News Release

DAIHATSU INFINEARTH MFG.CO.,LTD.

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# Joint Research on Next-Generation Ammonia Engine Launched with the National University of Singapore

## — Establishment of the IRGR Ammonia Engine Project Aiming for Social Implementation in Three Years —

On February 4, our company signed a Research Collaboration Agreement with the National University of Singapore (NUS), officially launching a joint research project aimed at the social implementation of the IRGR Ammonia Engine*1 within the next three years.

This project will be conducted at the Centre for Hydrogen Innovations (CHI) within the College of Design and Engineering (CDE) at NUS. With funding support from the Singapore Maritime Institute (SMI), the initiative will be promoted under an international industry–academia collaboration framework.

To mark the commencement of the project, a launch ceremony for the “IRGR (In-cylinder Reforming Gas Recirculation) Ammonia Engine Project” was held at NUS.
Distinguished guests from the Singapore government, industry, and academia attended the event, including senior representatives from the Maritime and Port Authority of Singapore (MPA), SMI, and Dr. Hai Gu, Vice President of the American Bureau of Shipping (ABS). Our President, Mr. Hotta, attended on behalf of our company.

The joint research project is scheduled to run for three years and aims to establish a practical engine concept for real-world implementation. Ammonia, which does not emit $CO_2$ during combustion, has attracted attention as a promising decarbonized fuel for the maritime sector. However, challenges related to combustion stability, efficiency, and emissions have hindered its widespread adoption. Through the innovative IRGR combustion concept, this project seeks to overcome these challenges.

Leveraging our extensive experience in engine technology and commercialization expertise,

we will contribute to the realization of next-generation zero-emission vessels and the decarbonization of the international maritime industry through this project.

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*1. About the IRGR Ammonia Engine

The IRGR Ammonia Engine is a combustion system in which, in a multi-cylinder engine, part of the ammonia fuel is reformed into hydrogen in one cylinder, and the resulting exhaust gas is recirculated to the other cylinders. By combining the combustion-enhancing effects of hydrogen addition with the benefits of EGR (Exhaust Gas Recirculation), the system aims to simultaneously improve combustion efficiency and significantly reduce unburned ammonia and other emissions.

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