

Gavin Newsom, Governor Yana Garcia, CalEPA Secretary Liane M. Randolph, Chair

June 19, 2023

Ed Washburn SVP Fleet Operations Pasha Hawaii 4040 Civic Center Drive, Suite 400 San Rafael, California 94903

#### Dear Ed Washburn,

On December 1, 2021, Pasha Hawaii submitted an Innovative Concept Application (Application) that included two sub-concepts: (1) an emission capture and control system (ECCS) for propulsion boiler, and (2) on-board wind power, as potential compliance pathways for meeting the requirements of the 2020 Control Measure for Ocean-Going Vessels At Berth (2020 Regulation or Control Measure) pursuant to California Code of Regulations, title 17, section 93130.17. On July 14, 2022, California Air Resources Board (CARB) staff notified Pasha Hawaii by letter that the Application was not complete as it did not contain the minimum information required for Innovative Concept applications as described in section 93130.17(b)(1). CARB's letter requested Pasha Hawaii to resubmit a revised, completed application addressing the missing information by August 19, 2022. To date, <u>CARB has not received the requested revised Application</u>.

Based on CARB staff evaluation of Pasha Hawaii's Innovative Concept Application and Pasha Hawaii's responses to public comments submitted on August 19, 2022, staff provides the following assessment:

## Innovative Concept Sub-Concept 1: Using ECCS for Steam Ship Propulsion/Steam Turbine Generator Boilers At Berth

As mentioned above, Pasha Hawaii's Application contained two sub-concepts. The first sub--concept is to use capture and control technology on Pasha steamships that use propulsion boilers for power needs while at berth. Under the 2007 At Berth Regulation (Section 93118.3, title 17, chapter 1, subchapter 7.5, California Code of Regulations), steamships were exempt from regulatory requirements. To achieve added public health and air quality benefits for California port communities, including disadvantaged communities, this exemption was not carried over into the 2020 Regulation. Because Pasha's proposed ECCS would control emissions associated with auxiliary engine use at berth, it simply represents a potential control method for direct compliance with the 2020 Regulation, rather than an alternate Innovative Concept. Therefore, CARB cannot approve Pasha Hawaii's application for sub-concept 1, using ECCS as an Innovative Concept.

However, as an alternative to the Innovative Concept process, the capture and control systems for the boilers sub-concept, as specified in the Application, may qualify as a CARB Approved Emission Control Strategy (CAECS) to achieve required emission

Ed Washburn June 19, 2023 Page 2

> reductions under the 2020 Regulation. Compliance using a CAECS has the added benefit of sharing compliance responsibility with the terminal. Additionally, visits that comply using a CAECS for compliance count toward the generation of vessel incident events (VIE) and terminal incident events (TIE), unlike visits that use the Innovative Concept pathway that do not. Information about CAECS is available on the program website here: https://ww2.arb.ca.gov/our-work/programs/ocean-going-vessels-berthregulation.

# Innovative Concept Sub-Concept 2: Utilize Wind Energy to Reduce Emissions While At Berth

The second sub-concept contained in Pasha's Application is to use a combination of wind power, solar power, and other energy saving methods to further reduce the in--port power loads, thus lowering the fuel consumption of the boilers and associated emissions. CARB acknowledges Pasha's response to the public comments regarding this Innovative Concept. The response provided additional information and clarification that was missing in the original Application as identified in our July 14, 2022 letter and has been helpful in our evaluation of this sub-concept.

However, even with the additional information from your response to the public's comments, there is still missing information that is required for CARB to be able to complete its evaluation. Section 93130.17 (b)(5) of the 2020 Regulation allows for the applicant to respond within 30 days of this letter and provide us with the information that we have outlined in the attachment called "Attachment A–Pasha Hawaii -Innovative Concept Evaluation–Request for More Information." Once we receive your response, we can proceed with the evaluation of your Application according to Section 93130.17 (b)(3). We look forward to your response by July 20, 2023.

If you have any additional questions or would like to further discuss the content of this letter and Attachment A, please contact Jeff Jacobs, Air Resources Engineer, Marine Strategies Section, at *Jeff.Jacobs@arb.ca.gov* or Angela Csondes, Section Manager, Marine Strategies Section, at *Angela.Csondes@arb.ca.gov*. If you would like to discuss CARB staff's feedback via conference call or a virtual meeting, we would be happy to meet.

