

# MEMORANDUM OF UNDERSTANDING

between

the U.S. Department of Energy,

Office of Energy Efficiency and Renewable Energy

and

the American Bureau of Shipping

## 1. PURPOSE

This Memorandum of Understanding (MOU or Agreement) establishes the framework for a cooperative relationship between the American Bureau of Shipping (ABS) and the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (DOE EERE) concerning clean energy development in the maritime shipping domain and decarbonization of maritime operations. This MOU provides for mutually beneficial information exchange and joint development activities in the public interest.

## 2. PARTIES

**DOE EERE.** DOE EERE's mission is to accelerate the research, development, demonstration, and deployment of technologies and solutions to equitably transition America to net-zero greenhouse gas emissions economy-wide by no later than 2050, and ensure the clean energy economy benefits all Americans, creating good paying jobs for the American people—especially workers and communities impacted by the energy transition and those historically underserved by the energy system and overburdened by pollution. DOE EERE's research, development, demonstration, and deployment activities include Sustainable Transportation and Fuels and Renewable Energy in the maritime shipping domain. DOE EERE provides leadership in many technical areas as well as the Zero Emission Shipping Mission (MI: ZESM) and the Green Shipping Challenge. Additionally, DOE is a key member of the U.S. government interagency working group on maritime decarbonization topics with other agencies like U.S. Department of State's Office of the Special Presidential Envoy for Climate (DOS SPEC), U.S. Department of Transportation's Maritime Administration (MARAD), U.S. Department of Homeland Security's Coast Guard (USCG), and the U.S. Environmental Protection Agency.

DOE EERE (and its interagency partners) are shaping a wide range of policy and programs as well as technology development, demonstration, and deployment, affecting clean energy development in the maritime shipping domain and decarbonization of maritime operations for the U.S. (including international vessels that operate in the U.S.).

**ABS** is a not-for-profit marine classification, standards/certification, and research organization. ABS serves as a hub of independent maritime knowledge and technical authority for both industry and government agencies and supports owners and operators of maritime vessels and other assets with specialized expertise across a vessel or asset's full lifecycle. ABS is the sole provider of classification and related services for vessels owned by the U.S. Government (46 U.S.C. § 3316). ABS conducts a wide range of technology development and demonstration projects with applicability to (1) clean energy

development in the maritime shipping domain (including offshore wind, marine energy (such as wave energy and offshore thermal energy systems), and advanced nuclear energy technology), (2) decarbonization of maritime operations in areas such as energy efficiency, electrification, alternative fuels/power, etc., and (3) regional initiatives like Green Shipping Corridors (GSCs), maritime aspects of hydrogen hubs, clean energy maritime hubs and transportation, carbon transportation and sequestration, and greening of marine highways and intermodal transportation systems.

### 3. AUTHORITIES

DOE enters into this MOU pursuant to the authority of section 646 of the Department of Energy Organization Act (Pub. L. 95-91, as amended; 42 U.S.C. § 7256).

### 4. INTENT AND PRIORITIES

The intent of this Agreement is to establish a cooperative understanding between DOE EERE and ABS that promotes partnership, fosters collaboration, and leverages and pursues research efforts that are mutually beneficial to each party, as well as the maritime industry at large. This MOU provides a mechanism for open engagement and information sharing between the parties.

The following are areas of potential collaboration:

- A. *Support to the U.S. Delegation for the Zero Emission Shipping Mission:*** The U.S., through DOE EERE, co-leads the MI-ZESM with Denmark, Norway, the Global Maritime Forum, and the Maersk Mc-Kinney Møller Center for Zero Carbon Shipping.
- B. *Support to DOE EERE on U.S. Maritime Decarbonization Action Plan:*** DOE EERE is leading the development of the U.S. Maritime Decarbonization Action Plan (Action Plan) which looks to provide industry and the U.S. government with a roadmap to a net-zero emission U.S. maritime sector by 2050.
- C. *Support Analysis for Low Carbon Intensity Energy in the Maritime Shipping Domain:*** DOE EERE is investing in a range of technology development and demonstration projects that include, but are not limited to, low- and zero-emission fuels deployment, onshore infrastructure and technical support, and maritime engine and vessel technologies in the maritime shipping domain.
- D. *Support Analysis for Low- and Zero-Emission Fuels/Electrification Implementation for Vessels and Port Operations:*** DOE EERE is investing in a variety of projects and programs to bring alternative fuels and electrification to maritime operations (both vessels and ports).

### 5. TERM

The initial term of the Agreement shall be for five (5) years starting when DOE EERE and ABS execute the Agreement. The Agreement shall renew for a five (5)- year period unless DOE EERE or ABS provides written notification to the other party in writing of a desire to terminate the Agreement. After the automatic renewal period expires, unless DOE EERE and ABS mutually agree to extend the Agreement in

writing, the Agreement terminates. Termination of an organization's role in the agreement can be initiated by any party with 60 days written notice.

## **6. RESPONSIBILITIES**

This section identifies the responsibilities of each party under the Agreement for each area of cooperation. No party makes any specific commitment of resources to projects through this Agreement. The parties may agree to specific mutual engagements or funding arrangements on specific projects in separate agreements on a case-by-case basis.

