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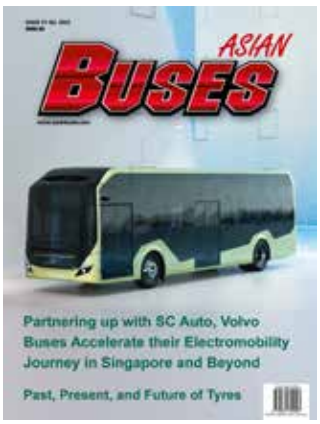

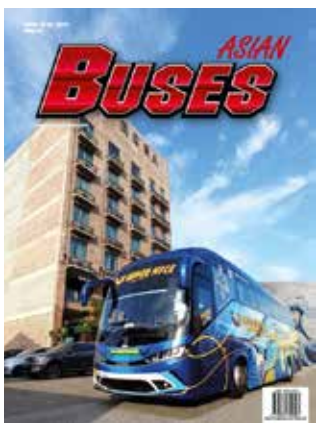

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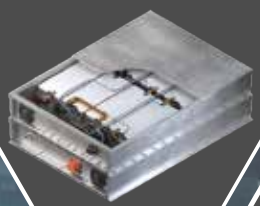

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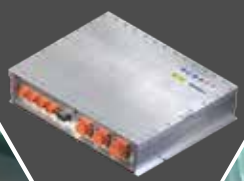

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Moving Forward into a New Year and New Technology

This year end seems special to me. I don't know about you, but I have started to put the pandemic behind me, started a new old normal. Surely, I am not saying we should forget all about the pandemic and how we adapted, switched and adjusted. But it sure does feel good to go about business again as we used to. Meeting people, taking the bus or having a chat over coffee. Nice.

And as we are saying our good-byes to a year that marked the end of one era and the beginning of a new one, we are also looking at another significant change in our lives. The electrification of transportation, heralded a few years ago, is finally in full swing. In leaving the pandemic behind we are also reaching over the doorstep and welcoming electric vehicles into our daily lives. The latest addition is Volvo's BZL that has been completed by SC Auto to be born as the SC Neustar. Just as me, surely you will have a lot of questions around this vehicle and the technology behind it. In our exclusive cover story, we will have more insights for you.

Hot on the heels of electrification I am also looking at Hydrogen as the next big thing. Solaris just delivered buses powered by it. Mercedes has some updates on their buses for you as the brand is now also prioritising the electrification of transport. MAN is ready to roar in Malaysia as they ready their e-chassis. These are just some highlights in this current issue of Asian Buses. With the surge in technological breakthroughs, it is hard not to get any exposure to this megatrend. However, some journalists have also commented that there is just too much about this being published at the moment and that they would like to report about other topics as well.

Naturally, I have something to balance this! We have yet again embarked on a practical tour to put a bus through the paces. I packed the family into a CAM bus for a trip to the East coast. Just like any other professional driver I had to work while everyone was having fun. Turn to our test drive report to see how the bus performed. And how it treated the passengers that might have been on one of the last trips powered by an internal combustion engine.

I have also sent a friend to cover an exhibition in Jakarta. Normally, he would write about something completely different, but he enjoyed the change of scenery. He came back, saying that he was amazed by what is going on in the industry and how exciting the technology is. Imagine this from people that aren't even in the business. What I am asking many of contacts is if they think that we need to have more engagement with commuters, users of public transport for them to also get excited about the vehicles and the industry. Somehow, it seems that the truckers get all the attention. Maybe that could also change in the next year as there is more coverage resulting from the implementation of electric transport solutions. I would welcome that.

With the current global landscape, it is actually interesting to see where the electrification journey goes. There will be countries that are not going to able to switch over immediately, others can rapidly deploy the new technology. Can the market be divided into those that romanticize the past and those that build castles in the sky? Just like I am looking both ways, at the year that has passed and the one ahead, one has to surely combine it. I like to reflect on what was great in the past 12 months and have more of that going forward while I think that what is new could be exciting additions to our lives.

Keep being curious, excited, but drive safe!

Stefan Pertz
Editor, Asian Buses


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Leisure Frontier is First in Singapore to Acquire the Scania K320 Coach

Scania Singapore, in partnership with RVS Allied Global, handed over the first K-series coach in the 320 hp engine configuration to local coach transportation company, Leisure Frontier. The handover ceremony for the Scania K320 IB 4x2 coach took place yesterday in the presence of customers and partners.

The more economical 320 hp engine, with 1600Nm torque, is ideal for urban transport as well as cross-border operations. "With the Scania K320, we are delivering to Leisure Frontier a durable and reliable right-size powertrain for Singapore city operations to reduce operating costs and environmental impact," said Mr Daniel Tan, Solution Sales Director of Scania Southeast Asia. "We recognise that fuel consumption is a major component of operating costs and have designed the K-series buses and coaches with a complete range of fuel-efficient powertrains to match different transportation requirements."

Scania's K-series buses and coaches offer an efficient engine, reducing fuel consumption without compromising on performance. Since 2021, all Scania vehicles equipped with the Opticruise cruise control are also pre-set to economy mode to ensure customers enjoy the best fuel economy towards Scania's reduction of Scope 3 carbon emissions under the Science Based Targets initiative.

Customers seeking further improvements in fuel economy can subscribe to driver training and support services to reduce fuel consumption, as well as fleet management services to analyse vehicle performance for more savings.

In addition, each vehicle is equipped with safety features including the Scania Retarder to improve braking power and increase the service life of the wheel brakes, and driver assistance systems to enhance vehicle control. These features, coupled with a smooth gearbox transition on the K-series vehicles, also ensure a high level of driver and passenger comfort and peace of mind.

"As inbound tourism and large-scale events resume in Singapore, we plan to meet the growing demand for local transportation with this Scania K320 coach," said Mr Terence Ng, Managing Director of Leisure Frontier. "We have enjoyed a positive experience using the Scania K410 coach since 2019 and 2 believe this latest acquisition is a fuel-efficient, safe and comfortable choice to support our operations."

Leisure Frontier Group, with a fleet of more than 100 coaches of different sizes, offers local tours, shuttle bus services, departure and arrival pick-ups, event transportation and rental and chartering services. Since the handover ceremony, Leisure Frontier has placed a further order for two more Scania 320 coaches and one more K410 coach. Its fleet already includes eight units of Scania K410 IB 4x2 coaches.

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Super Nice Express opts for MAN Coach Chassis in Latest Fleet Expansion Programme

Leading express bus company, Super Nice Express Sdn Bhd, has received the newest addition to its growing fleet of coaches – a double-decker coach built on the proven MAN RR5 three-axle coach chassis from German heavy commercial vehicle manufacturer MAN Truck & Bus (M) Sdn Bhd (MAN Malaysia).

Assembled at MAN Malaysia's manufacturing facility at Serendah, Selangor, the MAN RR5 coach chassis is mated to the intelligent and quiet MAN TipMatic gearbox that delivers excellent moving-off behaviour, smooth gear changes that optimise manoeuvring and reduce fuel consumption, with first-class driving and travel comfort.

Super Nice's new MAN Coach also features a new and innovative TX9 body design and first-in-Malaysia zero gravity seats that promise optimal blood circulation and less body aches despite seated for hours by Penang-based coach body builder, TACT Coach Seat & Manufacturing Sdn Bhd. According to him, he is bringing his experience in the hospitality industry to the table, whereby his aim is to design bus interiors that are modelled after hotels, providing a homely ambience.

At the handover ceremony in Batu Kawan, Penang, Super Nice also signed an agreement to purchase a further five units of RR5 and five units of RR3 chassis from MAN Malaysia.

MAN Malaysia Managing Director Andrew O'Brooks said the MAN RR5 coach chassis met all of Super Nice's requirements with its superior flexibility, versatility, and reliability; cutting-edge safety systems; and economical and efficient driveline. Touching upon the upcoming electrification of the transport industry, he stressed that a move towards becoming carbon neutrality has to start with the transport industry and thus, MAN is taking the lead in this ambition.

"We have the ideal and ready products – both low and zero emission -- to help bus companies like Super Nice join the sustainability journey without sacrificing profitability and evolve into a sustainable transport provider. Starting from 2023, MAN Malaysia will offer low emission Euro V engines as standard with all our MAN Bus and Coach chassis and also start taking orders for the zero emission, all-electric MAN eBus chassis as we continue to drive change towards sustainable mobility in the public transport sector of Malaysia," he said.

Super Nice Chairman Roy Chew said that the company now operates about 40 units of MAN coaches following the recent acquisition of Zenwan Express, a popular luxury coach service on the Singapore - Malacca - Kuala Lumpur – Ipoh route. Chew expressed that he is confident that the coming year will be a highly successful one for the express bus operator.

"MAN Coaches have proven to be reliable with minimal downtime and low maintenance costs, which encouraged us to invest in additional units to support the growing demand for road travel nationwide," he said. MAN bus and coach chassis, can be specified with the latest advanced driving assistance systems (ADAS) such as Electronic Brake System (EBS), Emergency Brake Assist (EBA), MAN BrakeMatic with maximum speed control management and cruise control, Lane Guard System (LGS) and Adaptive Cruise Control (ACC).

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Indian Bus Sector Witnesses Growth

The Indian bus sector has witnessed growth because of replacement demand and the push for EVs in the public transport domain reports Bhushan Mhapralkar.

After being the worst hit of all the automotive vehicle sectors during the Covid pandemic, the bus sector is experiencing growth on the back of replacement demand. The resumption of schools, offices, intercity bus transport and tourism is claimed to be the key driver for the same. It is after a gap of about two years or more that bus operators have begun replacing their ageing buses with new ones. Vinod Aggarwal, MD and CEO, VE Commercial Vehicles Ltd (VECV), recently mentioned that the bus segment is seeing a strong comeback on the back of replacement demand after a lull of 18 months. The lack of seasonal momentum from schools and the corporate sector, especially over the last two years, have meant that the replacement demand isn't very powerful. The replacement sales have been very low for the last two years, with the silver lining being the fact that the bus sector has surpassed the overall sales of buses sold in the financial year FY2021-22 in the period between April and July of FY2022-23.

Selling some 19 000 units in the first four months of the current fiscal in the 5-tonne and above category, the Indian bus sector is also witnessing new launches that were postponed because of the fall in demand during the pandemic. Volvo Buses, which merged with VECV in 2020 to form a joint venture that also has the VECV bus business as its part, launched the 9600 rear-engine multi-axle luxury coaches in August 2022. Not much later, the company also unveiled an electric bus under the Eicher brand at the Prawaas exhibition in Hyderabad. Tata Motors too showcased the updated Starbus electric bus at the same event. The most high-profile launch in the bus sector in August 2022 was that of the Switch electric double decker bus (based on the same platform as the Switch double decker e-bus in the UK) in Mumbai. Switch Mobility is the global electric commercial vehicle arm of Ashok Leyland. Although in the van segment, Force Motors has begun selling its next-generation passenger carrier named Urbania. The vehicle is made on a dedicated assembly line at the company's facility in Pithampur near Indore.

