



Inside the ultra-modern Mercedes-Benz factory near Istanbul.

# busworld turkey

## DREW THE CROWDS

The fourth edition of Busworld Turkey was held in the Istanbul Expo Center from 19 to 21 April. Almost 12,000 visitors came to the exhibition, including 1,350 from other countries. The Turkish economy fared much better than many others during the global financial crisis. The banks kept their discipline and the economy continued to grow.

The population of Turkey is now estimated to be around 77 million and of those, around half are less than 30 years old. Although there are rising levels of car ownership, there is still heavy demand for public transport. There is a very limited rail and metro network in Istanbul and the other main cities, creating heavy demand for bus services.

Turkey was slow to adopt European emission standards, partly because of the problem of creating a fuel distribution infrastructure

across such a large country. Suddenly, Turkey came up to speed, so that Euro 5 is now the standard. Euro 6 will come into force with effect from the beginning of 2016.

At the same time, the authorities require all new city buses to be accessible, with either low entry or full low floor layouts. The combination of accessibility and much lower emissions is a major step forward. There are reliable estimates that the country will require up

to 10,000 city buses over the next 5-6 years.

While many of these will be conventional diesel buses, at least some will be powered by compressed natural gas. There are pipelines from Central Asian countries which cross Turkey to the Mediterranean ports. Transit fees are paid to the Government in gas. Buses are a target market for these supplies, because they require fuelling all year round, whereas most demand for gas is in the cold winters.



BMC has restyled its full low floor articulated bus.

The cities cannot afford to buy all the new buses that are required. In Istanbul, as an example, around half the services are operated by the municipally owned IETT. The rest of the services are run by operators on contract to the Metropolitan authority which decides routes and frequencies. These vehicles can be distinguished by quite different exterior colour schemes.

In addition to large buses, regular services are operated by minibuses, operating like shared taxis at premium fares. They create a lot of congestion and pollution, and are not easily accessible. They also contribute to congestion and pollution. While the authorities would love to eliminate them, or at least greatly reduce their numbers, that will not be easy.

The coach sector is also buoyant. There is a very extensive network of intercity express services, mainly because the rail system is sparse and slow. Competition will come when a high speed rail line is opened from Istanbul to Ankara. There are also more services by low-cost airlines.

On the busiest routes, coach operators are responding by offering varying levels of specification. It is now possible to travel between some of the main cities in coaches which have 2+1 seating, at a level similar to business class in an aircraft. Passengers pay premium fares, but they enjoy the benefit of city centre to city centre travel, without the hassle of travelling to and from airports, and the queues in them.



Otokar has developed this low floor minibus.

Turkey also has a very strong industry manufacturing all kinds of components to very high standards of accuracy and quality. Practically everything that can be fitted on a bus or coach, either as standard or optional equipment, is available from domestic suppliers. Many of them were present at Busworld Turkey and attracted visitors from other countries who were looking for competitive sources of supply.

The Turkish industry is vibrant and that was fully reflected in Busworld Turkey, a remarkable and most enjoyable exhibition.

## TCV IS LAUNCHED

It is very rare to find a completely new manufacturer, even at a Busworld exhibition! Over the years, the trend has always been towards a reduction in manufacturers, partly through acquisitions, but also, regrettably, closures of long-established companies. That trend was reversed at Busworld Turkey when TCV was launched.

Timuçin Bayraktar, previously Production Director at Tamsa, had led a team to establish TCV and to develop an attractive 10.5 metre low floor midibus, known as the Centravel. There were two vehicles on the TCV stand, both

powered by Iveco Tector engines and driving through Allison fully automatic gearboxes. There is some demand in Turkey for midibuses in the oldest and most crowded parts of cities, but the main demand is for full size vehicles.

TCV has ambitious plans to develop further models, including a 12-metre city bus and an all-electric vehicle. Production will be based in Ankara and MAN engines will be offered as standard.

The two vehicles in Busworld Turkey were not only practical, but finished to a very high standard. TCV may be a new company, but it has a highly experienced team with an excel-

lent track record in the industry. It is therefore a manufacturer to watch.



TCV proudly displayed its new low floor midibus.



BMC can also meet demand for low entry midibuses.



A low floor BMC city bus for an Istanbul customer.

## LARGE ORDERS FOR BMC

BMC is one of the longest-established bus builders in Turkey, with its headquarters near Izmir. The company claims leadership in the city bus sector. The comprehensive range includes high and low floor buses, also the option of CNG power. At Busworld Kortrijk last autumn, BMC showed its first hybrid bus.

