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# Zero emission construction sites in Denmark

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# Collaboration between public buyers in DK



## Scaling demand for zero emission construction machinery

Lærke Møller Sandsdalen, Center for Offentlig-Privat Innovation,  
November 2025

# 1. Example from Denmark - Novafos

## Novafos – First to Set Emission-Free Requirements Across Its Entire Infrastructure Portfolio

### Water and Wastewater Utility Owned by 9 Municipalities in North Zealand

The country's first developer to require **zero-emission solutions** across its entire infrastructure portfolio.

A **framework agreement (4 + 2 + 2 years)** covers all water supply projects, mandating a **100% electric machinery fleet** after the baseline year. The contract value amounts to **up to DKK 1 billion**.

The organization has **implemented a governance structure** and allocated funds to set **project-specific zero-emission requirements** across the remaining portfolio (wastewater and climate adaptation). **Annual investment: DKK 600 million**.



<https://www.co-pi.dk/nyheder/novafos-foerst-i-danmark-eldrevne-maskiner-standard-i-anlaegsarbejdet/>

## 2. Example from Denmark – Vejdirektoratet

### Zero emission construction sites in DRD

#### Framework conditions

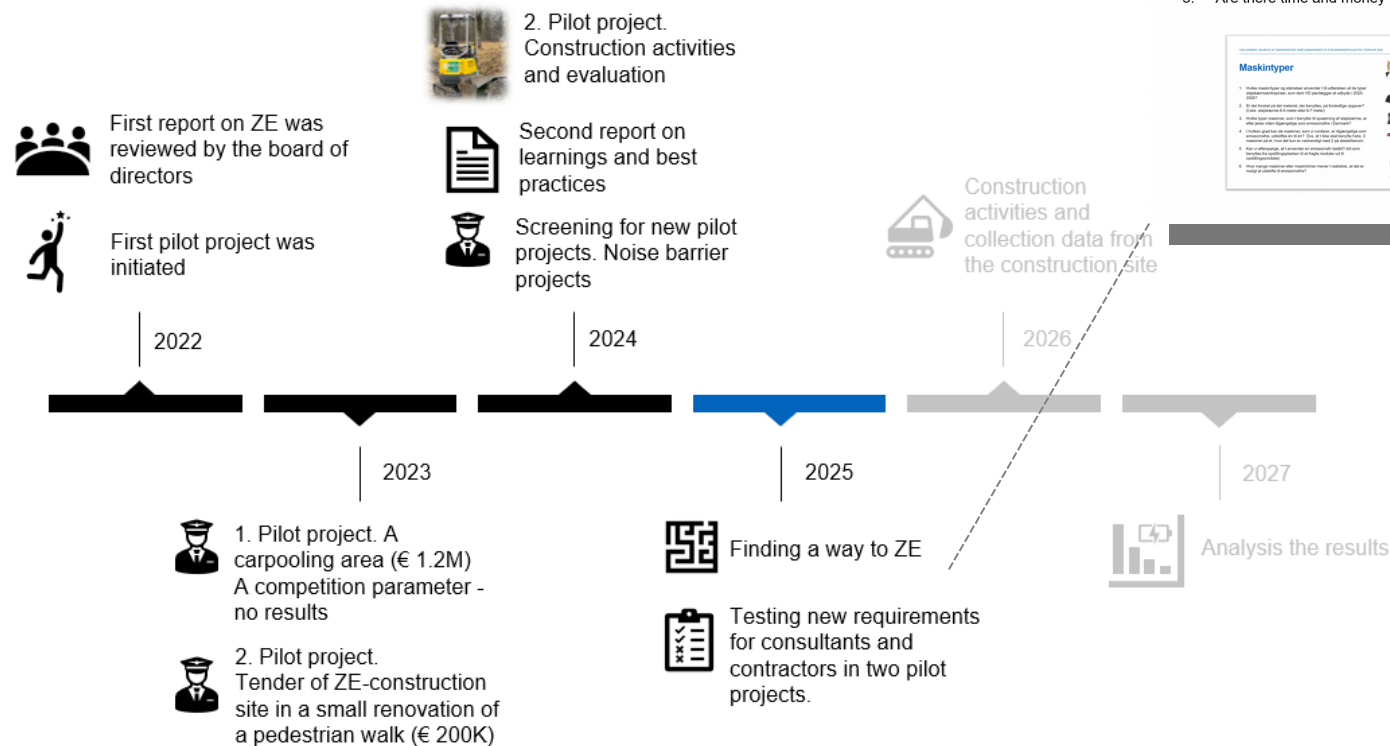
DRD's construction projects are agreed in the infrastructure plan 2021-2035

