



EUROPEAN  
TRANSPORT  
FORUM

# CHARGING TOWARDS THE FUTURE

MAKING EU INFRASTRUCTURE FIT  
FOR THE CLEAN VEHICLE REVOLUTION

8 OCTOBER 2019 — BRUSSELS

**MEMORANDUM**



## INTRODUCTION

Before launching the talks and panels, Ms. Cathy Smith, who facilitated the event, asked the audience to vote on the following four questions:

**1. How many fast charging stations (above 500KW) are available for HDVs?**

While the answer is zero, **35%** of the audience answered **20**, and **26%** answered **50**.

**2. What percentage of heavy-duty vehicles are alternatively powered in the EU fleet?**

Most attendees answered **1%**, which is the correct answer.

**3. How much do EU automotive manufacturers and suppliers invest into R&D?**

**38%** of the audience answered **57 billion**, and were right, while **31%** said **45 billion**, and **20%** said **20 billion**.

**4. When were the first electric trucks ever put on the road?**

**65%** of the audience answered **1924**, which is the correct answer.



## FIRESIDE CHAT WITH LARS STENQVIST

Mr. Stenqvist, Chief Technology Officer at the Volvo Group, started off by pointing out that road transport will continue to increase in the future, both in Europe and globally. He emphasised that we cannot go on with transport as it is today – the planet cannot cope with it. We need to come up with new solutions and change the transport system.

When asked which sort of trucks will be on the roads in five to ten years, he shared his conviction that there will be electric vehicles for long distances in all regions. Yet, he believes that there will not be a “fix all” solution, but instead a variety of technologies will be available and in use.

Willing to be provocative, he added that the combustion engine will survive, and Volvo Group will keep investing in the technology. He explained that contrary to common beliefs, the combustion engine does not equal fossil fuels - it is in fact versatile and can run with different fuels, including

hydrogen. Against this background, the number of electric vehicles will undoubtedly increase. Some networks and dedicated fleets will be electrified.

Regarding Volvo Group’s work in terms of electric vehicles for long distances, Mr. Stenqvist answered that the company is investing in the technology. Since 2013 it develops city buses which are either hybrid or fully electric. Although he admitted that this decision was made slightly too early, he stated that in terms of knowledge – how to charge, discharge and get the best performance from a vehicle – the experience was certainly valuable. Following the development of hybrid and electric city buses, Volvo Group is now working on urban trucks, and electric construction machines as well as other equipment which are potentially in the pipeline.

Mr. Stenqvist further pointed out that we are now facing a “chicken and egg situation” – in other words, electric trucks are ready, but whether customers will be ready to invest is the main question. He believes that there will be a business case to build charging points, and that politicians will have an essential role to play in this context.

When asked about what Volvo Group is expecting from the revision of the Directive on Alternative Fuels Infrastructure (DAFI), Mr. Stenqvist stressed that it is time to bring heavy vehicles on board and called on the European Commission to include binding targets for Member States. He said he was afraid that we might end up in a situation where electric vehicles have become popularised, but charging points are lacking. He added that while electric vehicles’ price tag is currently rather high compared to that of diesel, the situation in the long-run will change and customers will choose electric vehicles over their diesel counterparts. Customers are ready to buy if they are convinced that there is a business case for electric vehicles and know that the situation will be favourable long-term.



Regarding the situation elsewhere in the world, he explained that China is working on developing batteries, and that there are also clear commitments in California.

In addition, Mr. Stenqvist was concerned about the fact that the Paris climate agreement does not take fuels into account and does not consider long and heavy vehicles.

Lastly, Mr. Stenqvist talked about connectivity and new technologies, pointing out that since there are more than one million connected vehicles on the roads, a lot can be done with the data available. He concluded the first part of the event on a positive note, saying that he has never been so optimistic about the solutions which are available today.





The panel discussion was composed of:

**Mr. Lars Stenqvist,**  
Chief Technology Officer at Volvo Group;

**Mr. Matthias Maedge,**  
General Delegate at the World Road Transport Organisation (IRU);

**Mr. Johan Peeters,**  
Global VP Sales & Marketing, Electric Vehicle Infrastructure at ABB;

**Mr. Ovarith Troeung,**  
Green Mobility Director at ENGIE;

**Mr. Neil Valentine,**  
Head of Division of Urban Mobility at the European Investment Bank (EIB);

and

**Mr. Axel Volkery,**  
Team leader on clean transport at the European Commission (DG MOVE).

# AXEL VOLKERY

EUROPEAN COMMISSION



Mr. Volkery emphasised that the issue of charging infrastructure for heavy duty vehicles is of strong importance for the European Commission. One of the main tasks of the new Transport Commissioner will be to accelerate actions for the uptake of alternative fuels. The Commission has recently started to evaluate the 2014 Directive on Alternative Fuels Infrastructure (DAFI) and will come forward with a revision proposal after making an impact assessment. Mr. Volkery exposed that at the time the DAFI was adopted, alternative fuels were not at all developed in many Member states, but we now see policy frameworks in many of them.

