



Sustainable Supply Chain Advisory Committee

March Meeting Summary

Date: March 27th | 11 am – 3 pm

Location: In-person at Port of Los Angeles and via phone conference

Attendees: Attachment A

Meeting Agenda: Attachment B

Key Discussion Items

(Action items in green)

1. POLA / POLB Opening Remarks

- Chris and Jacqueline kicked off the meeting by providing updates on the most recent CAAP stakeholder meeting, the technology assessments for drayage trucks and cargo handling equipment, and the clean truck rate study.

2. Review January SSCAC Meeting Summary

- Meeting summary was approved. **See Attachment C**

3. Utility Infrastructure Planning at Ports (SCE & LADWP)

- Vincent (LADWP) summarized the infrastructure package that it has proposed to meet POLA's CHE and shore power needs as identified in a 10-year forecast based on POLA data. The presentation provided an update to LADWP's presentation to the SSCAC one year prior. The current estimated total cost for the plan is \$130 million, including \$60 million for a new receiving station, \$50 million in transmission costs, and \$20 million to provide new circuits. Costs do not include infrastructure to deliver power from the receiving station to individual terminals. The committee asked for additional information on the anticipated rate for drayage trucks charging on the LADWP system.
 - *In response to questions from the committee about the planning process, POLA confirmed that it will present on its analysis of power needs and upgrade plans at the next committee meeting.*
 - *As part of an updated presentation to the committee, LADWP is expected to include information on anticipated charging rates for MD and HD customers in the harbor.*
- Simon (SCE) summarized its current projects at POLB including at piers C, G and J, and advised the committee that it expects to launch its ChargeReady program for medium- and heavy- duty



equipment for customer application in approximately 60 days. Simon also noted that it began rolling out new EV rates in early March 2019 and is currently working with drayage operators to determine the best rates to levelized their fueling costs. While SCE is confident that it can meet expanded load at POLB over the next five years, it reminded the committee that it is unable to forecast infrastructure needs until OEMs have announced their technologies and their power needs for port operations. The committee noted concerns about ratepayers being responsible for ongoing EV charging infrastructure costs; it was noted that proposed legislation for allocating GGRF funds may respond to this concern.

- The committee emphasized the need to include key stakeholders such as trucking companies in assessing expected load, and to treat the effort as part of a greater regional one involving other stakeholders. Specifically, the committee encouraged the utilities and the ports to:
 - Engage trucking companies directly to ensure that a full understanding of the expected power load and siting is included in the power infrastructure assessment;
 - Ensure that the rate differential between SCE and LADWP is negligible, to protect port and regional competitiveness; and
 - Ensure that questions of power quality are addressed in these infrastructure upgrades, in addition to the question of power quantity.
- The committee proposed discussing, at a future meeting, its potential role in encouraging discussions among stakeholders responsible for addressing power supply gaps in those trucking corridors which lie outside of the ports' and committee's domain.

4. LNG as a Marine Fuel for Cost-Effective Emissions Reductions (Steve Cadden)

- Committee member Steve Cadden, who also serves as the executive director of SEA\LNG - an industry association advocating for LNG in marine fueling applications, presented findings on the economic cost/benefit of LNG-fueled marine vessels as compared to conventionally fueled vessels, and summarized initial findings of its upcoming well-to-wake study. **See Attachment D.**
 - Modeling of a 14,000 TEU vessel operating the Asia Pacific route under several engine and fuel type scenarios revealed that LNG offers the best ROI compared to scrubber-equipped diesel engines and low sulfur fuel-based engines.
- The study did not address the environmental footprint of LNG as a marine vessel fuel, but Steve noted that lower cost low-pressure engines meet Tier 3 standards while the high-pressure engines require more expensive scrubbers to meet NOx compliance standards. The study asserted that high-pressure engines have a slightly better greenhouse gas emission reduction profile. Steve noted SEA\LNG has also initiated a "well-to-wake" study to assess the greenhouse gas emissions of LNG marine vessels. The study is nearing completion and should be ready for presentation at the next committee meeting.
- The committee invited Steve to make a similar presentation on the results of the well-to-wake study at a future meeting (the study is due out in mid-April).