A political agreement on projects and finance

Reducing carbon emissions must be handled within the agreed finance

All projects are trying to cut costs

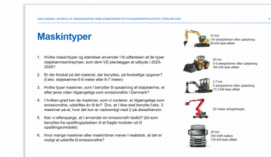
In 2026 DRD can pay around €25 to reduce on ton of CO<sub>2</sub> this number rises to around €100 in 2030



#### Noise barrier projects as pilots for ZE

Screening seven noise barrier projects

1. How are the grid connection?
2. Are the needed ZE-equipment available?
3. Are there time and money for a pilot with ZE?



Input for the two contracts

1. Project optimization after awarding the contract
2. Bonus for using ZE-equipment
3. Maximum bonus on €60.000 – 85.000 (approx. 10% of the contract value)

Machine Type	Bonus, € per hour	Bonus per month, € per machine*
Micro (0 - 0.5 tons)	Requirement	1000
Mini/Small (0.5 - 8 tons)	7	2100
Medium (8 - 16 tons)	13	2700
Large (16 - 25 tons)	17	4300

Source: InfraLCA, CO-PI, DRD's own calculations  
Note: 2025 prices. \*8 hours/day, 20 days/month



# 3. Example from Denmark – National level

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## Heavy transport

### Electrification of heavy road freight transport

- €10 million in subsidies in 2024
- €47 million in subsidies in 2025

Companies can apply for support for

- Additional costs for purchasing new hydrogen or electric trucks
  - Investment in depot charging/refueling infrastructure for hydrogen or electricity
- 
- €100 million for charging facilities for electric trucks
    - Towards 2030, a total of 25 charging parks will be established across the country. The first five charging parks will open in 2025.

Read more: [Pulje til grøn omstilling af tung vejtransport 2025](#); [Ladeparker til ellastbiler | Vejdirektoratet](#)





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# Leap to Zero and the EU



## Leap to Zero 2025

### Accelerating the transition to zero emission construction sites!

- The transition to zero emission construction is crucial for:
  - **Climate change** (Paris agreement)
  - **Nature & biodiversity** (including a nitrogen crisis in NL!)
  - Improving the **health** of our inhabitants and construction workers.
- **But we can't do this alone!**
- 2022: Leap to Zero started as a collaboration between The Netherlands (Rijkswaterstaat) and Sweden (Trafikverket).
- 2024: 1<sup>st</sup> Leap to Zero conference in Feb. and the 2<sup>nd</sup> was held in Nov.
- 2025: 3<sup>rd</sup> conference was organized in collaboration with NVF

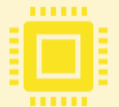
# Rijkswaterstaat



EXECUTIVE AGENCY OF THE DUTCH  
MINISTRY OF INFRASTRUCTURE AND  
WATER MANAGEMENT



YEARLY TURNOVER €6,6 BILLION  
(2023)



PURCHING POWER 3/4 BILLION  
ANNUALLY (PROJECTS & SERVICES)



## Emission requirements for construction equipment (basic tier)

Table 1 Basic tier, mobile machinery

	Period 1 1 January 2023 – 31 December 2024	Period 2 1 January 2025 – 31 December 2027	Period 3 1 January 2028 – 31 December 2029	Period 4 1 January 2030 onwards
Light duty (power <19kW)	No requirements	No requirements	100% ZE	100% ZE
Light duty (19-37kW)	Stage IIIa	Stage IIIa	100% ZE	100% ZE
Light duty (37-56kW)	Stage IIIb	Stage IIIb	100% ZE	100% ZE
Medium duty (56-130kW)	Stage IIIb	Stage IV with soot filter [1]	Stage IV with soot filter [1]	Stage IV with soot filter [1] (2030) 100% ZE (2035)
Heavy duty (130-560kW)	Stage IIIb	Stage IV with soot filter [1]	Stage IV with soot filter [1]	Stage IV with soot filter [1] (2030) 100% ZE (2035)
Specialist (lifespan >15 years)	No requirements	No requirements	Catalytic converter and soot filter [1]	Catalytic converter and soot filter [1] 100% ZE (2035)
Very heavy duty (>560kW)				
Stationary machinery (generators, pumps, tow cranes)				

