



Port of Long Beach and Port of Los Angeles Clean Truck Fund Rate Staff Evaluation and Recommendation

March 2020



Introduction

In the 2017 Clean Air Action Plan (CAAP) Update, the ports of Long Beach and Los Angeles (Ports) proposed modifications to the Clean Trucks Programs with a goal of transitioning to zero emission trucks by 2035. A critical element in the implementation of the Clean Trucks Program is the establishment of a Clean Truck Fund Rate (CTF Rate).

Our objectives for updating the Clean Truck Program are to reduce emissions to improve community health and to meet our criteria pollutant and greenhouse gas reduction goals, while minimizing economic impacts and disruption to the industry, and utilizing the Ports' authority within our jurisdiction. Achieving a balance of these objectives remains at the forefront of our thinking as we define our approach.

The basis for the CTF Rate is outlined in the 2017 CAAP Update, which identifies that beginning in 2020, a rate will be charged to the beneficial cargo owners for loaded containers hauled by Heavy-Duty trucks that enter or exit the Ports' terminals, with exemptions for trucks that have engines certified to the California Air Resources Board (CARB) Heavy-Duty low NOx manufacturing standard or better. As further stated in the 2017 CAAP Update, implementation of this CTF Rate is contingent upon the following factors:

- Completion of Truck Feasibility Assessment to understand the current status of low NOx and zero emission Heavy-Duty truck technology development, including confirmation of the availability of Heavy-Duty trucks suitable for drayage operations that meet the lower emissions standards
- Completion of an Economic Study of the CTF Rate to understand the potential effect of the rate on cargo diversion and the local drayage truck industry
- Establishment of CTF Rate collection mechanism
- Regulatory agency adoption and certification of a Heavy-Duty low NOx engine manufacturing standard

Background

Under the direction of the original 2006 San Pedro Bay Ports Clean Air Action Plan, both Ports developed Clean Trucks Programs to reduce community health and air quality impacts from the aging Heavy-Duty trucks providing port drayage services. Starting in 2008, the Ports helped the industry transition toward the State Drayage Truck Rule requirement for port trucks statewide to use the 2007 United States Environmental Protection Agency (EPA) engines by 2014, by advancing phased early adoption at the Ports by 2012. A \$35 per loaded 20-foot equivalent unit (TEU) container fee was assessed in the interim (from 2009 to 2011) for moves by trucks with engines that didn't meet the 2007 EPA engine standard. The funding collected was used by both Ports to administer their respective Clean Trucks Programs and provide incentives for the purchase of trucks meeting the 2007 EPA engine standard. Most trucks transitioned to meeting the 2007 EPA engine standard by 2010, two years in advance of the deadline. Today, as shown in the 2018 annual Emission Inventory reports for both Ports, Heavy-Duty truck emissions have been reduced by 97% for Diesel Particulate Matter (DPM), 78% for Nitrogen Oxides

(NO_x), and 92% for Sulfur Oxides (SO_x) compared to 2005. However, even with these tremendous improvements, Heavy-Duty trucks remain the Ports' largest source of greenhouse gas emissions (GHGs) and second highest source of NO_x.

When considering the success of the Ports' original Clean Trucks Programs, it is important to understand the factors that existed at the time the programs were being implemented. An understanding of these factors can provide insights and cautions for updates to the programs being considered today.

Of primary importance was the concurrent development and implementation of CARB's Drayage Truck Regulation, followed by CARB's Truck and Bus Regulation, which established in-use requirements for Heavy-Duty trucking activities throughout the state. Under the state's requirements, trucks were required to meet the 2007 EPA engine standard by 2014; the Ports' programs essentially served to accelerate attainment of the state's established requirements.

In addition, meeting the requirements of the previous Clean Trucks Programs did not require a significant technological change. Diesel-fueled trucks meeting the 2007 EPA engine standard were available, the transition could be made without any operational changes or significant specialized training for drivers or mechanics, and the trucks could be deployed using the existing regional diesel fueling infrastructure. Further, the cost differential for a truck meeting the new engine standard was not significantly greater than typical new truck prices at the time, and an available used truck market developed over the span of time that the Ports' requirements were being implemented.