The company secured an order from IETT last autumn for 279 Procity low floor buses from IETT, Istanbul. They are all due to be delivered by the end of this year and will be supported by the first full maintenance package offered

by any manufacturer on the Turkish market. (Since then, IETT has entered into at least one other similar maintenance contract.)

Following on from the 279 Procity buses, BMC has won orders for a further 200 buses from contractors in Istanbul. All its buses are powered by Cummins engines. BMC's factory still makes previous generation mechanical Cummins engines for export markets that do not require the latest European emission standards. Cummins and BMC confirmed that the factory in Izmir will be ready to offer the latest Euro 6 Cummins engines when that standard becomes mandatory in Turkey from the beginning of 2016.

## OTOKAR LAUNCHES ELECTRIC BUS

Otokar launched the first all-electric bus to be built in Turkey at Busworld. The low entry Electra was based on the popular Doruk midibus, known in Western European markets as the Vectio LE. This follows on from the company's previous experience of building the first hybrid bus in Turkey.

At the launch, Ahmet Hacıyunus, Research and Development Director, said that Otokar had spent the equivalent of USD76m in R&D in the last ten years. He said: "The demand for alternative fuelled vehicles will increase with Euro 6 standards. Emission limits are going to be more stringent for the automotive sector. Otokar is dedicated to the development of alternative fuel and drive systems." Turkey will adopt Euro 6 emission standards from January 2016.

On the Electra, electrical energy was stored in lithium-iron magnesium phosphate batteries that gave the bus a range of up to 275km in ideal conditions. Otokar reckoned that in typical city service, a range of over 150km could be achieved, but that could be extended by booster charging at stations along the route.

Otokar said that most competitors used a 2-speed transmission. The Electra was fitted with a 6-speed robotised transmission that changed gear according to the demand on the electric motor.

This contributed to the most efficient use of electric power. Among the target markets for the Electra are the Gulf States where the urban areas are relatively flat.



The new Otokar Electra midibus.



Otokar is enjoying strong sales of its Kent city bus.

## MERCEDES-BENZ RAISES THE BAR

The most modern bus and coach factory in Europe, if not in the world, is located just outside Istanbul and operated by Mercedes-Benz Türk. The company had a large stand at Busworld with models ranging from Sprinter minibuses to an articulated city bus. The latter was one of 221 ordered by IETT, Istanbul, for delivery this year.



Istanbul is taking delivery of 221 of these Conecto articulated buses.



A Travego coach build in the factory near Istanbul.

These were painted in a distinctive yellow colour scheme. There is large-scale investment in new buses in Istanbul, and they are running in a kaleidoscope of colours. The articulated buses are particularly suitable for moving large numbers of people on the busiest routes.

Another exhibit was a Travego coach, described as "Business Class", with a 2+1 seat

ing arrangement and a very comprehensive infotainment system. Although they cost around 15% more than a standard coach, that can be recovered by charging premium fares to business travellers on some of the most popular routes. Mercedes-Benz claims 65% of the new registrations in the express coach sector in the Turkish market. Its coaches are also widely used by the tourist industry.



The unusual but attractive styling of Tezeller's new low floor city bus.

## NEW TEZELLER CITY BUSES

Tezeller has been established in Bursa, often called the automotive capital of Turkey, for more than 45 years. The company has made the transition from being a bodybuilder on chassis to a manufacturer of a range of integral buses and coaches.

This has been extended to include an attractive full low floor city bus. First launched

at Busworld, the AutoBus was distinctively styled, breaking away from the traditional box shape of a city bus. The front panel, lighting and glazing were all quite different. Power was provided by a MAN engine mounted vertically in line at the rear.

ZF supplied the fully automatic gearbox, front and rear axles. Both buses on Tezeller's stand were painted in the colours of operators in Istanbul and were due to enter service after the exhibition.

## TEMSA TARGETS USA

Temsa brought several examples of its extensive range to Busworld Turkey, including a Safir coach with 2+1 seating for the top end of the express coach market. It was one of ten for Kamil Koc, one of the leading operators in Turkey.

Temsa is the only Turkish manufacturer that has ventured to the United States. Omer Sözütek, International Relations and Business Development Director of Temsa said that his company had established a presence with the TS35 midicoach and had a target for 90 sales in 2012. The number 35 stands for 35ft in American measurements, equivalent to 10.67 metres. He said that Temsa would add a 30ft model to the range later this year and was

also developing a full length 45ft (13.7 metre coach), with a prototype in production. Temsa would then be the only manufacturer able to offer products in the three main length sectors in the US market.



