

# ZEFV ACTion Group

## Creating a mass market for Zero-Emission Freight Vehicles

We, the ZEFV ACTion group, want to create a mass market for zero-emission freight vehicles (ZEFVs)<sup>1</sup> so that all road freight transport emits zero emissions by 2050. This document tells you why and how we will achieve this.

### WHY zero-emission freight vehicles?

Freight transport is responsible for 8% of global CO<sub>2</sub> emissions according to the ITF Transport Outlook 2019, with 62% of freight transport emissions being generated from road freight. At the current rate, emissions will double by 2050 compared to 2015 due to continued growth in freight demand. To meet the Paris climate goals the sector needs to almost fully decarbonize through a combination of new energy sources, fleet efficiency, better asset utilization, modal optimization, and lower freight demand. We acknowledge that all such strategies are needed across all modes and that there is no silver bullet. The ZEFV ACTion group is focused on accelerating ZEFV uptake as a cost-effective strategy for market transformation with large emission reduction potential.

### WHAT? Zero-emission freight vehicles viable by 2025 & dominant by 2040.

Our goal is that ZEFVs are commercially viable by 2025 and dominate by 2040<sup>2</sup>, and more specifically:



**2025**

- ZEFVs utilised for urban and regional trips achieve cost parity in key regions and applications (leading urban areas, regions and applications will reach cost parity by 2023).
- Long-distance ZEFVs are successfully demonstrated in key regions.



**2040**

- >80% of vehicles utilised for urban and regional trips worldwide are ZEFVs.
- Long-distance ZEFVs dominate new sales in key regions.

**2050**

- Road freight transport is zero emissions globally including upstream emissions.

<sup>1</sup> ZEFVs emit zero tailpipe emissions. We recognize that upstream emissions are significant and need to be tackled separately.

<sup>2</sup> This goal is consistent with the component 3 of the Action towards Climate friendly Transport (ACT) initiative.

## HOW. Start in key applications and markets, and grow together

Our theory of change, which has deeply resonated with industry and policymakers, includes:

### 1 Target first-success applications and markets where zero-emission alternatives can work today.

Based on market readiness, these applications are typically urban along known routes where vehicles return to base for charging overnight and include: urban freight delivery vans, port drayage trucks, yard tractors, utility trucks, refuse trucks, and medium- and heavy-duty regional trucks. At first key cities will be targeted in regions that are market-ready, including China, India, Japan, Mexico, Canada, the United States (led by California), South America and Europe. These countries and regions were selected because they represent industrialized countries with significant commercial vehicle populations and have publicly committed to reducing emissions. If they collectively work together, they would have an impact on the entire global market. Viability in these regions would be sufficient to reach initial technology economies of scale and cost-effectiveness from which the broader world would then benefit.

### 2 Build supporting ecosystems in first-success markets made up of aligned policies, incentives, infrastructure and pilot projects.

Such ecosystems tackle the main barriers towards ZEFVs, namely lack of model availability, enabling policies, charging infrastructure, cost parity, and fleet awareness.

### 3 Work concurrently and collaboratively across regions and industry worldwide.

This will encourage a global supply chain of critical components and manufacturers, and expand technology development and implementation to other on-road, off-road, and marine sectors as components mature, volumes grow, and costs decrease.

## WHAT actions and strategies are needed to reach our goal?

The following preliminary strategies are designed to address the key barriers to faster ZEFV adoption, and will be continuously updated based on stakeholder input and market needs. Annual work plans that link the activities from partner organizations to these strategies will support implementation in practice.

### MODELS ARE AVAILABLE



A large range of ZEFVs is available for all types of services and goods transport.

#### Key stakeholder: manufacturers

- Identify, compile and communicate available and emerging vehicles by manufacturer, application and region.
- Assess market volume opportunities in first-success markets to help manufacturers and governments plan.
- Engage with manufacturers to understand and influence commercialization strategy.
- Secure commitments by manufacturers to produce sufficient ZEFV volumes.
- Track sales and vehicle population by application and region.

## GOVERNMENTS SHOW LEADERSHIP AND ADOPT ENABLING POLICIES



Policymakers adopt and implement a portfolio of carrots and sticks to drive faster ZEFV adoption.