On the exports front, the Indian bus sector has been slowly and surely catching up. Daimler India Commercial Vehicles rolled out the 100th Fuso bus in September 2022 for exports in Chennai. In the same month, Ashok Leyland announced that it had bagged an order for 1 400 school buses in the UAE. These buses will be supplied out of its Ras Al Khaimah plant in the Middle East.

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Hydrogen Solaris Buses to go to Venice

Solaris will deliver four Urbino 12 hydrogen buses to Venice. The contracts were concluded with Italian carriers AVM Venezia and ACTV SPA Venezia. The 12-metre hydrogen-fuelled buses will arrive in Italy in mid-2023, and the total value of the contracts exceeds EUR 2.5m.

Solaris has landed another order for the delivery of zero-emission vehicles to Italy. The Urbino 12 hydrogen buses will serve the residents of Venice and its surroundings thanks to contracts signed with carriers AVM Venezia and ACTV SPA Venezia, which provide public transport services in Venice as well as within the communes of Venice and Chioggia. The deliveries are slated for the end of the second quarter of 2023, and the value of the contracts exceeds EUR 2.5m.

The Urbino 12 hydrogen bus is a low-floor vehicle, generating no local emissions. At the heart of the bus lies a 70 kW hydrogen fuel cell that acts as a miniature hydrogen power plant aboard the vehicle. The sole by-products of the chemical reaction that takes place in the hydrogen fuel cell are heat and steam. The fuel is stored in gaseous form, in state-of-the-art composite roof-mounted tanks. The tanks are rigorously tested, and have been designed to ensure maximum safety for the driver, passengers and pedestrians. This hydrogen-powered bus stands out due to their short refuelling time and their very long range, about 350 km, even in unfavourable weather conditions.

Travel comfort in these 12-metre hydrogen buses, with a 2-2-2 door arrangement, will be ensured, among other things, by air conditioning with a heat pump as well as USB ports for passengers located on the vehicle's walls. The driver will also be supported by MobilEye Shield+. This is a modern system which alerts the driver every time an unexpected

object is detected in the vicinity of the bus. The vehicles will also feature a passenger counting system. Continuous servicing of the vehicles will be provided by eSConnect, a bus fleet monitoring and management system designed by Solaris.

The Urbino 12 hydrogen units destined for Venice are yet another batch of vehicles producing no local emissions that will serve the residents of this region. In 2020, under a contract concluded with ACTV SPA Venezia, Solaris delivered 30 Urbino 12 electric vehicles to the city along with charging infrastructure. They have been deployed to exclusively provide public transport in two city districts located on the islands in the Venetian Lagoon: Lido and Pellestrina.

Hydrogen buses are an essential part of Solaris's e-mobility offering and an attractive proposition for towns and cities that are striving to achieve zero-emission public transport systems. Solaris Urbino 12 hydrogen buses can be seen e.g. on the streets of Bolzano in Italy, Cologne and Wuppertal in Germany, as well as in the province of South Holland in the Netherlands and in the city of Konin in Poland. What is more, 12-metre hydrogen-powered Solaris buses will soon roll out onto the streets of Upper Bavaria, Palma de Mallorca, Vienna, Bratislava, Lublin and Poznań.

SANI Express Aims to Capture Express Coach and Travel Market in Northern Malaysia

SANI Express comes back stronger to capture the express coach market and chartered travel services with the handover of three additional Scania K410EB6x2 Double-deckers with Opticruise and on Scania Ecolution partnership. These three units that are fuel-efficient, comfortable and safe, and environmentally friendly, will target the tourist passengers shuttling from SANI Terminal in the central region to the northern cities of Butterworth, Kota Setar and Kuala Perlis.

Daniel Tan, Solutions Sales Director, Scania Southeast Asia, handed over the key to three units of Scania K410EB6x2 Double-deckers, the last batch from a recent order of 22 units, to Ida Nureeni Haji Ismail, Managing Director, SANI Hotel & Travel Sdn. Bhd. A Scania Ecolution Agreement signing ceremony was also sealed between Thor Brenden, Solutions Services and Operations Director, Scania Southeast Asia, witnessed by a host of key personnel from Scania, SANI Express and Truckquip.

"With this final delivery, SANI will now be able to complete the new routing for the whole fleet by assuring our passengers that their comfort and safety with our Scania fleet has and will always come first. The fuel-efficiency that we have been enjoying for many years since we strengthened our operations with the Scania fleet, and with our Scania Ecolution partnership agreement, we will not only save fuel but will reduce the Carbon Dioxide emissions considerably. Scania has always been very supportive, particularly during the Covid-19 pandemic period by being the best sustainable partner any express coach operator could ever want," stated Ida Nureeni Haji Ismail, Managing Director, SANI Hotel & Travel Sdn. Bhd.

Equipped to the brim with safety features such as Electronic Braking System (EBS), Anti-Lock Braking System (ABS) with traction control, hill hold and three fire alarm sensors in the engine compartment, the Scania K410EB6x2 can be said to be the safest coach in the express coach's industry. The Automatic and manual control Retarder further adds to the braking system while putting less strain to the wear and tear of the brake-pads. Independent front suspension offers unparalleled stability, comfort and safety. It also features a walk-through aisle on the bottom deck for better flexibility in seat configurations. The fully adjustable steering wheel provides excellent driver station ergonomics, while hanging pedals enhance driver comfort, giving drivers a car-like feel.

In line with the Science Based Target initiative that was drawn up at the Paris Agreement in 2015, Scania heightened its sustainability practices by introducing the Scania Ecolution Sustainable Partnership. Scania Ecolution is a tailor-made partnership between Scania and customers that focuses on reducing fuel consumption resulting in reduced CO2 emissions. The partnership also focuses on reducing operating cost translating to improved profitability while fulfilling the growing demand for environmentally friendly initiatives.

These three coaches that was delivered are FAME-prepared. FAME is the abbreviation for Fatty Acid Methyl Esters, which is the technical term for the biodiesel that is produced in Malaysia They are able to run on all blends of diesel and biodiesel ranging from 0 percent biodiesel to 100 percent biodiesel, such as B0, B10, B20 and B100. The choice of further reduction of CO2 can be achieved with these coaches.

Yutong Awarded Special Busworld Certificate

As the Qatar's top football event drew global attention, the 888 units of Yutong new energy buses have also attracted the attention of the world for serving the tournament in Qatar. On November 27, the Yutong New Energy Development Forum under the theme of "create a green and low-carbon future" was held in Doha, Qatar. The Yutong NEV operator and media representative from Mexico, Kuwait, Kazakhstan, Qatar, Poland, Belgium, Italy, Norway and other countries participated in the forum to share solutions to a "zero carbon" future when Yutong new energy buses were serving Qatar's top football tournament.

The Yutong e-buses running to and from the stadium have won acclaim from all over the world. Fans applaud these e-buses from China for comfortable and cool rides, as well as convenience to enjoy the beautiful scenery of Qatar. In addition to passenger recognition, the local bus drivers have also commented positively with such remarks as "Quiet and easy to operate", "Powerful A/C, and passengers all say it is comfortable", and they say Yutong e-buses provide good driving experience.

In this forum, the representative of Yutong Bus shared the in-depth cooperation between Yutong and Mowasalat (Qatari state transportation operator) in such fields as public transit operation, e-bus depot management, and tournament e-bus service support during the ongoing football event. The tournament project is not only an integrated demonstration of the most advanced technology of China's new energy buses, but also another breakthrough of "Yutong Model" in the global new energy field.

In his speech at the forum, Shen Hui, CEO of Yutong Middle East, noted, "In addition to providing the full spectrum of products, Yutong, as a major e-bus manufacturer in the world, can also offer bespoke public mobility solutions to the differentiated needs of urban transportation. The e-bus fleet serving Qatar tournament represents an e-bus comprehensive solution featuring "trunk line city bus+branch line linkup bus+long driving range coach" that is specially designed by Yutong for Qatar. During the tournament, Yutong has set up a special 126-member team to perform daily multi-point inspection, station inspection and vehicle tracking, and the company has stored 4 162 kinds of spare parts. Also, it has trained 3 000 drivers by groups, ensuring the safe and efficient bus operation during the tournament."

Through the unprecedented operation of such a large e-bus fleet, both parties have accumulated rich experience, laying a foundation for Qatar to operate the tournament buses in its post-event public transport system. The outstanding contributions of Yutong and Mowasalat to the electrification of public transport in Qatar were also highly praised by Busworld Academy, as the two companies have taken the lead in the electrification of the Persian Gulf and the Middle East, and on behalf of Busworld, were commended as "NEV Pioneers".

Against the background of "carbon peak and carbon neutrality", the development of new energy buses bears upon the upgrading of industrial structure, and also closely relates to energy transition. This forum has strengthened global cooperation and exchanges for green and low-carbon solutions to jointly build a new ecology of regional coordinated development, bringing a lot of inspiration for the future development of new energy buses.

As a global major new energy bus manufacturer, Yutong has sold more than 170 000 new energy buses worldwide. From "NEV product supplier" to "integrated solution provider", Yutong Bus has constantly demonstrated the strength of Made in China, and Yutong buses running around the world have become a flowing Chinese element. In the future, Yutong will continue to expand global NEV operation, and work with global strategic partners to boost the sustainable development of the NEV industry.

HINO Total Support (TS) Contest Returns for 8th Instalment

HINO Total Support (TS) Contest ran for the 8th time this year as a contest for the authorized dealers of Hino Malaysia to upskill their knowledge and to provide better service to customers.

Hino Motors Sales (Malaysia) Sdn Bhd (Hino Malaysia), a subsidiary of Hino Motors Limited Japan, organized the Hino 'Total Support (TS) Contest for its 8th year. Held at its Malaysian headquarters in Petaling Jaya, the contest attracted 158 contestants from 26 companies representing Hino authorized dealerships.

Hino Malaysia took the initiative organizing this to exclusively foster greater skills and knowledge among the dealers, enhancing their customer servicing skills, as well as improving technical expertise.

The one-day event saw prizes being given to the Champion, 1st Runner-up, and 2nd Runner-up for each category, which were Sales, Services, Parts and Customer Success Operation (CSO). The grand prize for the 3S Champion, comprised of the Challenge Trophy and cash incentive of RM 3 000. The champions' team will join a learning trip to Hino Motors Limited Japan in 2023.

Throughout the contest, all contestants will also develop a success steered the organization and boost-up their skills and knowledge in the main four categories, Sales, Services, Spare Parts, and Customer Success Operation (CSO), including the theoretical and practical practices.

All four categories will be showcasing Hino's mission which is "To be Malaysia's most Customer-Centric and reliable Commercial Vehicle Company, and to make our country a better place to live by providing 'Best-fit Products' and 'Total Support'." This is be Hino's benchmark in reaching high quality standards to Hino work rate and to Hino customers.

Strong Pulse of Transportation Felt at SITCE 2022

Themed "Heartbeat of Mobility – Towards a sustainable, resilient and seamless public transport", the SITCE 2022 Congress featured congress streams with over 30 sessions, aiming to address challenges and raise solutions for urban mobility planners, operators, service providers.

In its fourth edition, SITCE 2022 aimed to explore the theme of 'Heartbeat of Mobility' and focused on improving commuter experience so it can be safer, more inclusive, and convenient.