5. Develop 2019 / 2020 Committee Priorities:



- **Finalize Funding Prioritization Recommendation**
 - The committee reviewed edits provided by stakeholders during and since the previous committee meeting. There was discussion about on dock rail and lower emission locomotive technologies.
 - Continued discussion on the recommendations for locomotives and trucks is required, and will be pursued to inform a revised draft to present at the next committee meeting.
6. **Update on 2019 Legislative Session**
- **SSCAC Trip to Sacramento**
 - The committee determined that it will consider traveling to Sacramento to advocate for continued and expanded funding for zero- and near-zero emission equipment and trucks, pending the results of current drafting of AB 371, SB 44, and AB 1262. The Port of LA committed to keep the committee informed on these issues in the next several weeks.
 - **Discussion of Pending Bills – AB 371, SB 44, AB 1262, and Clean Air Dialogue (CAD) Incentive Principles**
 - The committee heard the key points of these bills (AB 1262 is currently a spot bill only), and the CAD Principles. **See Attachment E.**
 - The committee emphasized that funding for heavy duty trucks should be a growing funding category for GGRF.
7. **Workforce Development Engagement**
- The committee agreed that a labor perspective on its work is valuable, although the committee clarified that it does not have the expertise to serve as the primary forum for addressing labor’s concerns around port electrification and automation. Instead, it asserts that this valuable discussion should be had in a more appropriate forum.
 - The committee proposed expanding its previous definition of the labor perspective as generally an ILWU-specific perspective, to “workforce development”, in order to capture the needs of the wider variety of employees at the ports.
8. **Update on Feasibility Assessments/Rate Study**
- Both feasibility assessments will be completed by the end of the second quarter, according to the current schedule.
 - The ports’ consultant has provided the rate study data to the ports for analysis. The results will be presented for discussion at a future date. While this effort is underway, it was noted that in the first clean truck program, the CARB regulations were perhaps a more important factor to getting fleet turnover than were the truck rates.
9. **Preparing for Summer VW funding for ZE trucks**
- The committee discussed opportunities to partner on proposals to capture a share of the available funds for drayage truck technologies.



10. Future Agenda Items

- Next SSCAC Meeting: May 29th
- Agenda Topics:
 - Harbor Craft Presentation
 - SEA/LNG Wake-to-Wheel Presentation
 - POLA Power Infrastructure Assessment Presentation
 - AMP Alternative Roundtable/Discussion

11. Conclusion & Next Steps

- Follow up discussion on the draft Funding Prioritization Recommendation, and preparation for further committee review
- Follow up discussion on policymaker engagement in 2019



Attachment A

Meeting Attendees

SSCAC Committee Members	
Adrian Martinez	Earth Justice
Michele Grubbs	PMSA
Thomas Jelenic	PMSA
Stella Ursua	GRID Alternatives
Bonnie Soriano	CARB
Matt Miyasato	SCAQMD
Louis Dominguez	San Pedro Neighborhood Council
Steve Cadden	CRT
Joe Lyou	CCA
Los Angeles Port & City Staff	
Chris Cannon	Port of Los Angeles
Erick Martell	Port of Los Angeles
David Libatique	Port of Los Angeles
Marisela Caraballo DiRuggiero	Port of Los Angeles
Michael Samulon	City of LA, Mayors Office
Max Reyes	City of LA, Mayors Office
Long Beach Port & City Staff	
Jacqueline Moore	Port of Long Beach
Rick Cameron	Port of Long Beach
Justin Ramirez	City of Long Beach, Mayor's Office
Other Stakeholders	
Vincent Zabukovec	LADWP
Simon Horton	SCE
Meeting Facilitation Staff	
Erik Neandross	GNA
Lexi Wiley	GNA
Eleanor Johnstone	GNA



Attachment B

Meeting Agenda

1. POLA / POLB Opening Remarks
2. Review & Finalize January Meeting Summary
3. Utility Infrastructure Planning at Ports (SCE & LADWP)
4. LNG as a Marine Fuel for Cost-Effective Emissions Reductions (Steve Cadden)
5. Lunch
6. Develop 2019 / 2020 Committee Priorities:
 - a. Finalize Funding Prioritization Recommendation
 - b. Emergent Action Items for:
 - i. Trucks
 - ii. Cargo Handling Equipment
 - iii. OGV
7. Update on 2019 Legislative Session
 - a. SSCAC Trip to Sacramento
 - b. Discussion of Pending Bills – AB371, SB44 and AB1262
8. Workforce Development Engagement
9. Update On Feasibility Assessments / Rate Study
10. Preparing for Summer VW funding for ZE trucks
11. Future Agenda Items
 - a. Next SSCAC Meeting: **TBD**
Agenda Topics:
 - Harbor Craft presentation
 - AMP Alternative Roundtable / Discussion
12. Conclusion & Next Steps