When asked whether the European Commission would favour a technology or type of alternative fuel, Mr Volkery answered that the EU institution will most likely remain technology-neutral when looking at emission savings. The EU has to manage a transition by which 2050, it will have reached 90% emission reduction, and emission reduction must come from all sources. He declared that electrification has a lot of potential for several segments, particularly in the light duty segments, but that it is not a silver bullet.

As regards potential binding targets for Member States in the revised DAFI, Mr Volkery reminded the audience that the original proposal in 2013 had binding targets, which were not accepted by co-legislators. The European Commission will investigate the idea of again having binding targets in the revised directive, yet this is not an easy discussion since the European transport network is diverse: it has different flows, and different traffic demands or situations around the EU cannot be put under one line. He also stressed that public consultation will start in early 2020.

# MATTHIAS MAEDGE

## WORLD ROAD TRANSPORT ORGANISATION

From the perspective of the operator, Mr. Maedge believed that a myriad of solutions, a mix of technologies is needed when talking about energy transition because the transport sector is diverse, it provides a basket full of different services, and vehicles do different jobs. He stressed on several occasions that operators do know what the future of transport will be like, and hence cannot invest in several technologies at the same time because they do not know what the infrastructure is and will become in different Member States.

Mr. Maedge remained perplexed about electric batteries: he believes that it is an undisputed fact that the electric engine is the most efficient, yet the more batteries and weight is put in a vehicle, the more energy is consumed. He called for a careful assessment on the distances to be driven by electric trucks in order to still benefit from efficiency.

On energy transition, he stated that a related issue is that of energy taxation. He lamented the fact that the European Commission set a "ridiculously low price" on CO2 and claimed that the carbon price should be set higher if we are to achieve climate goals.



# JOHAN PEETERS

ABB



Mr. Peeters started his panel intervention by looking back at electric cars' situation ten years ago and stated that the speed of the technology's development has been tremendous. According to him, regarding electric trucks, we are today at the same point we were at with electric cars in the late 2000s – early 2010s. He was clearly convinced that the technology which will dominate the transport sector in the future is the electric one. There is no doubt that electric trucks will be developed. The questions which however remain are: when will they hit the road, and what will the cost be?

He later added that the industry is running ahead of legislation, similarly to the time when electric cars were discussed. He declared that on standardisation and safety, the manufacturers' work is ongoing in full synchronisation between all European and North-American truck builders. They are indeed meeting with information providers and are seeking consensus on power levels and plugs in order to create a golden standard for North America and Europe.

Regarding hydrogen, Mr. Peeters believed that the cost of the fuel cells is an issue. He explained that here are two ways to create hydrogen: one from fuels or gas –the way it is done today, by burning, which is a very inefficient process. The other option is to make hydrogen from electricity: electrolyse it, pressurise it to get it into a fuel cell or burn it in a combustion engine. Yet, this is still very inefficient, he said.

# LARS STENQVIST

## VOLVO GROUP

When asked whether manufacturers and legislators should target one way of fuelling heavy-duty vehicles, Mr. Stenqvist answered the need to have several options open and continue to develop different technologies in parallel. It is too early and would be dangerous to go for only one solution.

Regarding potential binding measures for Member states to be included in the revised DAFI, Mr. Stenqvist claimed that if binding measures are not included, it will be necessary to create another mechanism in order to be confident that the infrastructure will in place by 2022-2024. Electric trucks indeed need to be on the roads to abide by with the legislation we have for 2025. Moreover, he emphasised that it would be inconsistent to put in place a legislation for high emission reduction and say that the relevant technologies will only be used in city centres: "either there will be electric vehicles to drive 300 kilometres, or legislation has to be changed."

On the question of how to incentivise technologies which are favourable to the energy transition, Mr. Stenqvist made clear that if we think that we should not support any kind of initiatives on technologies taking us towards the solution, sit and wait for the magic solution to happen around 2030, "we will fail big time".



# OVARITH TROEUNG

ENGIE



Mr. Troeung exposed that his company comes from the gas sector but has had to adopt different fuels as part of the energy transition goals. He said that ENGIE has been working with car-makers to provide them with charging stations. The request for electricity mostly comes from cars and utility vans driving in city centres – this is driven by the fact that some municipalities in France have announced a ban of diesel for their city centres by 2025. His company is helping companies who are willing to go green and ask themselves the question: “What is the most economically sound available solution to still be competitive?” He believes that natural gas & liquified gas are the best solutions for today, but in the future, biogas will take over. Hydrogen also has a role to play, but we need to find out how to make it easy to use and economically sound to be safely operated in the long-term.

