

# ZEV COMMUNITY



# Global MOU for Zero-Emission Medium- and Heavy-Duty vehicles

31 October 2022

SUPPORTED BY



**The Scottish  
Government**  
Riaghaltas na h-Alba



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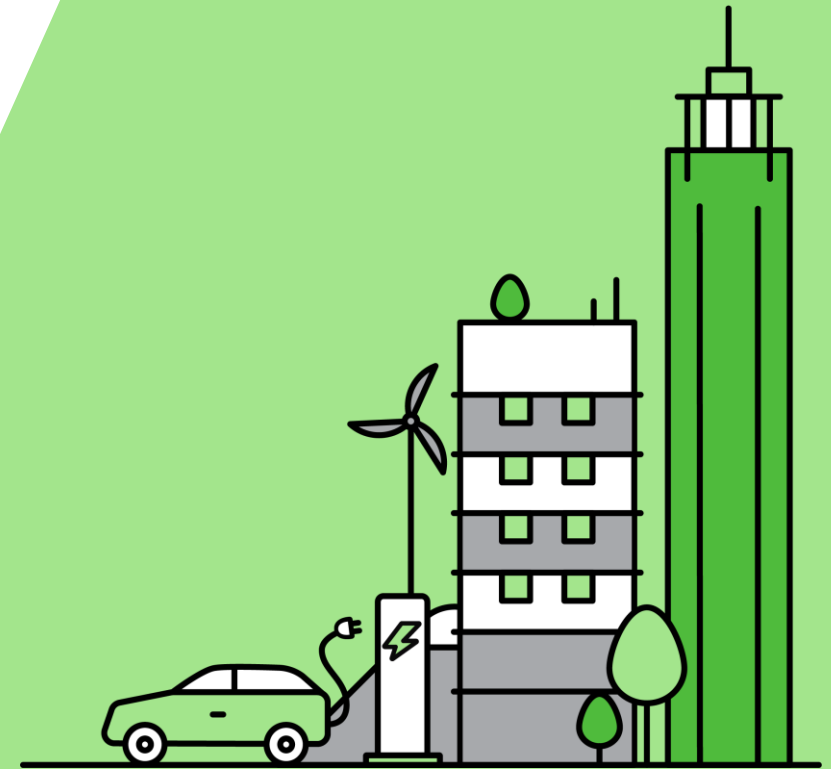


States United for Climate Action

# AGENDA

- Welcome & intros
- Overview of Global MOU - CALSTART
- Government perspectives
  - The Netherlands
  - California
- Private sector perspectives
  - Xos Trucks
  - ABB
- Q&A Session
- Conclusion

