



International Coach Conference Economic impact of coach tourism remains high

Of all transport means, the bus and coach industry contributes most to the environment, mobility and tourism but was and still is hardly heard by policy makers at all levels. That is what we learned from the International Coach Conference. Concrete, unambiguous and indisputable figures are urgently needed to convince politicians of the economic impact of coaches.

Due to the repeated lack of accurate figures, the Bundesverband Deutscher Omnibusunternehmer (BDO) calculated

German research provides concrete figures

the economic impact of coach tourism, intercity bus services and the use of public transport services by tourists. In total, Germany accounted for 14.275 bil-



lion euros in 2015. That is to be supplemented by another 6.55 billion euros of indirect sales through VAT, concessions and the like. Employment in the coach tourism industry yields a sixfold multiplicative effect. Travel by bus and coach should therefore not be regarded as a

problem but as a solution for economic and sustainable perspectives to be pursued.

If cities focus on coaches, they should rather look at how they generally deal with tourism, events, sport events and congresses. When you go for tourism, people always need transportation so it must be provided. In that light, it was suggested to work more closely with local public transport companies. For example, the German research revealed that 70 to 80% of the intercity bus passengers switch to local public transport upon arrival at the city centre. When you move the intercity stop to the periphery, up to 60% switches to their own car to make the trip.

What also plays a role at the local level is the underlying idea among politicians that tourists are not among their potential voters. In large cities, the impact of coach tourism is much more difficult to calculate than in villages where the result is often easier to measure.

The panel called for professional associations to get inspired by the German study to carry out similar studies and take these to regional and local policy makers. Only irrefutable figures can convince them of the actual impact of coach tourism and can help in encouraging them to take coach-friendly measures. Today, coaches are too often driving around in circles in the cities because there are no parking facilities or because bus parking spaces are too far away from the centre.

two power lines must be integrated that combine electric with gas, diesel and electricity (battery cost) as well as the further evolution to more economical and more efficient engines which will co-determine the future.

During the subsequent panel discussion, it was pointed out that account should also be taken of the country in which you are driving, the route that you take and the type of transport provided (intercity bus service, shuttle, round trip). It was also argued that currently no fully-fledged alternative drive unit is available for coaches while they already exist for freight transport. Once again, it was emphasized that the image of the environmentally friendly Euro6 engine has been conveyed insufficiently so far. If all Euro3 or older buses would be replaced by Euro6, a much greater impact on the environment might be achieved than a limited transition to alternative drive units. It was rightly mentioned that the current studies pay too little attention to possible new types of powering that are being developed. People also wondered whether there is room for a second drive unit within the available volume and admissible weight of a coach and whether there would still be enough space for passengers and their luggage.

International Coach Conference Alternative drive units not that easy

Since cities like Paris, Madrid, Athens and Mexico have announced the ban on diesel vehicles from their city centres, the possibilities of alternative drive units for long-distance coaches are being more and more explored. Electricity seems not immediately an option. Biodiesel, hybrid and LNG offer more perspective at first sight, as appears from the results of a comparative study presented at the International Coach Conference of IRU and Busworld Academy.

As ordered by IRU and others, Riccardo Enei of the Italian study agency Isinnova presented the preliminary results of a comparative study of alternative drive units for coaches that are deployed for long distances. CNG, biodiesel and hydrogen were taken into consideration and hybrid concepts were looked at as well. Electric powering was disregarded because that is more suitable for urban traffic. For the time being, CNG seems to be the best option in the short term because the technology is known, the investment cost is relatively limited and the supply is guaranteed. For biofuel, there is currently still a shortage of high quality biodiesel and availability.

The more expensive purchase price of hybrid vehicles is playing tricks because

Many prizes at Busworld Awards Night

Thursday night was Awards Night at Busworld. A first night full of prizes to award to the manufacturers and bus companies at this well-visited Busworld. A first night because it was a new set-up. The Awards Night attracted a lot of visitors, who experienced a remarkably cosy and spectacular night, presented by Mieke Dobbels and Jochem. With songs and sketches in great bus atmospheres, they managed to captivate the audience. A long row of prizes was handed over to the various manufacturers. They started off with the Sustainable Bus in three

categories, followed by the International Coach of the Year 2018 award – a prize that was introduced by trade journalists and for which the jury now counts 22 countries – and twelve Busworld Awards in the categories Design, Comfort, Safety, Ecology and Innovation. These twelve Awards are the result of performing tests all weekend in and around Kortrijk on twenty vehicles by thirty jury members, coming from the bus and coach sector, operators, drivers and experts. Altogether, it brought about a spectacular evening with a great show.