Setting the tone for SITCE 2022 was Keynote Speaker Katrine Marcal of leading Swedish Newspaper Dagens Nyheter. The bestselling author of "Who Cooked Adam Smith's Dinner?" and "Mother Of Invention: How Good Ideas Get Ignored In An Economy Built For Men" on women and innovation addressed the hall with a presentation on why it is high time that women took the lead in innovations and design. In her speech she cited too examples of how the needs of women have let to wheeled innovations that in today's world are indispensable.

First, she talked about electric cars, which have been built specifically for women some 100 years ago, featuring roofs as it was understood that women wear hats, dress nicer and men wouldn't mind bad weather, being the tougher gender. The other example was the fact that we landed on the moon before having castors on our luggage as standard. Again, it was the times we lived in where it was assumed that women would not travel alone, and it was the natural thing for a man to hand-carry the luggage. Today, a snazzy wheely-case

is the ultimate symbol of the astute and successful businessman, born out of the necessity of females to have to move their luggage as they started to travel solo. Today, the wheels put on luggage have changed the way we travel and even how airports are designed These two examples of gender influence set the direction for SITCE 2022, which was focused on how we can innovate transportation in a post-pandemic world.

Delegates got to learn more about the rapidly evolving transport sector with topics spanning across the five main congress streams:

- Building Net Zero Transport Systems
- Resiliency of the Mobility Ecosystem
- Revolutionising the Public Bus Industry
- Acceleration of Urban Rail: Assets, Infrastructure and Operations
- Smart Cities of Mobility - Active, Shared and Innovative

Active, Shared and Innovative

Thanks to modern technology, the harnessing of IoT, we are now able to fine-tune transport systems. In one of the seminars, it was learned that car sharing can become an integral part of the transport ecosystem. Integrating passenger cars into the public transport system adds capacity, offering flexibility for the last mile transport. A key finding that has huge implications for urban planners is the fact congested city cores, as a mobility problem, are typically caused by infrastructure deficits in suburban areas. Business parks and commercial zones offer opportunities to improve traffic flow as they are typically busy on working days, but empty on weekends.

A hotly discussed topic at SITCE 2022 was electro mobility. In the context of the global ambition to reduce CO2 emissions one needs to also consider that the world is become more mobile and that there are more means of transportation now available to us. There are now more vehicles and they do more trips each. The efficiency and with it, the amount of emissions produced, of any transport ecosystem depends on the policies of individual countries and cities. It can be said that the ambition to reduce global green house gases is dependent on the ambition to increase traffic flow and the concurrent reduction of congestion. As a general answer to this quest is that the drive to achieve emission reduction targets has to be driven top down, with suitable incentives that transpire the entire supply chain involved in the creation of transportation solutions.

olvo Buses Singapore and TES-Sustainable Technology Lifecycle Solutions made use of the occasion and signed a Memorandum of Understanding (MoU) on electronic waste and battery recycling at the Volvo stand. As an initial step, TES is pledged to provide Volvo with details of its own electronic scrap and battery recycling capabilities in Asia Pacific. In turn, Volvo will provide market insights and potential regional electronic scrap and end-of-life battery needs.

TES is a Singapore-based, sustainable technology lifecycle solutions provider covering E-waste recycling, battery recycling, asset management solutions, etc.. The signing of the MoU between Volvo Buses and TES kicks off possible collaboration opportunities in developing 2nd life battery management. It allows both companies to explore possibilities in creating circular economy business models with sustainable battery solutions, determining ownership of end-of-life batteries, developing options for using such batteries in second and third-life applications, and ultimately paving a sustainable road map for Volvo's electromobility journey in Singapore and the region.

"At Volvo Buses, we are committed to leading the transformation of our industry towards a more sustainable future. The MoU signing with TES brings us one step further on the sustainable journey with one of the best possible glo-cal solutions (global standards coupled with local expertise)," said Mats Nilsson, Director of Volvo Buses APAC Central Region.

Speakers also concluded that the role of hypermobility needs to be evaluated critically. While large vehicles moving us across vast distances, planes and trains, produce emissions, these are probably going to be less significant than the emissions produced through land transport covering small distances. A plane would possible produce a relative smaller amount of emissions per passenger kilometer than an electric scooter for instance.

Union Internationale des Transports Publics

UITP (Union Internationale des Transports Publics) is the International Association of Public Transport and a passionate champion of sustainable urban mobility. Established in 1885, with more than 135 years of history, it is the only worldwide network to bring together all public transport stakeholders and all sustainable transport modes. UITP has over 1 900 member companies spread out over more than 100 countries. Its members are public transport operators and authorities, policy decision makers, research institutes and the public transport supply and service industry.

Volvo BZL-SC Neustar City Full Electric Bus Makes Singapore Debut

For the first time an electric bus is designed, engineered, and manufactured in Singapore, focusing on safety and efficiency. The new electric bus also provides opportunities for job creation and upskilling of the workforce in the engineering and manufacturing sectors

Volvo Buses Singapore, as part of the Volvo Group ("Volvo"), one of the world's leading providers of sustainable people transport solutions, and SC Auto Industries ("SC Auto"), a homegrown bus manufacturer, today launched the Volvo BZL-SC Neustar City electric bus, delivering the first full electric, 3-door stepless bus that is designed, engineered, and manufactured in Singapore.

This next-generation electric bus, which was designed specifically to meet local bus requirements utilises state-of-the-art electric charging technology and a chassis design delivering superior efficiency and emission-free bus journeys. The bus is also compliant with UN ECE (United Nations Economic Commission for Europe) standards.

Engineered in Singapore

Jointly engineered by Volvo and SC Auto in Singapore, the electric bus has been meticulously designed with global and Singapore regulatory and safety standards, focusing on sustainability, safety, and reliability.

Safety features:

- Advanced safety systems designed into the bus's interior and exterior to protect passengers, including fire-retardant materials from composite flooring to FRP (Fibre Reinforced Plastics) to insulation materials to the isolation of high voltage systems and cables. There are multiple roof layers of fire protection with a high melting point of 1 400 degrees Celsius. Finally, shatter-free passenger seats help to reduce impact in the event of a crash.

- The batteries have nine layers of safety from chemistry choice to mechanical protection to ensure overall Energy Storage System (ESS) safety. The bus is also equipped with an automatic fire suppression system for the motors and batteries, which detects heat sources of 150 degrees and automatically discharges a suppression agent to extinguish the fire, allowing the driver to lead the passengers to safety. The battery cell (single cell) and its local environment are designed to prevent further propagation to surrounding cells in case of a single cell thermal issue. This has been repeatedly proven in testing.

- The driver's environment meets ISO 16121 standards, which contain requirements for an ergonomic and comfortable seating position to keep drivers in a good state of health for prolonged driving. This includes mounting positions of the driver's seat, pedals, and carefully chosen steering allowance to enable drivers to sit comfortably.

- A Driver Anti Fatigue warning system based on deep learning (Neural Networking Model) and Facial Vision Technology to detect driver's abnormal behaviour such as distraction, fatigue, or making a phone call while driving. It can detect and alert the driver via visual and audio displays, to help enhance safe driving.

- A Driver Assistance System (ADAS) and a Blind Spot Detection System (BSD), which uses AI (Artificial Intelligence) technology to automatically monitor and detect obstacles at the side and front of the vehicle:

    - o ADAS includes Forward Collision Warning, Lane Departure Warning, Headway Monitoring Warning and Pedestrian Collision Warning.
    - o BSD detect and alert pedestrians or cyclists in the blind spot on both sides of the bus. A LED Buzzer will alert pedestrians or cyclists when they are in the blind spot of the bus, at the same time, the driver will be alerted to react or execute immediate action to prevent accidents.

The electric bus seats up to 89 passengers and is the first bus model in Singapore that has an emergency exit located at the rear of the bus for evacuation. The bus body structure is built using Ferritic stainless steel, which is a lightweight, high-tensile strength steel that is highly resistant to corrosion. It also features a high-capacity energy-efficient air-conditioning system coupled with double-glazed low emissivity-coated glass panels that help reduce noise and radiant heat transfer.

In addition, the bus is purposefully designed to have an expected lower Total Cost of Ownership (TCO). More than 90 percent of the bus is recyclable, and the battery technology is suited for second life applications and recyclability, thereby promoting a circular economy. Further, the bus's modular design allows for damaged parts to be replaced individually and quickly with locally available spare parts, thereby reducing repair and maintenance downtime, and enabling the buses to get back on the roads sooner.

Launch Event Themed "Stronger Together"

Commenting on the partnership, Law Chung Ming, Executive Director (Transport & Logistics), Enterprise Singapore said, "We are heartened to see SC Auto reaching this new milestone in its innovation journey, with the launch of the Volvo BZL – SC Neustar City Electric Bus. Its successful partnership with Volvo demonstrates that Singapore companies have the right capabilities and make good partners for global corporates to co-innovate solutions to address the growing demand for sustainable transport. EnterpriseSG will continue to work with local companies such as SC Auto to build new capabilities and explore partnerships to capture new opportunities emerging from the green economy."

Contributing Towards Singapore's Green Plan by 2040

Aligned with Singapore's electrification plan for public buses to have a 100 percent cleaner energy bus fleet by 2040, the newly launched electric bus provides a viable solution as a greener way for people to travel. The Volvo BZL-SC Neustar City electric bus is expected to reduce

The Electrification Context

Following up on the topics covered during the introduction of the BZL (Asian Buses, Issue 28), Dan Pettersson, Head of International, Volvo Buses, shared additional insights gained a year after the official launch of the chassis in Australia. There has been a good uptake of the vehicles with four units already being in service in Perth, Australia. "It is starting and now the deliveries are taking place now."

With the ambition to become more environmentally friendly, one has to look at the entire life of a vehicle from well to wheel. Pettersson stated that "We need to look at the bigger picture and work in consultation with countries and cities to make the change to a more sustainable transport possible." According to him, Volvo is basing recommendations regarding the vehicles to be used on the feasibility of a range of technologies to be implemented. In some instances, it may be the better step forward to move to EURO VI first before embarking on an electrification drive. "To some extend we need to educate customers and also do a lot of lobbying with politicians."

Currently in a phase where early adopters would opt for the BZL chassis, Pettersson is highlighting the need for support by governments for the electrification of transportation. By this, he is not just referring to monetary incentives, but also the promotion of the idea of a more sustainable economy. "Without an understanding and placing a value on zero emissions, the effort made by industry players like Volvo and SC Auto will not bear fruits. What can already be said is that there is a clear business case for electric vehicles. Looking again at well to wheel, these vehicles need fewer components, require less services and spare parts and are thus more cost-effective over their lifespan. Thanks to the different design philosophy applied to an electric vehicle, modular systems can be used to further reduce operating cost. A good example is the rear-end of the Volvo BZL Neustar, which is developed to allow for an easier and cheaper change of parts in case of a rear-end collision as there is no engine in the back (Note: legislation in Singapore allows buses to be operated for 17 years. However, Volvo and SC Auto are confident that the vehicles can operate beyond this limit in a second market).