**ZEV COMMUNITY**

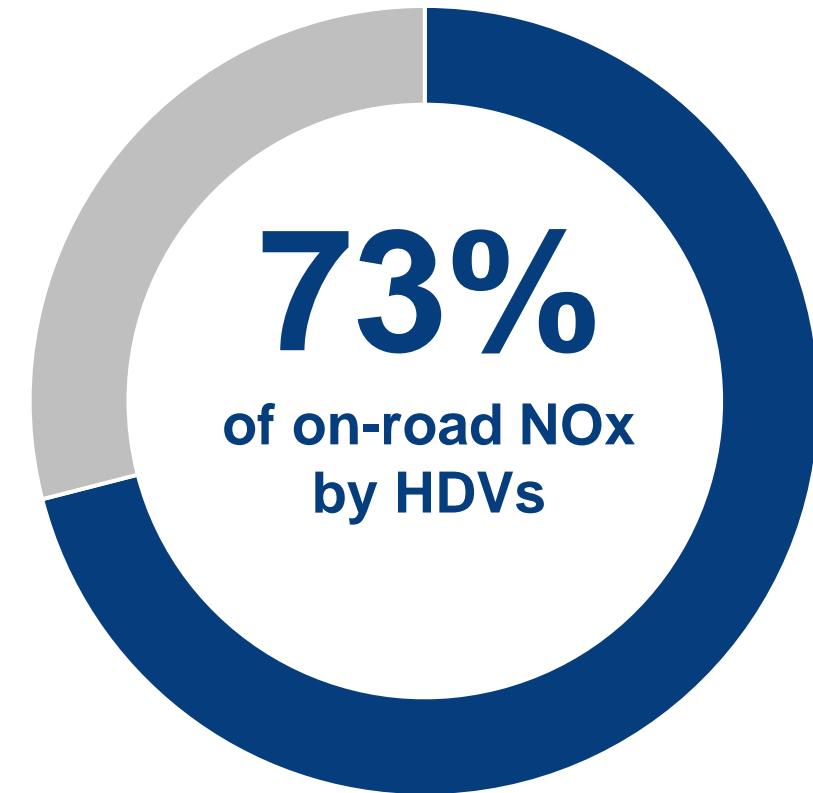
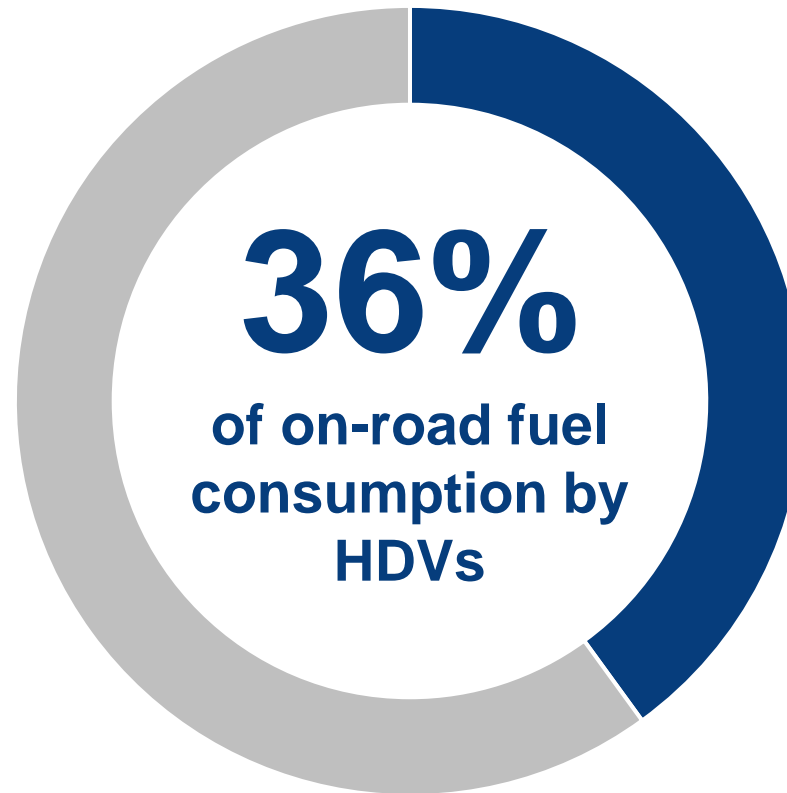
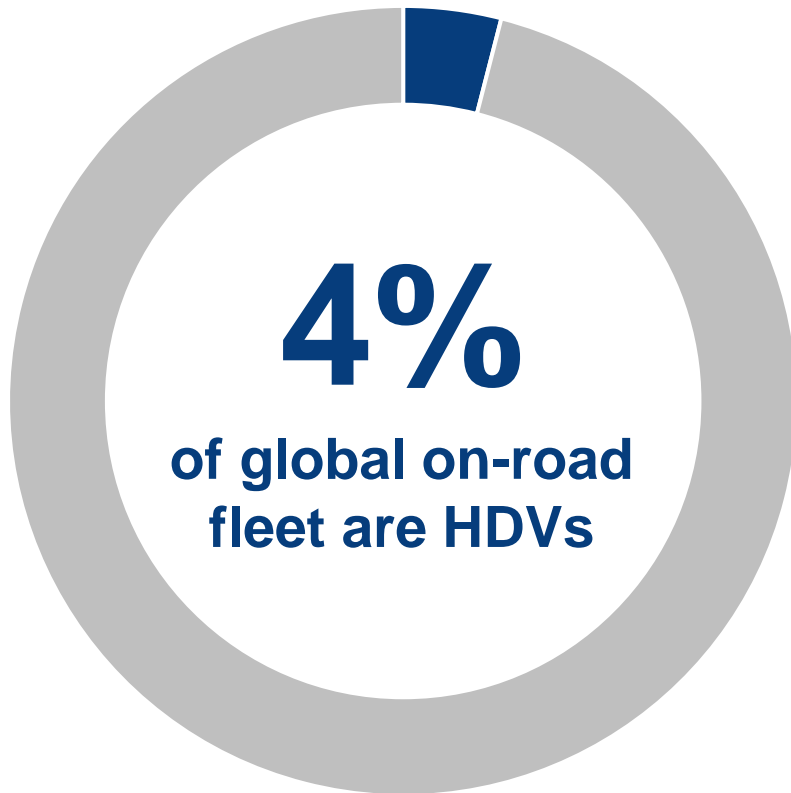




Government of  
the Netherlands

# Global MOU on zero-emission medium- and heavy-duty vehicles

Commercial vehicles represent a relatively small share of the global on-road fleet but contribute to a disproportionate share of on-road fuel consumption and emissions



