

Preliminary Discussion Document

Preliminary Concepts – Implementation Schedule – For Non-Tanker Vessels Above Port/IMT¹ Complex, Terminal, and Berth Thresholds

| | | 2021 | 2025 | 2031 | |
|--|-----------------------------|--|--|------|--|
| <p><u>Container/Reefer</u></p> <p>Ports Above Threshold: Oakland, POLA, POLB, Hueneme, San Diego Port/IMT Complex Threshold: 50 visits Terminal Threshold: 25 visits Total Visits: 4035, ~99% of visits after applying thresholds</p> <p><u>Cruise</u></p> <p>Port/IMT Complex Threshold: 25 visits Terminal Threshold: 5 visits Ports Above Threshold: POLB, POLA, San Diego, San Francisco Total visits: 537, ~99% of visits after applying thresholds</p> | Regulation Amendments Begin | ✓ 100% of visits ----- Shore power or Alt Control Tech (ACT ² min 80% CF ³ for aux engines, DPM, NOx) GHG reductions** | | | |
| <p><u>Auto, Ro-Ro</u></p> <p>Port/IMT Complex Threshold: 50 visits Terminal Threshold: 25 visits Ports Above Threshold: San Diego, Hueneme, POLB, POLA, Carquinez Complex, Richmond Complex Total visits: 906, ~90% of visits after applying thresholds</p> | | | ✓ 100% of visits ----- Shore power or Alt Control Tech (ACT min 80% CF for aux engines, DPM, NOx) GHG reductions** | | |
| <p><u>Bulk, General Cargo</u></p> <p>Port/IMT Threshold: 75 Terminal Threshold: 25 Ports Above Threshold: POLB, Stockton, POLA, Richmond Complex Total Visits: 908, ~61% of visits after applying thresholds</p> | | | ✓ 100% of visits ----- Shore power or Alt Control Tech (ACT min 80% CF for aux engines, DPM, NOx) GHG reductions** | | |

¹ IMT = Independent Marine Terminal (i.e., private terminal not part of a larger public port complex)

² ACT = Alternative Control Factor

³ CF = Control Factor

Preliminary Concepts – Implementation Schedule – For Tanker Vessels Above Port/IMT⁴ Complex, Terminal, and Berth Thresholds

| | | 2021 | 2025 | 2031 |
|--|-----------------------------|-------------|---|---|
| Tankers with Electrically Powered Pumps | Regulation Amendments Begin | | ✓ 100% of visits ----- 50% CF for aux engines (DPM, NOx) GHG reductions** | ✓ 100% of visits ----- 80% CF Shore power or Alt Control Tech (ACT min 80% CF for aux engines, DPM, NOx) GHG reductions** |
| Tankers with Steam Powered Pumps | | | ✓ 100% of visits ----- 50% CF for aux engines (DPM, NOx) and boiler engines (PM, NOx) | ✓ 100% of visits ----- 80% CF Shore power or Alt Control Tech (ACT min 80% CF for aux engines, DPM, NOx), 80% CF for boiler engines (PM, NOx) |

Port/IMT Threshold: 25 visits

Terminal Threshold: 5 visits

Ports above threshold: POLB, POLA, Richmond Complex, Carquinez Complex, Rodeo Complex, Stockton

Total Visits in 2017: 1374, ~97% of visits would be regulated after applying thresholds

Notes:

*All vessel types are required to get NOx, DPM reductions for aux engines; tankers with steam powered pumps must also reduce boiler emissions (PM, NOx)

**All vessel categories assumed to get a % GHG reduction from shore power usage; amount of GHG reduction will vary depending on % of each vessel type’s shore power utilization. Alternative technologies are presumed to be GHG neutral for this preliminary draft concept.

⁴ IMT = Independent Marine Terminal (i.e., private terminal not part of a larger public port complex)