Attachment C

January SSCAC Meeting Summary

(To be inserted for final submission)



Sustainable Supply Chain Advisory Committee

January Meeting Summary

Date: January 30th | 11 am – 3 pm

Location: In-person at Port of Long Beach and via phone conference

Attendees: Attachment A

Meeting Agenda: Attachment B

Key Discussion Items (Action items in green)

1. POLA / POLB Opening Remarks

- Chris and Heather kicked off the meeting by providing an update on the status of the draft assessment of clean truck technology assessment, clean truck rate study and the quarterly CAAP meeting.

2. Review September SSCAC Meeting Summary

- Meeting summary was approved. **See attachment C**

3. CAAP Updates

- CAAP updates were addressed during the opening remarks.

4. Discuss Funding and Resource Prioritization

- GNA presented an updated version of the slide deck shared at the last quarterly SSCAC meeting. GNA summarized the updates and work that had been done in response to Committee comments on the first draft in the prior meeting. **See attachment D.**
- A suggestion made at the previous meeting was reinforced by several members, that “prioritization” also suggests “de-prioritization” and words like “roadmap” and “sequencing” may better describe the need to focus on some activities in the near vs long term according to resource and technology availability. Port representatives suggested that agreement on priorities to sequence funding is useful for their processes. It was also noted that where the SSCAC and other stakeholder can align and agree on priorities, this will help to advocate with a common voice for additional funding and incentives to assist with implementation.
- Several comments raised the issue of time sensitivity: there needs to be a focus on near-term commercially available technologies that offer an immediate positive impact, while continuing



to support technology development efforts for equipment that may take a decade or more to materialize. It was also suggested that there is no one-size fits all: allowing for diversity within a fleet by pairing fuel technology types with specific drayage profiles to which they are best suited may yield a more actionable strategy. Trucks and cargo handling equipment likely fall into the near-term opportunities for technology upgrades, with OGV falling more into a longer-term opportunity and harbor craft and locomotives falling somewhere in-between.

- The development of a low NOx standard by CARB and EPA was also discussed by the group, as the promulgation of the low NOx engine rule by CARB is a key element of the Clean Truck Program. Other key elements are: the rate study and establishment of the rate; having a collection system in place; and having available technology that allows for the rate to be avoided.
- There was discussion among the group about the development and inputs used for the rate study now being developed, and the review of the rate study findings by all port stakeholders. Several comments were made emphasizing the value of the rate structure study in 2019 for identifying the potential impact on funding resources for on-road fleet upgrades.

5. Discuss Funding and Resource Prioritization Draft Recommendation

- The group reviewed and discussed the development of a draft recommendation which to identify areas for action in the near-term, and areas for ongoing research and project monitoring in the medium-to-long term.
- **ACTION ITEM: GNA will work with the committee members to further development the draft recommendation concept in advance of the next scheduled SSCAC meeting.**

The committee discussed that positive impact is immediately achievable in the following areas, in the near term:

- Harbor Craft – repower and retrofit tug boats to the Tier 4 standard or better
- Locomotives – engine upgrades to the Tier 4 standard or better, and other emission reduction technologies.
- Forklifts – introduce electric forklifts for the smaller capacity units
- Trucks – pursue deployment of existing zero and near-zero emission drayage technology through innovative engagement with stakeholders across the supply chain, including regulatory and funding agencies.