Sincerely,

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Bonnie Soriano, Branch Chief, Freight Activity Branch

Attachment - "Attachment A-Pasha Hawaii-Innovative Concept Evaluation-Request for More Information"

cc: Jeff Jacobs, Air Resources Engineer, Marine Strategies Section

### Attachment A Pasha Hawaii Innovative Concept Evaluation Request for More Information – On-board Wind and Solar Power

#### (American Wind Micro Cube Wind Wall)

On December 1, 2021, Pasha Hawaii (Pasha) submitted an Innovative Concept application (Application) that included two sub-concepts: (1) an emission capture and control system (ECCS) for propulsion boilers, and (2) on-board wind power as potential compliance pathways for meeting the requirements of the 2020 Control Measure for Ocean-Going Vessels At Berth (2020 Regulation or Control Measure). As mentioned in this letter (dated June 16, 2023), the sub-concept for using an ECCS for the vessel's propulsion boilers is not approved by CARB as an Innovative Concept as it does not meet the requirements as outlined in section 93130.17 of the Control Measure. Alternatively, Pasha's Application, "A Proposed Innovative Concept – Utilize Wind Energy" may meet these requirements. However, the Control Measure provides that applications for Innovative Concepts must contain, at a minimum, the specific information detailed under section 93130.17 (b)(1).

In general, applications for Innovative Concepts must contain any information necessary to demonstrate that the proposed Innovative Concept will "reduce NOx, PM 2.5, and ROG emissions equivalent to or greater than the level that would have been achieved by the Control Measure, while not increasing GHG," <sup>1</sup> (See section 93130.17 (a)(2)).

To establish this, the Application should provide three main components:

- Baseline Emissions Estimates per section 93130.17 (b)(1)(C): "Estimate of the vessel emissions planned to be covered under the Innovative Concept for each pollutant NOx, PM 2.5, and ROG by multiplying the emission factor for a pollutant found in section 93130.5(d) of this Control Measure by the expected number of vessel visits, average visit duration, and expected power used during an average visit."
- 2. An estimate of reductions that would be achieved under direct compliance with the regulation, in absence of any Innovative Concept (generally referred to as Direct Compliance Estimates).
- 3. An estimate of reductions achieved by the proposed Innovative Concept (generally referred to as Innovative Concept Estimates).

See Items 1, 5, and 6 below for more details.

<sup>&</sup>lt;sup>1</sup> NOx is oxides of nitrogen. PM2.5 is particulate matter that is 2.5 micrometers in diameter or smaller. ROG is reactive organic compounds. GHG is greenhouse gases.

These estimates must identify any assumptions such as activity, emission factors, electricity produced by the Innovative Concept, energy consumed and provide estimates for NOx, PM 2.5, and ROG reductions.

Neither the Application Pasha submitted on December 1, 2021, nor Pasha's letter dated August 19, 2022 contained the minimum information identified by the 2020 Regulation, and Pasha's Application is therefore incomplete. Below, CARB Staff has outlined the specific areas required by the 2020 Regulation in section 93130.17 which are missing or incomplete in your Application for the on-board wind cube sub-concept (see <u>underlined</u> text below). Please note that some application requirements that were not part of our July 14, 2022 letter (*https://ww2.arb.ca.gov/innovative-concept-application-pasha*) have been identified as lacking information upon further evaluation of your Application, and these additional components are included below.

#### Item 1:

**Section 93130.17 (b)(1)(C):** "Applications for innovative concepts shall contain ...'[an estimate] of the vessel emissions planned to be covered under the innovative concept for each pollutant NOx, PM2.5, and ROG by multiplying the emission factor for a pollutant found in section 93130.5(d) of this Control Measure by the expected number of vessel visits, average visit duration, and expected power used during an average visit.'"

In your Application, you state that, "The emissions generated from this type of propulsion boiler, which power the steam turbine generators in port, is unknown." Please re-submit an updated Application using the values provided in the 2020 Regulation section 93130.5 (d)(1) as a starting point estimation to calculate the total reduction of emissions or any other substantiated boiler emission data that you might have available.

The expected number of vessel visits, average visit duration, and expected power used during an average visit needed for this calculation must be estimated and included in your updated Application. If the data from the University of California, Davis (UCD), that is discussed in your August 19, 2022 public comment response becomes available before the response deadline indicated in this letter, that data can also be used for these calculations. If this Innovative Concept is approved based on the emissions factors in section 93130.5 (d)(1) before the UCD report becomes available, you can optionally update your emission reductions using the updated data from the UCD analysis when it becomes available as indicated by section 93130.17 (b)(1)(D) and (d)(2).