Of note is the experience with the early generation natural gas-fueled trucks during the initial launch of the Clean Trucks Programs. In the interest of maximizing early emission reductions, both ports provided incentives for the purchase and deployment of Heavy-Duty trucks fueled with natural gas. At the peak, more than 1,000 natural gas trucks were registered in the Ports' Drayage Truck Registry (PDTR). However, the natural gas-fueled engines available at that time were undersized for the typical drayage truck duty cycle. In many cases, significant mechanical issues arose, resulting in equipment down time, added expense, and grant-funded trucks that were abandoned. While the new generation and larger-sized natural gas fueled engines available today have overcome these issues, this experience provides a cautionary tale for the Ports when implementing new technologies. We need to balance the desire to accelerate emission reductions as quickly as possible with the proven readiness of the technology to do the work and conversely, guard against moving forward with new technologies too quickly in unproven applications. This highlights the importance of the Truck Feasibility Assessment and the technology demonstration projects that both Ports and South Coast Air Quality Management District (AQMD) have been engaged in for many years.

Another significant factor that encouraged truck owners to replace their trucks was the availability of financing through Licensed Motor Carriers (LMCs). Many LMCs helped to purchase the replacement trucks for the Independent Owner Operators (IOOs) driving for their companies, under lease/loan arrangements that deducted payments from drivers' paychecks for drayage work. In stakeholder comments, LMCs have indicated they will not be providing similar financing arrangements in the future

due to the incidence of employee-misclassification litigation involving purported contractor drivers operating LMC-owned trucks financed in this manner.

It is believed that many truck owners chose to replace their older trucks early under the Ports' programs because of a combination of factors: familiar technology, lower cost differential, available financial assistance, interest in avoiding the fee, and the upcoming requirement to replace their truck anyway in a very short period of time under the state's regulation.

Lastly, early in the implementation of the Ports' Clean Trucks Programs, several larger, well capitalized national trucking companies entered the drayage market with new trucks meeting the 2007 EPA engine standards, leading to significant early transition of the fleet. Within a year however, most of these new trucks had been removed from the local drayage service and redeployed elsewhere because they were uncompetitive from a cost perspective against new trucks entering the drayage service that had been purchased using incentive funds provided by the Ports and the air quality regulatory agencies.

Considerations for the Proposed CTF Rate

Numerous factors have been considered when developing the proposal for the CTF Rate. Key issues are described below:

- The Ports have long acknowledged their role in addressing the environmental impacts associated with port-related operations. The CAAP specifically identifies the need to reduce emissions from marine cargo-related sources, including trucks, for the benefit of community health, regional air quality, and global climate change, and it establishes specific emission reduction goals for DPM, NO_x, SO_x and GHGs.
- The Ports are economic drivers for the local economy and provide significant economic benefits throughout the state and beyond. Due to a number of factors, the Ports have experienced a decline in market share relative to other ports for more than a decade. It is important for the Ports to remain competitive and any programs that are developed must minimize the potential for additional cargo diversion and continued loss of market share.
- Starting in early-2018, the Trump administration began implementing a series of tariffs to apply additional duties on a variety of goods imported into the United States. More than 97% of imports from China move through our ports. The top categories - furniture, apparel, electronics and footwear – are now subject to tariffs. U.S. tariffs against China have triggered retaliatory tariffs on nearly 97% of all U.S. exports to China. As a result of this national trade policy, the Ports have observed significant volatility in volumes of import and export cargo. Tariffs create uncertainty, and the economy does not respond well to uncertainty. Moreover, the longer the trade war goes on, the harder it will be to reverse the damage and regain the lost business.¹
- During outreach for the proposed CTF Rate, cargo owners expressed significant concerns with increasing costs for moving cargo. The addition of a new cost for the gateway, in the form of the CTF Rate, has been indicated to be a strong consideration when determining where to route their cargo.

