

CHARGEHUB FOR HEAVY DUTY TRUCKS WAAIHAVEN ROTTERDAM



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PROJECT OVERVIEW: IN 2023, WE HAVE BUILT THE FIRST CHARGEHUB FOR HEAVY DUTY VEHICLES IN THE REGION

Port of Rotterdam Authority (PoR) acts as financier, initiator, matchmaker > break chicken/egg problem

Market response: larger than expected demand

Knowledge is shared with several governments and market parties

Contributes to UN SDG 7,8,9,11,13

Technical specs:

- ✓ 8x charging heavy duty trucks
- ✓ 5 MW grid connection, future proof
- ✓ Up to 400 kW today, ready for >1MW charging
- ✓ Scalable chargehub (92 parking spots available for additional charging bay)



INDEX

1. Overall project impression (clear description, supporting links and documentation, audio-visual material)
 - Delivered energy above expectation
 - Output meets predictive study scenarios
2. Original and innovative character of the project
 - PoR build heavy duty vehicle charging hub with uncertainty of demand in a difficult and conservative market.
3. Vision and leadership deployed by the port's management
 - PoR lead the way in a hard-to-abate sector
4. Contribution to sustainability and the UN SDGs
 - Contribution to energy transition sustainable transport
5. Cooperation with other ports and/or engagement of societal and commercial stakeholders
 - Together with regional stakeholders

1. OVERALL PROJECT IMPRESSION

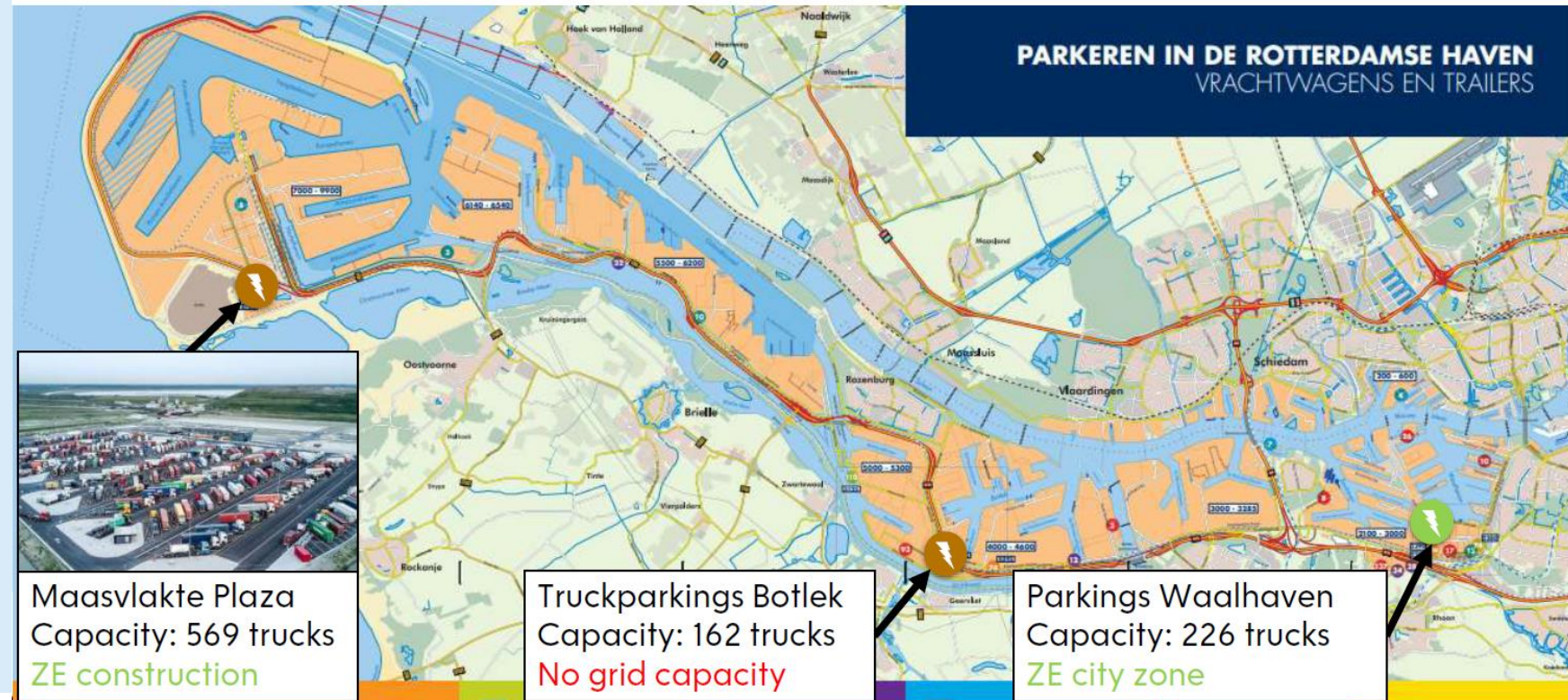
OPPORTUNITIES FOR SUPPORTING ELECTRIFICATION ROAD TRANSPORT

When electric heavy duty vehicles will come to the port area they will be in need for public accesable charging infrastructure.

