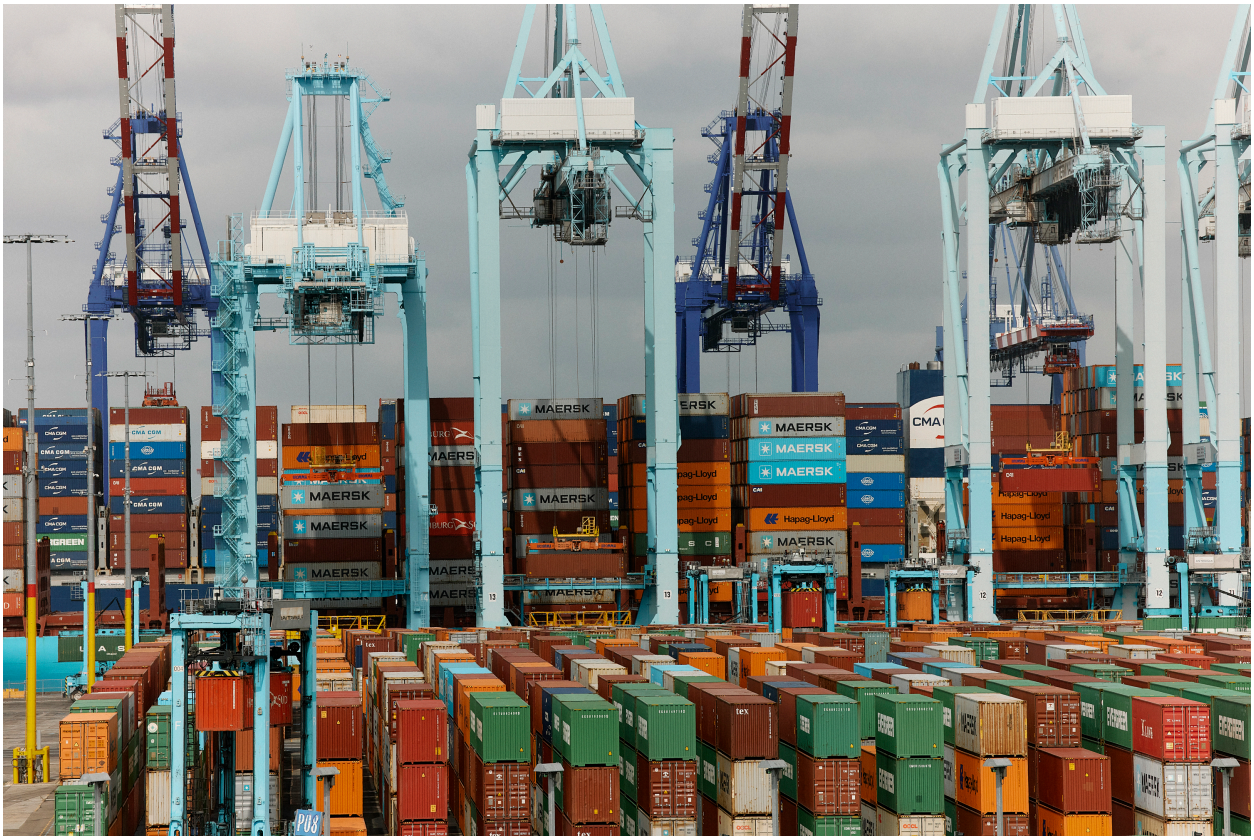
Electrifying Drayage Alliance



Electrifying Drayage Alliance 2030 Roadmap Port of Rotterdam

An implementation pathway to scale electric drayage by 2030

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Status: First online version

Executive summary

The Electrifying Drayage Alliance (EDA) was established by Smart Freight Centre, with support from The Climate Pledge, to accelerate the deployment of electric drayage by bringing together cargo owners, logistics providers, carriers, ports, terminals, charging providers, vehicle manufacturers, utilities and public agencies. The EDA 2030 Roadmap for the Port of Rotterdam establishes an implementation pathway to accelerate the deployment of electric drayage by 2030.

Rotterdam enters this transition with an established foundation: electric drayage is already viable and operating at small scale, charging capacity is expanding at Waalhaven and WattHub, and Dutch policy, including the vrachtwagenheffing toll, the AanZET subsidy and RED III/ERE, is improving electric truck economics. TCO modelling shows electric drayage already at cost parity with diesel, growing to an estimated 8% advantage by 2030.

The workshop held on March 2026 EDA Rotterdam confirmed the remaining barriers are structural, not technological. Carriers need multi-year (4–5 year) volume commitments to finance electric trucks, while most customer contracts run a year or less. Financing, residual-value uncertainty and fragmented charging access, pricing and roaming remain key constraints, particularly for smaller carriers. Grid capacity is a further constraint, with upgrades expected 2027–2029. Scaling will require stronger coordination across shippers, carriers, charging providers, terminals and public agencies.