30 Van Hool ExquiCity 18m buses for Belfast Rapid Transit Glider

At Busworld, Van Hool presented the first of thirty hybrid diesel-electric ExquiCity 18m buses that will be delivered to Belfast. Starting from September 2018, the Belfast Rapid Transit Glider will run on a BRT network which guarantees the citizens modern, efficient and fast public transport. Throughout the day, there would be a connection between East Belfast, West Belfast and the Titanic quarter every 7-8 minutes. Belfast invests

around 90 million pounds or 114.5 million euros in the development of the BRT network. Each Glider, as the brand name of the transport concept reads, can carry up to 105 passengers. Real-time information on board, automatic announcement of stops, free Wi-Fi, USB contact points for charging smartphones and tablets as well as air-conditioning are all standard features.



Nuala McAllisters, mayor of Belfast, was excited about the collaboration with Van Hool during the presentation of the first 'Glider'.



A first at Irizar: Electrically articulated 'tram bus'

Year after year, Irizar manages to surprise Busworld's visitors with wonderfully designed stands. It always reminds of the headquarters in the Basque city with the almost unpronounceable name: Ormaiztegui. The implemented corporate identity featuring much white and sloping lines is also present in Irizar's stands. A nice piece of branding. This

Busworld edition is once again the time and place for Irizar to bring the necessary news. The ultimate scoop is the eighteen-meter articulated electric tram bus ie-tram.

Over the past few years, they already presented the hybrid i3 and i4 and the electric i2 city bus. This summer, Irizar has

opened its brand new factory specifically for the construction of electric busses. The quite spacious 1,600 sqm stand in hall four features quite a few vehicles. Of course, there is the Irizar i8 Integral, meanwhile Coach of the Year 2018. In addition, the Irizar i6S and Irizar i4H hybrid are present too. Irizar also has a second stand where they present e-Mobility turn key electromobility solutions for cities with as absolute highlight the ie-tram. An eighteen-meter articulated electrically driven 'tram bus'. A nice piece of state of the art technique developed and constructed entirely in-house. Irizar e-mobility provides a complete product package with electric buses, charging infrastructure and power storage. And as if all that were not enough, they now add their own pantograph charging system to the mix. With these new acquisitions, Irizar offers a product range with all kinds of technical mobility solutions for buses and coaches, from diesel Euro 6 to hybrid and one hundred percent electric. Irizar can be found in hall 4, stand 405.



Irizar's ie-tram

Coach builder of the year

At Irizar's marvellous stand, Tom Terjesen, chairman of the International Coach and Bus of the Year jury 'once again' handed the trophy that comes with the title Coach of the Year 2018 to Irizar's CEO José Manuel Orcasitas. 'Once again', because the day before, during the Busworld Award Night, the official announcement had been made. That night, Irizar was awarded more prizes. They were named

'Coach Builder of the Year'. The day after, the title 'Coach of the Year 2018' was received with joy at the Irizar stand. Orcasitas said in his acceptance speech that it is a reward for years of hard work. Over the last ten years, Irizar has transformed from traditional constructor to modern, pioneering bus manufacturer with now quite a few hybrid and electric vehicles in their range.



ZF launches CeTrax Cummins goes electric

Just under a year ago, ZF introduced its new Central Drive for electrically powered buses. This year at Busworld, ZF brought a Higer equipped with this central drive, CeTrax, to the outdoor area for demos. The Higer, a Chinese bus, was originally equipped with a Siemens drive. ZF Friedrichshafen took that out and replaced it by their own CeTrax.

The whole is powered by large supercaps that provide enough energy for 20 to 25 kilometres. To demonstrate this, journalists were driven from Busworld to the centre of Kortrijk and back. A distance that the bus can cover a few times. It all felt good and the job was done very well. The supercaps also have the advantage that they can be charged in a very short time. The CeTrax is small and lightweight, which can easily be translated into more passengers. It can be combined with a portal axis, as in this Higer, with conventional low-floor axles or it can be installed in low-entry buses.