¹ <https://www.portoflosangeles.org/tariffshurt>

- In January 2020, the World Health Organization declared the outbreak of the respiratory disease caused by the Coronavirus a “public health emergency of international concern”. In response to the outbreak in China, the Chinese government ordered businesses to remain closed, extending the return to work dates after the Chinese New Year for an additional week. Some companies announced further closure dates extending an additional week to several weeks. A result of these closures is a global slowdown in cargo movement. Recent reports have indicated at least 60 vessel voyages destined for the San Pedro Bay were eliminated during first quarter 2020 due to the combination of Chinese New Year and the Coronavirus, representing an 18% reduction in expected vessel calls from Asia. The eliminated voyages have had a disproportional effect along the west coast, with over half of the eliminated voyages between Asia and North America effecting west coast ports. The ongoing effect and recovery period from the Coronavirus outbreak is unknown at this time.
- Labor law continues to evolve concerning the classification of drayage truck drivers as employees versus independent contractors, and remains uncertain due to pending litigation. This uncertainty makes it difficult to predict how trucking industry will invest in new trucks, whether under LMC-owned truck fleets with employee drivers, or otherwise.
- The Ports’ goals to maximize emissions reductions and transition to zero emissions technologies will require a transition away from the diesel-fueled technologies that have traditionally been used in Heavy-Duty trucking, consistent with the goals of the state and the mayors of Los Angeles and Long Beach. This shift raises numerous concerns for the industry, including whether the new technology trucks can meet the operational needs of the port drayage duty-cycle. The low NOx natural gas trucks have just started entering the drayage market, and anecdotal evidence indicates they are performing well. The zero emission trucks are currently only in operation in very small numbers, exclusively as a part of demonstration projects, and their capabilities are still being evaluated. Some supporting fueling and charging infrastructure is available for natural gas fueling, but the limited supply will be quickly exceeded if there is significant and rapid growth in demand. Charging and fueling options for electric and hydrogen trucks are essentially non-existent. Finally, the workforce will require additional training to support the operation and maintenance of the new technologies.
- The cost for the new technologies is significantly higher than the existing diesel-fueled technologies. The expectation is that this cost differential will be reduced as the technologies mature, a broader market is developed, and higher volumes of the trucks are produced in the future. How quickly this occurs and what the ultimate price point will be is unknown at this time. Given the emergent status of these new technologies, it will be many years before there is an available used market to provide a lower cost option.
- Availability of low NOx and zero emission trucks remains limited. According to the Ports’ truck feasibility assessment², zero emission trucks are not yet feasible or commercialized. There are currently less than 10 zero emission trucks in the PDTR, and all of those are currently participating in demonstration projects. One engine manufacturer currently makes the low NOx engine. The Cummins 11.9-liter low NOx (0.02g NOx/bhp-hr) natural gas fueled engines are

² Tetra Tech/Gladstein, Neandross & Associates (2019) 2018 Feasibility Assessment for Drayage Trucks.

commercialized, but trucks with those engines have only recently begun entering the drayage service. As reported in the CAAP Quarterly Stakeholder Meetings, there are currently approximately 130 low NOx natural gas fueled trucks in the PDTR, up from 32 low NOx natural gas fueled trucks in the early part of the 2019. For comparison, there are approximately 18,400 total trucks registered in the PDTR.

- Some progressive drayage trucking companies, with the assistance of incentives, have already begun purchasing and using low NOx natural gas trucks and several others have also placed early orders for zero emissions trucks to be delivered once they have been commercialized and are ready for sale. This early interest and adoption is promising and will help to encourage others in the industry to move forward with implementing these technologies.
- The Ports have been very clear throughout the 2017 CAAP Update and the CTF Rate development processes that a critical step for implementing the CTF Rate is for the regulatory agencies, or specifically CARB, to establish the Heavy-Duty low NOx engine manufacturing standard. The standard must be established by CARB, or the U.S. Environmental Protection Agency, under the authority of the Clean Air Act. Once established, the Ports can reference the defined standard in their respective Port tariffs for implementing the CTF Rate. Earlier this year, CARB released a technical white paper indicating their intended direction for establishing the upcoming Heavy-Duty engine manufacturing standards (now anticipated to occur in two phases, between 2024 and 2027). CARB has indicated they anticipate bringing the Heavy-Duty low NOx engine manufacturing standard to their Board for approval in June 2020.
- As stated above, one of the critical factors in the original Clean Trucks Programs' success was the ability to accelerate the effect of CARB's regulations. CARB has announced a potential action to update the existing Drayage Truck Regulation in 2022 to require a transition to zero-emission operations starting in the 2026 to 2028 timeframe, however no further details are currently available. No further state regulations are expected given that the Transportation Funding bill (SB 1) adopted in 2017 prohibits new regulatory requirements by the state to replace, retire, repower, or retrofit heavy-duty trucks before the truck has reached either 800,000 vehicle miles traveled or 18 years from the engine model year, whichever occurs first.
- The truck transition model in the Economic Study for the CTF Rate³ identified that the CTF Rate itself, over the range studied, will not force transition to cleaner trucks because of the high cost differential to purchase low NOx and zero emission technologies. Therefore, generating a fund and providing incentives will be the key to promote truck turnover. The turnover to new trucks will be limited by how quickly incentive funds can be generated and allocated to drayage operators that have adequate ability to finance or lease the remainder of the capital cost. Running a large scale incentive program and the process for awarding, contracting, relocating or scrapping old trucks, and deploying new funded trucks will come with a significant administrative burden.
- Financing for the purchase of a new truck may be limited for many IOOs, as they typically have difficulty accessing traditional loans. As stated above, the Ports do not anticipate that LMCs will serve a role in providing financing to drivers for the purchase of new trucks this time. Some

³ Port of Long Beach and Port of Los Angeles (2020) Economic Study for the Clean Truck Fund Rate.

financing companies are developing innovative approaches in order to qualify drivers for loans, for example, looking at typical wages as opposed to credit scores. However it is unclear if these programs will fully address the anticipated need.