The Safir coach attracted many visitors.

## SYMPATHY VOTE

Oghab Afshan Industrial & Manufacturing Co of Semnan, Iran, has collaborated with Scania on city buses and coaches since 2001 and is one of the largest builders in Iran.

They had planned to bring two vehicles to Busworld Turkey as part of their strategy to develop exports. Unfortunately for Oghab, international sanctions against Iran are really biting and their vehicles could not get past the Turkish border. Full marks to their team for putting on a brave face and showing well-produced videos of their plant and extensive model range.

# russian registrations

## RISING RAPIDLY



A NefAZ city bus fuelled by compressed natural gas.



The new LAZ interurban midibus from the Ukraine.



An interurban coach with a GoLAZ body on a Scania chassis.

**The second edition of Busworld Russia was held in Nizhny Novgorod from 5 to 7 June. Demand for buses and coaches is rising strongly in Russia, encouraging manufacturers to develop new and innovative products.**

In the first quarter of 2012, registrations of buses and coaches of all sizes rose by 84% compared with the first quarter of 2011. The

Russian economy is being boosted by higher demand for oil, gas and minerals. The Russian Government has made funds available for substantial re-investment in city bus fleets and the results can already be seen on the streets of Moscow.

Last year, Russian factories turned out 15,382 buses and coaches over 8 tonnes gross, almost all of which were supplied to the domestic market. In addition, there were around 5,000 imports, mainly interurban buses and coaches, from factories in China and Korea.

That gave a total market of around 20,000 larger buses and coaches, compared with around 27,000 for Western Europe. Although

many of the Russian vehicles were mid-sized PAZ models from the Pavlovo factory, it still puts the size of the Russian market into perspective.

Although domestic manufacturers dominate the city bus business, there were clear signs that operators are thinking in terms of whole life operating costs, higher quality, and better protection against corrosion.

All the larger fleets have extensive central workshops, where they can carry out the heaviest of repairs. These have traditionally included almost complete rebuilding of older buses which have suffered heavily from corrosion. Manufacturers are now tackling that

problem on their production lines, using materials like zinc-coated and galvanised steel. The Russian authorities are also encouraging



The colourful opening ceremony of Busworld Russia.

the introduction of accessible city buses, with either low entry or full low floor layouts. Mosgortrans, the Moscow municipal operator, is currently receiving more than 2,000 LiAZ low floor buses which have MAN Euro 5 engines, ZF fully automatic gearboxes and ZF axles. The structures are built in zinc coated steel to protect against corrosion.

Sometimes, the infrastructure in Russia is not suitable for low floor vehicles. At Busworld, there were at least three exhibits which were fitted with wheelchair lifts at the second door. They were yet another example of the progress now being made by the Russian industry to modernise its products.



A wheelchair lift on a PAZ midibus for local services.

## ALL-ELECTRIC BUSES

At Busworld Russia, two domestic manufacturers launched all-electric full low floor city buses.

LiAZ, the Likino Bus Factory, introduced the -6274. This had large packs of lithium-ion batteries, mostly mounted at roof level. All the electrical equipment was packaged neatly in a full width compartment at the rear of the bus. The batteries gave a range of around 200km on a full charge and they could be recharged in 4-6 hours. The development was carried out with MOBEL, a Moscow-based electrical specialist. Strictly speaking, the bus was not entirely emission free, because an independent oil-fuelled heating system was installed, to conserve electrical energy in winter conditions.

The interior of the bus was well-finished, with a facility to take a wheelchair passenger on and off by a ramp at the centre door. The driver's compartment was restyled, and quite spacious. Attention to detail included space for a driver to store his belongings, while the instrument panel contained a display which



LiAZ launched the all-electric full low floor -6274 city bus.



The TrolZA all-electric full low floor -52501 city bus.

not only indicated the vehicle's speed, but also the estimated remaining range. LiAZ was hoping to obtain an order from Moscow for a trial batch of similar vehicles.

