CO₂ and hydrogen will be a new breakthrough that can meet product demand and improve the economics of the petrochemical complex, while also reducing CO₂ emissions and mitigating their impact on the environment.



Mr. Damian Chan, Executive Vice President of the EDB, said “The EDB is supportive of Sumitomo Chemical’s plans to integrate the two technologies and implement them in Singapore. It is aligned, not only with EDB’s interests in increasing propylene supply to grow high value petrochemicals manufacturing on Jurong Island, but also in enabling a low carbon energy industry and chemicals industry in Singapore. We are heartened that an industry leader such as Sumitomo Chemical has chosen Singapore as the location to commercialise these innovative technologies.”

Sumitomo Chemical is committed to achieving early implementation of this new combination of technologies with the help of the Singapore government, and will continue to contribute to a sustainable society through its businesses by creating both economic and social value.