- The Ports have repeatedly heard the concerns that the drivers are the least able to shoulder the burden of the additional cost anticipated for implementation of the Clean Trucks Program. The CTF Rate needs to be designed to direct the costs associated with the transition of the truck fleet in San Pedro Bay to be borne by the freight moving through this gateway, and not by the individual truck drivers that serve it.

Public Process for Developing the CTF Rate Proposal

The Ports have been engaged in outreach on the Clean Trucks Program strategy for some time. Throughout the two year development of the 2017 CAAP Update, significant emphasis was placed on the Clean Trucks Program and numerous meetings and discussions were held with the regulatory agencies, trucking industry, broader port industry, technology providers, community members, and environmental groups to receive input on the intended approach. Since the 2017 CAAP Update was approved, the Ports have continued to discuss the next steps in implementation of the Clean Trucks Program through CAAP Quarterly Stakeholder Meetings, eight of which have been held to date, and focused small group meetings with the trucking industry, cargo owners, agencies, and environmental groups. Specifically related to the CTF Rate development, the Ports hosted a public workshop in August 2019 to receive initial comments on the objectives and approach for the CTF Rate. A second public workshop was held in December 2019 to receive input on the proposed CTF Rate and to engage in a preliminary discussion about the Draft Economic Study. A follow up presentation about the Economic Study and the proposed CTF Rate was held at the CAAP Quarterly Stakeholder Meeting in January 2020 to receive additional public comment. At the end of January, the Ports collected written comment letters in response to the Economic Study and the proposed CTF Rate. Staff continue to meet and communicate with the stakeholders to receive public input. All of this input has been considered and shared with the Boards of Harbor Commissioners in preparation of consideration of adoption of a Resolution to approve the CTF Rate amount and exemptions. Assuming a CTF Rate is adopted by each Board, the Ports will continue to work with stakeholders following Board action on the Resolution to receive input on the details of the incentive programs and the implementation tariffs, which are expected to be brought to the Boards for consideration after regulatory agency adoption of a Heavy-Duty low NOx engine manufacturing standard.

Proposed CTF Rate

The uncertainties and considerations raised above lead us to recommend moving forward cautiously as the most prudent and sustainable approach in initiating the CTF Rate amount.

The Ports' Economic Study raised concerns about competitiveness and potential cargo diversion resulting from the cost that would be added, as well as other factors. While the Davies' elasticity analysis on the specific cargo movements that will be affected by the CTF Rate (local moves by trucks), included in the Technical Appendix of the Economic Study, indicated a relatively low sensitivity to cost, the economic evaluation also identifies other factors that can affect gateway choice, especially over the

long term. Both Ports have already experienced a steady reduction in market share for more than a decade. A high added cost could potentially accelerate that trend. Feedback received from cargo owners indicates the industry is likely to have a negative reaction to a higher rate amount, the results of which aren't predictable by solely analyzing the specific additional cost of the CTF Rate.

Further, as identified in the Ports' Truck Feasibility Assessment and the Ports' ongoing evaluation of the development of the low NOx and zero emission technologies, there is currently limited availability of low NOx and zero emission Heavy-Duty trucks. This limit on availability will affect how many trucks can be purchased and deployed using incentive funds.

The Boards always have the ability to use their discretion to make adjustments to the CTF Rate amount over time based on continued evaluation of progress of the Clean Trucks Programs in relation to other market conditions.

Therefore, **staff recommend a CTF Rate of \$10 per loaded TEU or \$20 per loaded 40-foot container.** Between October 2018 and September 2019, the number of loaded non-on-dock full containers from both ports was 9,097,157 TEUs. Based on the assumption that a \$10 rate would be applied to almost all loaded TEU truck moves, because only a very small number of trucks in the fleet would qualify as low NOx or zero emissions trucks, **an initial fund of approximately \$90 million could be generated per year.**

With the CTF Rate proposal, the Ports seek to encourage the deployment of the cleanest trucks by offering exemptions for loaded containers that are transported using low NOx or zero emission trucks. Therefore, the following exemptions are also proposed:

- Full rebate of the CTF Rate for the pick up or drop off of a loaded container hauled by a zero emission truck.
- Full rebate of the CTF Rate for the pick up or drop off of a loaded container hauled by a low NOx truck between the start of the CTF Rate collection in 2020 through December 31, 2031. Starting January 1, 2032, low NOx trucks are proposed to pay the full CTF Rate amount.