The coalition has a shared ambition of enabling 250 electric drayage trucks to operate in the Port of Rotterdam by 2030. This roadmap establishes an implementation pathway to achieve that ambition through five implementation pillars:

- Strengthen demand signals
- Enable operational readiness
- Optimize port & terminal operations
- Enable supportive market conditions
- Coordinate, measure & scale deployment

Each implementation pillar pairs stakeholder commitments with the resources that EDA will develop to support implementation, measure progress and share lessons learned. The timeline sets primary objectives for each year from 2026 to 2030, followed by a detailed action plan.

The roadmap is intended to be a living document that can evolve alongside the market. The EDA will conduct annual reviews to inform annual roadmap updates, guide implementation priorities for the following year, and support replication across the broader EDA network.

How to use this roadmap

This roadmap is intended to support voluntary collaboration across Rotterdam's drayage ecosystem. It should be used by ports, terminals, cargo owners, logistics providers, carriers, charging providers, utilities, public agencies, and other stakeholders to:

- identify practical actions within their respective roles;
- align implementation efforts around a shared 2030 ambition;
- monitor progress through annual roadmap reviews; and
- inform updates and replication across future EDA port roadmaps.

The roadmap is designed to evolve alongside the market through annual progress reviews and coalition feedback.

NOTICE

This roadmap is not a procurement commitment, demand-aggregation mechanism, or substitute for carrier-specific support. It is a shared implementation pathway that provides a voluntary implementation framework for cargo owners, logistics providers, ports, terminals, carriers, and infrastructure partners around practical action to improve electric drayage utilization. All companies retain autonomy over prices, volumes, suppliers, routes, financing arrangements, and all commercial decisions.

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1. Purpose: why this port complex matters

The Port of Rotterdam is the largest port in Europe, handling approximately 438.8 million tonnes of cargo annually. It is a major gateway for European trade, with 72% of containers whose first destination is the Netherlands arriving through Rotterdam before being transported to the hinterland. Around 55% of hinterland container transport is carried by truck, resulting in approximately 6.8 million TEU transported by road each year and around 10,000 truck movements to and from the port per day. The scale of these road freight flows, combined with the significant share of trips within the range of current electric trucks, makes the Port of Rotterdam a strong candidate for large-scale deployment of electric drayage.

Electrifying drayage activity at the Port of Rotterdam presents a significant opportunity to reduce emissions from road freight while supporting the port's wider sustainability and energy transition objectives. Approximately 74% of truck trips to and from the port are shorter than 250 km, while 18% fall within a 60 km distance band typically associated with drayage operations. The shorter-distance segment alone represents an estimated 623 trucks and approximately 1 million containers moved annually. These operating characteristics provide a strong foundation for the deployment of electric trucks. At the same time, the changing policy landscape is creating additional opportunities for electrification beyond shorter-distance operations, as measures affecting road freight increasingly improve the relative economics of electric trucks compared with diesel.

The Electrifying Drayage Alliance (EDA) was established by Smart Freight Centre, with support from The Climate Pledge, to accelerate the deployment of electric drayage by bringing together cargo owners, logistics providers, carriers, ports, terminals, charging providers, vehicle manufacturers, utilities and public agencies. Rather than focusing on individual projects, the EDA provides a collaborative platform to identify common barriers, align implementation efforts and develop practical solutions that enable deployment at scale.

This roadmap translates that collaboration into a shared implementation pathway for the Port of Rotterdam. It does not prescribe commercial decisions or procurement commitments. Instead, it identifies the actions needed to strengthen demand signals, improve operational readiness, optimise port operations, address remaining market barriers and coordinate implementation between now and 2030.

The Port of Rotterdam has several conditions that support the transition to electric drayage, including a growing electric truck market, government support for zero-emission transport and introduction of new policies favouring electric over diesel. Truck operators are confident in the electric truck and their operational abilities. At the same time, deployment remains constrained by the availability and cost of electric trucks, charging infrastructure and electricity grid capacity. Identifying the use-cases where electric trucks can operate at parity with diesels and convincing receiving customers of the operational efficiency remain the largest barriers to adoption.

This roadmap focuses on that next phase. It provides a practical implementation pathway to scale electric drayage through coordinated action across the freight ecosystem between 2026 and 2030.

2. Market Readiness Assessment

The roadmap has been informed by a market assessment undertaken by Smart Freight Centre to establish the current state of electric drayage in the Port of Rotterdam. The assessment considered electric truck deployment, charging infrastructure, market conditions, policy support and operational readiness, complemented by stakeholder input from the March 2026 workshop on electric drayage in Rotterdam. Together, these inputs identify where the conditions for deployment already exist and where further collaboration is needed to enable scale.