#### Item 2:

**Section 93130.17 (b)(1)(D):** "Applications for innovative concepts shall contain ... the proposed recordkeeping, reporting, monitoring, and testing procedures that the applicant plans to use to demonstrate reductions."

<u>Please explain how Pasha intends to monitor, calculate, log, and report emissions reductions</u> within the specified applicable regions and scenarios. The Application asserts that, "This proposed innovative concept will provide constant emissions reduction while in all California waters, not just at berth." As indicated in section 93130.17 (a)(4), only emissions reductions that occur "at the same port or marine terminal, within adjacent communities, or overwater within three nautical miles of the port or marine terminal," may be applied to the Innovative Concept. Any reductions in emissions that take place outside this region may not be counted toward the Innovative Concept. If wind or solar power generated outside this region is used to charge batteries that are, in turn, used to reduce emissions at berth or within the specified region, these reductions may be used toward the Innovative Concept. However, your letter dated August 19, 2022, indicates that, "It is currently not feasible to incorporate an energy storage system on this ship to provide all the energy during an in-port stay." Therefore, please explain how Pasha intends to monitor, calculate, log, report, and apply emissions reductions within the specified applicable region.

In addition to restrictions on the region in which emissions reductions can be banked for use with an Innovative Concept, there are scenarios which preclude claiming emissions reductions that can be banked and applied to other visits.

For visits using a CARB Approved Emission Control Strategy (CAECS) while concurrently reducing emissions using the Innovative Concept technology (e.g., wind or solar energy), the emissions reductions during that visit are not considered excess to regulatory compliance. The combination of the CAECS and the emissions reduction from the technology result in a compliant visit. That is, an applicant cannot bank reductions that are achieved using the Innovative Concept technology for other visits because the reductions were achieved during, and contribute to, the visit's compliance.

For example, consider a vessel that uses wind and solar technology to reduce the auxiliary load by 50 percent during a visit, but also uses a CAECS for capture and control. Although the vessel uses 50 percent less power, these reductions are associated with the compliant visit. This visit does not generate additional reductions that can be banked for other visits.

If the vessel uses wind and/or solar technology to reduce emissions during a visit that is compliant by using a vessel incident event (VIE) or a terminal incident event (TIE), the reductions achieved by the Innovative Concept technologies can be banked and used later for compliance under the Innovative Concept compliance option. This is because the visit that is compliant using a TIE or VIE do not have a requirement to reduce emissions.

For visits that rely on a CAECS for compliance, any wind and/or solar power generated and stored in a battery storage system can be used as an Innovative Concept pathway for compliance for other visits.

In your updated Application, please explain how the data collection, accounting, and reporting will occur to ensure that reductions that occur outside three nautical miles or during a CAECS-compliant visit are not banked and applied later when using the Innovative Concept pathway for compliance. Ensure that the emissions that need to be reduced by a visit using the Innovative Concept are based on the baseline values (see Item 1 above) and not the reduced emission levels caused by the wind cubes and other planned efficiencies.

If banked emissions reductions from the application of Innovative Concept technology are used for a visit, the record keeping must show that the total amount of emissions reductions are equal to or greater than the baseline emissions reductions as calculated in section 93130.17 (b)(1)(C) (see Item 1 above) and not the emissions level after the boiler emissions are reduced due to the reduced power load on the generator(s) from the wind cubes and other efficiency implementations.

#### Item 3:

**Section 93130.17 (b)(1)(E):** "Applications for innovative concepts shall contain ... a Memorandum of Understanding (MOU) or similar agreement between the applicant, any funding partners (if more than one entity is providing funding), owners and operators of controlled equipment for the innovative concept that shows agreement regarding the innovative concept's scope and requirements for using the innovative concept in compliance with this Control Measure. The Memorandum of Understanding or similar agreement must be approved by the Executive Officer and must be in place prior to the start date of the innovative concept compliance period."

<u>Please provide any MOUs from any funding partners, owners, and operators of controlled</u> <u>equipment for the Innovative Concept. If no such agreements exist, please explain.</u>

#### Item 4:

**Section 93130.17 (b)(1)(H):** "Applications for innovative concepts shall contain ... a discussion regarding any environmental review requirements that may apply to the proposed innovative concept, including identification of which agency would serve as the lead agency for environmental review purposes."

