

Prepared for
Maersk Warehousing & Distribution Services USA LLC

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CUSTOM WAIRE PLAN APPLICATION
FACILITY ID 199026
5011 FIRESTONE BOULEVARD
SOUTH GATE, CALIFORNIA

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ACRONYMS AND ABBREVIATIONS

AQMD	Air Quality Management District
BE:	battery electric
DPM:	diesel particulate matter
EV:	electric vehicle
GPS:	global positioning service
LADWP	Los Angeles Department of Water and Power
ID:	identification
kW:	kilowatts
kWh:	kilowatt-hours
NOx	oxides of nitrogen
VIN	vehicle identification number
WAIRE:	Warehouse Actions and Investments to Reduce Emissions
WAIRE POP:	WAIRE Program Online Portal

1. INTRODUCTION

Ramboll Americas Engineering Solutions, Inc. (Ramboll) is pleased to present this Custom WAIRE (Warehouse Actions and Investments to Reduce Emissions) Plan application on behalf of Maersk Warehousing & Distribution Services USA LLC (Maersk) for the warehouse facility Southgate, located at 5011 Firestone Boulevard, South Gate, California 90280. This warehouse has the Facility ID 199026 on South Coast Air Quality Management District's (South Coast AQMD's) WAIRE Program Online Portal (POP) platform and is owned and operated by Maersk Warehousing & Distribution Services USA LLC.

As required by Rule 2305(d)(4)(A),¹ this Custom WAIRE Plan application includes the following sections:

- Description of Proposed Actions
- Quantification of WAIRE Points for Proposed Actions
- Verification Methodology for Proposed Actions
- Schedule of Key Milestones for Proposed Actions
- Location of Proposed Actions
- Expected Permits or Approvals Required for Proposed Actions

If you have any questions about this application, please feel free to contact Ramboll and/or Maersk at:

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¹ South Coast AQMD. 2021. Rule 2305: Warehouse Indirect Source Rule. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/reg-xxiii/r2305.pdf?sfvrsn=15>. Accessed: May 2023.

2. DESCRIPTION OF PROPOSED ACTIONS

██████████ is installing 24 ██████████ quad dispensing electric vehicle (EV) chargers with 96 charging ports in an offsite yard ('Denker Yard'), located at 20504 Denker Ave, Torrance, California 90501 (**Figure 1**). These charging ports can operate simultaneously at a maximum rating of 90 kilowatts (kW) each. The specification sheet for these charging ports is provided in **Appendix A**. The proposed construction layout for these charging ports is provided in **Appendix B**. ██████████ will be installing 24 ██████████ linear generators to provide temporary power for these chargers until Los Angeles Department of Water and Power (LADWP) provides the necessary utility connections. The LADWP utility connection is expected to be completed in late 2024 or early 2025. Specifications of the linear generators can be seen in the South Coast AQMD Permits to Construct which are included in **Appendix C** for your reference.

Since Maersk operates the Denker Yard, these 96 EV charging ports will be solely used by battery electric (BE) trucks servicing Maersk warehousing facilities in and around Southern California. Maersk currently operates 38 BE Class 8 drayage trucks that transport goods between the San Pedro Bay Ports and their Southern California warehousing facilities. Besides this, Maersk plans to acquire and deploy an additional 358 BE Class 8 trucks to service their Southern California warehouses by 2026. A large number of these BE trucks are expected to use the EV charging ports in Denker Yard and move goods to/from Maersk's Southern California warehousing facilities including Facility ID 199026 (Southgate).

As noted in the letter in **Appendix D**, ██████████ gives Maersk the right to submit Custom WAIRE Plan applications to assign the points for construction and energization of these EV charging ports to Maersk-operated warehouses subject to Rule 2305.

In this Custom WAIRE Plan application, Maersk would like to assign the construction and energization points for 43 EV charging ports that will be installed in the Denker Yard to Facility ID 199026 (Southgate). These actions are expected to be completed by January 5, 2024.

Southgate is located approximately 10.2 miles from the proposed location of the EV chargers (**Figure 2**). The driving distance between Denker Yard and Southgate is 15.0 miles.

3. QUANTIFICATION OF WAIRE POINTS FOR PROPOSED ACTIONS

Table 3 in Rule 2305² already defines the WAIRE Points for construction and energization of EV charging ports with a maximum rating of 90 kW each. These are summarized below:

- 9 WAIRE Points to begin construction of one EV charging port, and
- 59 WAIRE Points to finalize (complete construction and energize) one EV charging port.