The committee discussed providing support for the following activities in the long term:

- Ocean Going Vessels – assess and invest in solutions for meaningful emissions reductions at key operational stages.
- Cargo Handling Equipment – monitor and extract lessons learned from ongoing zero and near-zero emission demonstration projects at the ports, and across



California. The committee also recommended that ports continue to implement the CHE recommendation approved in May 2017. **See Attachment E.**

6. **Planning for the 2019 Legislative Session**

- The group discussed a number of near-term priorities, which included:
 - Prioritizing funding opportunities for more ZE infrastructure that don't have technology purchase requirements, like the recent CEC grant.
 - Advocating for extended liquidation timelines on existing grant programs so there is more time for the ports to install infrastructure.
 - **ACTION ITEM:** Future opportunities to engage policymakers in Sacramento as a committee. GNA will pursue this in advance of the next committee meeting, to support continued discussion.

7. **Future Agenda Items**

- The group discussed the following agenda items:
 - Follow up discussion on the draft recommendation, following incorporation of committee comments
 - Follow up discussion on policymaker engagement in 2019



Attachment A

Meeting Attendees

SSCAC Committee Members	
Adrian Martinez	Earth Justice
Michele Grubbs	PMSA
Thomas Jelenic	PMSA
Stella Ursua	GRID Alternatives
Cynthia Marvin	CARB
Bonnie Soriano	CARB
Matt Miyasato	SCAQMD
Zorik Pirveysian	SCAQMD
Michele Grubbs	PMSA
Cody Rosenfield	CCA
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Los Angeles Port & City Staff	
Chris Cannon	Port of Los Angeles
Tim DeMoss	Port of Los Angeles
Erick Martell	Port of Los Angeles
David Libatique	Port of Los Angeles
Marisela Caraballo DiRuggiero	Port of Los Angeles
Michael Samulon	City of LA, Mayors Office
Irene Burga	City of LA, Mayors Office
Max Reyes	City of LA, Mayors Office
Jacob Haik	City of LA
David Reich	City of LA, Mayors Office
Long Beach Port & City Staff	
Heather Tomley	Port of Long Beach
Renee Moilanen	Port of Long Beach
Meeting Facilitation Staff	
Erik Neandross	GNA
Lexi Wiley	GNA



Patrick Couch	GNA
Eleanor Johnstone	GNA

Attachment B

Meeting Agenda

1. POLA / POLB Opening Remarks
2. Review & Finalize November Meeting Summary
3. Funding & Resource Prioritization Discussion
4. Lunch
5. Discuss Funding & Resource Prioritization Recommendation
6. Planning for the 2019 Legislative Session
7. Future Agenda Items
8. Next SSCAC Meeting: **March 27**
Agenda Topics:
 - Develop 2019 / 2020 committee priorities
 - Update presentation from SCE / DWP
 - AMP alternatives roundtable / discussion
 - OGV emissions reductions (i.e., T3 scrubbers, LNG, etc.)
 - Summary of a recent study on LNG as a marine fuel for container ships (Steve Cadden to present)
9. Conclusion & Next Steps



Attachment C

November SSCAC Meeting Summary



Attachment D

Funding Prioritization Presentation



Attachment E

CHE Recommendation



Attachment D

SEA/LNG Presentation

(To be inserted for final submission)