2.1 Current market position

The Port of Rotterdam already has several of the building blocks required for the transition to electric drayage. Electric trucks are being introduced by carriers and logistics providers, charging infrastructure is expanding, and national and European policy measures are increasingly supporting the economics of electric transport. The March

2026 supply-stakeholder workshop confirmed that electric drayage is technically viable today and is already being implemented by several companies, although deployment remains at an early stage.

The scale and characteristics of freight flows also provide a significant opportunity. Around 10,000 truck movements take place to and from the port each day, with approximately 74% of truck trips shorter than 250 km and around 18% within a 60 km distance band typically associated with drayage. However, the opportunity for electrification is not limited to the shortest-distance segment. Changes to road freight policy, particularly the introduction of distance-based heavy goods vehicle charging, are improving the economics of electric trucks across a broader range of operating profiles.

Category	Baseline	Why it matters
Container throughput	~6.8 million TEU transported by road annually	Large road freight base for electrification
Drayage fleet	~10,000 truck movements/day, no official e-truck numbers	Significant potential demand for electric container transport
Charging infrastructure	60+ public chargers across 2 sites and private depot charging for some carriers	Infrastructure base is growing, but access remains fragmented and cost remains high
Grid Capacity	Grid congestion remains a constraint; significant upgrades expected from 2027–2029	Limits the speed and scale of charging deployment
Policy Environment	Vrachtwagenheffing, AanZET subsidy, RED III and other policy mechanisms	Increasingly improves the economic case for electric trucks
Market maturity	Technical feasibility demonstrated; early deployments underway	Focus shifts from proving technology to creating conditions for scale
Primary implementation challenge	Long-term demand commitment, commercial structures, charging usability and operational coordination	Determines whether early deployments can develop into sustained market uptake

2.2 Market strengths and remaining barriers

The assessment indicates that Rotterdam has a growing ecosystem of carriers, logistics providers, infrastructure operators and other stakeholders with experience in electric trucks. The March 2026 workshop confirmed that many participants are already operating electric trucks or pilots, while charging providers are developing both depot and public charging solutions.

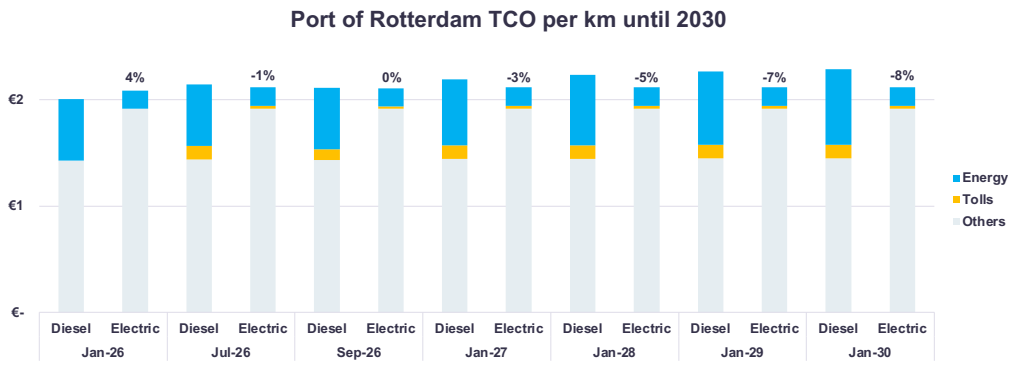
At the same time, the market has not yet reached the level of coordination required for large-scale deployment. The key barriers identified by stakeholders are increasingly commercial and operational rather than technological. In particular, the mismatch between the long investment period required for electric trucks and the short-term nature of many customer contracts makes it difficult for carriers to take on the investment risk. Charging infrastructure is also developing faster than the systems needed to make it easily accessible, transparent and optimised across different operators

Market strengths	Remaining barriers
Electric drayage is technically and operationally viable today	Limited long-term customer commitments and volume guarantees
Growing number of carriers and logistics providers with EV experience	High upfront vehicle costs and financing challenges
Strong policy momentum supporting electrification	Fragmented charging access, pricing and roaming
Stakeholders willing to collaborate	Limited use of terminal and operational measures to support EV deployment

2.3 Total Cost of Ownership assessment

The market conditions for electric container transport in the Netherlands have changed significantly since the beginning of 2026. The introduction of the distance-based heavy goods vehicle charge (vrachtwagenheffing) from July 2026 has materially improved the economics of zero-emission trucks. Under the current charging regime, electric trucks pay approximately €0.04/km compared with €0.18/km for diesel, creating a difference of around €0.14/km. As a result, the share of a route travelled on tolled highways has become an important driver of the TCO comparison: higher-mileage operations with a greater share of tolled distance can have a stronger economic case for electric trucks.