TrolZA, at one time known as Uritsky, is the largest manufacturer of trolleybuses in Russia, and therefore has wide experience of automotive electrical equipment. They introduced the -52501 all-electric city bus which used a combination of lithium-ion batteries and capacitors, all mounted at roof level. The super capacitors were used to power the vehicle from a bus stop or standing start to around 20-25kph. The lithium-ion batteries then provided power until the vehicle slowed down for the next stop. Energy was also recuperated during braking. TrolZA's engineers reckoned that the bus could travel for 240km on a full charge in typical city conditions.

Although Russian manufacturers have built prototype hybrid buses, the decision to develop all-electric models is logical. Many Russian towns and cities already have trams and trolleybuses, and the electrical infrastructure which goes with them. As the development of all-electric buses gains pace, it should be possible, at relatively low cost, to provide fast

charging facilities at each end of a route, in order to extend the range of electric buses. As TrolZA said, the all-electric bus offers the smoothness of a trolleybus, but without the cost and maintenance of overhead wiring systems.



The electrical equipment on the LiAZ bus was in a full height compartment at the rear.



Inside the LiAZ -6274.

# RUSSIA LOOKING FOR DURABILITY

For various political and economic reasons, it seems inevitable that the vast majority of city buses bought by the public sector in Russia will be sourced from Russian manufacturers. It is a fundamental part of the Government's policy to sustain employment in Russia.

Compared with Western Europe, there are few manufacturers of components, therefore Russian bus factories have to be much more self sufficient, making practically everything that they require for their vehicles.

Vehicles in exhibitions are not always representative of the main volume of a manufacturer's range, but, nevertheless, there were some noticeable trends at Busworld Russia. MAN and Cummins regularly supply engines to the Russian industry, with Cummins also offering the option of CNG power. More recently, Scania has agreed to supply its new CNG engine as an option on the LiAZ city bus range. ZF, Voith and Allison all supply fully automatic gearboxes.



Plenty of Western components on this LiAZ articulated bus, including MAN engine, ZF axles and gearbox, and Hubner turntable and bellows.

ZF also offers front axles and its portal rear drive axles for low floor city buses, also its extensive range of synchromesh gearboxes for interurban, midi and full size coaches.

All these units are well known for their durability. Russian customers are realising that the higher price is recovered in other benefits, like greater reliability, superior fuel consumption, and better quality ride and handling for drivers and passengers. This trend is likely to continue, because the imported components are not so much competing with domestic suppliers, but filling a demand for components that cannot be sourced within the country.

At one time, the vast majority of people in Russia had no option but to use public transport. Nowadays, buses and coaches face increasing competition from cars. It needs a combination of measures to control the situation,

including improvements to the infrastructure, such as bus lanes and priority at traffic lights. It also needs the most reliable vehicles to persuade car users of the cost benefits of public transport. That is where the importers of quality components can play a major part.



This PAZ interurban midicoach has a Cummins engine and ZF gearbox.

## NEW BUSWORLD ASIA

Busworld and its partners in China, VNU Exhibitions, have announced that the next Busworld Asia could be held in the southern Chinese city of Guangzhou, concurrent with Auto Guangzhou from 22 to 24 November.

Guangzhou is the capital and largest city of the Guangdong Province, and is located on the Pearl River, about 120km north of Hong Kong. It is an important transportation hub and trading port and the third largest city in China. It is part of the heavily populated Pearl River Delta region.

Busworld was disappointed with the turnout at its last edition, also due to the lack of exhibition space at Shanghai. After extensive discussions with its partners, it was decided to look for a possibility to relocate to Guangzhou. Although it will be held at the same time and location as Auto Guangzhou, there will be separate halls and entrances for Busworld and its exhibitors. Having said that, people will be able to move freely between the two exhibitions.

Although Busworld has traditionally specialised in exhibitions exclusively for the bus and coach industry, in the widest terms, its Chinese partner, VNU Exhibitions believes that the new plans will attract a greater number of visitors to Busworld. They also say that the new arrangement will be a major benefit to suppliers who are active in other sectors of the automotive industry. They will be able to meet more of their customers on one site.

Plans for Busworld Asia are still at a preliminary stage, but further information will be given in the next Newsletter.

## INGE BUYTAERT

Inge Buytaert joined Busworld on 18 June as the new Marketing and Communication Manager. She will be the principal contact



for all media and communication issues. Inge can be reached by phone on +32 471 215 474 or by e-mail (inge.buytaert@busworld.org).

Inge has already had a taste of Busworld, because she attended Busworld Turkey. She looks forward to working with exhibitors, visitors, suppliers, the media and friends of Busworld.

## NEWSLETTER ONLINE

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