# Global MOU – The first international agreement on zero-emissions trucks and buses

Share of new MHDVs that are zero emissions

100% by 2040

30% by 2030



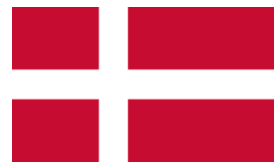
Austria



Canada



Chile



Denmark



Finland



Luxembourg



Netherlands



New Zealand



Norway



Portugal



Scotland



Switzerland



Turkey



United Kingdom



Uruguay



Wales

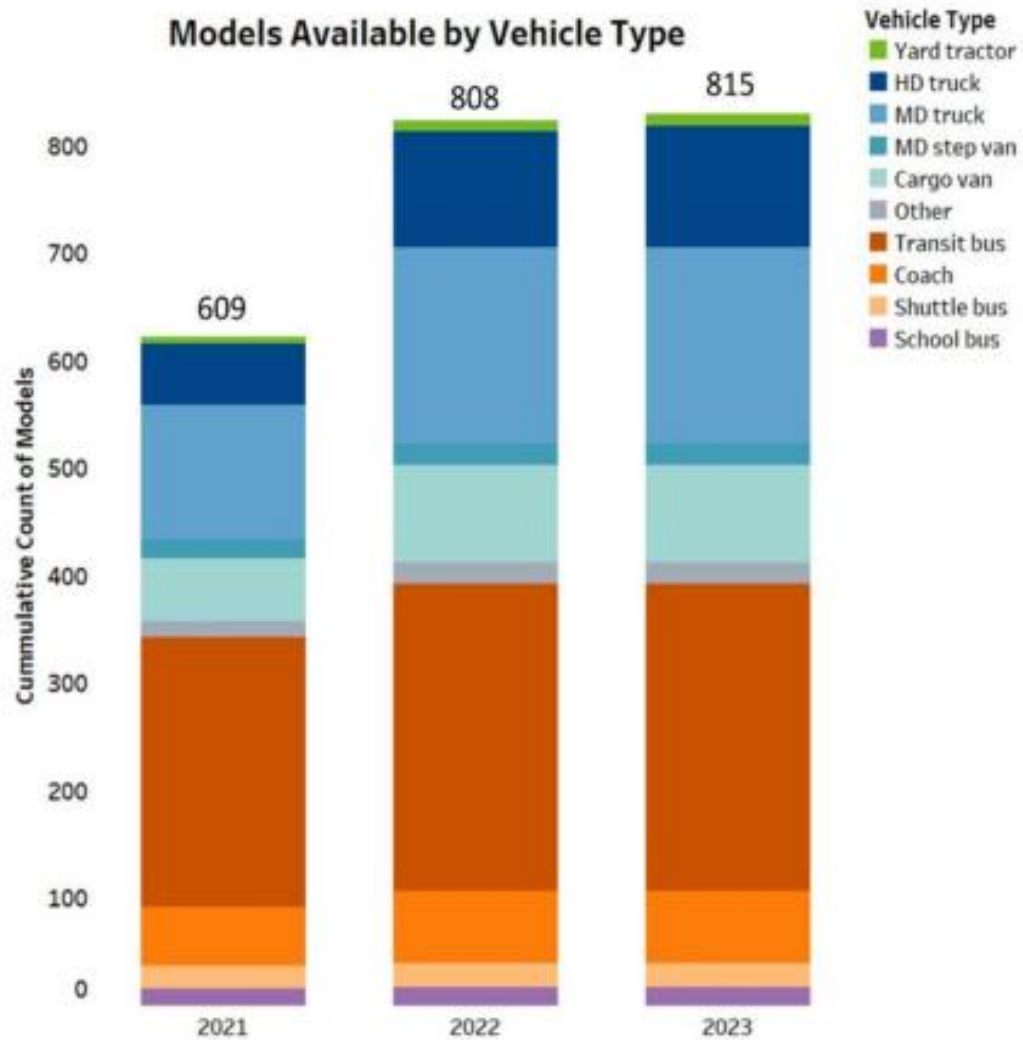


Over 55 subnational governments and industry stakeholders endorsed the Global MOU ambition, recognizing their critical work to support national governments.

# TECHNOLOGY STATUS



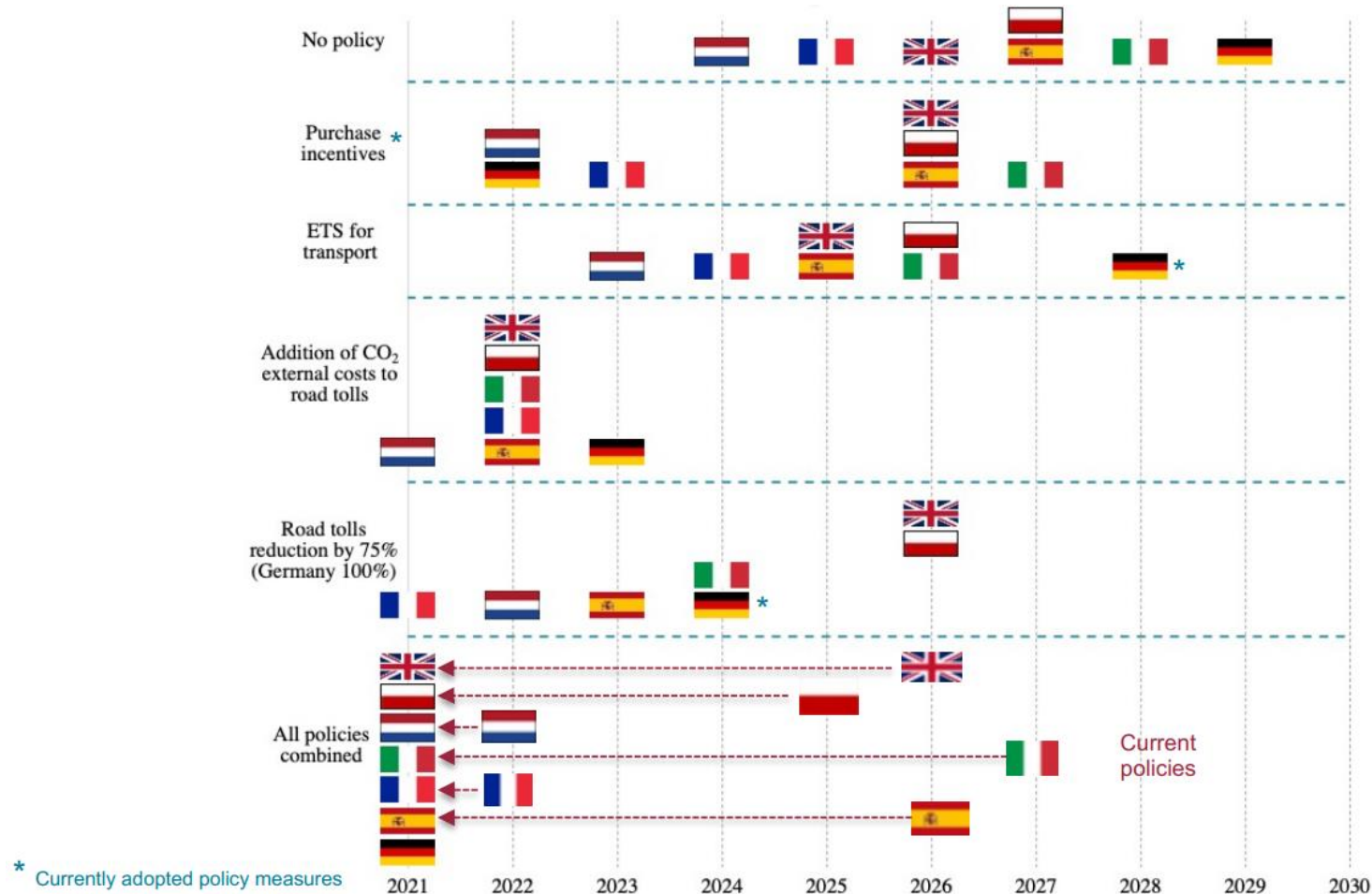
**Figure 4.** Global ZE-MHDV Model Availability from 2021 to 2023