Beyond improving battery capacity and producing cleaner energy, buses still have a lot of potential reduce the environmental impact. Recently, Volvo, in partnership with Swedish steel producer SSAB, introduced a truck with fossil-free steel. SSAB steel delivered to Volvo is produced using a new technology, based on hydrogen. The result is a much lower climate impact than conventionally produced steel. "Volvo Buses is part of the Volvo Group. Different innovations are generated across the group in different silos and whatever works will eventually be transferred to the other units. Thus, we could possibly see if such innovation could also be used in buses," Pettersson added.

The rise of electromobility has also opened opportunities for new brands to enter this heavily contested market. Today it is possible to purchase the vast majority of the components from third parties and to assemble an electric vehicle under a new brand. However, he made a point by stating that it is equally important to have a service network to match the product besides having to have the right values and expertise to offer an inclusive transport solution. This would, locally, also require the support of established and trusted partners to realise the vision of being glo-cal. Finding the right local partner is crucial as there are not enough body builders that have the capacity to either mass-produce buses or to cater to the myriad of local requirements. "In Singapore, we are happy to have found the right fit in SC Auto as it is equally important to share values."

Delighting the next market with the introduction of the BZL, the Volvo team headed to the Middle East, where electric buses are now also gaining more attention. Although oil-producing, these countries recognise the benefits of electrified public transport.

carbon emissions by up to 60 percent or approximately 329kg per passenger per year of carbon dioxide for every 15 000km when comparing an electric bus to that of a diesel bus's similar journey.

Rachel Lee, Managing Director of SC Auto Industries said, "Today's launch is an important step for SC Auto as we roll out viable electric buses as part of sustainable land transport solutions for Singapore. We believe this to be an important contribution to the nation's agenda of transitioning to a climate-friendly, net zero emissions mobility sector by 2040. I am delighted that our strong partnership with Volvo Buses has helped to unlock more possibilities in green transport – their pioneering automotive technology, coupled with our expertise in building best-in-class buses, are particularly well

L to R: Mr Mats Nilsson, Director of Volvo Buses Asia Pacific Central, Mr Dan Pettersson, Senior Vice President, Business Unit Chassis, Volvo Bus Corporation His Excellency, Mr. Kent Härstedt, Ambassador of Sweden to Singapore, Mr Alvin Tan, Minister of State for Trade and Industry and Culture, Community and Youth, Mr Tan Siow Chua, Chairman of SC Auto Industries, Mr Lee Pak Sing, Assistant Chief Executive Officer, Enterprise Singapore, Ms Rachel Lee, Managing Director of SC Auto Industries, Mr Law Chung Ming, Executive Director (Transport & Logistics), Enterprise Singapore

matched. As a homegrown manufacturer, we take great pride in our products and are confident that this electric bus meets with our customers' high expectations on sustainability and climate-suited infrastructure."

Mats Nilsson, Director of Volvo Buses Asia Pacific Central said, "We are incredibly proud to showcase the first Volvo BZL-SC Neustar City in Singapore. With a local track record of over 40 years, today's launch represents a key milestone for the manufacturing industry here, and officially kicks off Volvo's complete electromobility offering in Singapore. At Volvo Buses, we

believe that these changing and complex times require more strong partnerships like that of ours and SC Auto's, which result in exciting innovations like this electric bus and provide inspiring leadership to push forward the green transport agenda. Of note, this partnership involves competence transfer between the two companies, providing a glo-cal solution to meet local market needs, and (from Singapore) enabling the further expansion of our joint regional activities."

Creating Jobs, Upskilling Workforce

The new electric bus will be produced in SC Auto's 200 000 square feet factory. In line with Singapore's 10-year plan to grow its manufacturing sector by 50 per cent in 2030, which is a key driver of the nation's economic growth, SC Auto and Volvo are expected to create up to 100 new job opportunities in its workforce and/or upgrade the skills of 50 percent of its existing workforce as production for the new bus ramps up at its factory.

Additionally, both Volvo and SC Auto are already collaborating with local tertiary institutions, including ITEs through the ITE Work-Study Diploma program, as well as Polytechnics and Universities to help nurture the next generation of engineers, and collectively contribute to Singapore's emerging electric vehicle ecosystem.

BZL Neustar Specifications

Length Capacity:	12 metres long and 89 passengers (depending on configuration).
Driveline Gearbox:	Either a 200-kW single electric motor or 400-kW dual electric motors coupled to a two-stage automated gearbox, which increases wheel torque at low speed and evens out current peaks, thus reducing energy consumption and sustaining motor and battery health.
Structure Build:	Built using best-in-class materials such as double-glazed glasses to reduce heat transfer, and insulations on the bus's roof and motor area to improve energy-use efficiency. It incorporates high capacity aircon with an Electrostatic Air Cleaner (EAC) system to maintain a clean and cool environment inside the passenger compartment.
Charging:	Minimum 310 kilometres on a single charge in just over 3 hours.
Energy Storage Size and Capacity:	Three to five lithium-ion battery packs, located on the bus's roof, provide battery options of 282kWh, 376kWh and 470kWh. It is designed for charging flexibility for both high-power charging on route as well as charging at the depot.
Expected Lifespan:	Minimum 17 years in accordance with Singapore's law.
High Recycling Percentage:	At least 90 percent of the whole bus is recyclable including, but not limited to, the chassis, bus structure and batteries. Further to this, Volvo has arrangements in place with sustainable technology lifecycle services firm TES to explore options and opportunities for battery recycling/repurposing/2nd life applications.

The Volvo BZL-SC Neustar City electric bus is scheduled to be trialled on Singapore's roads by end-2022.

Practical Explainer about Retreads

As part of an ongoing campaign to demonstrate that retread tyres are not just performing but are also safe, Gummitread invited transporters and truck drivers to a factory tour to explain the process of retreading.

To prove some of the misconceptions about retread tyres wrong, GIIB and Asian Trucker have agreed to conduct and monitor a long-term test of retreaded tyres. The rationale for using retread tyres goes beyond the intention to prove that retreads are safe to use. To allow transporters to better understand how the process of retreading can help them save money, Gummitread Sdn Bhd hosted a factory tour during which participants could follow a tyre through the entire process of being retreaded.

Welcoming participants and leading the tour was Chan Boon Liat, who heads Gummitread. With decades of experience in the retreading industry, it was a delight to see him take to the task of explaining how retreading works and why one should not worry about the quality of the refurbished tyres, but instead have confidence in them. "The process is very stringent and our workers not just check the product at their station, but workers check each other's work to ensure that our product is safe," he explained. Furthermore, the process is strictly governed and quality assurance will need to be obtained through SIRIM.

"Retreading is like going to the gobbler. You don't need to throw away a perfectly fine shoe, just because the sole is worn out."

There is not just one, but two good reasons why tyres should be retreaded. The first one is an economical one: the process of retreading costs only a quarter of what a new tyre (Japanese or European brand) would cost. High quality tyre casings are designed to allow for three to four retreadings, which means that transporters save big. Chan highlighted that this depends on how good a transporter takes care of their tyres, saying that they once retreaded a tyre more than 10 times. The other reason why transporters should retread tyres is that the process of retreading uses less resources than producing new tyres. The casings, containing metals, rubber and other components are more valuable in terms of materials used. By just replacing the liner and repairing any injuries to a tyre, significant savings of raw materials are achieved.

The quality of the tread liner used on a tyre is a deciding factor when it comes to the performance of a tyre. Tread liners produced by GiiB under the Supercool brand are specifically designed for the tropical climate found in the region. Heat is generally the biggest enemy of tyres. Therefore, heat dissipation is crucial to achieve a prolonged tyre life. In this connection, Chan explained how underinflation of a tyre is the most important point that transporters need to look out for. An underinflated tyre will generate more heat, which can lead to the separation of the cushion gum and the tread liner, resulting in a tyre failure. Overheating tyres are also prone to bursting and they typically wear out faster too.

While the organisers hoped that the session will have allowed participants to better understand the business of retreading, it was acknowledged that there are still many who have the wrong idea about retreads. Chan, GiiB and Asian Trucker agreed to hosting more such factory tours should transporters be interested to see this process. Those interested may contact Asian Trucker to arrange for a personalised factory tour of Gummitread.

How Insourcing Tyre Management Enhances Fleet Performance

Giving your fleet an edge, insourcing these tools to manage your tyres can significantly improve your bottom line through savings and enhanced performance.

Workshops servicing commercial vehicles, being it in-house or third-party, need to be continually upgraded to provide the best service possible. Tyres are one of the major cost positions in running a fleet of commercial vehicles and having tyres performing at their peak translates into improved bottom lines. Rotary is offering a number of machines that any fleet operator could integrate into their workshop, insourcing this crucial component of service and maintenance.

Globally, a trend that can be observed is that workshops are moving away from using pits and instead are using column lifters and other equipment that can be deployed without having to modify the structure of the building. "Flexibility is the key advantage of using mobile equipment as one is not restricted to performing work in one designated area only," Nathan Vagg, Business Development Manager – Asia Pacific, summed it up. Speed and efficiency are drastically improved using column lifts as it is easier to get to the components underneath the vehicle.

Time for a Tyre Changer

There are several good reasons why fleets should invest in a tyre changer, insourcing this process. Firstly, with a tyre changer in the own workshop, downtime and waiting times are eliminated. There is no time wasted driving to the workshop to have tyres changed. With the current shortage of (foreign) labour, workshops now have limited capacity and tyres may not get changed right away. With a tyre changer on site, swapping tyres is fast, efficient and less labour intensive as there is no longer a need to drive to the workshop.

Using a Rotary tyre changer, the process is highly automated and does not require a lot of manual labour or strength. One customer that recently invested in one such machine now manages to change up to 200 tyres per day in their own workshop. With an estimated cost of only RM 6 per tyre, the ROI is quickly calculated. Comparing the process using the Rotary tyre changer with the traditional method of prying the tyre off the rim, the Rotary machine also offers protection of the rim, the tyre (important for retreading) and the health and safety of the worker operating it.

"By having such equipment in your own workshop, you enhance uptime, reduce wastage and efficiently manage the vehicle. Globally, we see a trend to insource this kind of operation as the ROI on such capital equipment is rapidly reached."

Thanks to advancements in technology, the Rotary tyre changer is extremely easy to use. Previously, as Vagg noted, one would have skills to change tyres. Not so with the Rotary tyre changer, which makes it look like child's play and thus suitable for any workshop.

Balanced Balance Sheet

Tyres, together with fuel and driver's salary make up the biggest chunk of cost. Therefore, fleet operators are now concerned with the performance of their tyres and how they can extend the milage on them. A crucial aspect of tyre management is the correct balancing as it can not only reduce wear and tear on the tyre but also protect other components of a vehicle.

Pro-Tipp: carry out wheel balancing whenever a truck comes in for a regular service. Monitor fuel consumption to identify the need to check your tyres.

Obviously, a tyre that is unbalanced adds wear to the tyre and it adds rolling resistance and thus increases fuel consumption. Both of this can be reduced significantly through proper tyre management and wheel alignment and balancing. "The net result is that tyres last longer if they are properly balanced." An unbalanced wheel will also send vibrations into other components of the vehicle, and this can cause damage to these parts. While a tyre could easily be swapped, other components affected could be very expensive and time-consuming to the replace. Again, Rotary assures customers that their wheel balancing equipment is very intuitive to use and that it does not require a lot of training to be operated. Besides the savings on fuels and replacement parts, the increased uptime and not having to take the tyres to a workshop further improve the bottom line.

