

Statement of position

ZEV industrial retrofit as a viable alternative to new and used ZEVs



 **TRANSITION-ONE**
ELECTRIC CAR FOR ALL

Introduction

This document is a statement of position from Transition-One to propose an alternative to new and used electric vehicles (ZEV) to the California authorities by offering an industrial retrofit solution.



The ZEV industrial retrofit

The electric retrofit consists of changing a combustion engine into an electric engine. Thus, the powertrain and the tank are replaced by an electric powertrain and a battery pack. Technically, all vehicles are retrofittable. The limitation is on the expected use (acceleration, speed, range).

Millions of vehicles exist throughout the state of California and other states of the United States of America. Why throw them out and replace them when only the engine is the problem? A regulation already exists in the USA to change the engine. It is a one-size-fits-all approach that makes it difficult to scale up to meet the climate emergency. It is through industrialization that it will be possible to offer a choice of models at an affordable price.

The economics of industrial retrofitting

The ecological impact and the economic impact must be maximized to respond to the climate emergency. By industrializing (low-carbon) the retrofit process, it becomes possible to scale up very quickly. In the end, this will reduce the cost of the solution and it will make it affordable to the widest possible audience: those with low incomes and those who do not want to spend too much on the use of their vehicle. The major objective is to massively and rapidly reduce CO₂ emissions for the greatest number of people. The price (<10,000USD) is a decisive factor in the acceleration of this market. In order to produce low carbon, the local production of retrofit kits is essential.

The virtues of industrial retrofitting

Industrial retrofitting allows the mass conversion of CO₂ emitting vehicles. Once converted, these vehicles no longer emit CO₂ when they move. On an industrial scale, it becomes essential to produce low-carbon vehicles in order for the solution to be very virtuous. A coherent approach is to produce these conversions near the use of the vehicles. These conversions in proximity of the customers eliminate the emissions necessary to transport the vehicles in a centralized factory. This decentralization would be achieved in a two-pronged approach: the installation of retrofit kits at currently existing garages as well as the assembly and distribution of kits regionally. This would offer a new activity to our local garage professionals who will lose 30 to 50% of their activity due to the reduced amount of work required to maintain an electric vehicle. In addition, by assembling the retrofit kits in a micro-factory within the region, the CO₂ emissions would be further reduced, while creating more jobs in our communities.

Regulatory needs

The implementation of an industrial regulation (or guidance) allowing to have a more efficient, more affordable and safer approach should be encouraged. It is about providing retrofit manufacturers with regulations similar to those for new vehicle manufacturers.

The manufacturer would present to a certification authority: (1) a technical documentation summarizing the modifications and describing the conversion process, i.e., its bill of materials (or BOM), (2) the results from tests performed in an official laboratory demonstrating that these characteristics were maintained, and (3) a prototype representative of the vehicle brand and model to be retrofitted.

After analysis and on this basis, on the continuity of the references of the parts, the manufacturer would receive an approval for the BOM and its targeted vehicle model. This manufacturer can then convert as many approved vehicles as he wants, while also being responsible for training his installers to ensure that the conversion process is respected.



In summary, we would appreciate that the ZEV industrial retrofit would be recognized as a viable alternative to new and used ZEVs for the light-duty vehicle category, and that it would be shown as such in your implementation plan. It would be desirable if a recognition would translate into funds being available for this industry and also into ZEV retrofits being granted similar rebates as those for new and used ZEV purchases. Furthermore, your support and push for a regulatory framework guiding this industry at both State and Federal levels would also be welcomed.

Who is Transition-One ?

Transition-One is a French company, pure player of industrial retrofit. Our mission is to save our atmosphere 1,000,000t of CO2e in 10 years.

We target numerous, light vehicles with a reasonable range.

Our business model is based on an industrial approach of proximity and low carbon:

- Conversions in garages close to the customers.
- Assembly of retrofit units in digital and regional micro-factories.

**LET'S ACT
NOW
FOR THE
CLIMATE
EMERGENCY**

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