ZE-MHDV technology is ready for most MHDV applications, and it will soon be ready for all truck applications

Source: CALSTART (2022). Global Zero-emission Truck and Bus Market Update

# The vast majority of ZE truck and bus applications will achieve cost parity by 2030 (and much sooner with stronger policies)



Source: ICCT (2022) - TOTAL COST OF OWNERSHIP FOR TRACTOR-TRAILERS IN EUROPE: BATTERY ELECTRIC VERSUS DIESEL

# POLICY STATUS



# Why we need aligned ZE-MHDV targets

- Technology is ready but we need stronger signals from leading governments to industry.
- Countries need to raise climate ambition and ZE-MHDVs can contribute to emission reductions.
- Aligned targets will lay the foundation for strong policies and incentives.
- Aligned targets will advance technology innovation, generate clean technology jobs, improve energy security, deliver tangible climate benefits, and lower air pollution.

Global MOU goes beyond (non-binding) targets, and establishes a forum supporting countries to meet the targets, and monitoring progress through robust, consistent, and transparent data reporting



Data Reporting and Progress Dashboard



Policy ecosystem



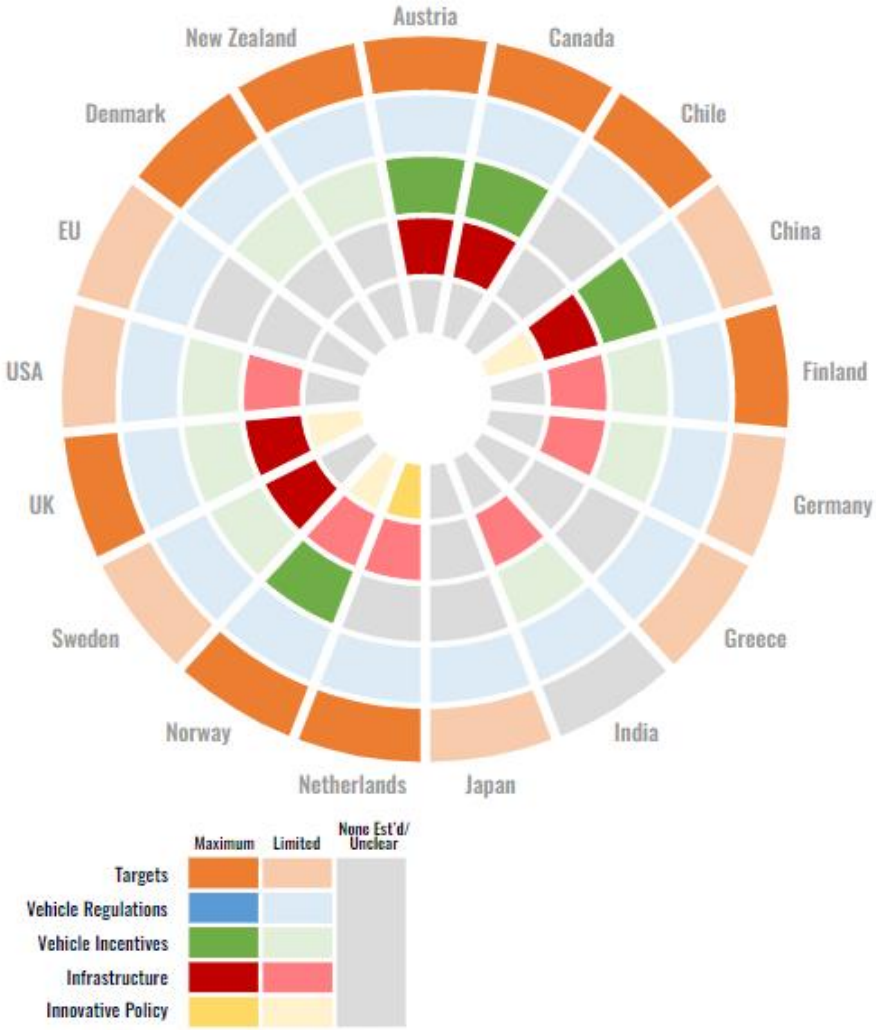
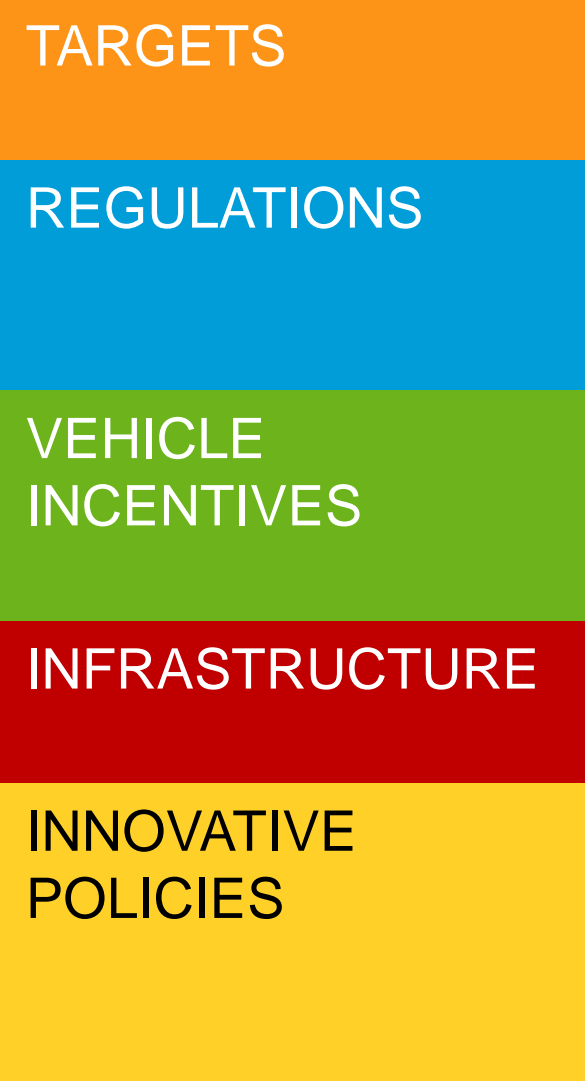
Non-binding Targets