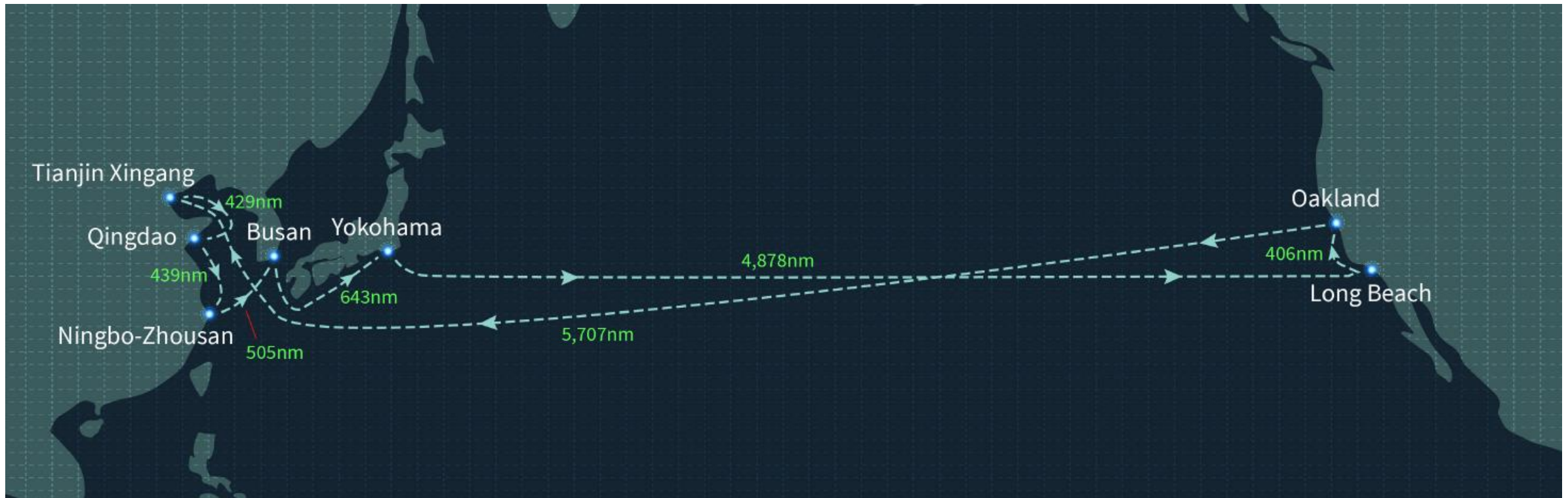


**LNG: The economic, environmental
and evolutionary marine fuel**

ECONOMICS – ADDING VALUE THROUGH LNG

- ECA Voyage times not so relevant

ASIA – USWC LINER ROUTE



ECONOMICS – INDUSTRY ACCEPTED FIGURES

CONSERVATIVE ASSUMPTIONS REINFORCE BUSINESS CASE

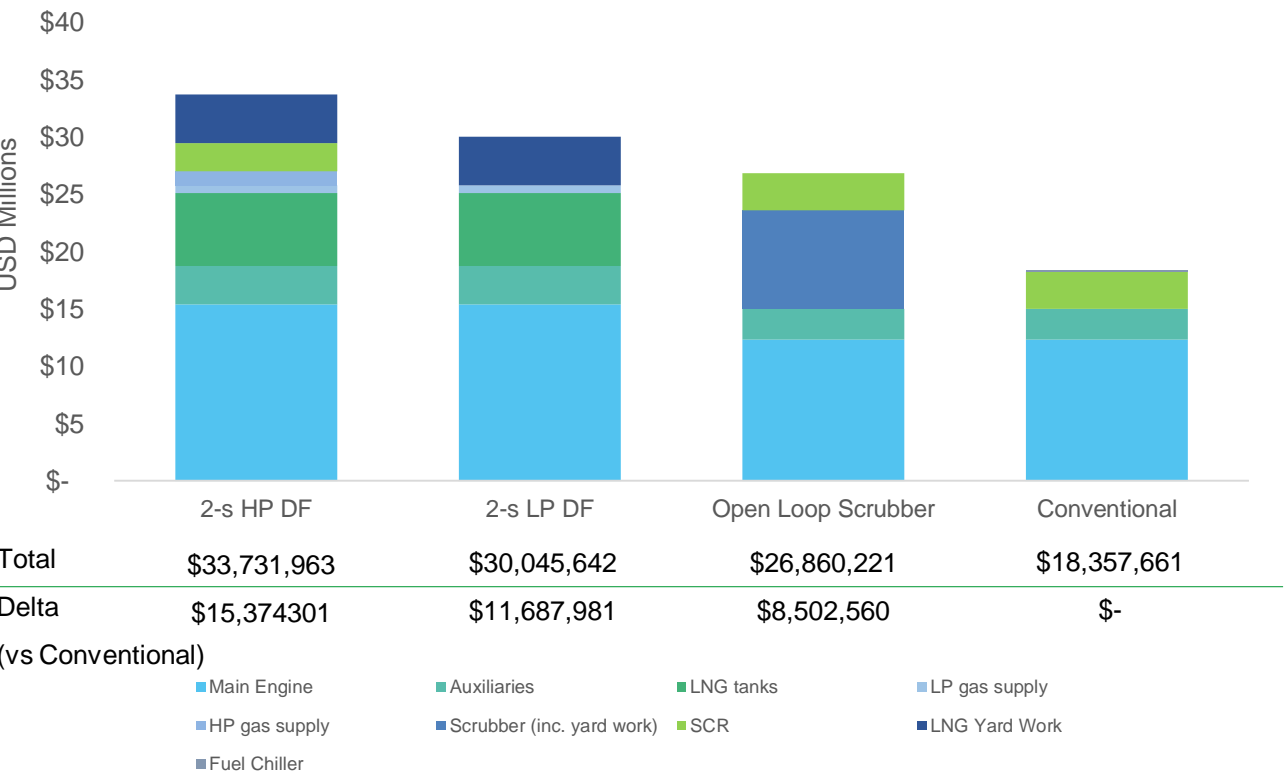
- 14K TEU Newbuild vessel
- Both strong freight markets sailing at designed operating speed and weak freight markets involving slow steaming tested
- Weighted Average Cost of Capital of 8% over 10 year investment horizon period
- Multiple Fuel Cost Scenarios tested
- LNG DF, HFO w/Scrubber and VLSFO engine options– Capital and Operating costs modelled.
- Open Loop Scrubber assumed to be conservative