Aligned Front to End

The Rotary wheel alignment system is rather unique as it is a dedicated truck alignment system that measures the tractor as well as trailers. With some additional equipment, it can also be used in light commercial vehicles. "We found that many fleets comprise of a mix of vehicles from different weight classes, and thus, it is really important that our system can be used on either vehicle." As the latest innovation, the Rotary wheel alignment does not require rolling compensation. Furthermore, the results of the measurements before and after the alignment can be printed for long-term documentation.

Being highly intuitive and self-guided, the system will instruct the technician on the steps to take and again, insourcing this process does not require expert knowledge while again, reducing downtime.

Pro-Tipp: Tyre wear can be an indicator of misaligned wheels. Fuel consumption and tracking of the vehicle, making it difficult to steer, can also indicate wheels being misaligned.

Committed to Longevity

Rotary's commitment is to provide equipment that will last for a long time, thus offering the best total cost of ownership. Machinery discussed are made in Italy, to high European standards, which ensure that assets will be operational for a long time. To achieve that, Rotary designs and develops their machinery to third party standards. While machines are designed to, e.g. CE, every approved machine is then validated by an external certifying body.

Vagg explained that Rotary also uses cycle tests, whereby "We might have to comply with 10 000 cycles at 100 percent capacity. However, we design our equipment to 20 000 cycles with even more capacity. One will find that in workshop environments our machinery is not always used at 100 percent capacity, thus it lasts longer." Vaag added that the company has a deep understanding of the componentry for such machinery and has been making this kind of equipment for a long time, thus the extensive expertise is reflected in the quality of the products.

Rotary is part of the VSG Group, which is a global, publicly listed Fortune 500 company. The company maintain production facilities in the US, its home market, China, Italy and Germany. The main products offered are capital investment goods, ranging from vehicle lifts and wheel service to collision repair equipment. Established in 1925, the company looks back at decades of innovation and a passion for providing market leading solutions for the automotive industry.

In local markets, Rotary partners with domestic markets in order to ensure that customers get the best service possible through appointed distributors and dealers on the ground, as that ensures swift responses to any enquiries or requests to troubleshoot. "In Malaysia, we partner with Lubetrans for the wheel service and vehicle lift programs as well as the collision repair equipment. The installation and aftersales service offered by Lubetrans is on par with our market leading equipment. A cornerstone of our philosophy is that we need to provide an excellent aftersales service, which is provided by Lubetrans since 2010," said Nathan Vagg, Business Development Manager – Asia Pacific.

The promise given by Rotary exceeds the strong commitment to being a provider of high-quality products. The value proposition encompasses efficiency, safety and low cost of ownership. Of these, safety is to foremost priority. Longevity is a hallmark of Rotary's approach in going to market, which requires the support of partners that share this vision in order to provide end-customers with top-rated services.

Adi Putro – Innovation and Quality

One of the largest exhibitors at Busworld Southeast Asia staged at the Jakarta International Expo Kemayoran from October 5-7, was Adi Putro. Asian Buses caught up with David Jethrokusumo to find out what trends were influencing this leading Indonesian coachbuilding company.

Adi Putro began as a partnership between four brothers in 1973 and, in the intervening years, it has become recognised for its innovation, quality control and adoption of technology. Passenger transportation was just becoming important back then and the brothers seized the opportunity. They developed the concept of modifying pick-up trucks into passenger vehicles and from this humble beginning, they are now producing state-of-the-art luxury buses and coaches for the ever-growing Indonesian vehicle transportation industry. From their humble beginning in a small workshop, within just two years, they were producing minibuses.

The aim from the beginning was to produce vehicles of the highest quality and to continually adopt new technology in order to deliver vehicles of the highest quality standard.

The company's first coachwork workshop was established in Malang in 1975 and it is still operating until today.

In 1982, Adi Putro invested in cutting edge machinery that could create a full-pressed body. By 1986, the workshop was equipped with the OVEN painting system and in1989, Adi Putro expanded by establishing a marketing division in Jakarta. Soon after, an assembly plant was opened in Bekasi.

Adi Putro signed a contract in 1994 with Neoplan, one of Germany's largest coachwork companies. This enabled the company to access the South East Asian automotive market as well as having its key staff trained to demanding German standards. While the partnership has been mutually suspended, it enabled Adi Putro's engineers and Research and Development Team to periodically study in Germany to keep abreast of the latest market technologies.

Adi Putro's Bus Division fabricated Indonesia's first monocoque bus (a shell around the vehicle made by using both the chassis as the frame in a single construction). The first prototype was developed in 1994 and went into full production by 1997.

Quality is Paramount

David Jethrokusumo claims, "the company has always aimed for the highest standards; it's what we call Adi Putro Quality." He continued, "to enable and to ensure this, we often conduct test-drives in Sumatra which is renowned for some of the most challenging road conditions in Indonesia. These protypes are only ready to go into production when they have passed all these rigorous standards at the highest level".

Adi Putro was also the first Indonesian coachwork company to develop the design frame for air suspension in their bus productions. This frame is highly regarded by passengers for its comfort.

First Time Exhibitor

Adi Putro was a first time exhibitor this year as it did not participate in the first event in 2019. According to Jethrokusumo, Adi Putro was a little sceptical of the event but quickly realised when they attended the first expo and realised its potential to reach a new and varied audience. "I am confident with the local market but hopefully our participant in this year's event will enable us to

secure some international attention and some new export markets," he enthused. "We are up to the challenge and even half-way through this year's expo we have already received some solid leads so Busworld Southeast Asia 2022 is a success for Adi Putro", he added. He claimed that through their participation, they could meet potential buyers and bus operators and could learn more about the different cultures of these people. "My feedback from many people is that they are impressed with what Indonesian coachbuilders can make, so this is the positive feedback that companies such as Adi Putro want to hear", he stated.

Innovative Displays

Adi Putro has not ventured into the electric bus market but is having discussions with a South Korean chassis supplier. "Everyone, it seems, is focussed on e-buses but we are not

worried as we hope to develop a better product by holding back for the time being", Jethrokusumo explained. But the company is ready to support government initiatives into e-bus development and fleet expansion.

The company showcased several buses at Busworld SEA including the Jetbus Transit, Jetbus 3+ SDD, Jetbus 3+ HDD and Jetbus 3+ SHD. The Jetbus Transit and Jetbus 3+ SDD (Super Double Decker) stood out for several reasons.

Jetbus Transit is an Indonesian developed, 22-seater bus with a wheelchair dropdown panel to the footpath to provide easy access for such passengers. There is also one-dedicated wheelchair space onboard the bus. This is Indonesia's first monocoque medium low-deck bus. The bus is easy to access and its coil-spring suspension offers a comfortable ride. While the bus on display was eight metres in length, Adi Putro can supply this unit in nine, ten and 12 metre lengths. The Jetbus Transit had been tested for operation in Surabaya and Solo (ASEAN Para Games 2022, Solo).

The Jetbus 3+ SDD is Adi Putro's largest and most spacious of their passenger coach buses. Its 13.5 m-long design emphasises safety, luxury and passenger comfort with connectivity on two levels for modern long-distance coach travel. While the interiors of these coaches can vary according to customer requirements they all feature comfortable seating with footrests that double as a storage bin, fold-down tables, USP charging ports, individual in-seat entertainment, overhead storage bins and seating capacity for up to 71. The lower deck can be modified to accommodate four semi-flat beds or tables with seats.

Adi Putro is planning its next generation coaches to be released next year. Its fifth-generation coaches will offer new styling featuring the latest technology.

Your Attention: Please?

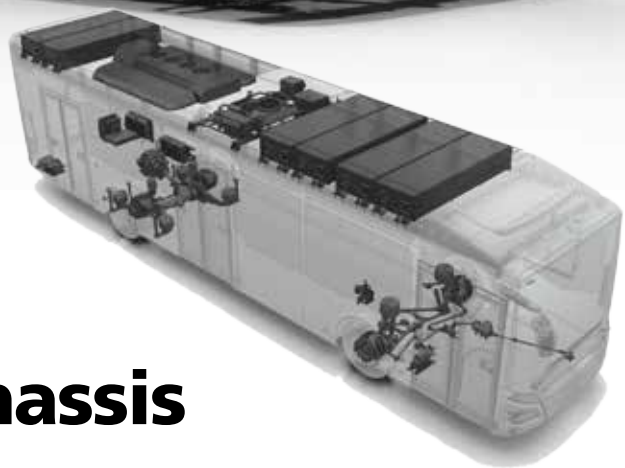
A couple of days ago, Tesla handed over their first Semi Truck. Media toppled over each other to cover the event and to re-post the footage of a 500-Mile trip on one battery charge. This official launch comes much later than initially scheduled and with technology that may no longer be relevant. The mirrors sticking out have been criticised for instance, now where we have mirror replacement systems. The news was all over. There is even an eight-hour video of the trip the truck made besides a time lapse of the ride, in case you don't want to have a Tesla marathon rivalling The Lord of the Rings.

It appears that the world's attention is on the trucks; meanwhile, electric buses have been around for some time and have broken records, set examples and served as the basis to learn about electromobility when developing trucks. Recently, a German bus maker took an electric bus all across Europe. Asian Buses and a few others reported, but there aren't any time lapse videos (that we are aware of) or raving reviews of the vehicle. It went electrified-ly quiet. Which begs the question why there isn't more attention on the bus side of electrification. I should think that there are more people globally using buses every day than truckers plying the streets.

There are the ice road truckers. But why isn't there a show on snowy city street but captains? In all the excitement about the Tesla Semi, the news that France is planning to ban domestic flights has not seem to have caught on. Imagine: no domestic flights! That leaves you with road transport or railways. Between these two, road transport is the cheaper, faster way to ramp up to compensate for the flights that will be no longer ferrying people. I imagine an elaborate hub and spoke system being required in France very soon to cope with the demand for transportation. What great news this is for the bus manufacturers, people needing jobs and those along the highways in rest stops. The potential is massive, exciting.

From my own experience, I can tell that a bus journey can be a lot of fun. Having used buses extensively to travel between Thailand, Vietnam, Cambodia and Singapore, there is a lot of good to be said about this mode of transport. Try bringing print magazines and books to Singapore. Limited on a plane, bound only by what you can lift on a bus. Some of the coaches on our roads are rolling living rooms, lifestyle extensions of the Asian way of life, complete with a kitchenette. My media colleagues on the SuperNiceTour2022 were shook (as they say) when they found out first hand what a bus can offer that you cannot have on a plane or in a car. Our family holiday was also made a lot more exciting as we had a bus, which allowed us to have four families in one vehicle. Instead of using four individual cars, we also reduced the carbon footprint.

Perhaps communication around buses is too technical for most people? Currently, we are talking about charging infrastructure, recycling and hydrogen. Not exactly as attractive a topic than the idea of a trucker that has turned his vehicle into a rolling Ultraman showcase, complete with airbrush livery. Maybe the nature of bus operations is strangling this very creativity. A city bus cannot be customised by the driver. Imagine, if a driver was given the vehicle on a contract basis to drive, leasing-like, and he could soup-up the vehicle. In a recent conference, I learned that the ambition is to make bus rides something that we can experience "in togetherness". My thought would be how we are going to achieve that when literally everyone on board is wrapped up in their own mobile phone world, shutting out communication by using headphones. I would want to ask commuters what could make their journey exciting, deserving of more attention.