<u>Please describe any environmental review requirements that may apply to the proposed</u> <u>Innovative Concept, or an explanation for why no environmental review is necessary for the</u> <u>projects.</u>

Even if there are no environmental review requirements, it is incumbent upon the applicant to explain why not and show due diligence in ensuring and demonstrating that there are no requirements. If any requirements apply, please describe which agency would serve as the lead agency. Your updated Application should outline any findings regarding any environmental review that may be required, or that you have ruled out.

#### Item 5:

**Section 93130.17 (b)(1)(l)/(a)(2):** "Applications for innovative concepts shall contain ... any information necessary to demonstrate that the proposed innovative concept ... [reduces]

NOx, PM 2.5, and ROG emissions equivalent to or greater than the level that would have been achieved by the Control Measure, while not increasing GHG.' Emission reductions are verified each year through annual reporting in section 93130.17(d) of this Control Measure."

<u>Please estimate if it will be possible to bank enough emissions reduction "credit" within the described region and timeframe to account for all visits. If it is not possible, what is Pasha's plan for compliance otherwise? For example, will Pasha use VIEs, control and capture technology, or the remediation fund?</u>

Your original Application and public comment follow-up letter do not explain how you will be able to demonstrate emissions reductions equivalent to, or greater than, achieved by the 2020 Regulation. Please do so in the updated Application. Because wind and solar power will be unable to *directly* produce reductions equivalent to, or greater than, the level that would have been achieved by the 2020 Regulation while at berth, it will be necessary to "bank" emissions reductions that occur at berth, within adjacent communities, overwater within three nautical miles of the port or marine terminal, or earlier than the compliance requirement date. However, there is no description in your original Application, or the August 19, 2022, letter of how this banking process will take place.

A correlation between the power output from the generators and the emissions produced by the boilers must be established. Please provide an updated Application which includes the details associated with estimates of the emissions reductions and how these reductions will be achieved and reported.

CARB staff understands your proposal as follows: As power draw on the boiler-driven generators decreases due to Micro Cube power generation and other power-producing or power-reducing activities (new nozzles, ultra-low sulfur fuel, variable frequency drives, etc.), there will be less power required by the boiler generator(s). With reduced loads for the generators, the boilers would require less energy production and therefore less fuel usage and therefore less emissions would be produced.

Your public comment follow-up letter states that, "Energy use reduction has the same impact as adding green energy supply. If we reduce the load by 100 kW, it will have the same emission reduction result as if we produced 100 kW of green energy. Therefore, the emission reduction will reduce the average emissions produced by the ship by the same percentage as the energy reduction." It is generally true that reducing power load results in reduced need for power generation and thus, reduced emissions. However, because of the requirement to continuously operate the boiler to maintain its inside pressure, the reduction in power draw on the boiler generators does not necessarily result in a direct ratio of emissions reductions. While the power draw by the boiler generator(s) may be reduced by using these alternate power sources and power-usage reductions, the boiler can operate independently of the generator(s). The correlation between reduced use of the generator, added efficiencies, and quantity of emissions must be established. This correlation between reduced generator power load and boiler emissions could be demonstrated by comparing boiler emissions output to varying power draw on the generators. In addition to wind-driven Micro Cube generators producing power to offset the load to the steam-driven generators, your December 1, 2021 Application proposed several other power load-reducing activities including the following:

- Designing and building new nozzles for ultra-low operation on the load propulsion boiler while burning ultra-low sulfur fuel optimized for reduced emissions.
- Using a variable frequency drive for the force draft boiler control for reduced energy consumption and better control of combustion air for burning the fuel.
- Using a variable frequency drive for the main condenser cooling pump for reduced energy consumption.
- Performing an energy audit onboard the vessel focusing on in port operations and equipment upgrades for in port energy reduction.
- Installing solar panels where space allows.

Each of these activities is focused on reducing the load on the generators, which may reduce the fuel requirement on the boilers, and thus, the associated emissions. However, as with using wind cubes to lower the power draw on the generator for auxiliary power as discussed above, a correlation between reduced load on the generators due to these added efficiencies and reduced emissions must be established.

Depending on the results of these analyses, it may not be feasible to reduce NOx, PM 2.5, and ROG emissions equivalent to, or greater than, the level that would have been achieved by the 2020 Regulation due to the requirement to keep the boilers running while at berth.