Best pilot location is the most eastern part of the port for its strategic position towards the port hinterland corridors and zero emission city zones.

Waalhaven first. Other areas will follow.

10,000 TRUCKS VISITING THE PORT PER DAY 1,000 PARKING BAYS IN PUBLIC FACILITIES.



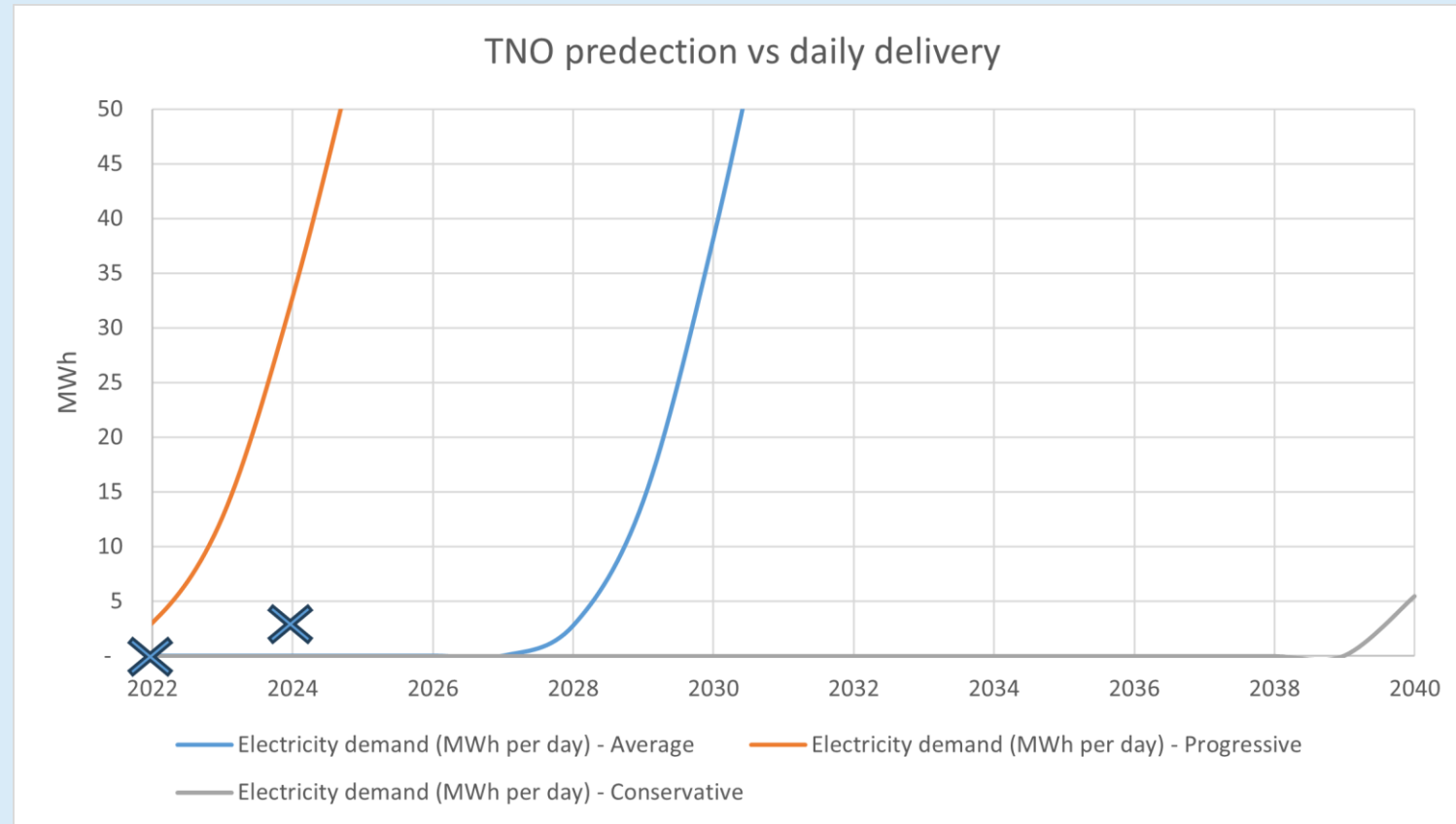
1. OVERALL PROJECT IMPRESSION

TNO PREDICTION STUDY VS. WAALHAVEN HUB DATA

To be able to make well-considered project decisions TNO delivered a prediction studies on electricity demand for charging heavy duty Trucks (2022) with 3 scenario in energy demand.