MAN Malaysia Showcases Highly Anticipated MAN Electric City Bus Chassis

Customers gathered at the HQ of Gemilang International to preview MAN's electric bus chassis. MAN Malaysia estimates EVs to make up 20 percent of MAN Bus sales in Malaysia by 2026.

German commercial vehicle manufacturer MAN Truck & Bus (M) Sdn Bhd (MAN Malaysia) and Gemilang International Limited ("GML"), a Hong Kong-listed bus and bus body manufacturer based in Malaysia, have showcased the MAN eBus chassis for the first time in Malaysia at a special preview for bus operators and government officials at GML's headquarters in Senai, Johor.

Beginning 2023, MAN Malaysia will offer the zero emission, all-electric bus chassis along with conventional chassis powered by low-emission Euro V engines as the company continues to drive change towards sustainable mobility in the public transport sector of Malaysia.

For the Malaysian market, the MAN eBus chassis will be available as a two-axle vehicle with low floor (LF) that is suitable for urban public transport. It is powered by an electric motor with continuous power of 160 kW and maximum torque of 2 100 Nm mated to a single speed gearbox.

With electric supply from either a modular 4-pack 320 kWh or 6-pack 480 kWh battery with NMC (lithium-nickel-manganese-cobalt) technology, the MAN eBus chassis has a range of up to 350 km on a single charge. Other technical highlights include the front setup being a steerable with rigid portal axle (non-independent suspension).

MAN Malaysia Managing Director Andrew O'Brooks is confident that the MAN eBus chassis, with its flexibility and proven performance, would be the perfect platform for Malaysian bus operators to transition to electromobility. To boost confidence in the new technology, preparations are taking places at MAN Malaysia's service outlets, including workshop facilities and manpower capabilities to be able to deal with electric vehicles.

"We are planning to assemble the MAN eBus chassis locally to make it very competitively priced for those who are keen to join us on the sustainability journey. With the completely knocked down (CKD) programme, we aim to have our electric buses contribute at least 20 percent of MAN Bus sales by 2026," he said. In a bold move, MAN Malaysia introduced EURO V only engine options for trucks in 2022. "We are on track on updating the emission standards in line with our trucks to Euro V for the diesel engine buses. MAN Euro V buses will also be available from 2023 onwards. Meanwhile, the demand for electric mobility for passenger transportation is increasing strongly, MAN co-offers our tested and proven electric bus product in Europe," he added.

Pang Chong Yong, Chairman and CEO of Gemilang International said that the company is excited with the introduction of the MAN eBus chassis in Malaysia.

"GML is one of the first companies in Southeast Asia to assemble electric buses and we share a common goal with MAN in reducing carbon emission. We are committed to develop the most durable, lightweight, environmentally-friendly, and cost-effective aluminium bus body for the MAN chassis using the latest technology. In addition to having a zero-emission chassis, a green bus body is equally essential to make an overall environmentally friendly vehicle. Together, we hope to lead Malaysia and the rest of the region towards a cleaner, quieter and safer future," he said.

With the new technology, a set of new considerations for the end-of-life planning need to enter. As explained by O'Brooks, the energy storage units are being repurposed for "second use" as a stationary energy storage. In 2035, batteries with a total capacity of 50–70 GWh could be integrated into stationary storage annually. However, these projections depend on how fast the electrification within mobility progresses and how many batteries from electric vehicles can actually be reused.

The innovative design calls for the battery packs to be mounted on the roof. This calls for adjustments of the frame to accommodate the additional weight. Resulting from this move is also a change in the centre of gravity to be higher. From driving a bus point of view, there is not much impact expected as double decker buses for instance are taller and carrying heavier loads. Plus, city buses normally drive only doing short distances at lower speed and start-stop mobility. Nevertheless, driver's familiarization training is conducted for every new customer according to O'Brooks.

The event, however, can not be seen in isolation, but has to be placed in the greater strategic plan that MAN Malaysia is currently executing. "We had already started working very hard on this matter. For clients, we introduced electric mobility solution and technology during our Bagus 2022 event. The preview at Gemilang Coachworks is the next stepping stone and there will be more events to explain for electric mobility," O'Brooks stated. For the general public, MAN Malaysia is creating more content in its social media platform to educate society about low emission and environmental impacts from Euro V and electric mobility. MAN Malaysia is also working closely with government agencies in order to deliver impactful products and providing public benefits.

As a neutral bus body builder, GML has been a trusted original equipment manufacturer (OEM) for MAN for the past decade. As winner of the MAN Body Builder Award in 2013, 2014, 2015, 2017 and 2019, the company has supplied more than 2 500 MAN Buses to Malaysia and overseas markets such as Singapore, Hong Kong, Australia, Uzbekistan and Dubai.

Meanwhile, MAN Malaysia will be offering customer-specific 360° eMobility consulting services to companies that plan to transition to electromobility. The exclusive service from MAN Transport Solutions covers all important factors for successful transition such as range and consumption analysis, network analysis, charging infrastructure concept, charging and energy concept, fleet transition and services and training.

Mercedes-Benz Buses: Prioritising Transformation to Electromobility

Daimler Buses is vigorously pressing ahead with the transformation to e-mobility with buses in cities and metropolitan areas. Daimler Buses is also announcing the launch of the eCitaro Range Extender with fuel cell for 2023. Daimler Buses is making the transition to e-mobility easier for transportation companies by supplying the complete infrastructure, including construction measures as well as special digital e-services. At the Press Days, the Mercedes-Benz Intouro hybrid bus will be the centerpiece to demonstrate the step toward e-mobility with intercity buses.

Mercedes-Benz Benz eCitaro NMC 3

The abbreviation is NMC°3: Behind it is a new generation of high-performance batteries for the all-electric low-floor Mercedes-Benz eCitaro city bus. An outstanding advantage is its enormous capacity, which results in a long range without intermediate charging. The battery equipment's modular design is an added feature. The eCitaro as a solo bus has a capacity of up to 588 kWh and the eCitaro G articulated bus even boasts a capacity of up to 686 kWh. In average conditions, the maximum equipment scope ensures a reliable range of 280 kilometers for the eCitaro solo bus and 220 kilometers for the eCitaro G throughout the entire service life of the battery. This means that the buses cover the majority of requirements regarding the daily driving performance of city buses. Under favorable conditions, the range is more than 300 kilometers. The first eCitaro buses with the new battery generation are expected to be delivered before the end of 2022.

Mercedes-Benz eCitaro Range Extender

The Mercedes-Benz eCitaro Range Extender will enable ranges of around 400 kilometers for average requirements without recharging with an all-electric solo bus in urban traffic and around 350 kilometers with the corresponding articulated bus. The eCitaro Range Extender is resolutely designed for operation as a city bus in a practical and cost-conscious manner. Electricity is a significantly cheaper fuel than hydrogen – which is why it is a battery-electric low-floor city bus. The hydrogen-powered fuel cell therefore serves only to extend its range. The vehicle's premiere and the first deliveries are planned for 2023.

Daimler Buses Supplies Complete Infrastructure and Digital eServices

Daimler Buses facilitates the transition to electromobility with customized service packages and training courses provided by the Omniplus service brand as well as the installation of complete e-systems. This initially includes comprehensive and competent advice. As a general contractor, Daimler Buses can develop and supply fully fledged turnkey e-systems on request, including the complete infrastructure: eCitaro, re-planning and converting the depot, equipping it with charging stations, safeguarding the power supply and providing charging management. As a result, despite all its complexity, electromobility with city buses is increasingly becoming a plug-and-play solution that is simplifying the transformation to locally emission-free mobility. Daimler Buses is collaborating with strong and experienced system partners. This results in customized all-inclusive systems for vehicles and infrastructure.

Together with the drive system, service is also changing and has taken on a new dimension in the eCitaro. eServices are specifically geared towards electric mobility with city buses and supplement the traditional service portfolio with digital solutions. The focus is on the continuous and comprehensive monitoring of the complete vehicle technology, as well as the operating status and infrastructure down to the last detail for safe and economical operation. The Omniplus On portal makes data streams usable for transportation companies, so that operations can run at optimum efficiency. The eCitaro communicates with the control center and vice versa in real time. Whether it's monitoring a single bus for every minute of its operation, or the comprehensive analysis of a complete fleet, the continuous data stream makes it possible.

Mercedes-Benz Intouro hybrid: Practical step toward e-mobility with intercity buses

Electromobility has many facets. While the emphasis is on all-electric drive systems for urban traffic, Daimler Buses is relying on the Mercedes-Benz Intouro with its hybrid module as a first step for intercity transport and mixed usage profiles involving regular service and operation as a touring coach to continue to cut the already economical fuel consumption.

The basic function of the Intouro hybrid is extremely simple. An additional electric motor acts as an alternator during the bus's braking and coasting phases, converting braking energy into electricity. This current is stored in supercapacitors ("supercaps") and is made available to the electric motor to support the combustion engine, especially when starting off and accelerating and to support idling. Both of these factors together result in a reduction in the already low fuel consumption. In the Intouro, this is particularly evident in local and suburban traffic, where the driver is constantly alternating between the accelerator and brake pedals. The reduction is up to five percent in suburban and local traffic.

In short: At IAA Transportation 2022 Press Days, Daimler Buses will be leaping ahead with fast and practical steps on the way to e-mobility with buses, such as the Mercedes-Benz eCitaro NMC 3 and Intouro hybrid, the outlook on the eCitaro Range Extender with fuel cell as well as a wide range of services.

Forward-looking statements:
This document contains forward-looking statements that reflect our current views about future events. The words "anticipate," "assume," "believe," "estimate," "expect," "intend," "may," "can," "could," "plan," "project," "should" and similar expressions are used to identify forward-looking statements. These statements are subject to many risks and uncertainties, including an adverse development of global economic conditions, in particular a decline of demand in our most important markets; a deterioration of our refinancing possibilities on the credit and financial markets; events of force majeure including natural disasters, pandemics, acts of terrorism, political unrest, armed conflicts, industrial accidents and their effects on our sales, purchasing, production or financial services activities; changes in currency exchange rates, customs and foreign trade provisions; a shift in consumer preferences towards smaller, lower-margin vehicles; a possible lack of acceptance of our products or services which limits our ability to achieve prices and adequately utilize our production capacities; price increases for fuel or raw materials; disruption of production due to shortages of materials, labor strikes or supplier insolvencies; a decline in resale prices of used vehicles; the effective implementation of cost-reduction and efficiency-optimization measures; the business outlook for companies in which we hold a significant equity interest; the successful implementation of strategic cooperations and joint ventures; changes in laws, regulations and government policies, particularly those relating to vehicle emissions, fuel economy and safety; the resolution of pending government investigations or of investigations requested by governments and the conclusion of pending or threatened future legal proceedings; and other risks and uncertainties, some of which are described under the heading "Risk and Opportunity Report" in this Annual Report. If any of these risks and uncertainties materializes or if the assumptions underlying any of our forward-looking statements prove to be incorrect, the actual results may be materially different from those we express or imply by such statements. We do not intend or assume any obligation to update these forward-looking statements since they are based solely on the circumstances at the date of publication.