<u>Please estimate the fuel requirement and the related emissions to maintain the pressure and temperature inside the boiler at its minimum level, and if reductions greater than the level that would have been achieved by the 2020 Regulation are possible using these energy conservation measures in addition to the Micro Cubes.</u>

#### Item 6:

**Section 93130.17 (b)(1)(I)/(a)(3):** "Applications for innovative concepts shall contain ... any information necessary to demonstrate that ... the proposed innovative concept [achieves] emissions reductions of NOx, PM 2.5, and ROG that, as of the date the compliance period begins, are early or in excess of: (1) any other state, federal or international rule, regulation, statute, or any other legal requirement (including any requirement under a Memorandum of Understanding with a government entity), that is in effect, has been approved, or has been noticed; or (2) of an emission reduction strategy identified in an AB 617 Community Emissions Reduction Program that has been approved by CARB's Governing Board."

<u>Please demonstrate how the proposed Innovative Concept achieves emissions reductions</u> <u>that are earlier than, or in excess of, any legal requirements or reduction strategies identified</u> <u>in an AB 617 program.</u>

#### Item 7:

**Section 93130.17 (b)(1)(I)/(a)(5):** "Applications for innovative concepts shall contain ... any information necessary to demonstrate that ... 'the proposed innovative concept [does not] increase emissions at other ports or marine terminals.'"

Please describe how Pasha's Innovative Concept meets this requirement.

Your December 1, 2020 Application does not address this requirement. Even if Pasha believes that a particular Innovative Concept requirement is obviously met given the proposal, it is incumbent upon applicants to explain why.

#### Item 8:

Section 93130.17 (b)(1)(l)/(a)(6) Part 1: "Applications for innovative concepts shall contain ... any information necessary to demonstrate that ... the proposed innovative concept [achieves] emissions reductions that exceed any reductions otherwise required by law, regulation, or legally binding mandate, and that exceed any reductions that would otherwise occur in a conservative business-as-usual scenario. For purposes of this section, 'business as usual' means the set of conditions reasonably expected to occur within the relevant area in the absence of the incentive provided by the innovative concept provisions of this Control Measure, taking into account all current laws and regulations, as well as current economic and technological trends."

See above comments regarding Items 1, 5, and 6 above.

#### Item 9:

**Section 93130.17 (b)(1)(l)/(a)(6) Part 2:** "Applications for innovative concepts shall contain ... any information necessary to demonstrate that ... the proposed innovative concept [achieves] reductions that are real, quantifiable, verifiable, and enforceable where:

(A) 'Real' means that reductions result from a demonstrable action or set of actions, and are quantified using appropriate, accurate, and conservative methodologies that account for all emissions within the innovative concept;

(B) 'Quantifiable' means the ability to accurately measure and calculate reductions relative to a project baseline in a reliable and replicable manner for all emissions within the innovative concept;

(C) 'Verifiable' means that any emission assertions are well documented and transparent such that it lends itself to an objective review; and

(D) 'Enforceable' means the authority for CARB to hold a particular party or parties liable and to take appropriate action if any of the provisions of this article are violated."

In your updated Application, please show how each boiler energy-saving method is real, quantifiable, verifiable, and enforceable. Also, see above comments regarding Items 1 and 2 above as they relate to this requirement.

#### Item 10:

Section 93130.17 (b)(1)(l)/(a)(7): See 93130.17 (a)(7) for complete 2020 Regulation text.

<u>Please provide a statement of understanding of how the Innovative Concept will comply with all portions of section 93130.17 (a)(7) (A) through (C).</u>

### Item 11:

**Section 93130.17 (b)(1)(I)/(a)(9):** "Applications for innovative concepts shall contain ... any information necessary to demonstrate that ... visits made under an innovative concept [will not be] counted toward a fleet's VIEs or terminal operator's TIEs in section 93130.11 of this Control Measure, and [will be] ineligible for using the remediation fund provisions in section 93130.15 of this Control Measure."

<u>Please explain how Pasha will ensure that visits made under the Innovative Concept will not</u> <u>be counted toward a fleet's future allocation of VIEs or terminal operator's future allocation</u> <u>of TIEs, and how Pasha will ensure that such visits would not attempt to use the remediation</u> <u>fund provisions.</u>

#### Item 12:

**Section 93130.17 (b)(1)(I)/(a)(10):** "Applications for innovative concepts shall contain ... any information necessary to demonstrate that ... reductions can be used toward compliance as specified in this section only in the calendar year in which they are achieved or the following calendar year."