### Key stakeholder: governments

- Compile compendium of policies and case studies (e.g., purchase incentives, congestion or low/zero emission zones/pricing, port access fees, rewarding/recognition/labelling fleet schemes, ZE commercial-only lanes and reserved loading/unloading areas for clean fleets, mandates, regulations, exclusion zones, utility regulatory policy, procurement plans) that regions are using and can use to drive ZEFV adoption. Share and validate with partners and industry.
- Engage with policymakers to understand and disseminate best practices, and influence faster policy adoption.
- Research and communicate policy effectiveness.

## FITTING INFRASTRUCTURE IS IN PLACE



Urban and interoperable user-friendly energy infrastructure is available for all vehicle types in all regions.

### Key stakeholders: utilities, grid/distribution system operators, charging point operators

- Identify and communicate best practices for grid improvements, infrastructure planning, smart energy management systems, deployment and scaling such as interoperability and open protocols.
- Engage with utilities to convey ZEFV needs for success, understand barriers and influence faster deployment and innovative business models.

## VEHICLES ACHIEVE COST PARITY



ZEFVs have an attractive total cost of ownership (TCO) and cost parity.

### Key stakeholders: customers, investors, governments

- Research and communicate TCO for different applications and regions.
- Identify opportunities and where possible fund and implement regulations, incentive programs, financing mechanisms, and innovative business models that impact cost parity. Inform their design and implementation.
- Secure commitments from financing institutions, governments, and manufacturers for ZEFV investment.

## FLEET OWNERS ADOPT ZEFVs



Fleet owners and operators understand which ZEFV models are available and best suited for their operations, can build the business case to invest, and train workforce.

### Key stakeholder: fleet owners and operators

- Support pilot and demonstration projects, evaluate effectiveness, compile and communicate lessons.
- Engage with fleets to highlight business case, cost parity based on TCO, identify champions and deployment opportunities, and inform workforce training.
- Help tackle issues around the residual value for electric trucks and ensure widespread adoption and equity through the second-hand ZEFV market.

## USERS DEMAND ZERO-EMISSION FREIGHT SERVICES



Investors and freight users (i.e., organizations hiring freight services such as shippers, logistics providers and large fleets that sub-contract to freight operators) support and encourage the use of ZEFVs over fossil fuels.

### Key stakeholder: freight users, investors

- Secure the commitment of multinationals as users of freight services to adopt ZEFVs for their own and subcontracted fleets and develop strategies to realize this.
- Engage with investors to ensure they include zero-emission freight vehicles into their investment strategies and criteria.
- Establish and implement robust methodologies for logistics emissions calculations to support freight users with adopting and meeting aggressive emission reduction targets.
- Define innovative and sustainable procurement approaches and targets that public authorities and private companies can adopt to boost the demand of ZEFVs and lead by example.

## WHO IS IN THE ZEFV ACTION group?

The ZEFV ACTION Group is a multi-stakeholder group of organizations with an existing track record in clean transport and which has specific and complementary contributions to make to creating a mass-market for ZEFVs. The group is championed by the Transport Decarbonisation Alliance (TDA) in collaboration with CALSTART/Drive to Zero.

The following table highlights which organizations are already active in each of the areas mentioned above, and this is not an exhaustive list. Our expectation is that member organizations will coordinate activities that will lead to concrete results to accelerate ZEFV uptake.

	 Models	 Policies	 Infrastructure	 Cost parity	 Fleets	 Users
CALSTART	✓	✓	✓	✓	✓	✓
Climate Group/ EV100	✓	✓	✓	✓	✓	✓
C40 Cities	✓	✓	✓	✓	✓	✓
International Council on Clean Transportation (ICCT)	✓	✓	✓	✓	✓	✓
ICLEI – Local Governments for Sustainability	✓	✓	✓	✓	✓	✓
Polis	✓	✓	✓	✓	✓	✓
Smart Freight Centre (SFC)	✓	✓	✓	✓	✓	✓
Transport Decarbonisation Alliance (TDA)	✓	✓	✓	✓	✓	✓
Transport and Environment (T&E)	✓	✓	✓	✓	✓	✓
World Economic Forum (WEF)	✓	✓	✓	✓	✓	✓
World Business Council for Sustainable Development (WBCSD)	✓	✓	✓	✓	✓	✓
World Resource Institute (WRI)	✓	✓	✓	✓	✓	✓
Zero Emission Vehicle (ZEV) Policy Lab	✓	✓	✓	✓	✓	✓

For more information, please contact the Transport Decarbonisation Alliance Secretariat at [tdasecretariat@tda-mobility.org](mailto:tdasecretariat@tda-mobility.org)