

May 30, 2025

Michael Walker, CEO
STAX Engineering, Inc.
65 Pine Avenue, Suite 943
Long Beach, California 90802
m.walker@staxengineering.com

Dear Michael Walker:

California Air Resources Board (CARB) staff have reviewed the "Request for Amending STAXbox 1-1 EO for ro-ro and container vessels to include STAXbox 4-1, 4-2, 5-1 and 5-2 as duplicates of STAXbox 1-1" submitted December 19, 2024, and the "Request to Amend STAXbox 1-1 EOs with three duplicate designed barges (STAXbox 6-1, 6-2, 7-1, 7-2, 8-1 and 8-2", (STAX's Requests), submitted April 1, 2025. STAX's Request for Executive Order (EO) approval is for ten STAXbox capture and control systems for auxiliary marine diesel engines on container and auto carriers/roll-on roll-off (ro-ro) vessels. **This letter addresses STAX's Request as it pertains to container vessels only.**

The purpose of STAX's Requests was to verify and attest that STAXbox 4-1, STAXbox 4-2, STAXbox 5-1, STAXbox 5-2, STAXbox 6-1, STAXbox 6-2, STAXbox 7-1, STAXbox 7-2, STAXbox 8-1, and STAXbox 8-2 are duplicates of STAXbox 1-1, the system formerly named STAXbox.A-1, which was approved under EO G-23-294 for container vessels operating one auxiliary engine.

For duplicate systems (once CARB confirms them as duplicates) that are identical to one that CARB previously approved through an EO, the CARB Approved Emission Control Strategy (CAECS) operator may request that the duplicate system be added to an approved equipment list attached to the previously issued EO. Once an updated EO is issued, the duplicate system may operate as a CAECS to comply with CARB's Control Measure for Ocean-Going Vessels At Berth, title 17, California Code of Regulations 93130 *et seq* (2020 At Berth Regulation). Each duplicate system will be required to complete in-use compliance testing, confirming the performance of the duplicate equipment per section 93130.5(j) of the 2020 At Berth Regulation, and must submit test data to CARB within six months of operation or 30 vessel visits, whichever comes first, after the date that the duplicate equipment is approved and added to the EO. If the CAECS operator fails to submit test results for the new system within the specified timeframe, or if the new system fails to achieve emissions reductions required by the 2020 At Berth Regulation while performing with the same design, conditions, and requirements approved for the original approved system, the Executive Officer may revoke the approval of the duplicate system and remove it from the EO.

The following in-use compliance tests must be conducted on duplicate equipment within 6 months or 30 vessel visits, whichever comes first after the duplicate equipment is approved and added to the EO.

1. Third-party source testing for all pollutants listed in section 93130.5 (g) at one load point following the requirements and test methods listed in section 93130.5(g) with Relative Accuracy Test Audit (RATA) testing.
2. Third-party capture efficiency testing at one load point.
3. Durability testing on a minimum of 5 vessels and a minimum of 200 hours.

CARB staff's review of STAX's Request was based on the requirements in the 2020 At Berth Regulation and STAX's Test Plan for container vessels, submitted on February 28, 2023.

We are pleased to inform you that we have approved STAXbox 4-1, STAXbox 4-2, STAXbox 5-1, STAXbox 5-2, STAXbox 6-1, STAXbox 6-2, STAXbox 7-1, STAXbox 7-2, STAXbox 8-1, and STAXbox 8-2, to be duplicates of STAXbox 1-1 and are issuing the enclosed EO G-23-294-003. Executive Order G-23-294-002 is hereby superseded and is of no further force and effect.

STAX must conduct the above in-use compliance testing on the duplicate equipment (STAXbox 4-1, 4-2, 5-1, 5-2, 6-1, 6-2, 7-1, 7-2, 8-1, and 8-2) within 6 months (by November 30, 2025) or 30 vessel visits, whichever comes first.

Executive Order G-23-294-003 identifies the monitoring, reporting, and recordkeeping requirements for the approved STAXbox systems (STAXbox 1-1, 1-2, 2-1, 3-1, 3-2, 4-1, 4-2, 5-1, 5-2, 6-1, 6-2, 7-1, 7-2, 8-1, and 8-2) and stipulates the approved operating conditions for the use of the STAXbox systems.

Executive Order G-23-294-003 identifies the approved STAXbox systems and the vessel and engine types for which the STAXbox systems are approved to control in the approved equipment list (Attachment 1 of EO G-23-294-003). **Under EO G-23-294-003, the STAXbox is not approved to be used simultaneously to control two sources at the same time.**

STAXbox 4-1, 4-2, 5-1, 5-2, 6-1, 6-2, 7-1, 7-2, 8-1, and 8-2 have been granted EO G-23-294-003 under the 2020 At Berth Regulation, California Code of Regulations, title 17, section 93130.5(e)(3) and the approved equipment (STAXbox 1-1, 1-2, 2-1, 3-1, 3-2, 4-1, 4-2, 5-1, 5-2, 6-1, 6-2, 7-1, 7-2, 8-1, and 8-2) may operate under the terms specified in the EO as a CAECS for five years from the date when STAXbox 1-1 was approved (March 21, 2024) before needing to apply for an extension, as specified in section 93130.5(i)(1).

For a future duplicate system(s) to be added as approved equipment on an EO, STAX will again need to submit information confirming that there are no modifications to design or operation for a future system(s) as compared to the existing approved equipment. When requesting approval for a future duplicate system(s), please submit the following

information in writing to assist CARB in verifying that there are no modifications (as described in section 93130.5(i)(2)):

- ID number for this new piece of equipment
- Brief description of the control strategy's operation, confirm no changes
- Brief description of the monitoring and notification system, confirm no changes
- List of all components (provide spec sheets as applicable), confirm no changes
- Confirm no changes requested to any portion of the Executive Order approval
- Refer to previously approved test plan, agree to abide by test procedures (to be used for in-use compliance testing, as applicable) and maintenance procedures
 - o Option to include test plan as an attachment, or submit a truncated version applicable to this new request

Per section 93130.19, this information may be submitted via email to shorepower@arb.ca.gov, and shall include an attestation that the information is true, accurate, and complete, signed under penalty of perjury.

If you have any questions, please contact Angela Csondes, Manager, Marine Strategies Section, at angela.csondes@arb.ca.gov.

Sincerely,



Bonnie Soriano, Chief, Freight Activity Branch, Transportation and Toxics Division

Attachment: EO G-23-294-003

cc: Angela Csondes, Section Manager, Marine Strategies Section