



**“Determining the environmental impacts of conventional  
and alternatively fuelled vehicles through LCA”**

**Vehicle LCA Study produced for DG CLIMA**

## **Policy Recommendations from the ART Fuels Forum**

### **INTRODUCTION**

The European Commission’s DG Climate Action asked Ricardo Energy & Environment, together with Ifeu and E4tech, to conduct a study aiming at improving the understanding of the environmental impacts of road vehicles and the fuels they use by introducing new methodologies to assess them in the mid- to long-term timeframe (up to 2050) under the Life Cycle Analysis (LCA) perspective.

The study showed the challenging reality of applying the LCA approach to the complex system of the road transport sector, where multiple options regarding vehicle technologies are combined with different fuels and energy carriers.

Following its publication end July 2020, the Alternative and Renewable Transport Fuels Forum (ART Fuels Forum – AFF) decided to commission a third-party critical review, particularly addressing the assumptions, the datasets, and the overall methodology used in the study to cover alternative and renewable fuels. The conclusions of this review, available here, were found to be in line with the caveats included in the LCA study as the results should be cautiously considered and not used to inform policymaking.

Based on the critical review of the final LCA study, the AFF would like to point out several key considerations and recommendations to policymakers:

## 1. ALTERNATIVE & RENEWABLE FUELS ARE KEY PARTNERS FOR TRANSPORT DECARBONISATION

In light of the ambitions set out in the Paris Agreement and European Green Deal, and considering the lack of a “one-size-fits-all solution”, it is imperative that all low-carbon options, including alternative and renewable fuels, play a role in the energy transition. According to the EC’s Sustainable and Smart Mobility Strategy, 30 million zero-emissions vehicles will be on the road by 2030. This leaves about 270 million vehicles equipped with internal combustion engines whose emissions will have to be reduced through efficiency gains and better fuels. The EU’s long-term energy transition goals not only depend on developing new technologies and infrastructures, but also will have to foster the uptake of existing alternative and renewable fuel solutions and vehicle technologies that can readily reduce greenhouse gases (GHGs) and harmful pollutant emissions of the new and existing fleet.

## 2. TRANSPORT DECARBONISATION NEEDS ACCELERATION

Adequate policy and economic support should be put in place to ensure that the full potential of alternative and renewable fuels is fully harnessed. These fuels not only represent one of the most cost-effective ways to decarbonise the transport sector, but can also help reduce GHG emissions from the existing fleet. Alternative and renewable fuels should be promoted side-by-side with electric vehicles, renewable electricity and other sustainable low- or even zero-carbon energy sources.

## 3. NEED TO CREATE THE RIGHT LEGISLATIVE FRAMEWORK

To make it attractive for vehicle manufacturers to produce and market alternatively fuelled vehicles, as well as for fuel producers to invest in the production of such fuels, legislation should provide dedicated measures and incentives. Various policies, including climate and energy targets, GHG reduction targets (ESR), CO<sub>2</sub> regulations, clean vehicles procurement (CVD), renewable energy targets (RED II), climate-responsible taxation (ETD) and the deployment of alternative fuels infrastructure (AFID) should all be aligned. Policies focusing solely on tailpipe emissions wrongfully depict certain technologies as zero-emissions, and do not consider the potential of alternative and renewable fuels, thus providing no incentives in the eyes of the vehicle industry. Additionally, all alternative and renewable fuels as well as renewable energies should be recognised and treated in such a way that allows them to compete with each other in a technology neutral environment.

#### 4. IMPORTANCE OF CREATING THE RIGHT UNDERSTANDING OF CARBON FOOTPRINTS IN A LIFECYCLE PERSPECTIVE

A holistic approach is particularly important: the assessment of vehicles solely considering tailpipe emissions (Tank-To-Wheels – TTW) does not take into account GHG emissions along the fuel chains, from their production to their use in the vehicles. Under this perspective the term “zero-emission vehicles” is misleading. A complete lifecycle approach, including Well-To-Wheels (WTW) for fuels and energy carriers, should be the basis to assess emissions and energy efficiency from different transport solutions. The existing EU CO<sub>2</sub> legislation for light- and heavy-duty vehicles is based solely on TTW emissions, disregarding the potential for GHG emissions reduction from renewable or circular sources of carbon, and does not distinguish fossil from biogenic CO<sub>2</sub> contained in alternative and renewable fuels.

Considering the complexity of the LCA methodology, it is not a question of elaborating a new CO<sub>2</sub> regulation based on the LCA dimension, but of **complementing the tailpipe approach with a methodology that can translate the need for a technology-neutral approach**, having in mind the LCA thinking.

To this end, the members of AFF welcome the initiative from DG CLIMA on the development of an adequate LCA methodology to determine the carbon footprint of different fuel and vehicle pathways. The published Vehicle LCA study demonstrates some of the complexities and caveats. Some aspects in the study require improvements and corrections, particularly in relation to the methods and data to calculate GHG emissions of alternative and renewable fuels, so the results should be handled with great care.

AFF members are fully committed to further collaborating towards adequate LCA methodologies and contributing to the revision of the European legislative pieces that will shape the future of our transport system.

#### ABOUT ART FUELS FORUM

The Alternative and Renewable Transportation (ART) Fuels Forum, financed by the European Commission, brings together more than 100 high-profile experts representing leading demand and supply Industries in the area of ART Fuels. It is a single policy and proven technology forum aiming at producing evidence-based opinions and conveying the collective interest of the ART Fuels industry towards informing European decision-makers and officials. The Forum supports the production and the utilization of sustainable advanced liquid and gaseous fuels towards decarbonization of key transport sectors: automotive, aviation and maritime and promotes the widespread market deployment of these fuels.

[www.artfuelsforum.eu](http://www.artfuelsforum.eu)

DISCLAIMER - The above position paper/recommendation/statement has been drafted by the assigned working group of the Alternative & Renewable Transport Fuels Forum (ART Fuels Forum) after exchange of opinions and internal consultation among the Forum members. The content of the Position paper does not necessarily reflect the views of all members of the ART Fuels Forum, but is a synthesis of the main positions. The positions, recommendations and statements listed above are those of the members of the ART Fuels Forum and do not necessarily reflect either the official position of the Commission or the complete position of the members of the ART Fuels Forum.

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