

October 7, 2025

Kanadevia Corporation

Mitsui O.S.K. Lines, Ltd.

Yanmar Power Solutions Co., Ltd.

## 98% Methane Slip Reduction from LNG-fueled vessels Achieved in Onboard Trials

**Onboard trials to continue through FY2026, aiming for social implementation from FY2027 onwards**

Kanadevia Corporation (hereinafter “Kanadevia”), Mitsui O.S.K. Lines, Ltd. (hereinafter “MOL”), and Yanmar Power Solutions Co., Ltd. (hereinafter “Yanmar Power Solutions”) have, under the Green Innovation Fund Project “Development of Next-Generation Vessels” led by the New Energy and Industrial Technology Development Organization (hereinafter “NEDO”), been working on the project “Development of Methane Slip<sup>(Note1)</sup> Reduction Technology for LNG-Fueled Vessels through Catalyst and Engine Improvements” (hereinafter “the Project”). As part of the Project, full-scale demonstration trials began in May 2025 on routes including between Japan and Australia, achieving a methane slip reduction rate of 98%, far exceeding the target of 70%.



[Demonstration vessel REIMEI]



[Methane slip reduction system on board  
 (Left: EGR<sup>Note2</sup> system, Right: Methane oxidation catalyst layer)]

The Project, spanning six years from FY2021 to FY2026, aims to achieve a methane slip reduction rate of 70% or more for LNG-fueled vessels by combining methane oxidation catalysts with engine improvements. Its goal is to be the first in the world to socially implement methane slip reduction technology in the maritime sector, a technology that has not yet been established even on land.

Thus far, the Project has obtained, ahead of the rest of the world, verifying the achievement of a 93.8% methane slip reduction rate (at 100% load) in land-based trials a certificate from Nippon Kaiji Kyokai (ClassNK).

Based on these results, the three companies modified the land-based test equipment for onboard use and, starting in May 2025, began full-scale demonstration trials in sea areas including between Japan and Australia using the LNG-fueled large coal carrier REIMEI, operated by MOL. In onboard trials, engines are operated

under actual operating conditions, subject to constantly changing environmental factors in the engine room as well as fluctuations in load rate due to weather conditions. Even under these conditions, the system achieved a high reduction rate of 98% at the practical operating range (75% load), surpassing the land-based trial results.

Going forward, onboard trials will continue through the end of FY2026 to evaluate overall system performance and catalyst durability, with the aim of social implementation from FY2027 onward.

Through this Project, Kanadevia, MOL, and Yanmar Power Solutions will work to establish methane slip reduction technology at an early stage and actively contribute to reducing greenhouse gas emissions in the maritime sector.

Note1: A portion of the methane in LNG fuel is emitted into the atmosphere unburned as methane. Since methane has a higher greenhouse effect than CO<sub>2</sub>, reducing methane slip is essential from the perspective of GHG reduction.

Note2: Exhaust Gas Recirculation. A technology that recirculates engine exhaust gases to reduce unburned methane slip, NO<sub>x</sub>, and other emissions.

## ■Business Overview

Project Sponsor: New Energy and Industrial Technology Development Organization (NEDO)

Project name: Green Innovation Fund Project “Development of Next Generation Ships”

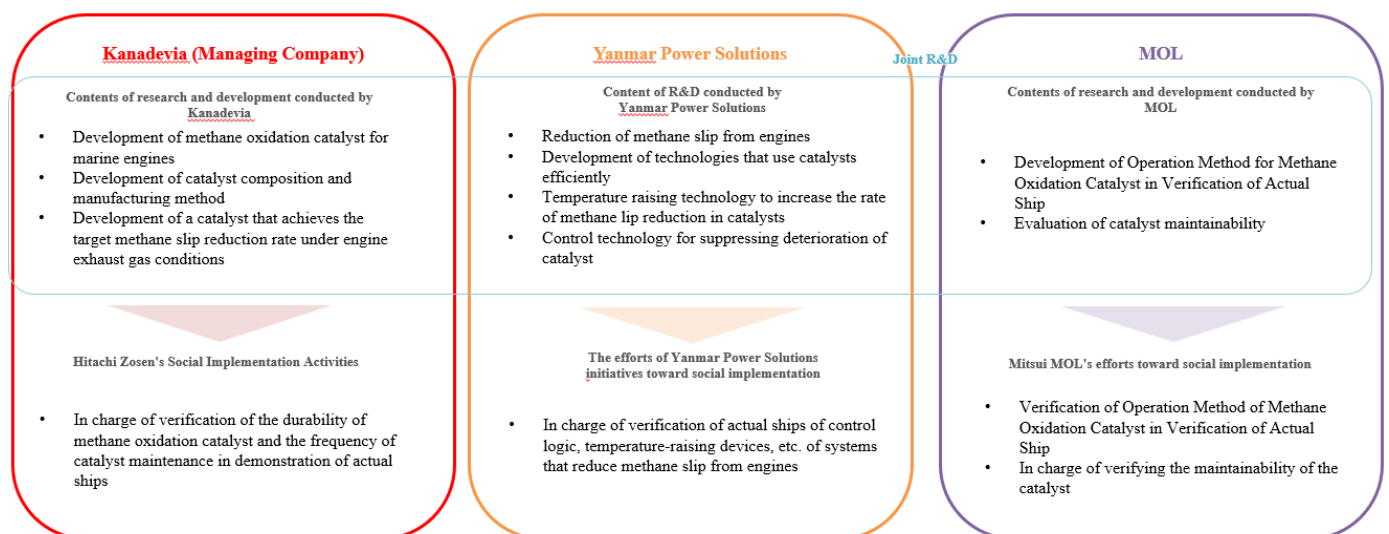
Executors: (Managing Company) Kanadevia Corporation (Osaka City, Osaka Prefecture; President and CEO: Michi Kuwahara)

(Joint Executors) Mitsui O.S.K. Lines, Ltd. (Minato-ku, Tokyo; President: Takeshi Hashimoto), Yanmar Power Solutions Co., Ltd. (Amagasaki City, Hyogo Prefecture; President and CEO: Masaru Hirose)

R&D Theme: Development of Methane Slip Reduction Technology from LNG Fueled Vessels by Catalyst and Engine Modification

Implementation period: FY2021 - FY2026 (planned)

## Reference: Roles of each company in the Project and their efforts toward social implementation



For more information on the project's efforts to date, please refer to the press release below.

- NEDO Selects Methane Slip Reduction Project for Next Generation Ship Development

<https://www.yanmar.com/global/about/ygc/news/2021/10/27/99066.html>

- Design Approved for World's First Methane Oxidation Catalyst System

<https://www.yanmar.com/global/marinecommercial/news/2022/03/16/105532.html>

- Achieved a 93.8% Methane Slip Reduction Rate in Onshore Tests and Received the Statement of Fact for the First Time in the World

<https://www.yanmar.com/global/marinecommercial/news/2024/04/11/136202.html>