Request for Information:
Battery for Boston Duck Tours' Zero-Emission Conversion of Amphibious Vehicles
CALSTART
June 5, 2025

1. RFI Overview

CALSTART is seeking information regarding a suitable battery system that Boston Duck Tours can use to convert their amphibious "duck" vehicles to zero-emission. The ducks are used for both land and water tourism in the city of Boston. They are purpose built modernized recreations of military DUKWs, used specifically for tourism. The existing vehicles must be upfitted rather than creating a new build. The vehicle that Boston Ducks Tours wishes to electrify first is gas-powered; the remainder of the fleet is diesel-powered.

Please note that this Request for Information ("RFI") is for informational purposes only, and no contract will be awarded as a result. A firm or organization's response to the RFI—or lack thereof—will have no impact on the evaluation of responses to any subsequent Request for Proposals ("RFP") or Invitation to Bid ("ITB") released. Responses will be used solely for information and planning purposes.

1.1. RFI Contact

We have designated the following individuals to serve as the official points of contact for this RFI. These individuals are the only authorized contact permitted to communicate on behalf of CALSTART about this RFI.

Sydney Hayes, Lead Project Manager
Northeast Regional Office
CALSTART
shayes@calstart.org

Jennifer Kritzler, Deputy Director
Northeast Regional Office
CALSTART
jkritzler@calstart.org

1.2. Submission Details

Please submit your responses to this RFI via email to both RFI contacts listed above before the due date identified in Section 1.3. When submitting your response, please use pdf format only and use the subject line "Boston Duck Tours Battery RFI Response – [Company Name]." Supporting attachments will be accepted.

Physical (paper) copies of RFI responses are not permitted.

If you have any questions about this RFI, please direct them to the RFI contact during the appropriate period identified below in Section 1.3.

1.3. RFI Timeline

Please review the below RFI timeline. Dates may be modified or amended by CALSTART, which will post an amendment to this RFI notifying prospective respondents of any change.

- RFI Released: June 5, 2025
- Deadline for Questions: June 26, 2025 5:00 PM EDT
- Responses Due: July 14, 2025 5:00 PM EDT

2. Background Information

2.1. Goals and Outcomes

CALSTART aims to provide Boston Duck Tours with the information gathered from this RFI to inform their search for a suitable battery for their ducks. Respondents should provide information on battery manufacturers that can meet the requirements described in Section 3.2.

2.2. Background

Boston Duck Tours originated in 1994 and has since grown into one of the most popular tours in Boston. They operate 28 ducks, employ about 200 people, and serve up to 4,600 tourists per day. Throughout their history, Boston Duck Tours have received numerous awards and accolades, including the TripAdvisor Certificate of Excellence, National Geographic's designation of "Boston Must Do," and Boston's A-List for Best City Tour.

Boston Duck Tours' vehicles are modernized recreations of military DUKWs. Their oldest duck was built in 2006, and their newest duck was built in 2014. The company that built their ducks is no longer operating, meaning replacement vehicles are not currently available.

In the peak summer season, each duck travels an average of 55 miles per day, with lower daily mileage during the spring and fall. The operating season is approximately 38 weeks per year; the ducks do not operate during the winter.

Boston Duck Tours wishes to reduce the emissions from their ducks to preserve the city's health and future. In the process, protecting the safety and wellbeing of their guests remains the utmost priority. While exploring the possibility of transitioning their ducks to zero-emission, they have been unable to identify a suitable battery that can support their operations. Boston Duck Tours sought assistance from Mass Fleet Advisor, a free technical advisory assistance provider that helps fleets learn how to transition their fleet to zero-emissions. Mass Fleet Advisor is funded by the Massachusetts Clean Energy Center (MassCEC) and CALSTART is the Lead Consultant.

3. Information Requested

3.1. Who We're Looking For:

CALSTART is especially interested in hearing responses to this RFI from battery manufacturers or subject matter experts, those with experience repowering or converting gasoline or diesel on-road engines, and those with experience repowering or converting gasoline or diesel marine engines, especially zero-emission conversions.

3.2. What We're Looking For:

Boston Duck Tours' vehicles require 240 kWh power total from a combined four batteries or less. This can be achieved by using four batteries at 60 kWh each or another combination that meets the required dimensions listed below.

Information is requested for a battery or combination of batteries that can meet the following requirements:

- **Power**: 240 kWh total.
- **Voltage**: 400 volts.
- **Dimensions**: less than 85" L x 14.5" W x 11" D (2147mm x 372mm x 268mm) desired.
    - Ability to be mounted on its side or on its base.
    - It is desired for all batteries to fit into a space approximately 90" L x 28" W x 23" D.
- **Weight**: less than 900 lbs. per battery; less than 3,600 lbs. total is desired for all batteries needed to meet the 240 kWh requirement.
- **Housing**: Steel, at least 3MM thick.
- **Certifications**: to meet UL 1642 or IEC 62619.
- Included vent port that can be easily connected to piping or tubing.
- Liquid cooled.

The following requirements are optional but highly preferred, due to marine operation:

- Saltwater and corrosion protection.
    - A minimum High Ingress Protection (IP) rating of IP67.
- Vibration and shock resistance.
- Housing that accounts for thermal expansion.

Please include the following information about the proposed battery solution:

- Description of battery case vent port and connection.
- Expected energy release during unplanned Thermal Runaway.

- Expected off gassing during normal use and during charging.
    - Including but not limited to: Vapor Density (lighter or heavier than air), toxicity, duration
- Price estimate for the battery or batteries submitted.