Forum to report progress and exchange lessons



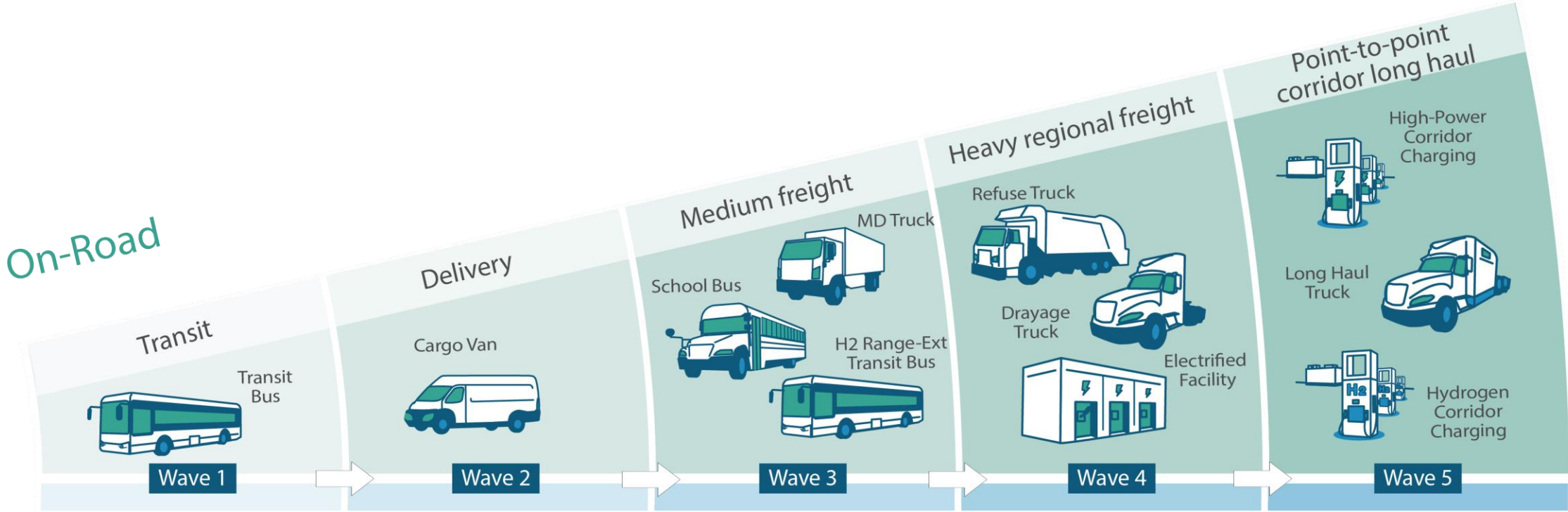
# Progress dashboard



# PATHWAY FORWARD



# Change will come in waves: Long Haul starts now



# Benefits from Global MOU and accelerated ZE-MHDV deployment across the globe



Reduce greenhouse gas emissions



Reduce deaths from air pollution



Create ecosystem of local clean tech jobs



Leverage climate funding



Rapidly reduce cost of ZE-MHDVs



Reduce fuel dependency



**Thank you!**

For more information:  
[www.globaldrivetozero.org](http://www.globaldrivetozero.org)