Maersk proposes to earn the same quantities of WAIRE Points for the construction and energization of the EV charging ports in this Custom WAIRE Plan. The methodology used to develop these WAIRE Points is described in the WAIRE Menu Technical Report³ and summarized in **Table 1** of this application for your reference.

As noted previously, the driving distance between Denker Yard and Facility ID 199026 (Southgate) is approximately 15.0 miles (**Figure 2**) and the Class 8 BE trucks using these chargers are expected to transport goods to/from Maersk warehousing facilities in and around Southern California, including Facility ID 199026 (Southgate). These new Class 8 BE truck trips directly facilitated by the Denker Yard chargers will displace existing diesel Class 8 truck trips to/from Southgate, resulting in regional and localized emission reductions. Hence, this EV charger installation project will directly facilitate oxides of nitrogen (NO_x) and diesel particulate matter (DPM) emission reductions within three miles of Southgate.

These reductions will be realized once the chargers begin operating in 2024 and will be quantified in separate Custom WAIRE Plan applications that Maersk will submit at a later date. These future Custom WAIRE Plan applications will propose earning WAIRE points for the usage of these EV chargers and will include a quantification of the expected NO_x and DPM emission reductions within three miles of the relevant facilities. These reductions will also be verifiable as described in the next section.

² South Coast AQMD. 2021. Rule 2305: Warehouse Indirect Source Rule. Available at: <http://www.aqmd.gov/docs/default-source/rule-book/reg-xxiii/r2305.pdf?sfvrsn=15>. Accessed: May 2023.

³ South Coast AQMD. 2021. WAIRE Menu Technical Report. Available as Appendix B of Attachment I to Agenda No. 27 in the South Coast AQMD's May 7th 2021 Board Meeting at: <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2021/2021-May7-027.pdf?sfvrsn=10>. Accessed: May 2023.

4. VERIFICATION METHODOLOGY FOR PROPOSED ACTIONS

The documentation necessary for verification of the construction and energization of EV charging ports is described in the South Coast AQMD's WAIRE Implementation Guidelines⁴ and summarized below:

- Begin Construction of EV Charging Port: Copies of permits and photo/video documentation showing that construction was initiated.
- Finalize (complete construction and energize) EV Charging Port: Permit records and/or photo/video documentation of the EV Charging Port in use.

Maersk will maintain this type of documentation for the 43 EV charging ports that are included in this Custom WAIRE Plan application to verify their construction and energization. A copy of the Application for Building Permit and Certificate of Occupancy for the construction of these chargers is provided in **Appendix E**. Pictures/video documentation showing the initiation/completion of construction and EV charging ports in use will be gathered and maintained by [REDACTED] and Maersk. This documentation will also be submitted to South Coast AQMD in the progress report for this Custom WAIRE Plan.

In addition to the construction and energization documentation, [REDACTED] has partnered with [REDACTED], a third-party vendor, to offer live operational visibility for EV trucks and chargers in Maersk's network. As noted previously, Maersk will submit separate Custom WAIRE Plan applications in the future to earn WAIRE points for usage of the EV chargers installed at the Denker Yard. The data from [REDACTED] can be used to quantify and verify NO_x and DPM emission reductions within three miles of the facilities referenced in these future Custom WAIRE Plan applications. A summary of the [REDACTED] software and its capabilities is included below for your reference.

[REDACTED] provides a cloud-based software solution that includes custom dashboards and data reports, accessible at [REDACTED]. This collaboration enables real-time monitoring, data analysis, and the generation of facility-specific and time-framed reports to optimize the performance of the EV fleet. The software has the capability to generate reports that summarize the total kWh dispensed during each charging event. It can also provide the unique identification (ID) code for the charger port that was used during each charging event, the VIN (vehicle identification number) number of the electric truck that was charged, and the start and end time for the event. A sample report generated from the EV charger software for another site is included in **Appendix F**. The software also provides route tracking for Maersk's Class 8 BE trucks that are using the EV Chargers. This is enabled by global positioning service (GPS) devices that are installed in the BE trucks.

⁴ South Coast AQMD. 2021. WAIRE Implementation Guidelines. Available at: <http://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/waire-implementation-guidelines.pdf?sfvrsn=12>. Accessed: May 2023.