Figure 1. TCO per loaded mile in Rotterdam



Under the current assumptions, including a 70% tolled highway share, 85% depot charging, a €1.70/litre diesel price and available policy mechanisms such as the AanZET subsidy, RED III and CO_2-based tolling, electric trucks can already reach TCO parity with diesel and, in some operating scenarios, achieve a lower cost per kilometre. The current analysis indicates that electric trucks were approximately 1% cheaper than diesel under the July 2026 toll regime, with the temporary toll discount from September 2026 affecting the differential during the remainder of 2026. Further policy changes, including the phase-down of diesel excise advantages and the introduction of ETS2 from 2028, are expected to further improve the relative economics of electric trucks.

Despite these improving operating economics, the upfront investment remains a significant barrier. A new electric truck currently costs approximately €260,000 compared with around €100,000 for a new diesel truck. This investment gap is particularly challenging for carriers operating on short-term contracts, where the investment period required to recover the additional vehicle cost extends beyond the duration of the customer commitment.

The economic case therefore depends not only on the vehicle purchase price, but also on how the truck is operated. Depot charging, access to lower-cost electricity, high annual mileage and a high share of tolled road distance can materially improve the TCO of electric trucks. Conversely, reliance on higher-cost public charging, lower utilisation or limited access to charging infrastructure can weaken the business case.

The current analysis demonstrates that the economic case for electric container transport is changing rapidly. Electric trucks can already reach cost parity under the right operating conditions, and the introduction of vrachtwagenheffing has expanded the range of operations where parity can be achieved. This means that the opportunity is no longer limited to the shortest drayage routes. The remaining challenge is to identify and structure the freight flows, commercial commitments, charging solutions and operational conditions that allow these favorable economics to be realized in practice.

The TCO assessment will be updated periodically as vehicle prices, diesel and electricity costs, policy mechanisms and operational experience continue to evolve. Future roadmap updates will incorporate the latest market data to ensure implementation priorities remain aligned with changing deployment economics.

3. Implementation framework for Port of Rotterdam

The coalition has a shared ambition of 250 electric drayage trucks to operate across the Port of Rotterdam by 2030. This roadmap organizes implementation around five complementary pillars that define the 2030 stakeholder commitments, the EDA implementation resources that will support stakeholders in achieving those commitments, and the phased action plan that will guide implementation through 2030.

Throughout this roadmap, the following terms are used consistently:

- **Implementation pillars** describe the five areas of focus for the roadmap.
- **2030 stakeholder commitments** describe the voluntary actions coalition stakeholders aim to have adopted by 2030.
- **EDA implementation resources,** also referred to as **outputs**, are the tools, guidance, analyses, and other tangible resources resulting from those priority actions that EDA will develop to support implementation.
- **Annual outcomes** describe what the coalition aims to achieve by the end of each year.
- **Priority actions** are the quarterly activities undertaken to achieve those annual outcomes.
- **Progress indicators** are the measures used to monitor implementation in the progress dashboard and inform annual roadmap updates.

Implementation pillar	Rotterdam 2030 stakeholder commitments	EDA implementation resources
Strengthen demand signals	Include electric drayage as a standard option in relevant procurement processes and RFIs, and work towards multi-year (4–5 year) freight volume commitments that give carriers the investment horizon needed to finance electric trucks (shipper, LSP)	Business case studies; Rotterdam Freight Opportunity Map; Shipper–Carrier Demand Framework and model RFI guidance
Enable operational readiness	Align vehicle deployment and charging plans with available infrastructure, grid capacity and utility requirements as the market scales (carriers, CPOs, infrastructure partners, utilities); evaluate EV replacement for retiring diesel trucks where operational requirements, charging readiness and TCO conditions support deployment (carriers)	Charging Infrastructure Overview and Charging Readiness Strategy, with links to grid capacity/interconnection timelines; energy management and smart charging guidance
Optimize port & terminal operations	Commit to implement operational and/or economic measures that support EV drayage (e.g. reduced waiting times, priority access/green lanes), share lessons learned with other terminals, and drive continuous improvement (terminals and ports)	Resource on Port & Terminal Solutions; feasibility study for terminals across the Port of Rotterdam
Enable supportive market conditions	Support development and implementation of coalition-informed recommendations on financing, policy, charging-market access/pricing/roaming, and regulatory barriers to EV adoption (ecosystem)	Policy and Incentive Overview; Updated TCO Assessment; coalition-informed market and financing recommendations
Coordinate, measure & scale	Participate and continue to contribute to the coalition through 2030, including data relevant to monitoring progress (EDA)	Roadmap dashboard; annual progress report; implementation resource hub

4. Timeline

The implementation timeline establishes the primary objective for each year from 2026 through 2030, reflecting the expected progression from coalition alignment to deployment at scale and long-term knowledge transfer.