Daimler Truck at a glance
Daimler Truck Holding AG ("Daimler Truck") is one of the world's largest commercial vehicle manufacturers, with over 40 main locations and more than 100000 employees around the globe. The founders of Daimler Truck have invented the modern transportation industry with their trucks and buses a good 125 years ago. Unchanged to this day, the company's aspirations are dedicated to one purpose: Daimler Truck works for all who keep the world moving. Its customers enable people to be mobile and get goods to their destinations reliably, on time, and safely. Daimler Truck provides the technologies, products, and services for them to do so. This also applies to the transformation to CO2-neutral driving. The company is striving to make sustainable transport a success, with profound technological knowledge and a clear view of its customers' needs. Daimler Truck's business activities are structured in five reporting segments: Trucks North America (TN) with the truck brands Freightliner and Western Star and the school bus brand Thomas Built Buses. Trucks Asia (TA) with the FUSO and BharatBenz commercial vehicle brands. Mercedes-Benz (MB) with the truck brand of the same name. Daimler Buses (DB) with the Mercedes-Benz and Setra bus brands. Daimler Truck's new Financial Services business (DTFS) constitutes the fifth segment, the product range in the truck segments includes light, medium and heavy trucks for long-distance, distribution and construction traffic and special-purpose vehicles used mainly in the municipal and vocational sector. The product range of the bus segment includes city buses, school buses and intercity buses, coaches and bus chassis. In addition to the sale of new and used commercial vehicles, the company also offers aftersales services and connectivity solutions.

Flat bed Revolution for Buses

An insight during a flight led to the creation of a revolutionary setup using fully-flat beds on a bus, providing comfort on long-distance coaches like never before.

Good sleep is essential to refresh both mind and body. As coaches offer an alternative to air travel, operators also try to offer the best possible seats to allow passengers to rest while on board. Napaway may just have reinvented long distance travel, positioning themselves as a Premium Sleeper Coach Service, offering full-flat beds on board their coaches.

Dan Aronov, CEO and Founder of Napaway spoke to Asian Buses about the creation of this unique offering that features seats some of us may have only experienced in intercontinental business class flights.

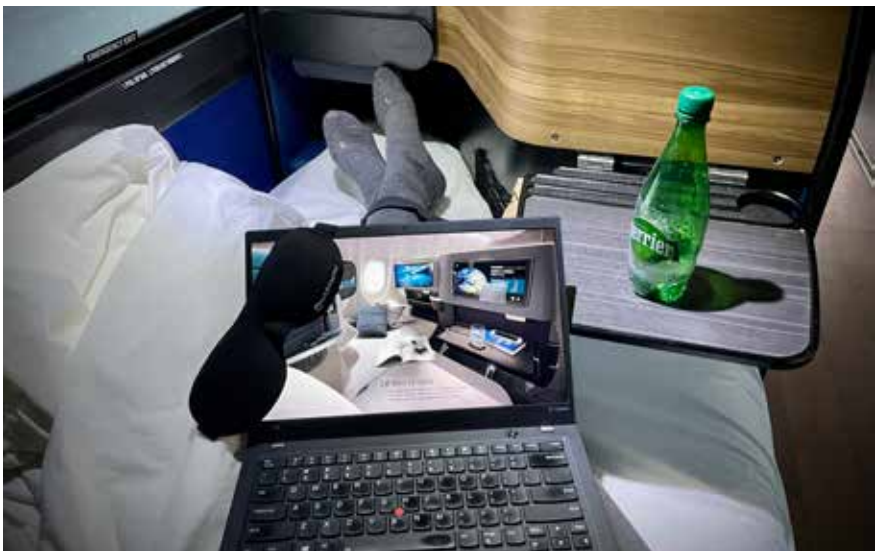
It was one of these Eureka! moments when Aronov was travelling with an uber-tall friend who travels extensively but had forever been using economy class on flights and had never managed to sleep – despite journeys of up to 72 hours.

On a vacation, the two friends were lucky to be upgraded to business class. For the first time, Aronov's friend managed to sleep on board a plane, truly enjoying the full-flat bed. "It might seem like a trivial insight, but a fully-flat bed really is critical for good sleep. No upright seat, no matter how far it reclines, can really compete with that."

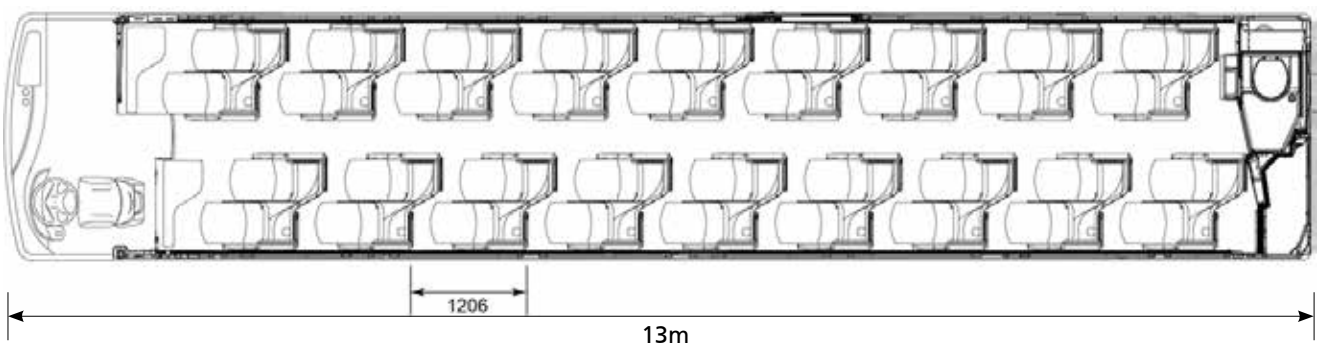
It was then that Aronov experienced the difference a bed makes when travelling long distances. As soon as he got back from his tour, he set out to put airline-style business class seats into a bus.

The natural choice was to approach manufacturers of airline seats to bring Aronov's vision to life. Butterfly Flexible Seating Solutions, located in Hong Kong, offered their services to equip Napaway coach. Creating airline-style seats for a coach, however, comes with several considerations. "One consideration is the extra weight, but the incremental increase in weight does't translate into a significant increase in fuel consumption," Aronov continued.

When considering a passenger's experience of riding in these seats, Aronov noted that one has to take into account that many people will not have had the opportunity to travel in similar comfort. However, even with Napaway's routes, taking up to 11 hours, almost every single passenger has commented positively on the experience.



Now that they have been in use now for some time, Aronov is planning to equip more buses with the Butterfly seating systems. Commenting on this from Butterfly Flexible Seating Solutions was Lars Rinne, Co-founder & Commercial Director. "We have an opportunity here to make a real impact for travellers who opt for a bus. Our highly customisable seats feature high privacy shells and row-to-row dividers. They're a fantastic platform, as we can be more flexible than in the airline seating segment – which requires a lot of certifications and is highly restricted." Rinne told Asian Buses that the company is eager to prove the value of good sleep on buses, thanks to the Butterfly Seating System, in Southeast Asia as well.



The CAM Kingo Real Life Test

Putting a van through the paces, this real-life test of the CAM Kingo demonstrated the fun and practicality of the Van Life.

It is always a special occasion when one gets to test drive a vehicle. However, in many cases, it is not a real-life scenario as the vehicle may not be registered or one is the only person on board. A true test drive would take a few days and should be carried out in a manner that is as close as it gets to the application a buyer would need the vehicle for. This time around, we had it all: a full weekend, every imaginable road condition and an extended family complete with luggage to try a CAM Kingo on for a trip to the coast.

The Kingo is a very likeable vehicle for tour operators as it can be operated with a passenger car licence. This means that operators can enter this market segment without the burden of having to sit for a full commercial vehicle licence. For this family, the Tans, it was the Tan-Van.

The vehicle tested seats 15 passengers. A driver shares the cockpit with one co-driver while there are 13 more seats in the back. The configuration is that of two rows of 3, a two-seater row with a single seat set aside and a long, four-seater row in the back. The arrangement of the seats makes it easy for passengers to get in and out of the vehicle. Seats can be reclined or folded forward to be fully-flat to become storage space. A lot of smaller luggage pieces can fit underneath the seats. Should the group of travellers require more space for luggage, it would be advisable to reduce the number of passengers. Sacrificing two seats to store luggage was required for the weekend trip, which did not impair the experience as the tour group was 11 strong, hence there was ample space for luggage. Access through the rear door makes loading and unloading easy.

The CAM Kingo has some interesting features that are immediately pleasant. The “Vacuum Door” is the first one that one will notice. Instead of having to slam the sliding door shut, the mechanism gently closes the door once it is slid into position. There is a light at the back that ensures that passengers can find their way around while the tinted glasses

prevent the sun to heat up the interior. On balance, the inside is well lit while offering a comfortable experience on the eyes. All seats are equipped with seatbelts. This also enables the use of baby chairs for young families to secure their youngsters. The aircon for the passenger compartment was rated "extra strong" by our family testing the van.

The first part of the trip was dry, hot and steep. The Karak Highway is, of course, the best stretch of road to give the vehicle a proper challenge. Purring away with its 3-Litre Diesel engine, the Kingo pulls up the hills and even manages to accelerate on the long inclines leading up to Bentong. Despite running at almost full capacity, the engine has enough power to move up the hills with ease. Whoever developed the engine must have had Malaysia's climate in mind as the temperature gauge hardly moves although the Kingo is put through the strenuous stretch up to Genting. Within the city, the CAM Kingo almost handles like the fabled Myvy.

The Kingo is a very likeable vehicle for tour operators as it can be operated with a passenger car licence.

The long straight and rather flat stretch from Bentong to Kuantan is covered with ease. The responsive engine allows to overtake the slower trucks without becoming a roadblock for other travellers. Kingos can go faster than 110, but you really wouldn't as cruising at 90 – 100 is very easy and relaxing while at the same time coving enough ground. Being a Diesel with a sufficiently dimensioned tank, one can take the Kingo from Klang to KLIA, then through Subang to NKVE and onwards to Kuantan on one tank. Fuel consumption is in line with the work the van has to perform on Karak Highway. The weekend consumed about 80 Litres of Diesel in tough highway and urban environment driving.

Entering the city, the Kingo demonstrates what it is really capable of. It is a huge car, but the handling is superlative. The turning circle, the way the power steering responds, paired with good acceleration and braking power make it a joy to drive. The only downside of a vehicle like this is that the driver would have to almost entirely depend on the outside mirrors to check traffic around the Kingo. When reversing, a rear-view display makes it child play to back the Kingo into a space. As said, the Kingo is a big vehicle, however, it fits most parking lots. Any experienced driver will be able to manage this with ease. A bit of attention needs to be given when opening the driver and co-driver's door as they need to be swung wide to enter or exit. This, however, is to be expected with the design of this kind of van. Equipped with a manual transmission, the Kingo requires a bit of work in the city or when passing through toll gates as the driver is getting busy meshing the gears and operating power

windows, signals etc. However, as the instruments and all the levers are nicely placed, the manual gearbox is not much of an issue to complain about.