**@TeamDriveToZero**



Rijksdienst voor Ondernemend  
Nederland

# The Netherlands approach to decarbonising ZE- MHDV

ZEV Community x CALSTART  
October 31

Anton Wuis



# Netherlands ZE-MHDV status per October 2022

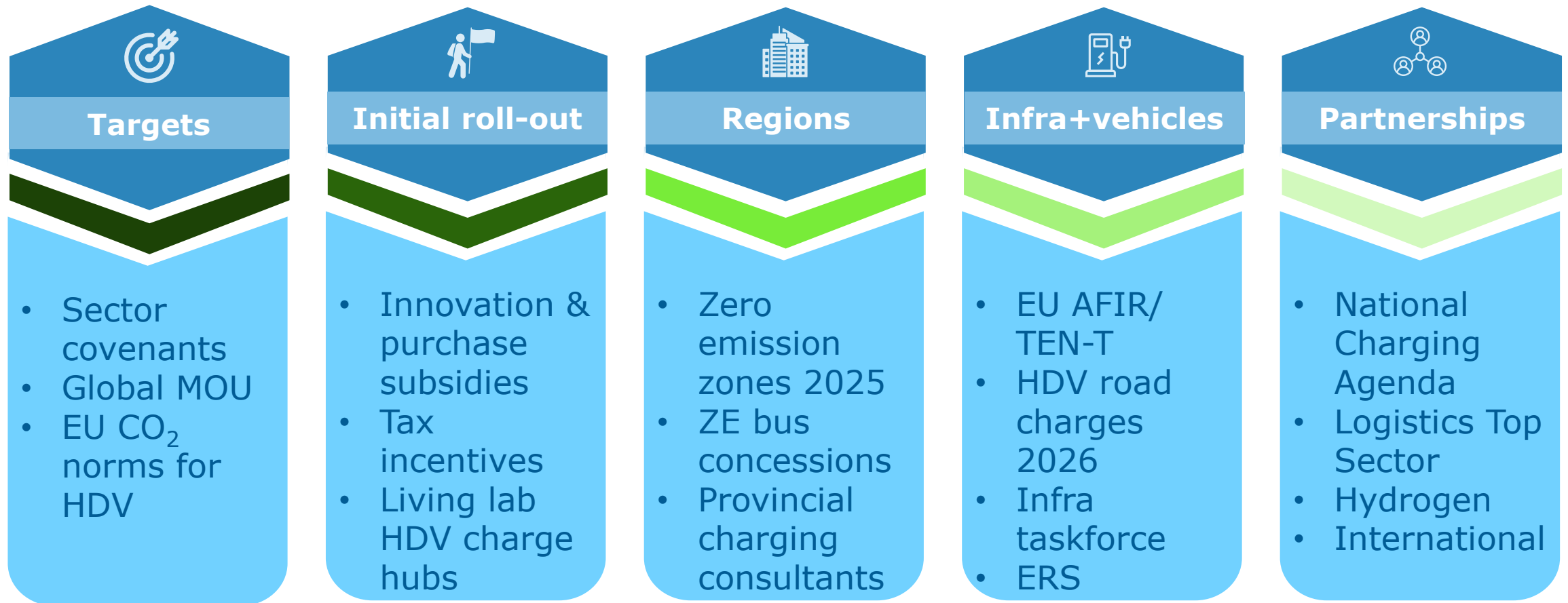
source: RVO.nl

- > ZE trucks: 311 (0.19% of fleet)
- > ZE vans: 11,992 (1.13% of fleet)
- > ZE buses: 1,500 (16% of fleet)



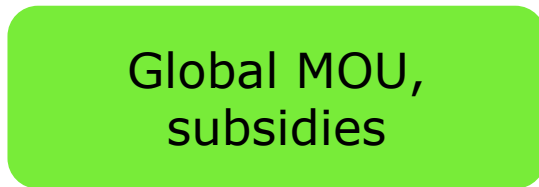
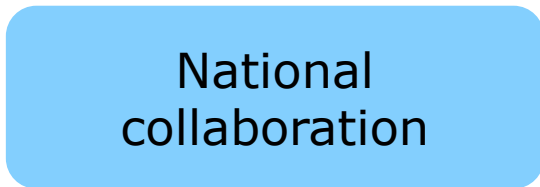
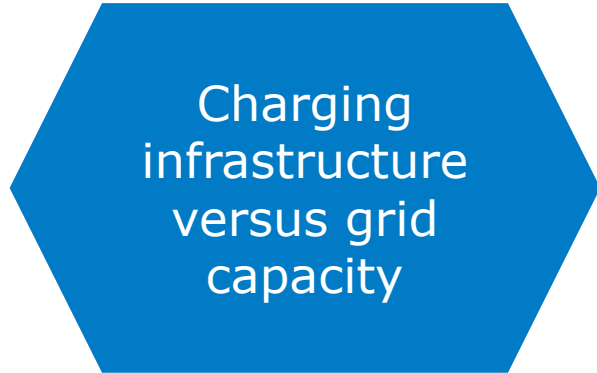