ECONOMICS – ENERGY COSTS OUTWEIGH CAPEX



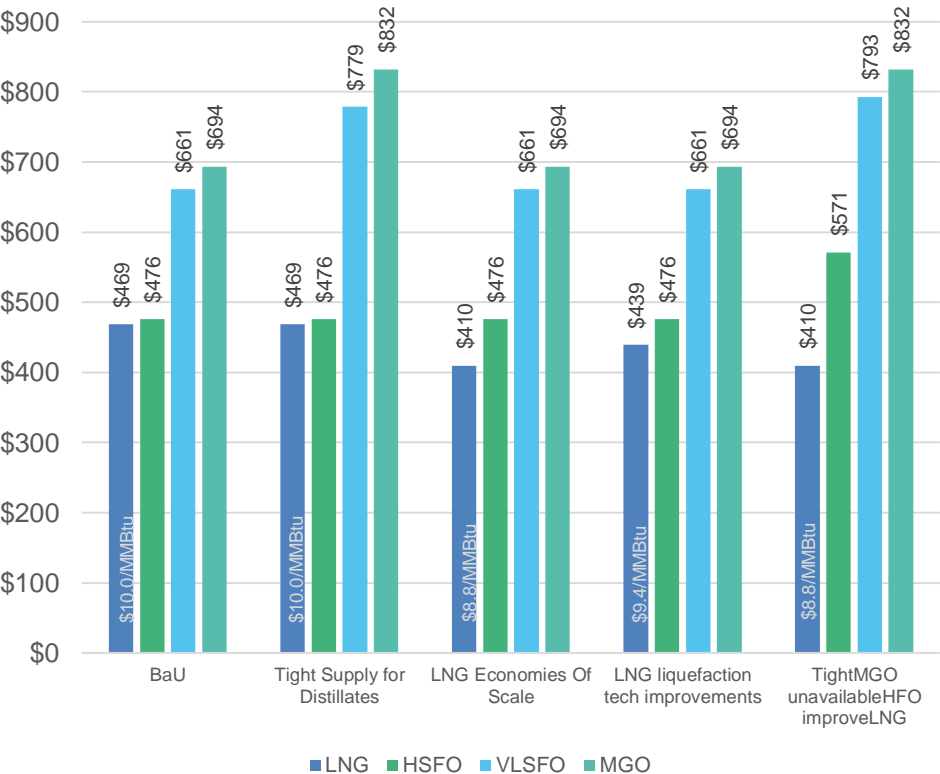
- Diminishing CAPEX hurdle

CAPEX SUMMARY



- Competitive Energy Costs

2020 PRICES FOR FIVE SCENARIOS (USD/MT)

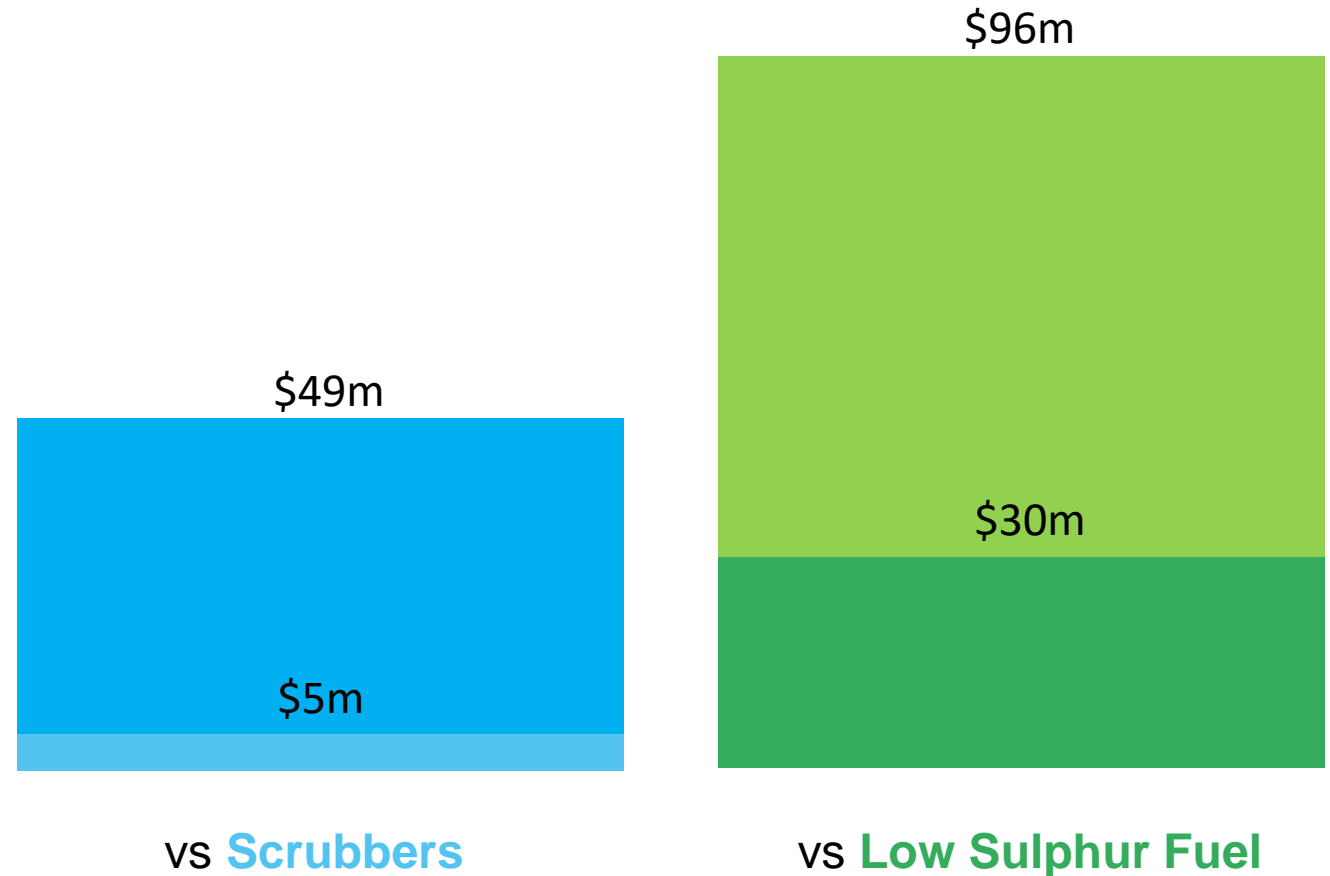


- Don't underestimate costs of scrubbers and other auxiliary equipment

ECONOMICS – LNG OFFERS BEST ROI

NET PRESENT VALUE BENEFITS COMPARISON

- Significant additional NPV benefits: \$5M - \$96M
- Fast pay back: 1 -2 years





Attachment E

Clean Air Dialogue Principles

(To be inserted for final submission)



Clean Air Dialogue – a working group of CED *Principles for Sustained and Effective Incentive Programs*

The California Environmental Dialogue (CED) is a group of California business leaders, environmental groups, and government officials who collaborate through open and honest dialogue to develop timely policy solutions that improve economic efficiency and future environmental protection. CED explores diverse perspectives to formulate solutions that address today's most challenging environmental issues. Over the past two decades the Clean Air Dialogue, a working group of CED, has specifically discussed air quality and climate change solutions for California.