Year	Annual Rotterdam Port objective	Annual outcomes
2026	Coalition alignment & market activation	Coalition aligns around a shared implementation pathway for Rotterdam; the five working groups are established; foundational EDA resources are launched (charging infrastructure overview, terminal feasibility study, policy and incentive overview); initial aggregated coalition demand baseline is established.
2027	Deployment readiness & learning	Initial deployments are supported through validated freight-flow/TCO parity data, stronger multi-year demand commitments, a charging readiness strategy, and terminal operational pilots; implementation resources are refined based on early deployment performance and AanZET Round 2 outcomes.
2028	Market expansion & replication	Proven deployment approaches are expanded across additional carriers, freight flows and terminals; shared and public charging build-out advances at priority sites; market and financing recommendations are refined based on deployment experience.
2029	Scaling and optimization	Coalition partners focus on addressing remaining commercial and operational barriers, aligning charging capacity with fleet growth following the completed Stedin grid upgrade, and embedding proven terminal and financing practices to support sustained deployment growth.
2030	Assessment & knowledge transfer	Final progress toward the coalition's 250-truck ambition is assessed; the roadmap is updated based on implementation experience; lessons learned and implementation resources are shared to support replication across the broader EDA network. Coalition determines whether to develop a 2030–2035 roadmap to support further adoption of electric drayage in Rotterdam.

5. Action plan for Rotterdam

The Action Plan translates the implementation framework and annual objectives into a sequence of priority actions through 2030. Each action contributes to achieving the annual outcomes described in the Timeline and advancing the coalition's shared ambition of enabling 250 electric drayage trucks across the Port of Rotterdam.

Implementation is intended to be collaborative. While each action identifies a primary implementation lead, successful delivery will require continued coordination across coalition members and stakeholder groups. Each of these stakeholder groups is related to the implementation pillars; Demand, Carrier, Port & Terminal, Charging Infrastructure, and Market Enablement, and stakeholders are categorized by nature of their business and expressed expertise and interest. Actions taken by each working group are highlighted in the roadmap through colorcoding, as shown in the below table.

Working Group Color Coding
Demand Working Group
Carrier Working Group
Ports & Terminal Working Group
Charging Infrastructure Working Group
Market Enablement Working Group

EDA will focus on convening stakeholders, developing shared implementation resources, monitoring market progress and capturing lessons learned. Companies' individual procurement, infrastructure development, utility interconnection, permitting and investment decisions remain with the organizations responsible for those activities.

The Action Plan will be reviewed annually and updated as market conditions evolve, implementation progresses, and new opportunities emerge.

2026: Coalition alignment & market activation

By 2026, the coalition aims to have:

- Validate demand signals and establish an aggregated baseline of potential demand for electric drayag.
- Publish an overview of public and depot charging infrastructure available for coalition members.
- Complete the feasibility study of terminal solutions across Rotterdam container terminals.
- Confirm current and expected policies and incentives to feed into the Market Enablement Framework.
- Finalize roadmap actions and confirmed owners, and start implementation by completing all 2026 actions.

Q	Pillar	Priority Action	Lead	Output
Q4	Coordinate, measure & scale	Finalize the roadmap, confirm the 2030 target methodology, establish implementation workstreams, and confirm annual reporting processes	EDA	Final Roadmap & Implementation Governance
Q4	Strengthen demand signals	Validate initial demand signals at the 7 October roundtable	Demand Working Group	Validated demand baseline / roundtable outcomes
Q4	Strengthen demand signals	Establish a baseline understanding of potential demand for electric drayage, based on voluntarily provided coalition data	Demand Working Group	Aggregated demand baseline (TEU at Rotterdam)
Q4	Enable operational readiness	Map existing and planned charging capacity (Waalhaven, WattHub, 13 identified industrial-land sites) and confirm the Stedin grid-upgrade timeline	Charging Infrastructure Working Group	Charging Infrastructure Overview
Q4	Optimize port & terminal operations	Assess current terminal operational practices and scope for priority-access/green-lane measures at Rotterdam terminals (APM Maasvlakte II, RWG, Euromax/ECT Delta)	Ports & Terminal Working Group	Port & Terminal Solutions Assessment for Rotterdam
Q4	Enable supportive market conditions	Compile current and expected policy/incentive landscape (AanZET Round 2, vrachtwagenheffing, RED III/ERE) including funding cycles through 2030	Market Enablement Working Group	Policy and Incentive Overview

2027: Deployment readiness & learning

By 2027, the coalition aims to have:

- Provide resources to support economically and operationally viable EV use cases.
- Create a charging readiness strategy in line with expected EV growth.
- Confirm the implementation plan for terminal solutions across Rotterdam.
- Create market recommendations needed to close the remaining TCO gap.
- Update roadmap actions for 2028 based on 2027 learnings.