Cargo owners will be responsible for the payment of CTF Rate – not truck drivers and not trucking companies. The two Ports recently undertook a public procurement process, issued a Request for Proposals, and selected a vendor to develop a rate collection mechanism. A contract with the successful proposer will be brought to the Boards for consideration in a few months. The cargo interests will be required to pay the CTF Rate before the loaded container will be permitted to pass through a marine terminal gate. If the loaded container is verified to have been transported by a truck that is eligible for a rebate, the rebate will be applied after the transaction is complete.

Costs for administration of the CTF Rate collection and fund allocation program will be small relative to the funds generated, and will be covered by the collected funds. The majority balance of the funds from the program will go towards incentives for the purchase of low NOx and zero emission trucks to service the ports, and potentially to support charging and/or fueling infrastructure. The incentive awards could be administered with the assistance of a third party grant administrator, pursuant to the Boards'

directions. During implementation of the original Clean Trucks Programs, a similar approach was employed, where AQMD provided assistance by administering the Ports' Prop 1B grant award and Port funding toward incentives for the purchase of new cleaner trucks.

Initially, it is anticipated that incentives will be provided to help offset some or all of the cost differential for Heavy-Duty low NOx and zero emission trucks upon initiation of the CTF Rate. After 2023, pending review of the Ports' latest Drayage Truck Feasibility Assessment, it is anticipated that incentives will be offered only for the purchase of zero emission trucks in order to focus on achievement of the Ports' 2035 zero emission goal for Heavy-Duty trucks. Eligibility for an incentive award will require the removal of an existing truck in the PDTR (either through scrappage or movement of a CARB-compliant truck out of the South Coast Air Basin), as well as a commitment to use the newly purchased truck in port drayage operations. Additional input and analysis is needed to understand how to structure the incentive program for the best results. The specific details of the incentive program will be developed in the coming months, with the input of stakeholders, and submitted to both Boards for consideration at the time when the tariffs to implement the CTF Rate are presented for consideration.

The Ports anticipate periodically reporting to their Boards on progress of implementation of the Clean Trucks Programs and the CTF Rate, including an accounting of the collected funds and the disbursement of incentives, and will evaluate if adjustments are needed. The Boards always reserve the right to increase, decrease, suspend, or cancel the CTF Rate as they feel is necessary.

Conclusion

The CTF Rate being recommended is \$10 per loaded TEU, with certain exemptions for zero emission and low NOx trucks, which would initially generate approximately \$90 million per year, based on recent cargo volumes and anticipated rebates. This rate amount is being recommended to provide a balanced approach to achieving the Ports' objectives of reducing emissions to lessen impacts to community health, and to meet our criteria pollutant and greenhouse gas reduction goals, while also minimizing unintended consequences related to economic impacts and disruption to the industry.

The amount of funding that is being proposed is significant. In recent years, the amount of available incentive funding for low NOx and zero emission Heavy-Duty trucks throughout the South Coast Air Basin was less than \$20 million per year, and the amount of funding available for future years is uncertain. Having a dedicated and recurring funding program on the order of magnitude of what is being proposed, dedicated specifically to the Port drayage truck industry, will be transformational. For example, if incentives are offered at \$100,000 per truck, consistent with recent low NOx truck incentive programs, up to 900 trucks per year could be replaced.

Next Steps

The Ports and AQMD have been working on an AQMD-Ports Memorandum of Understanding (MOU), which is being developed to identify the potential emission reductions related to implementation of the CAAP that can be claimed by AQMD for inclusion into the State Implementation Plan (SIP). Once the CTF

Rate is identified, it can be included into the MOU process and the potential benefits can be calculated and incorporated into their Contingency Measure Plan that is required for submittal by AQMD to EPA.

Following establishment and confirmation of the CTF Rate amount, Port staff will focus on preparing the details for the truck incentive program and the tariff language to implement the CTF Rate. The incentive program details and the CTF Rate tariff are anticipated to be brought to the Boards for consideration in mid-2020, following CARB action to adopt a manufacturing standard for low NOx Heavy-Duty trucks, currently anticipated to occur in June 2020. Implementation of the CTF Rate is anticipated to begin later in 2020 and the incentive program could be initiated simultaneously.

The AQMD-Ports MOU, which will include the CTF Rate amount, is anticipated to be brought before the Ports' Boards for consideration in the coming months. AQMD has asked the Ports to approve the AQMD-Ports MOU one month in advance of the AQMD Board's action.