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A Significant Milestone Marked in the World's First Global Hydrogen Supply Chain Demonstration Project

Chiyoda Corporation ("Chiyoda"), one of the association members of The Advanced Hydrogen Energy Chain Association for Technology Development (AHEAD), is pleased to announce that the dehydrogenation plant constructed by Chiyoda in TOA OIL CO., LTD.'s Keihin Refinery located in the Kawasaki Coastal Area, has entered into stable operation to separate hydrogen and toluene from Methylcyclohexane (MCH)*1 produced in Brunei Darussalam.*2

This event marks a significant milestone in the "Demonstration Project for a Hydrogen Energy Supply Chain Utilizing the Organic Chemical Hydride Method", supported by New Energy and Industrial Technology Development Organization of Japan (NEDO), for it has realized the *world's first* international hydrogen supply chain by connecting the hydrogen supply chain between Brunei Darussalam and Japan through a series of processes including MCH production in Brunei, maritime MCH transport, and dehydrogenation of MCH in Japan. The commencement of global hydrogen supply chain operation is a notable step toward the realization of CO₂-free "Hydrogen Society".

Chiyoda will work in close cooperation with Mitsubishi Corporation, Mitsui & Co. and Nippon Yusen Kabushiki Kaisha, the other association members of AHEAD, to confirm the effectiveness of global hydrogen transportation through this project. With the aim of commercializing the hydrogen supply chain business, we will continue to work on this research theme to realize the implementation of the Organic Chemical Hydride Method, by collecting various data both at the hydrogen production & hydrogenation plant in Brunei and at the dehydrogenation plant in Japan.



Brunei Hydrogen Production & Hydrogenation Plant



Kawasaki Dehydrogenation Plant

*1 Methylcyclohexane (MCH): A liquid produced from toluene and hydrogen which can be handled in a liquid state at ambient temperature and pressure

*2 Toluene separated from MCH will be returned to Brunei Darussalam, where it is integrated again with hydrogen and transformed back into MCH. The toluene will be repeatedly used as a means of transporting hydrogen in the future hydrogen supply chain.



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