# Netherlands approach to achieve MOU goals





# Netherlands challenges



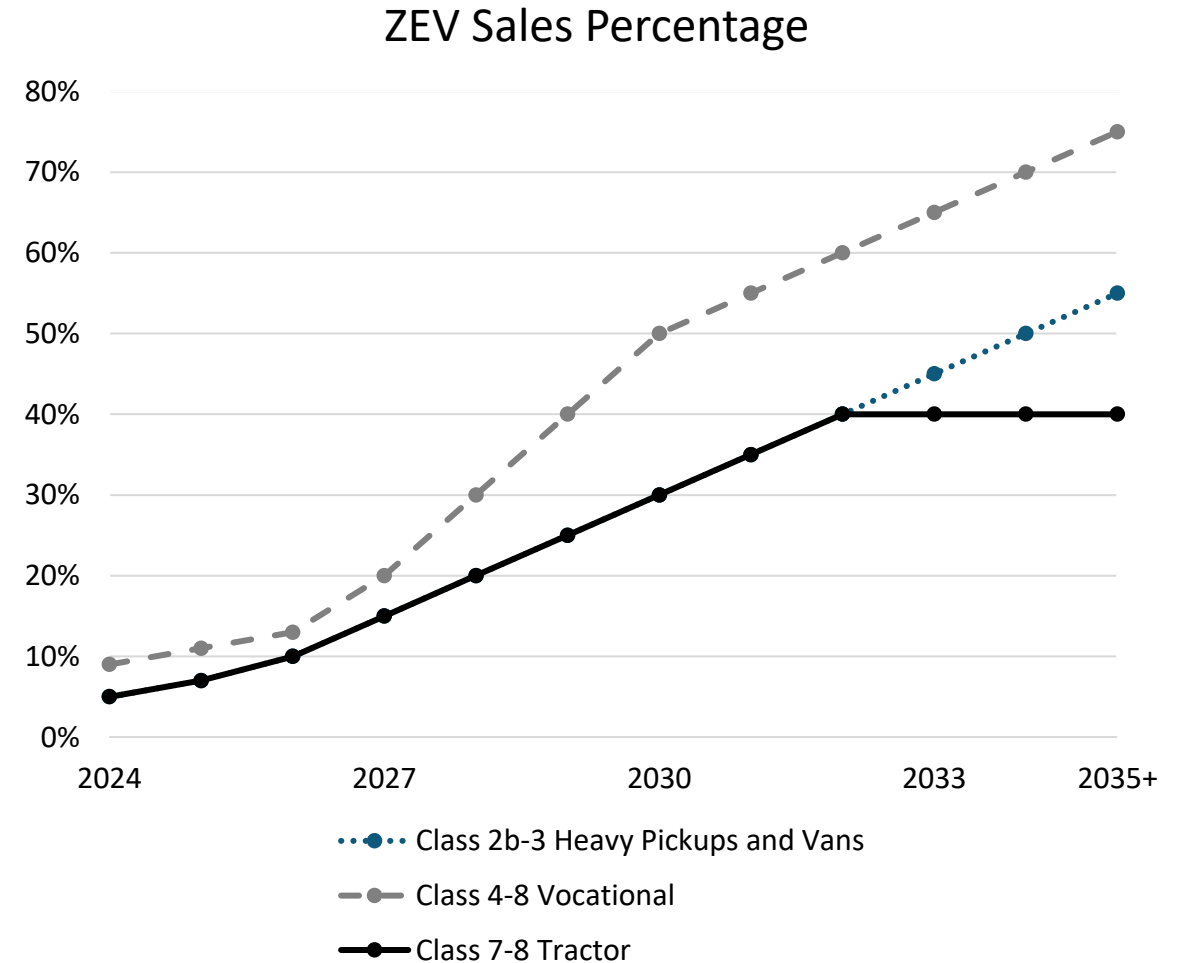


# Accelerating the Transition to Medium and Heavy Duty Zero Emission Trucks

**Sydney Vergis, PhD**  
Division Chief, California Air Resources Board  
[sydney.vergis@arb.ca.gov](mailto:sydney.vergis@arb.ca.gov)

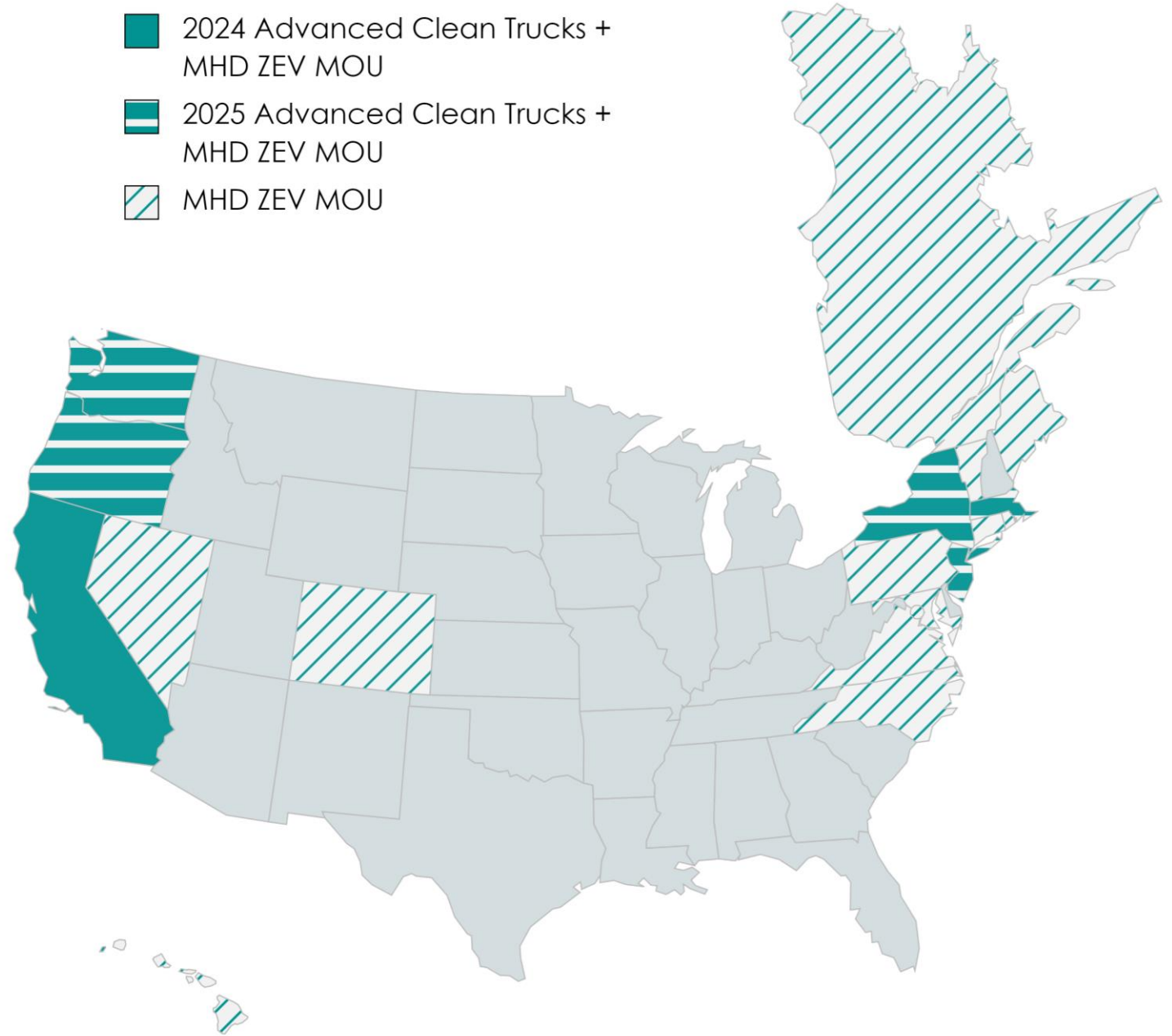
# Advanced Clean Trucks Regulation

- Manufacturers to sell ZEVs in all vehicle classes as a percentage of total sales\*
- Credit for pre-2024 sales
- 320,000 ZE trucks to California by 2035
- Board resolution setting 2035, 2040, and 2045 fleet goals