The parties may work together to share current and future best practices; jointly develop and/or test new methods, tools, and approaches; identify considerations for future ABS guidance; and jointly publish and present guidance to agencies and/or industry.

Responsibilities:

### **A. *Support to the U.S. Delegation for the Zero Emission Shipping Mission:***

- i. ABS will provide technical analysis to DOE EERE to support this international effort.
- ii. DOE EERE will engage ABS in meetings to share best practices and lessons learned on key topics of interest, information resources, and tools related to MI: ZESM. Examples may include but are not limited to, aid in developing projects that fit within the MI: ZESM Action Plan, bringing together stakeholders for potential MI: ZESM projects, and conducting gap analysis of the MI: ZESM project portfolio.

### **B. *Support to DOE EERE on U.S. Maritime Decarbonization Action Plan:***

- i. ABS will provide technical assistance to DOE EERE as DOE develops the U.S. Maritime Decarbonization Action Plan. After the release of the U.S. Maritime Decarbonization Action Plan, ABS will help DOE EERE monitor progress towards achieving the plan's goals, identify areas that may need to be revisited, and DOE EERE disseminate information related to the plan's implementation.
- ii. DOE EERE will engage ABS in meetings related to the development and implementation of the U.S. Maritime Decarbonization Action Plan.

### **C. *Support Analysis for Low Carbon Intensity Energy in the Maritime Shipping Domain***

- i. ABS will provide analysis, including technology readiness assessment and qualification support, as needed, to support DOE EERE's research, development, and deployment efforts. This may include individual technology/project assessment or broader system-wide development planning support.
- ii. DOE EERE will engage ABS in meetings related to the development and implementation of maritime decarbonization analysis, research, and deployment efforts.

### **D. *Support Analysis for Low- and Zero-Emission Fuels/Electrification Implementation for Vessels and Port Operations:***

- i. ABS will provide DOE EERE with independent analysis of technology readiness and development of cross-cutting safety/risk standards and industry standards.
- ii. As a classification organization, ABS guidance documents are derived from principles of naval architecture, marine engineering, and related disciplines. DOE EERE will consult as requested during the development of these ABS guidance documents.

#### *6.1.1 Additional Responsibilities as appropriate*

##### *DOE EERE Responsibilities*

DOE EERE will do the following:

- Participate in meetings with ABS to share best practices and lessons learned on key topics of interest and analytical opportunities under the Agreement.
- Engage ABS, information resources, and tools in collaborative efforts as determined beneficial to the agency.
- Suggest areas of joint research/development and/or testing for new methods, tools, and approaches.
- Provide guidance and expertise on ABS projects.
- Support writing and presenting joint papers as agreed upon mutually.

#### *6.1.2 ABS Responsibilities*

ABS will do the following:

- Participate in meetings with DOE EERE to share best practices and lessons learned on key topics of interest and analytical opportunities under the Agreement.
- Engage DOE EERE, information resources, and tools in collaborative efforts as determined beneficial to the DOE EERE..
- Suggest and support areas of joint research/development and/or testing for new methods, tools, and approaches.
- Assist DOE EERE in data dissemination and technology transfer across the maritime industry.
- Support writing and presenting joint papers as agreed upon mutually.

#### *6.1.3 Joint Responsibilities*

Joint responsibilities include the following:

- Each party will cover its own costs for routine interactions, exchange of ideas, and collaboration discussions.

- For more substantive collaborative engagements, the participating parties will work together to define the most appropriate mechanisms for funding any projects.
- Each party will observe mutual information protection determined to be appropriate for specific engagements, including the protection of Controlled Unclassified Information (CUI) as appropriate.

This Agreement in no way restricts either of the Parties from participating in any activity with other public or private agencies, organizations, or individuals.

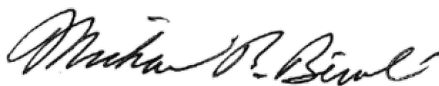
This Agreement is neither a fiscal nor a funds obligation document. Nothing in this Agreement authorizes or is intended to obligate the parties to expend, exchange, or reimburse funds, services, or supplies, or transfer or receive anything of value.

This Agreement is strictly for internal management purposes for each of the parties. It is not legally binding or enforceable and is not intended and shall not be construed to create any legal obligation, express or implied, on the part of either Party. This Agreement is not intended to provide and shall not be construed to provide a private right or cause of action for or by any person or entity, whether in law or in equity.

All agreements herein are subject to, and will be carried out in compliance with, all applicable laws, regulations, and other legal requirements. This Agreement is not intended and shall not be construed to alter any existing laws, regulations, or other legal requirements.

## 7. SIGNATORIES

The parties, acting through their duly authorized representatives, have caused this MOU to be signed in their names and delivered as of this 10th day of April, 2024



---

**For the U.S. Department of Energy  
Office of Energy Efficiency and Renewable Energy**

Michael Berube  
Deputy Assistant Secretary for Sustainable  
Transportation and Fuels



---

**For American Bureau for Shipping**

Christopher J. Wiernicki  
Chairman and CEO