Addressing air quality and climate change issues is critical to securing a sustainable future for Californians. This requires emissions reductions across all sectors, and mobile source emissions pose an ongoing challenge in this regard. "Mobile sources—cars, trucks, and a myriad of off-road equipment—and the fossil fuels that power them are the largest contributors to the formation of ozone, PM_{2.5}, diesel particulate matter, and greenhouse gas (GHG) emissions in California. They are responsible for approximately 80 percent of smog-forming nitrogen oxide (NO_x) emissions, 90 percent of diesel particulate matter emissions, and nearly 50 percent of GHG emissions. Given this contribution, significant cuts in pollution from these sources are needed."¹

The goal of this paper by the Clean Air Dialogue is to present a clear set of effective principles that support greater and consistent funding for cleaner transportation to help California achieve its air and climate change goals. The following set of principles represent a consensus approach to the development and implementation of policy and investment strategies that will improve air quality and accelerate the deployment of cleaner, lower emitting mobile source technologies. The Clean Air Dialogue recommends the use of incentive programs to encourage actions that complement state and federal regulations, and achieve additional, or early emission reductions.

It is important that these principles apply across all implementing agencies in order to maximize benefits, provide transparent and clear priorities for incentive programs, and ensure that the State's air quality and climate change goals are achieved.

- **Increased and Consistent Funding** – Increased and consistent funding over a multi-year time frame, similar to the existing AB 118/AB 8 program (approximately 8 years), is essential to provide market certainty for consumers, fleets, dealers, manufacturers, and suppliers participating in the transition to cleaner technologies. Many of California's cleaner transportation funding programs are chronically oversubscribed and receive funding on a yearly, stop-start basis. Funding certainty is important to manufacturers for long-term product planning, which requires multiple years to bring products to market after design, testing, and manufacturing. Sustained and consistent funding is equally important for air quality and community planning efforts, particularly in disproportionately impacted populations.
- **Transparency and Accountability** – Incentive programs need to include transparent, comprehensible metrics for emission reduction and cost/benefit quantification methods that are made publicly available for review and comment. Incentive programs must include routine public

¹California Air Resources Board *Mobile Source Strategy*, May 2016

accounting of the actual performance of the incentive measured by metrics established when the incentive expenditure was approved. The factors used for determining success and for meeting the stated goals need to be clearly articulated. In cases where cost effectiveness is not the main factor for funding of a program, the metrics need to be tied to the stated goals. All incentive programs should incorporate regular evaluations to justify continued funding; preferably using independent evaluators with public input. If evaluation of the program shows that goals are not being achieved, then re-configuration, or transition to a more effective program is warranted.

- **Equitable Funding** – Funding should be prioritized to benefit the most environmentally burdened communities and low-income populations wherever possible so that these communities receive the air quality, public health, and economic benefits of these investments.
- **Monetary and Non-Monetary Incentives** – Monetary and non-monetary incentives are both critical tools for addressing the challenges of transitioning the transportation sector to cleaner technologies. Upfront costs for cleaner technologies are often higher than existing technologies. Incentives help fleets and consumers reduce these costs and justify choosing a cleaner technology. Non-monetary incentives are also impactful; with access to carpool (high occupancy vehicle-HOV) lanes as an example of an effective non-monetary incentive.
- **California Manufacturing and Workforce Development** – Incentive programs should support, but not require, strategies and efforts to increase manufacturing and workforce development related to the technology, fuel, or infrastructure supply chain within California. The programs should promote the availability and training of skilled labor to attain clean air objectives and reduce GHG emissions.
- **Balancing Near- and Long-Term Objectives and Leveraging Private Investment** – Incentive programs should be configured to support both near-term expansion of commercially available cleaner technology options and longer-term transformative technologies that offer greater benefits at maturity. Incentives should be designed to spur the growth of cleaner technologies by reducing costs through increased research and development, innovation, and economy of scale manufacturing that increase demand for clean technology products and accelerate business models triggering increased private investment.
- **A Technology Neutral Approach** – The goal of mobile source incentive funding should be to achieve emission reduction mandates in a manner that does not predetermine a technology approach. Funding should be directed in a technology neutral manner that best achieves air quality and climate objectives across the portfolio of public incentive programs.

In closing, the Clean Air Dialogue urges the Governor, the State Legislature, and public agencies to consider the policy principles put forward in this document for sustained and effective incentive programs to help California achieve its clean air and climate change goals.