

August 6, 2019

Asahi Tanker Co., Ltd.
Exeno Yamamizu Corporation
Mitsui O.S.K. Lines, Ltd.
Mitsubishi Corporation

**Asahi Tanker, Exeno Yamamizu, MOL and MC Agree on Strategic Partnership
To Develop Zero-emission Fully Electric Vessels**

TOKYO— Asahi Tanker Co., Ltd., Exeno Yamamizu Corporation, Mitsui O.S.K. Lines Ltd., and Mitsubishi Corporation today announced their agreement to create a strategic partnership to provide new infrastructure services in the marine shipping industry that focus on electrically powered vessels. Their newly established company, e5 Lab. Inc. (e5 Lab) will work to develop and promote the greater use of these relatively clean modes of marine transport.

There are a number of challenges facing Japan's shipping industry (see below), which e5 Lab will seek to address by consolidating the technologies, know-how and networks of its four major shareholders. The new company will develop a platform to provide a lineup of services that takes advantage of electrically powered vessels and other cutting-edge technologies. The aim is to leverage this platform to encourage sustainable growth and development within the marine shipping industry.

[7 Challenges To Be Addressed by e5 Lab]

1. Control greenhouse gas (GHG) emissions and help to combat the adverse impacts of climate change by converting vessels to electric propulsion.
2. Improve working environments and mitigate crew shortages by upgrading onboard communications systems.
3. Leverage sophisticated sensor technologies to improve ship maintenance and management, thereby ensuring that aging vessels can be operated as safely as possible
4. Leverage autonomous sailing technologies and big data to provide onshore support for crews and contribute to safe, reliable and efficient ship operations.
5. Offer an electric-vessel platform to all stakeholders in the marine shipping industry (including shipbuilders, equipment manufacturers, ship owners and

operators, and cargo owners), standardize vessels and otherwise help to develop a sustainable growth model within the industry.

6. Propose standards on the swift and broader application of next-generation technologies.
7. Leverage large-capacity, rechargeable batteries to provide emergency backup power and otherwise assist with the business continuity planning of local communities.

The first objective for e5 Lab will be to build the world's first zero-emission tanker by mid 2021. The tanker will be a coastal vessel powered by large-capacity batteries and will operate in Tokyo Bay. The company will also develop other kinds of electrically powered vessels to address the abovementioned challenges.

Furthermore, e5 Lab will actively promote the electrification of both coastal and ocean-going vessels, and pool the technologies, human resources and operational know-how needed to achieve the 50% GHG reduction target of the International Maritime Organization (IMO) as soon as possible (the IMO wants to see annual emissions drop to half of their 2008 levels by the year 2050).

By delivering five kinds of e-value ("Electrification," "Environment," "Evolution," "Efficiency," and "Economics") e5 Lab will offer new innovation to society.

[“e5” zero-emission, fully electric vessel promotion video]



Japanese version : <https://youtu.be/6sJzCbRFWw>

English version : <https://youtu.be/JLDTYzr3Jt0>

[Profile of e5 Lab. Inc.]

Representative	President Tomoaki Ichida
Paid-in capital	¥50 million (including capital reserve)
Shareholders	Asahi Tanker Co., Ltd. : 30% Exeno Yamamizu Corporation: 30% Mitsui O.S.K. Lines, Ltd.: 20% Mitsubishi Corporation: 20%
Address	1-1-3 Otemachi, Chiyoda-ku, Tokyo
Businesses	1. Planning and development of <u>full electric vessels</u> 2. Activities to broaden the use of <u>full electric vessels</u> 3. Management of <u>full electric vessel</u> intellectual property rights
Commencement of business	August 2019
Supporting companies, incorporated foundations, etc.	Japan Railway Construction, Transport and Technology Agency (JRTT) (technical support) ClassNK (Classification) Shipbuilding Research Centre of Japan (basic design) ClassNK Consulting Service Co., Ltd. (risk assessment) Kawasaki Heavy Industries, Co., Ltd. (power plant/system integration) Tokyo Electric Power Company Tokio Marine & Nichido Fire Insurance Co., Ltd. Other energy companies, etc.

[Reference]

Profile of Asahi Tanker Co., Ltd.

Address of headquarters: 1-2-2 Uchisaiwai-cho, Chiyoda-ku, Tokyo

Founded: 1951

Businesses: An ocean shipping company that operates around 150 tankers designed for cargoes of petroleum, chemical, LPG, and other products. Asahi Tanker offers both coastal and ocean shipping services, the former of

which serve major petroleum companies and trading houses. The company's ocean-going crude oil tankers, chemical tankers and product tankers are operated worldwide.

Representative: President Kazunori Nakai

Profile of Exeno Yamamizu Corporation

Address of headquarters: 1-1-3 Otemachi, Chiyoda-ku, Tokyo

Founded: 1947

Businesses: Broking service for ocean freight, ships chartering, S&P and marine equipment. It focuses on consulting services for creating new ocean logistics and new ship building.

Representative: President Hisaaki Masuda

Profile of Mitsui O.S.K. Lines, Ltd.

Address of headquarters: 2-1-1 Toranomom, Minato-ku, Tokyo

Founded: 1884

Businesses: A multi-modal transport group that meets the needs of the modern era in a wide variety of fields, such as various types of dry bulkers for iron ore, coal, and wood chips, tankers that carry crude oil, LNG carriers that transport liquefied natural gas (LNG), car carriers, and containerships that carry various products.

Representative: President & CEO: Junichiro Ikeda

Profile of Mitsubishi Corporation

Address of headquarters: 2-3-1 Marunouchi, Chiyoda-ku, Tokyo

Founded: 1954

Businesses: A global integrated business enterprises with operations covering a wide range of industries and organized into 10 Business Groups (Natural Gas Group, Industrial Materials Group, Mineral Resources Group, Industrial Infrastructure Group, Automotive & Mobility Group, Food Industry Group, Consumer Industry Group, Power Solution Group, and Urban Development Group).

Representative: President and CEO Takehiko Kakiuchi

For further information on the new company, please contact:

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Exeno Yamamizu Corporation	e5 Project Office https://www.exeno.co.jp/en/contact/
Mitsui O.S.K. Lines, Ltd.	Media Relations Team, Corporate Communication Division (TEL:03-3587-7015)
Mitsubishi Corporation	Media Team, Public Relations Division (TEL:03-3210-2171/FAX:03-5252-7705)