Q	Pillar	Priority Action	Lead	Output
Q1	Strengthen demand signals	Confirm priority electrifiable freight flows using TCO/tolled-highway-share data and match with interested carriers	Demand Working Group	Rotterdam Freight Opportunity Map
Q1	Enable operational readiness	Track AanZET Round 2 award outcomes for Rotterdam-registered operators and update the fleet baseline	Carrier Working Group	Updated Fleet Baseline
Q2	Strengthen demand signals	Test multi-year (4–5 year) volume-commitment models addressing the carrier–customer contract mismatch identified at the March 2026 workshop	Demand Working Group	Shipper–Carrier Demand Framework
Q2	Enable supportive market conditions	Update the TCO assessment with the confirmed ERE price and the January 2027 toll-rate reversion	Market Enablement Working Group	Updated TCO Assessment
Q2	Enable operational readiness	Develop a charging readiness strategy aligned with expected fleet growth, building on the 2026 Charging Infrastructure Overview	Charging Infrastructure Working Group	Charging Readiness Strategy
Q3	Enable operational readiness	Track utilization, charging access and uptime from early deployments (Odin, SVZ, TC Rotterdam, Einride)	EDA + Carrier Working Group	Initial Deployment Performance Data
Q3	Optimize port & terminal operations	Pilot operational incentives (reduced waiting times, priority access) at one terminal	Ports & Terminal Working Group	Terminal Pilot Assessment
Q3	Enable operational readiness	Evaluate EV replacement for retiring diesel trucks (AanZET policy)	Carrier Working Group	2028 Deployment Pipeline
Q4	Coordinate, measure & scale	Review deployment progress and capture lessons across all workstreams	EDA	2027 Annual Progress Report
Q4	Coordinate, measure & scale	Update priorities and confirm the 2028 action plan	EDA + All Working Groups	Updated 2028 Action Plan

2028: Market expansion & replication

By 2028, the coalition aims to have:

- Expand freight opportunities and carrier participation based on proven use cases.
- Advance shared and public charging build-out at priority locations.
- Expand successful terminal operational measures to additional terminals.
- Refine market recommendations based on deployment experience.
- Update roadmap actions for 2029 based on 2028 learnings.

Q	Pillar	Priority Action	Lead	Output
Q1	Strengthen demand signals	Expand priority freight opportunities based on 2027 results; engage additional shippers and carriers	Demand Working Group + Carrier Working Group	Expanded Freight Opportunity Map / Deployment Pipeline
Q2	Enable operational readiness	Advance shared/public charging build-out among the identified sites	Charging Infrastructure Working Group	Charging Expansion Plan
Q2	Optimize port & terminal operations	Expand successful operational measures to additional terminals	Ports & Terminal Working Group	Expanded Terminal Solutions
Q3	Enable supportive market conditions	Refine financing/risk-sharing recommendations (e.g. a drayage financing mechanism) based on experience and subsidies	Market Enablement Working Group	Updated Market Recommendations
Q3	Enable operational readiness	Identify further deployment opportunities based on charging progress and the Stedin grid-upgrade status	EDA + Carrier Working Group	2029 Deployment Pipeline
Q4	Coordinate, measure & scale	Assess deployment, demand, charging and operational progress across the coalition	EDA	2028 Annual Progress Report
Q4	Coordinate, measure & scale	Capture successful approaches for replication and update 2029 priorities	EDA + All Working Groups	Updated 2029 Action Plan

2029: Scaling and optimization

By 2029, the coalition aims to have:

- Scale electric drayage demand across proven freight flows.
- Align charging capacity with fleet growth.
- Scale successful terminal operational measures across participating terminals.
- Reduce remaining economic and operational barriers.
- Confirm final priorities for 2030 based on deployment and market progress.

Q	Pillar	Priority Action	Lead	Output

Q1	Strengthen demand signals	Expand electric drayage demand across proven lanes and additional shippers	Demand Working Group	Expanded Freight Opportunity Map
Q1	Enable operational readiness	Assess charging capacity against fleet growth and the completed Stedin grid upgrade	Charging Infrastructure Working Group	Updated Charging Needs Assessment
Q2	Optimize port & terminal operations	Scale successful operational measures across participating terminals	Ports & Terminal Working Group	Expanded Terminal Solutions
Q2	Enable supportive market conditions	Update TCO and identify remaining barriers to broader carrier adoption ahead of ETS2 (from 2028)	Market Enablement Working Group	Updated Market Recommendations
Q3	Strengthen demand signals	Identify opportunities to aggregate or coordinate demand across additional freight flows	Demand Working Group	2030 Deployment Pipeline
Q3	Enable supportive market conditions	Refine financing and risk-reduction approaches based on deployment experience	Market Enablement Working Group + Carrier Working Group	Carrier Scaling Recommendations
Q4	Coordinate, measure & scale	Assess coalition progress and remaining gaps toward the 2030 ambition	EDA	2029 Annual Progress Report
Q4	Coordinate, measure & scale	Confirm final 2030 priorities based on deployment and market progress	EDA + All Working Groups	Updated 2030 Action Plan

2030: Assessment & knowledge transfer

By 2030, the coalition aims to have:

- Assessed deployment progress against the 2030 ambition.
- Evaluated charging availability and remaining infrastructure gaps.
- Evaluated terminal operational measures across participating terminals.
- Documented successful deployment models and remaining barriers.
- Defined the coalition's role in supporting continued deployment beyond 2030.