[1] 'Catalytic convert functioning, closed d

Table 3 Basic tier, cor

	Period 1 1 January 2023 – 31 December 2024	Period 2 1 January 2025 – 31 December 2027	Period 3 1 January 2028 – 31 December 2029	Period 4 1 January 2030 onwards
N1 - vans				
N2 - light goods vehicles				
N3 - heavy goods vehicles				

N1 - vans  
N2 - light goods vehicles  
N3 - heavy goods vehicles

- All projects
- Contract requirements
- Hydrotreated vegetable



## Emission requirements for construction equipment (ambitious tier)

Table 2 Ambitious tier, mobile machinery

	Period 1 1 January 2023 – 31 December 2024	Period 2 1 January 2025 – 31 December 2027	Period 3 1 January 2028 – 31 December 2029	Period 4 1 January 2030 onwards
Share of frontrunner projects [1]	5-25%	25-50%	50-80%	75-95%
<b>Growth in use of zero-emission machinery</b>				
(percentage of operations done with ZE machinery, operating hours x power, in a project)	10-30%	30-70%	70-90%	90-100%

[1] As a percentage of commissioning body's project portfolio.

Table 4 Ambitious tier, construction logistics

	Period 1 1 January 2023 – 31 December 2024	Period 2 1 January 2025 – 31 December 2027	Period 3 1 January 2028 – 31 December 2029	Period 4 1 January 2030 onwards
Share of frontrunner projects [1]	5-25%	25-50%	50-80%	75-95%
<b>Growth in use of ZE machinery</b>				
N1 - vans	50% ZE	100% ZE	100% ZE	100% ZE
N2 - light goods vehicles	10% ZE	50% ZE	100% ZE	100% ZE
N3 - heavy goods vehicles	1% ZE	10% ZE	30% ZE	100% ZE

[1] As a percentage of commissioning body's project portfolio

- Intention for selection



# Examples form EU



## Big Buyers Working Together (BBWT)


### CoP ZECS

Danko Aleksic, Project Coordinator







## CoP ZECS (2)



CoP ZECS Roadmap approved in February 2025, defines vision and mission of the CoP, defines Deliverables and sets indicative timeline.


Deliverables envisaged:

- Deliverable 1 - Preliminary market availability analysis: update of the database on Emission-free Construction Equipment developed in 2022.
- Deliverable 2 – Analysis of targets and policies in key countries and cities.
- Deliverable 3 – Position paper on procurement criteria for ZECS in public works contracts.
- Deliverable 4 – Guidance for the 1st ZECS Project
- Deliverable 5 – Joint Statement of Demand (TBC, as it is a subject of sufficient number of signatories)



**PUBLIC BUYERS COMMUNITY**  
**Zero Emission Construction Sites (ZECS)**

public-buyers-community.ec.europa.eu



## Policy landscape for zero-emission machinery

Overview of the international and European schemes, state of play & enablers

Leap 2 Zero – October 23<sup>rd</sup>, 2025

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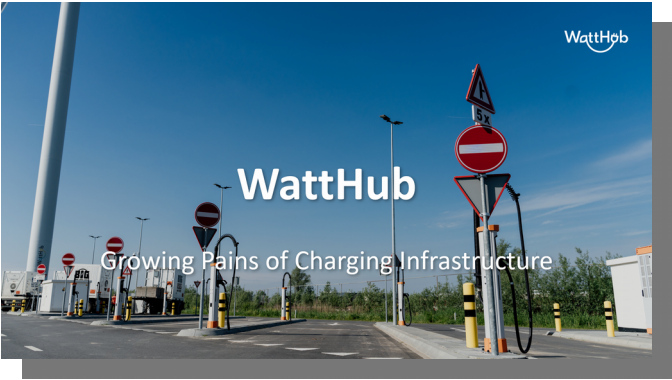
[linda@bellona.org](mailto:linda@bellona.org)



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## Electric work vessel Volta

Leap to Zero  
Tobias van Oord






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## Electric fleet