Regarding meeting the predicted energy demand we are ahead of the average scenario. (hub data marked by 'X')

From market research we learn that the charge hub is visited because it is the only public hub in the region. Hence the hub is an accelerator to the transition from diesel tot battery electric trucks.



1. OVERALL PROJECT IMPRESSION

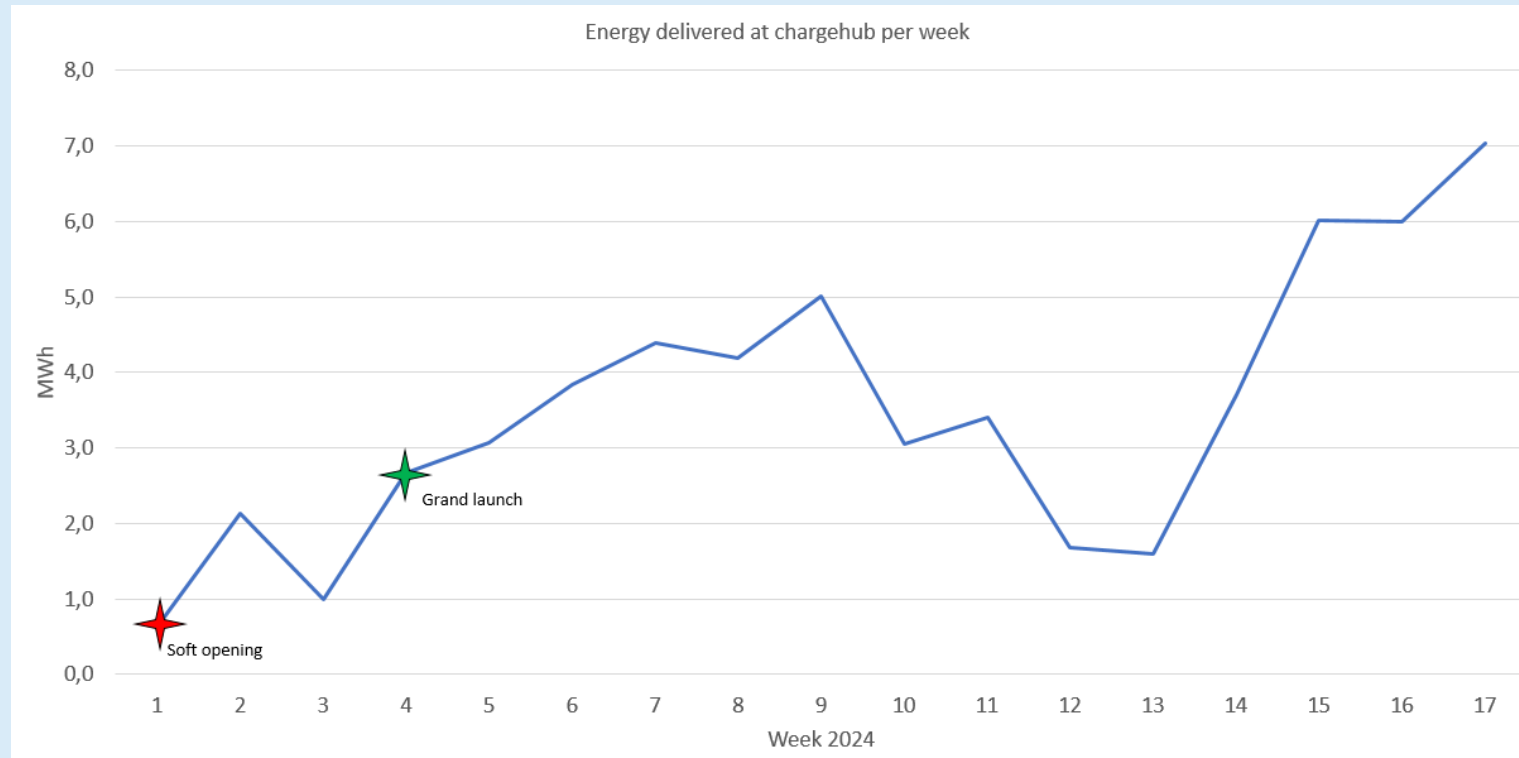
CHARGEHUB WAALHAVEN IN OPERATION SINCE JANUARY 2024

Only chargehub that is accessible by heavy duty trucks within the proximity of Rotterdam.

Fast increase in delivered energy after grand opening

- Soft opening in week 1: 01-01-2024
- Grand launch in week 4: 25-01-2024

Behaviour is opportunity charging. Combining charging with breaktime. Average session duration of 54 minutes.