With the music booming through the Kingo, passengers enjoyed the ride in their comfortable chairs. Meanwhile, the driver's compartment is compact and extremely comfortable. Although the middle console offers compartments and cup holders, a separate cupholder on the dashboard could be a valuable addition. The first impression of the driver's space is that it could be a bit cramped. However, the captain's space has proven to be very comfortable and extremely well designed with all the functions in easy reach, with tactile functions and logical labelling and placement. It is an extremely effective workstation.

The turning circle, the way the power steering responds, paired with good acceleration and braking power make it a joy to drive.

The return trip was an entirely different experience in terms of road condition. Heavy rain and going through one of Malaysia's most winding roads, the Kingo yet again surprised. Having to divert from the Karak Highway through Gombak, it was 25 kilometres of wet, muddy roads that were just one turn after another. The conditions seemed to have been made for the Kingo as the

driver just danced through the endless series of corners. One may comment that the Kingo is not equipped with a lot of luxury and systems to support the driver. However, during this tour, the simplicity of the instrument cluster made it a delight to operate the Kingo. Without too many distractions, the driver can concentrate on the road while having all the systems on hand that are required without sensory overload.

Everyone that has driven on a highway for a few hours will know the creeping feeling of fatigue setting in. A highlight of the CAM Kingo is clearly the seat that was installed for the driver. Within the compactness of the cockpit, the easy-to-operate instruments and a position that provides phantastic views of the surroundings, the seat must be one of the most comfortable around. And this is from a tall-ish guy that is currently trying to shed 10 kilograms of weight. It is noticeable that the vehicle is conceptualised for drivers that are a little shorter though. If the driver is taller than 1.8 meters, things could get tricky with the low top edge of the windscreen. After two days, the test driver commented that he had not a hint of sore shoulders or arms, despite having to shift hundreds of times and pushing the Kingo through kilometres of winding roads that require a lot of work on the steering wheel.

The Verdict

After a weekend on the road, a lot of praise can be given for this surprisingly agile and comfortable van that holds up to 15 passengers with luggage. Although the engine is appropriately sized, it performs slightly better in urban environment or on long flat stretches. The space inside the van is appropriate if there is only limited luggage. This makes the CAM Kingo an ideal vehicle for the use as a school bus or for day trips that don't require the passengers to bring luggage along. The van really shines on short distances in tight cities where the benefit of having such vehicle is that one can move a larger group of people with just one car instead of having to deploy several passenger cars.

After two days, the test driver commented that he had not a hint of sore shoulders or arms, despite having to shift hundreds of times and pushing the Kingo through kilometres of winding roads.

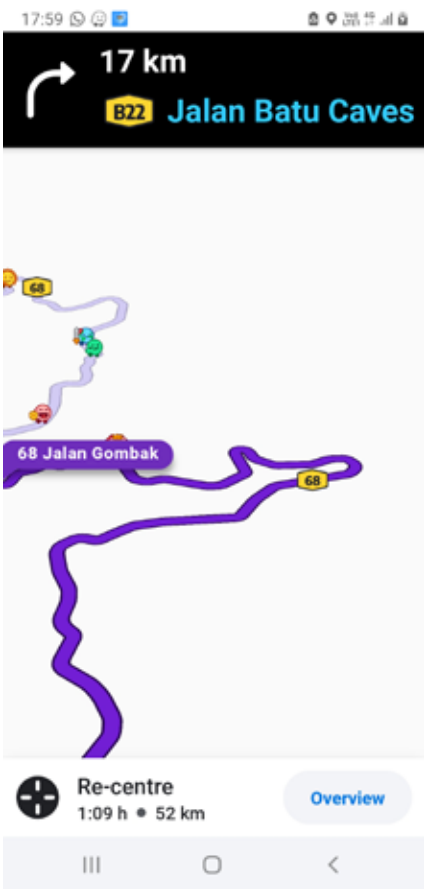
Considering the price range for the CAM Kingo, the vehicle offers all the amenities that one would expect and needs. This asset is a real treat for those that require a no-frills workhorse. As the test driver, we are full of praise of the layout of the cockpit. Surely, professional drivers will appreciate the comfort as they will not just drive this vehicle for one or two days, but day in and out. It has to say something about the comfort on board when adults and infants alike can find the peace to not just nap but to get an hour of quality sleep while cruising. The CAM Kingo comes with 5 year / 150,000km warranty for a new vehicle. There are some features that could be added, and the overall concept of the vehicle is not geared towards being over-styled. However, given the price point, the CAM Kingo is worth every cent.

Highlights

Easy to read instrument cluster
Feeling refreshed after a long trip
Strong engine

Improvements

Storage spaces
Amenities like cub holders or USB charging points
Parking brake cumbersome to operate



BYD Unveiled Singapore's First Blade Battery Powered BUS

BYD unveiled Singapore's first Blade Battery-powered bus at the fourth LTA-UITP Singapore International Transport Congress and Exhibition (SITCE 2022). BYD showcased its B12A03 electric buses at the three-day exhibition. The battery's layout of the Q1R tractor is adjusted for enhanced safety performance, battery capacity, and endurance. Carrying capacity is also greatly improved, with the electronic controls upgraded to a five-in-one system. The B12A03 bus, a model BYD specially designed for the Singapore market, is configured as a 12-meter full-low-floor bus with three doors. Adopting a fourth-generation aluminum body, the bus is also the first pure electric bus equipped with the Blade Battery.

As one of the 62 companies invited, BYD launched its strategy for Public Transport Electrification back in 2010. Continuous technological innovations and breakthroughs have enabled BYD's commercial vehicles to amass an extensive global footprint on six continents, including more than 70 countries and over 400 cities. BYD has established a complete industrial chain of commercial vehicles that integrates planning, research and development, design, production, sales, and after-sales services. It has manufactured commercial vehicles that cover the following market segments: buses, coaches, taxis, logistics, construction and sanitation, as well as vehicles for warehousing, seaport, airport, and mining operations.

Tyrexpo Asia and Asian Buses Offer Hosted Buyer Programme

Tyrexpo Asia Series is returning for its 13th edition of Tyrexpo Asia at the Marina Bay Sands Convention Centre, Halls A,B,&C Level 1 from 8 to 10 March 2023, where the exhibition will showcase the latest technology, cross-pollinate best practices and solutions to drive operational efficiencies and profits for businesses. The platform in Singapore will congregate close to 3 000 Tyre industry players around emerging markets in the Asia Pacific and aims to connect traders, tyre manufacturers, distributors, retailers, and wholesalers in the Tyre industry.

Tyrexpo and Asian Trucker have partnered to offer a "Hosted Buyer Programme to interested parties wanting to visit the exhibition to source products.

What is Tyrexpo Asia Hosted Buyers' Programme? The hosted buyers programme is specially catered for companies interested to expand their business product portfolio to fuel their business growth. This programme is a targeted and highly effective business matching platform for buyers and sellers across Tyres, Automotive Repair Equipment, Tools, Parts and Accessories profiles. The Hosted Buyers Programme provides buyers the opportunity to have a focused one-to-one appointment with suppliers from around the world that matches with your preferred product requirements and interest, and at the same time learn from the best in the industry and network with peers. Qualified buyers will receive travel, accommodation, catering, and many other benefits.

*Participation is free of charge, subject to strict qualifying criteria.

To request your application documentation, please contact us via stefan@asianbuses.com / +60 10 271 2610

Karsan Receives a Great Honor at Global Brand Awards 2022

Offering high-tech mobility solutions with the vision of being "One Step Ahead in the Future of Mobility", Karsan continues to crown its achievements with global awards. In this context, Karsan has been awarded "Europe's Most Innovative Commercial Vehicle Brand" in the Global Brand Awards 2022, where superior performance in different industries such as automotive, technology, and finance are appreciated worldwide.

Leading the electric public transport transformation for a sustainable future, the company continues to attract attention as it has become the first and only European brand that can meet the needs of public transportation in all sizes from 6 meters to 18 meters. Karsan CEO Okan Baş, underlining that they took steps initially to have a place in Europe and then in North America by developing innovative e-mobility solutions, said, "2022 was a year in which we were rewarded for our efforts and were deemed worthy of many global awards. With our 12-meter electric e-ATA model, we won the Sustainable Bus of the Year 2023 award in urban public transportation. Then, in the "Global Business Excellence" awards, we got the top rank in the "Extraordinary Brand Transformation" category with our electric transformation journey "Karsan Electric Evolution" strategy. Following all these successes, we are proud to be awarded as the "Europe's Most Innovative Commercial Vehicle Brand" by Global Brand Awards. Over the past five years, Karsan has taken significant steps thanks to its mobility solutions with innovative technologies and has pioneered global electric evolution in public transport. This latest award won actually demonstrates how accurate the vision we set is and how much more we can offer to the market than a commercial vehicle manufacturer."

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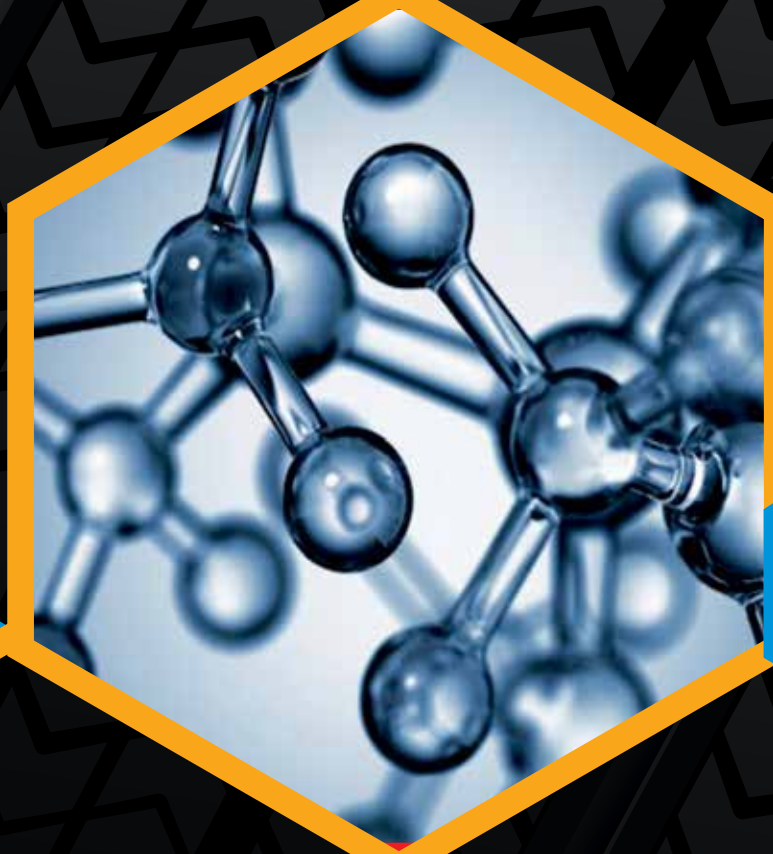
RUBBER MATERIALS CONFERENCE 2023

11-12 October 2023, Malaysia



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