Q	Pillar	Priority Action	Lead	Output
Q1	Coordinate, measure & scale	Assess deployment progress against the roadmap's 250-truck ambition	EDA	2030 Progress Assessment
Q1	Strengthen demand signals	Assess growth in shipper demand and electric drayage freight volumes	Demand Working Group	Demand Progress Summary

Q2	Optimize port & terminal operations	Evaluate operational measures implemented across participating terminals	Ports & Terminal Working Group	Terminal Solutions Assessment
Q2	Enable supportive market conditions	Assess remaining economic, financing and policy barriers to carrier adoption	Market Enablement Working Group	Updated Market Recommendations
Q2	Enable operational readiness	Assess charging availability, utilization and remaining infrastructure gaps	Charging Infrastructure Working Group	Charging Readiness Assessment
Q3	Coordinate, measure & scale	Document successful deployment models and lessons from implementation	EDA + All Working Groups	Rotterdam Implementation Lessons
Q4	Coordinate, measure & scale	Complete the final assessment of progress against the 2030 ambition	EDA	2030 Annual Progress Report
Q4	Coordinate, measure & scale	Define priorities and the coalition's role in supporting continued deployment beyond 2030	EDA + All Working Groups	Post-2030 Recommendations

6. Progress dashboard for Port of Rotterdam

The dashboard is updated annually and adapted to local market conditions. It replaces the static 'success indicators' and supports annual roadmap reviews.

Pillar	Indicators	2026 baseline	2027	2028	2029	2030
Strengthen demand signals	EV drayage solutions included in RFIs	TBD				100%
	Share of coalition-reported freight moved by electric drayage (where data are available)	TBD				4%
Enable operational readiness	EV trucks (based on port registries)	TBD (>30)				250
	Charging stations/ports (operational; planned assets tracked separately where data are available)	58				TBD
Optimize port & terminal operations	Number of participating terminals (with active green lanes, priority appt. systems, etc.)	1				3
Enable supportive	Relevant active/funded incentive programmes tracked	3 (AanZET, vrachtwagenheffing, RED III/ERE)				X

market conditions	Lanes/use cases at or near TCO parity (based on available analysis)	TBD current %				X
Coordinate, measure & scale	Annual progress report completed, including actions taken and lessons learned	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
	Number of engaged coalition members	#				#

Rationale for the 2030 targets

The 2030 targets are intended to provide a clear and measurable indication of whether the coalition is helping move the electric drayage market from early deployment toward broader adoption. They reflect the coalition's ambition, while recognising that market conditions, policy support and technology availability will continue to evolve.

- **EV drayage solutions included in RFIs:** Coalition members are expected to include an electric option in all relevant RFIs. This is a non-binding step that builds market visibility and learning without requiring a commitment to procure electric services.
- **Share of coalition-reported freight moved by electric drayage:** The target aligns with the ambition of 250 electric trucks, representing approximately **4% of the estimated drayage-relevant fleet** in Rotterdam. It provides a demand-side measure of whether coalition members are contributing meaningfully to market uptake.
- **EV trucks**: The target of **250 electric trucks** represents approximately 4% of the estimated drayage fleet and reflects an ambitious but achievable level of deployment based on the region's existing electric truck base, improving vehicle economics and expected development of a second-hand EV market.
- **Charging stations/ports**: The 2030 target reflects the charging capacity needed to support the 250-truck ambition, informed by planned build-out across additional identified sites.
- **Participating terminals**: All three major Rotterdam container terminals (APM, RWG, Euromax/ECT) are expected to assess and, where feasible, implement operational or economic measures that support electric drayage.
- **Relevant active/funded incentive programs**: The objective is to reduce reliance on incentives as market conditions improve, while recognising that some support is likely to remain necessary through 2030. The indicator will track the evolution of relevant programmes rather than target a fixed number.
- **Lanes/use cases at or near TCO parity**: Electric drayage in Rotterdam is already at cost parity with diesel, and this is expected to strengthen through 2030 as toll and policy mechanisms continue to improve electric truck economics. The Rotterdam Freight Opportunity Map will identify where these conditions apply.
- **Annual progress report**: A simple annual measure to ensure the coalition reviews progress, actions and lessons learned each year.
- **Number of engaged coalition members**: Tracks growth and continuity of participation, ensuring the coalition remains sufficiently representative to support market change while maintaining a practical implementation focus.