1. OVERALL PROJECT IMPRESSION

REFERENCES

Operational info [Charging hub for electric trucks | Port of Rotterdam](#)

Press release [First charging station for electric trucks opened in the port of Rotterdam | Port of Rotterdam](#)

Press release [Supplier - The first charging hub for electric trucks in the port](#)

Background interview ['Trucks opladen in haven noodzaak voor elektrificatie wegvervoer' | NT](#)

2. ORIGINAL AND INNOVATIVE NATURE OF THE PROJECT

WAALHAVEN ROTTERDAM

The original and innovative character lies in the fact that the charge hub is specifically targeting heavy duty electric trucks (N3) as one of the first hub in the Netherlands. That requires a different approach than a regular charge hub for passenger vehicles.

Heavy duty electric truck charging is in this perspective considered a service to a truck operator. Therefore, the combination is sought with other truck services such as food, lounge, sanitary services and overnight secured parking. Also providing the possibility for opportunity charging during driver breaks.

Experimentations are done with different configurations of charging infrastructure to see what works best in what situation. Overnight charging, opportunity charging or both.

Because of the required maneuvering space for heavy duty trucks and the limited available space special attention is paid to the positioning of the parking spaces destined for charging.

Output from the experiments, lessons learned and developments in the market are used for follow-up projects at for creating infrastructure at truckparkings in the Maasvlakte, Botlek and Europoort areas.

3. VISION AND LEADERSHIP DEPLOYED BY THE PORT'S MANAGEMENT

The chicken and the egg causality dilemma describes best the motivation behind the initiative to develop a charging hub for heavy duty vehicles within the Port of Rotterdam area: “Without electric vehicles there is no demand for public charging infrastructure and without that infrastructure electric trucks will not come to the port area”.

The thin margins within the transportation business causes hesitation with the companies to do the big investments required for the electrification of trucks.

Instead of waiting for the market to act, the PoR showed vision and leadership by taking responsibility and acting accordingly to break that dilemma. The PoR took upon itself the initiative, coordination, funding and marketing in the realization of a pilot project for heavy duty truck charging infrastructure.

In the PoR rollout strategy charging infrastructure is included the building of a knowledge platform about charging infrastructure, keep taking the initiative and prepare for the enormous expected growth of the electric heavy duty trucks that operates within the port area and hinterland.

4. CONTRIBUTION TO SUSTAINABILITY AND THE UN SDGS

SDG 7, 8, 9, 11 AND 13



Sustainable energy. The electric truck is an enabler for driving on green energy.



Economic growth is contributed to by enabling better logistics and a green economy.



The project is innovative because it realizes infrastructure which was not there before and which is sustainable for the future.



The project contributes to cleaner cities and communities because it enables transportation which is zero emission from tank to wheel. Enabling improved airquality and reduced noise emission.



Zero emission transportation contributes to CO2 reduction. CO2 reduction is climate action.

5. COOPERATION WITH OTHER PORTS AND/OR ENGAGEMENT OF SOCIETAL AND COMMERCIAL STAKEHOLDERS














To make the world part of our experiences we actively share knowledge with European (and North American) mainports. Back and forth contact is established and visits are made to ports around the North and East Sea who deal with similar challenges.

PoR aims to lead the market and actively pursues joining programs on municipal, regional, national and international level to share knowledge and lessons learned.

The PoR tries to understand, guide and challenge shipping agencies, terminals and transport companies within the port in their efforts in decarbonization.

In collaboration between the port authorities of Rotterdam, DeltaPort (Germany), HAROPA PORT (France: Le Havre, Rouen, Paris) and Sines (Portugal), in partnership with 10 research institutes and over 30 companies in the Netherlands, Germany, France, Portugal, Denmark and Sweden a research project is executed. The project has been given the acronym MAGPIE: sMART Green Ports as Integrated Efficient multimodal hubs.

One of the subprojects is to examine how to make transport to, from and around the port more sustainable using smart solutions, with electric self-driving vehicles being an example.

Sharing knowledge with Ports	Sharing knowledge with societal parties	Understanding market parties and helping them
Port of Amsterdam		Carriers   
Port of Gothenborg	<i>Local</i> Stedin, R'dam, Papendrecht, westland infra, gem. Westland,	Terminals   
Port of Hamburg	<i>Regional Provinces</i> Zuid Holland, Gelderland, Zeeland, Brainport	LSPs  
Port of LA	<i>National</i> CEH, NAL, LLHDL, TLN, Elaad,	Shippers 
Dutch organisation of seeports (BoZ)	<i>EU gov</i> Benelux union,	Contractors   
	<i>International</i> SFC, SWC	Other chargehubs  
Port of Oslo (pending)		