

Organization Profile Form January 20, 2017

Organization name: **Advanced Environmental Group, LLC. (AEG)**

Logo:



Kind of organization: Company

Barge and shore based emission control technology and services for the ocean shipping industry to meet current and future regulatory emissions control requirements. Our technology guarantees compliance with California's stringent at-berth regulation at the most competitive costs and with little or no impact on operations. Low cost and operationally transparent compliance ensures a fleet's competitiveness by avoiding expensive fines or operational restrictions.

Products and Services:

The Advanced Maritime Emissions Control System (AMECS) is a patented barge based system that treats emissions from auxiliary engines and boilers of ocean going vessels (OGVs). Auxiliary engines are a significant source of Particulate Matter (PM10), NOx and SOx emissions at ports. California requires ships while at berth to reduce their auxiliary engine emissions and it is expected that other states and countries will follow their example.

AMECS is California Air Resources Board approved for compliance with its at-berth regulation. It captures and treats the auxiliary exhaust gases to remove NOX, SO2 and PM10. The ships auxiliary generator exhaust is captured using stainless steel ducting actuated by an articulated hydraulic boom mounted on top of a tower. The end of the ducting uses high temperature flexible piping to connect to the generator and/or auxiliary boiler exhaust on the vessel. Once connected a slight suction is used to capture the vessel exhaust. This exhaust moves through the capture and treatment system where it is scrubbed of NOx, PM, and SOx, and re-enters the atmosphere cleaner than the ambient air.

The AMECS is transparent to ship operations as it does not require the installation or modification of ship board or shore side infrastructure. The barge has been specially modified to meet US Coast Guard and OSHA safety, structural and stability standards. The vessel has been examined by the United States Coast Guard to ensure that it meets all U.S. regulatory requirements. Additionally, AMECS has undergone risk evaluations by both the American Bureau of Shipping (ABS) and Det Norske Veritas (DNV) to ensure that the system cannot impact vessels or their equipment, particularly diesel engines.

Since approval, the system is being used by major shipping lines as a cost-effective alternative to shore power. The system has been operated without incident for over a thousand hours of commercial use. During these operations, there has never been an incident that posed a threat to the vessel, its equipment, the port, or the environment. Additionally, an independent third party analysis has determined that in ports that have no shore power infrastructure AMECS obtains an equivalent air emissions reduction at one third the total cost of shore power.



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Core Competencies:

Expertise in: Emission Reduction Technology – AMECS management include personnel with extensive government and private experience developing and commercializing emission reduction technologies.

Expertise in: Air Quality Regulations and Regulatory Compliance – AMECS management includes former California state and local regulatory personnel experienced in air quality planning, regulation development.

Expertise in: Maritime Operations and Regulatory Compliance – AMECS management includes former Coast Guard marine safety personnel, senior port administrators, maritime officers licensed for large vessel operations and tug and barge operations.

Current foreign representation: No? XX Yes? If yes, please answer the following:

- Company subsidiary, joint venture or affiliated company (identify)
- Distributor or agent (identify)
- Licensing arrangements (identify)
- Other (explain)

Relationships: **AEG** is seeking the following:

- Channel/distribution partners
- Investment in the company
- To invest in other companies
- Licensing opportunities (in or out)
- Other (explain)

Meeting interest: **AEG** would like to meet with the following:

- Meet with companies for collaborations, projects and synergies
- Meet with military
- Meet with universities and research centers for collaborations, projects and synergies
- Other (explain) – meet with state and local government organizations

Primary contact information:

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