On the issue of how to promote and minimise the risk for people who wish to embark on sustainable energy, Mr. Troeung said that industry and companies should not impose anything on customers, but instead put forward arguments showing that alternative fuels are good for them and make economic sense to them. Financial support to help the supply and the demand is necessary in the beginning in order to provide visibility and help build a business case. There needs to be a positive business case in the beginning, and business models which work for the customers.

Mr. Troeung further exposed that one of the issues with electricity vehicles relates to the peak of electricity demand when people wish to charge their vehicles’ batteries, in the evenings mainly. High demand being put onto the electricity grid could lead to a collapse. A solution could be to use a digital software helping customers to schedule and charge at the best time, in order to alleviate the congestion on the grid. On the roads and highways, it will be another issue because we might need to bring a special transformer to remote places and convert the voltage. If we want to electrify roads, it means that we must reinforce the transmission grid.

# NEIL VALENTINE

## EUROPEAN INVESTMENT BANK

Mr Valentine exposed that banks are interested in decarbonisation of the transport industry generally. The EIB is effectively technology neutral, and promoter-led, meaning that it does not create projects. Business plans hence need to be credible for banks to support projects.

When asked whether the EIB supports diesel, Mr Valentine answered that the bank, and the EC have been tossed up in the air and shaken around by politicians recently. The European leaders want the bank to do more, in the sense that it should become more of a climate bank. Currently, the EIB does 25% of its lending in climate. When it receives a project proposal, the bank assessed the project by looking through a climate lens: they ask themselves "does this make sense from a climate perspective?" and then look at the economic viability of the project. The view of the bank is that it must support several ways. It has been partnering with the European Commission to get grant support, get risk capitals available, and in the bus sector this has certainly paid off.

He later added that shifting people onto public transport is a good thing, but in relative terms because public transport even if efficiently delivered still has a carbon footprint. If we are willing to reach the 90% reduction target, we must see incremental improvements in carbon emissions. It would be a shame to invest massively into an energy if we later find out that the energy is still emitting carbon.

Mr. Valentine also talked about corporate social responsibility. He said that corporates themselves are subjected to corporate social activism. Emotion is driving the debate, and the industry is beginning to feel emotional pressure and the emotional side of the debate.





## CONCLUDING REMARKS – WHAT IS NOW MOST IMPORTANT TO BE ABLE TO MOVE FORWARD?

### **OVARITH TROEUNG – ENGIE**

We need to look at the DAFI and find out how to capitalise on the fact that we already have the technology and be more efficient to reach our targets. We also need to wonder how to harmonise once we have picked up the best practices. No one technology is better than the other – we have to decide for which usage one technology will be chosen. We must ask ourselves: is the technology easy to use? Is it economically sound for our customers? Are they ready to adopt it? Are we and the customer ready to pay?

### **NEIL VALENTINE – EUROPEAN INVESTMENT BANK**

We need to see lots of good projects, to have industry bringing forward more sensible projects. We are looking at these projects through a public policy lens given the nature of our institution, and very much through a climate lens now. Thus, we will prioritise what we hope are the best solutions for the climate. We must reinforce the message that we are here, we have an intelligent technical view of the projects, and we are happy to discuss with industry when they are ready.

## **JOHAN PEETERS – ABB**

It is very simple, it will happen anyway – with or without subsidy or legislation – and it will be electric. The real question is: do we want to accelerate it? Can we use the European Commission to speed what is happening? And yes, there will be a fight on batteries, and range etc., but we are solving these issues. I do not know whether the way to do it is by putting legislation and binding measures – I am not a politician – but it will happen. I hope the Commission can contribute because we cannot afford to get this wrong.

## **AXEL VOLKERY – EUROPEAN COMMISSION**

For now, it is premature to say whether we should do X, Y or Z in particular fields. We have to keep open the diversity of technologies for the different use-cases, and ensure that we have both quantity and quality in terms of infrastructure. It will be important to get DAFI right on this.

## **LARS STENQVIST – VOLVO GROUP**

There will be many flowers in the bouquet of solutions. Volvo Group is fortunate to have a budget of two billion euros per year for engineers – we can do a lot on our own, and we have fantastic products in the pipeline. I am not worried about the uptake of LNG: it is happening and will keep happening, and it will be thousands of vehicles. It would be a pity to later say that we did not have the legislation, that we did not have a good plan to meet the necessary infrastructure for electric vehicles.



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