Looking ahead

Achieving 250 electric drayage trucks by 2030 will require continued leadership across the freight ecosystem. This roadmap provides a shared implementation pathway, not a fixed prescription. As technology, markets, and policy evolve, so too will the roadmap. Through annual updates, shared learning, and continued collaboration, the coalition will refine this implementation pathway and support replication across additional EDA port regions.

Appendices

Appendix A. Baseline market assessment

Appendix B. LA-LB Roadmap stakeholders and participants [placeholder]

Appendix C. References

Appendix D. Glossary

Appendix A. Baseline Market Assessment

Below are the baseline inputs and results for the TCO calculation discussed in Chapter 2.3. These assumptions will be reviewed with the coalition in the working groups and updated as needed.

Disclaimer: The TCO results represent a modelled, port-level benchmark based on standardized assumptions across vehicle performance, utilization, infrastructure, and incentive structures. These findings are intended to indicate the presence and magnitude of cost gaps (or parity) under representative conditions, rather than to predict outcomes for individual fleets, routes, or operating models. Actual TCO will vary significantly depending on route characteristics, charging strategy, fleet scale, financing structure, and access to incentives.

Table A1. TCO assumptions

Assumption	Value
Energy and charging	
Depot charging rate (€/kWh)	0.10
Public charging price (€/kWh)	0.40
Depot charging share	85%
Diesel price in 2026 (€/l)	1.70
Route profile	
Tolled highway share of total distance	70%
Policy and market mechanisms	
ZET subsidy (€/truck)	54,600
ETS2 (€/tonne CO_2)	45 to 100
ETS1 (€/kWh)	0.03
RED III (€/kWh)	0.13
CO_2-based tolling from 1 July 2026 (€/km)	Diesel: 0.18; ZET: 0.04
CO_2-based tolling, 1 September 2026 – 31 December 2027	22% discount

Table A2. TCO inputs by vehicle type

Metric	New e-truck	New diesel truck
Purchase price (€)	260,000	100,000
Resale value	20%	20%
Operational days per year	260	260
Annual mileage (km)	70,000	70,000
Fuel efficiency	1.2 kWh/km	2.93 km/l
Maintenance cost (€/km)	0.08	0.08
DEF cost (€/km)	0.01	0.01

Table A3. TCO results: electric vs. diesel cost per km, 2026–2030

Date	Electric vs. diesel TCO per km	Context
Jan 2026	+4%	Before CO_2-based tolling applies
Jul 2026	-1%	CO_2-based tolling in effect; EVs pay about €0.14 less per km in tolls
Sep 2026	0%	Temporary discount on toll applies
Jan 2027	-3%	Diesel excise duty discount drops from 2027 onwards
Jan 2028	-5%	ETS II (2028 onwards) increases the CO_2 price (€45–100/tonne CO_2)
Jan 2029	-7%	ETS II CO_2 price continues to increase
Jan 2030	-8%	Diesel price 23% higher than in 2026

A negative value means the electric truck is cheaper than the diesel truck per km. Figure 1 in Chapter 2.3 shows the same results by cost component (energy, tolls and other costs). Source: EDA Port Characterization Rotterdam (13 July 2026).

Appendix B. Rotterdam Port Roadmap stakeholders and participants

This appendix includes organizations engaged in roadmap development, organizations with Rotterdam Port freight activity, and/or confirmed or proposed working-group participants. It should not be read as a list of formal EDA coalition members unless otherwise indicated.

Company	Company Type	Working Groups	Working Group Lead
X	X	X	X

Appendix C. References

This list of reference is extended as the work within the roadmap continues.

C1. Local policies and incentive programs

(a) Clean Air Action Plan (CAAP)
(b) Clean Truck Program

C2. State policies and incentive programs

C3. Federal policies and incentive programs

C4. Technical guidance

C5. Related studies

Appendix D. Glossary

Acronym	Definition
BEV	Battery-electric vehicle
CARB	California Air Resources Board
CPO	Charge Point Operator; an organization that owns and/or operates electric vehicle charging infrastructure
EDA	Electrifying Drayage Alliance
EPA	U.S. Environmental Protection Agency
EV	Electric vehicle
GHG	Greenhouse gas
HDV	Heavy-duty vehicle
ICE	Internal combustion engine
kW	Kilowatt, a unit of power
MCS	Megawatt Charging System; a high-power charging standard designed for heavy-duty electric vehicles
MW	Megawatt, equal to 1,000 kilowatts
OEM	Original Equipment Manufacturer (vehicle manufacturer)
RFI	Request for Information; a preliminary procurement document used to gather information from suppliers before formal solicitation
TEU	Twenty-foot Equivalent Unit; the standard measure of containerized cargo capacity
TCO	Total Cost of Ownership; the full lifecycle cost of owning and operating a vehicle, including purchase, fuel or electricity, maintenance, depreciation, and other operating costs