5. SCHEDULE OF KEY MILESTONES FOR PROPOSED ACTIONS

As noted in **Appendix D** and **Appendix G**, the proposed schedule for various stages of the EV charging port acquisition are as follows:

1. Purchase Date: April 20, 2022 for 1 [REDACTED] quad dispensing EV charger and December 6, 2022 for the remaining 23 [REDACTED] quad dispensing EV chargers
2. Delivery/Acquisition Date: May 3, 2023 for 23 [REDACTED] quad dispensing EV chargers and August 3, 2023 for the remaining 1 [REDACTED] quad dispensing EV charger
3. Estimated Construction Start Date: September 27, 2023
4. Estimated Date for Construction End and Energization (first set of nodes): December 14, 2023
5. Estimated Energization Date for the Full Site: January 5, 2024

Copies of the purchase order and delivery slips for the chargers are provided in **Appendix G**, for your reference. As noted previously, this Custom WAIRE Plan application requests that Facility ID 199026 (Southgate) earn WAIRE Points for the construction and energization of 43 EV charging ports that will be installed at Denker Yard. Since the implementation of this custom plan extends beyond the 2023 compliance period, Maersk will submit a progress report within 180 days of the plan approval documenting the completion of construction and energization of the chargers in accordance with Rule 2305 (d)(4)(C).

6. LOCATION OF PROPOSED ACTIONS

The location for the installation of the EV chargers is shown in **Figure 1** and the proposed construction layout is provided in **Appendix B**.

7. EXPECTED PERMITS OR APPROVALS REQUIRED FOR PROPOSED ACTIONS

██████████ will obtain the necessary permits and approvals for construction and energization of the EV charging ports at Denker Yard and provide copies to Maersk for recordkeeping purposes. A copy of the Application for Building Permit and Certificate of Occupancy for the construction of these EV chargers is provided in **Appendix E**.

TABLE

Table 1. Estimating WAIRE Points for the Construction and Energization of a 90 kW EV Charger

Parameters for WAIRE Point Calculations		
Charger Specifications		
Charger Rating ¹	90	kW
Cost Estimates		
Purchase Cost ²	60,000	\$
Installation Cost ²	80,000	\$
WAIRE Point Estimate to Begin Construction of EV Charger Project		
Potential NO _x Emission Reduction ³	200	lbs
Points for Cost to Begin Construction of Charger Project ³	1	--
Points for Regional Emission (NO _x) Reductions ³	8	--
WAIRE Point Estimate to Begin Construction of EV Charger Project	9	points/unit acquired
WAIRE Point Estimate to Finalize EV Charger Project		
Potential NO _x Emission Reduction ³	1,400	lbs
Points for Costs to Finalize Charger Project ³	3	--
Points for Regional Emission (NO _x) Reductions ³	56	--
WAIRE Point Estimate to Finalize EV Charger Project	59	points/unit acquired

Constants:

Cost-Effectiveness ²	100,000	\$/ton of NO _x reduced
Mass Emissions Conversion Factor	2,000	lbs/ton
Down Payment to Begin Construction ²	10,000	\$

Notes:

¹ Charger rating is based on the maximum output for each charger port, assuming all ports are charging simultaneously. Total charger rating is 360 kW, and there are four ports; each port can provide up to 90 kW of charge. These ratings are based on the specification sheet for the Pihong '360 kW - Fan Cooling System DC Charger' model, provided in **Appendix A**.

² Obtained from the Rule 2305 Final Staff Report, Appendix B. Available at: <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2021/2021-May7-027.pdf?sfvrsn=10>. Accessed: June 2023.

³ Estimated based on the methodologies described in the Rule 2305 Final Staff Report, Appendix B. Available at: <http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2021/2021-May7-027.pdf?sfvrsn=10>. Accessed: June 2023.

Abbreviations:

\$ - dollar	NO _x - oxides of nitrogen
kW - kilowatt	South Coast AQMD - South Coast Air Quality Management District
lbs - pounds	WAIRE - Warehouse Actions and Investments to Reduce Emissions

FIGURES

Figures have been redacted as they have confidential business information

APPENDIX A
EV CHARGER SPECIFICATION SHEET

Appendix A has been redacted as it has confidential business information

APPENDIX B
PROPOSED SITE LAYOUT FOR EV CHARGERS

Appendix B has been redacted as it has confidential business information

APPENDIX C
SOUTH COAST AQMD PERMITS TO CONSTRUCT FOR THE LINEAR
GENERATORS

Appendix C has been redacted as it has confidential business information

APPENDIX D
LETTER FROM 

Appendix D has been redacted as it has confidential business information

**APPENDIX E
APPLICATION FOR BUILDING PERMIT AND CERTIFICATE OF OCCUPANCY
FOR THE CONSTRUCTION OF THE EV CHARGERS**

Appendix E has been redacted as it has confidential business information

APPENDIX F
SAMPLE EV CHARGER REPORT

Appendix F has been redacted as it has confidential business information

APPENDIX G
PURCHASE AND DELIVERY DOCUMENTATION FOR EV CHARGERS

Appendix G has been redacted as it has confidential business information