Striking detail, ZF had made a little window in the floor so you could see the CeTrax in operation. A salient detail is that during the presentation of the CeTrax last year they showed a plastic model, as ZF mentioned with a smile. The Higer has been converted in four weeks' time. They could not be prouder



The CeTrax in operation.

in Friedrichshafen. The CeTrax delivers a 300 kW (405 hp) power with a maximum torque of 4400 Nm. ZF claims that the CeTrax can handle considerable hills and can therefore be deployed in metropolitan areas in many countries.

A particularity is that the CeTrax can also be built in retrofit, without any chassis, axles or differential adjustments.

ZF's dr. Jochen Witzig, who is responsible for the development of the transmission systems, states that manufactures can save on development and installation costs this way. "With the CeTrax, operators can use conventional and electric drive together within one platform strategy to give electric mobility a jump start.

Cummins goes electric, as we learned from the press conference on the first day of Busworld 2017. From now on, Cummins provides a fully electric drive unit range or one with a range extender, i.e. an electric drive with batteries that are fed on a regular basis through a diesel generator. What was also announced right before Busworld is that Cummins acquired a US company that develops and supplies energy storage through batteries.

Cummins is known as the company whose engines are found in many buses and trucks, while it is rather unknown among the general public. Name recognition is not their thing. Nevertheless, quite a few vehicles around the world run on Cummins' diesel or gas engines. Every year, more than 60,000 buses with a Cummins engine roll out of the factories. The company, which is over one hundred years old, has been working with electric drive units since 1995. What they did is develop a modularly built engine of which parts are interchangeable. At least, the same engine can be built into the next vehicle in another configuration.

Light diesel generator

For the diesel-generator-powered range extender, Cummins uses a very light 2.8 litre diesel engine that feeds the battery with 120 kW (160 hp) powering the electric engine. This engine is at least sixty percent smaller than the average engine in a city bus. Cummins claims that tests have shown that this engine consumes only eighteen litres of diesel per one hundred kilometres. The range extender should give this bus an action radius of 135 kilometres in zero emission mode. Please note that the diesel feeds the bat-

An image of the Cummins E2.8 Engine generator.



tery and does not power the engine. The standard battery supplied by Cummins should be good for up to 360 kilometres of action radius, if full capacity is used. By default, the battery is 70 kWh, but it can be increased eightfold up to 560 kWh.

Peak power

Both the battery version as the one with the range extender offer a torque of 1,850 Nm but this can increase if necessary to a peak level of 3,400 Nm. The electric engine, developed by Cummins itself, generates a power of 25 kW (302 hp) up to a peak power of 350 kW (469 hp). Cummins obviously uses braking energy recovery, which may contribute up to 20 percent to the battery charge. An electronic control module keeps track of which systems require power so it can be provided in the best order. Such systems include the electronic power steering, air compressor, fans and the like. Enabling them at the times they are needed will save the necessary energy. During the Busworld press conference, it was emphasized that, next to city buses, the system would also be ideal for city distribution vehicles.

Energy storage

The determination of Cummins to walk the electric path is proven by the acquisition of Brammo, a North American company that specializes in energy storage. This company develops and builds batteries that store large amounts of power. This acquisition brings Cummins into a leading position in the provision of electrically powered drive units, whether mobile or stationary. Still, Cummins does not lose sight of diesel and gas. With these new goals, Cummins expects to play a leading role in the three forms of drive and energy storage, according to CEO Tom Linebarger. Cummins has accommodated Brammo in a newly created division that specifically focuses on electrification and that is led by Julie Furber. The American Cummins, which is headquartered in Columbus, Indiana, recorded a revenue of 17.5 billion US dollars in 2016, of which 1.39 billion US dollar was left below the line. Cummins employs around 55,400 people worldwide.



ZF's test bus with CeTrax central drive.



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Editor in chief: Jean-Pierre Schoukens
jps@busworld.org
Photography: Hervé Ally, Bieke Bruggeman
Translation: X-L-Ent
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