**20% of the  
U.S. Truck  
Market  
is Going Zero**

- 2024 Advanced Clean Trucks + MHD ZEV MOU
- 2025 Advanced Clean Trucks + MHD ZEV MOU
- MHD ZEV MOU



# International ZET Collaborations



MULTI-STATE MEDIUM- AND HEAVY-DUTY ZERO EMISSION VEHICLE

MEMORANDUM OF UNDERSTANDING





**Thank you**



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31-10-2022

# Calstart – The ecosystem of charging

## Sandor Darretta – ABB- E-Mobility

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# Challenges of transport companies

## Finding the balance

Sustainability

Charging

Business  
operations

TCO

# ABB E-Mobility's Heavy-Duty vehicle ecosystem



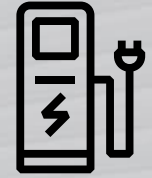
**Collaboration  
Public & Private**



**Learn from usecases &  
countries**



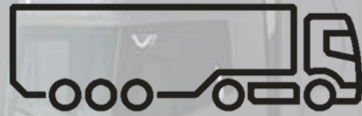
**Investments**



**Technology  
& Utilization**



**Production**

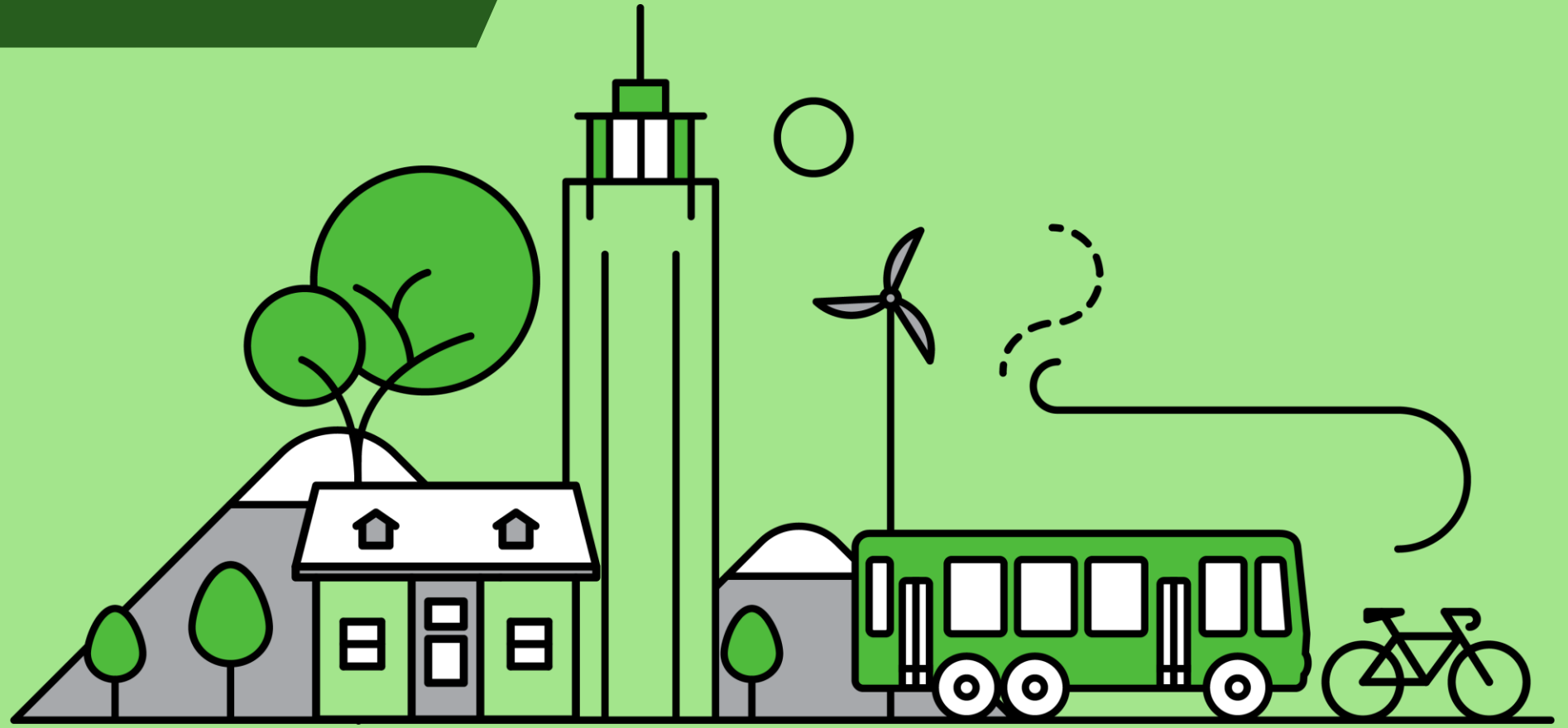


**Integration**



**Site management**

# QUESTIONS?



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# ZEV COMMUNITY



For more information, please contact:

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