<u>Please provide details regarding the planned systems that will be used to account for the timeframes in which the emissions reductions occur and when they are to be used with this Innovative Concept.</u>

It is incumbent on Pasha to be able to collect and calculate emissions reduction data as it occurs and be able to report the use of the emission reductions as necessary to comply with the 2020 Regulation. While describing the recordkeeping, reporting, monitoring, and testing procedures, please include how this requirement will be met. In general, please describe in detail in your updated Application how you plan to monitor, account for, and accumulate emissions reductions based on vessel location, duration, and condition.

#### Item 13:

**Section 93130.17 (b)(1)(I)/(a)(11):** "Applications for innovative concepts shall contain ... any information necessary to demonstrate that ... early reductions achieved through an

innovative concept that occur before a vessel or terminal's first compliance period can be used towards compliance during the first compliance period of up to five years [and that] early reductions [will only be] applicable for the initial compliance period and will expire when the initial compliance period ends."

<u>Please indicate if it is Pasha's intention to bank early reductions. Please discuss how this</u> <u>emissions reduction banking and accounting will be managed as discussed above in section</u> <u>93130.17 (b)(1)(D), (a)(9), (a)(10), and in 93130.17 (d) of the 2020 Regulation.</u>

#### Item 14:

**Section 93130.17 (b)(1)(I)/(a)(12):** "Applications for innovative concepts shall contain ... any information necessary to demonstrate that the proposed innovative concept ... [is not] partially or fully funded with a public incentive program."

<u>Please demonstrate that the Innovative Concept would not be funded, in part or in full, through public incentive program funds.</u>

CARB commends Pasha's participation in the Port Alternative Energy Demonstration Project for Powering Microgrids at the Port of Los Angeles. However, an Innovative Concept may not be funded by a public incentive program.

#### Item 15:

**Section 93130.17 (b)(1)(I)/(a)(13):** "Applications for innovative concepts shall contain ... any information necessary to demonstrate that ... [the applicant will] maintain records in a manner and form as specified by the Executive Officer in the approved innovative concept. Required records include, but are not limited to, information on fuel usage, routes, port calls, maintenance procedures, and emissions test results. Such records and reports shall be retained for a period of not less than five years and shall be submitted to the Executive Officer in the manner specified in the approved innovative concept and upon request by the Executive Officer, either within 10 calendar days or by a later date approved by the Executive Officer on a case-by-case basis."

<u>Please discuss how Pasha's emissions reduction banking and accounting will be managed as</u> <u>discussed above in sections 93130.17 (b)(1)(D), (a)(9), (a)(10), and 93130.17 (d) of the</u> <u>2020 Regulation to satisfy this requirement.</u>

#### Item 16:

**Section 93130.17 (b)(1)(l)/(a)(14):** "Applications for innovative concepts shall contain ... any information necessary to demonstrate that [the applicant will] comply with this section by [not] operating under an innovative concept unless the applicant has first been notified in writing by the Executive Officer that the innovative concept application has been approved. Prior to such approval, vessel operators and terminal operators intending to use the

innovative concept shall comply with the provisions of this section, including the emission limits in sections 93130.7 and 93130.9 of this Control Measure."

<u>To provide a complete application which addresses all requirements of the Innovative</u> <u>Concept section of the Control Measure, please provide a statement acknowledging an</u> <u>understanding of this requirement.</u>

#### Item 17:

**Section 93130.17 (b)(1)(l)/(a)(15):** "Applications for innovative concepts shall contain ... any information necessary to demonstrate that ... the innovative concept [is] implementable within the timeframe needed to be used for compliance with this Control Measure, including any time needed for environmental review (if applicable)."

<u>Please outline a detailed schedule including the project milestones to demonstrate that the</u> <u>Innovative Concept is implementable within the needed timeframe.</u>

Your letter of response to public comments estimated that, "it will take 18 months to have the technologies installed and operating from the time of receiving approval of our Innovative Concept. The technologies and methodologies will come online at different times within the 18-month period with the easier to implement items done first."

<u>Please provide details regarding governmental approvals and what impact this approval</u> <u>process will have on the implementation schedule.</u>

Your Application indicates that, "The United States Coast Guard (USCG) and American Bureau of Shipping (ABS) must approve the installation and connection of the Micro Cubes on the ship(s)." Please include this approval process in the project schedule as part of this requirement.

#### Other Comments:

Your response to public comments mentions biofuels as a critical component to meet necessary reductions as part of your Innovative Concept, but your initial Application does not include biofuels as part of the plan as shown in the above summary of your proposal. Therefore, biofuels may not be used as part of this Innovative Concept.