**BYD shows latest ebus model at Busworld 2013**

**First fully electric bus designed for Nordic conditions**

BYD, China’s fastest growing automotive business, is using Busworld 2013 which opens in Kortrijk, Belgium, today to launch the latest version of its full size pure electric bus family, the ebus. It is the first fully electric bus to be designed for the demanding climatic conditions encountered in Nordic Europe countries – one of the buses on show will begin trial service in Copenhagen, Denmark shortly and the other in Helsinki, Finland.

These BYD ebus models have been prepared and tested to meet the grueling climatic conditions of Scandinavia. Challenging operational conditions like abrasive salt and water corrosion and heat-insulation have been key factors in the body construction. Auxiliary heating and AC cooling systems provide passengers with a comfortable journey all year round.

**Green City Solution**

BYD has created its Green City Solution, which aims to electrify urban public transportation systems by transitioning from gasoline and diesel powered buses and taxis to pure electric ones. Besides electric vehicles, BYD also provides related services such as charging facilities, charging station monitoring systems and after-sale service, all as a one-stop-shop solution.

Widespread adoption of these green technologies would help to create greener, healthier and

more economically vibrant cities.

**Fe battery technology**

The power battery for an electric bus needs to meet exacting requirements for safety, energy density and low cost. BYD’s safe, reliable and environmentally friendly long life Fe lithium iron phosphate battery is the best choice to meet all of these criteria. Under normal conditions, BYD’s Fe battery can be fully charged and discharged for more than 4,000 cycles while still retaining over 75% of its capacity with no memory effect.

The Fe battery contains no heavy metals or toxic electrolytes with no pollution and emissions during production. Also, waste batteries can be recycled with minimal environmental impact. The BYD ebus is able to run 250km on a single charge in typical urban conditions. The three battery packs with a capacity of 600Ah can be mounted in various positions to enable flexible interior layouts.

**Technical features**

The in-house developed motor controller with integrated on-board charger controls the functions of battery and motor, allowing the driving motor to run in reverse when required. The distributed Battery Management System consists of the signal collector and controller, which can inspect every cell’s working status.

The BYD ebus features a Regenerative Braking System. This BYD system converts part of the kinetic energy of the bus during deceleration or downhill driving into electricity and stores it in the battery to give additional driving range.

The BYD-developed rear drive axle installed on the ebus is the core technology in BYD’s electric buses. The rear drive axle system integrates the wheel-hub drive and regenerative braking technologies, and at the same time, provides exceptional passenger comfort.

In the ebus range different body types, interiors, ranges and loading capacity can be tailor-made according to customers’ requirements, providing more operating flexibility.

Being corrosion-resistant for a life of more than 20 years, the monocoque aluminum body not only reduces curb weight, but also ensures optimum performance while reducing energy consumption.

The BYD ebus has received the EU’s Whole Vehicle Type Approval, WVTA for short, allowing it to be sold in all EU member states without the need for individual national approval. The energy consumption of BYD ebus is around 130kWh/100km in urban conditions. It saves up to 80% of fuel cost compared to a diesel bus. The longer you drive, the more you save.

With a distinctive appearance, the BYD ebus is in tune with the modern design style common in the public transport sector. Many details, such as the clear and sleek lines on the front, the blue and silver oval logo and the alloy wheels, all accentuate the strong design identity. The ebus is available in a range of colours to meet regional operator requirements and livery styles.

Body features:

·Double-glazed tinted glass

·Panoramic front windscreen: Double-glazed toughened safety glass, with electric defogger

·Extra thermal and fire-proofing insulation layer in body construction

·Heavy-duty protective paint for chassis and protective guard for chassis wire harness

·Auxiliary heating system keeps the compartment at a comfortable temperature even in extreme cold weather

**Fully proven**

The two-door version of the BYD ebus on display at Busworld has been proven by millions of kilometres of passenger-carrying service in China and elsewhere.

The two-door BYD ebus has been tested worldwide in major global cities, including – in Europe – Madrid, Salzburg, Warsaw, Amsterdam, Barcelona, Brussels, Tel Aviv and Budapest. The Dutch island of Schiemonnikoog has converted its entire bus fleet to pure electric BYD ebuses and a fleet of 35 units has been ordered for Schiphol Airport, Amsterdam.

Outside Europe BYD has already undertaken test-trials in major cities such as Shenzhen, Beijing, Hong Kong, Los Angeles and Bogotá.

Each city received BYD electric buses to conduct their own parameter of tests on operational cost-effectiveness and return on investment in the new technology. The encouraging test data and financial figures demonstrate the outstanding reliability and efficiency of BYD’s unique electric system.

The ebus is also available for the right hand drive markets, such as the UK and Ireland. This bus has two doors with an emergency exit on the right. It is designed with a low entry feature for convenient passenger flows. This version will be shortly begin trial service in London.

BYD also supplies a 3-door version of the electric bus to allow for more convenient passenger flows. To allow faster passenger movement, a different battery layout has been adopted.

**Driver benefits**

Driver of the ebus will appreciate the wide windscreen design, and the driver’s compartment cockpit with its large TFT instrument panel giving excellent brightness and contrast, providing the driver with crucial driving information, such as mileage, remaining energy, and etc. The centre console is well laid-out for ease of operation. The front windshield covers two thirds of the frontal facial, providing excellent front vision. The height of driver’s seat, supplied by Grammer, can be adjusted automatically, making it easy to select an ideal driving position. Additionally, an independent climate control system enhances the driver’s comfort.

With BYD’s in-house developed keyless system, the bus can be started and stopped by just one press on the "POWER" button.

The interior styling boasts an air of quality with durable seating for passengers. An engineered sound insulation system keeps the ride whispering quiet and provides a pleasant passenger experience.

All aspects have been designed to maximize the passenger comfort. The low entrance and low floor ensure quick and efficient boarding and exiting, even for wheelchair users and those with impaired mobility.

Manual and electrically powered ramps are offered providing roll-on access for wheelchairs and infant buggies. On board, wheelchairs can be positioned securely on the bus with safety harness device.

**On-board charging system**

The BYD AC on-board charging system is a newly developed technology for an electric bus. The cost and space occupation are much less than an off-board DC system and the AC on-board charging system is also easier to operate. Additionally, the BYD ebus can be fully charged in 5 hours with a 60kW power source. Off-peak charging offers even more economical costs.

BYD is a major international industrial and manufacturing company. In Europe, BYD has already demonstrated several kinds of electric buses and in the near future, BYD intends to introduce a full spectrum of electrified mini, midi, double-decker and articulated buses and BRT solutions.

**ebus Specifications**

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| --- | --- | --- |
| **BYD ebus Specifications** | | |
| **Items** | | **Parameters** |
| **Dimensions & Weight** | L/ W/ H | 12000/2550/3360 (mm) |
| F/R Overhang | 2600/3450 (mm) |
| Wheelbase | 5950 (mm) |
| Min. turning radius | ≤12 (m) |
| Curb weight | 13800 (kg) |
| Approach/Departure | 7º/7º |
| Tyre | 275/70 R22.5 |
| Body material | Aluminum |
| **Performance** | Top speed | 70 (km/h)\* |
|  | Max rotation speed | 7500 (rpm) |
| **Range** | Urban range | 250 (km) |
|  | Electric motor | permanent magnet synchronous AC motor (integrated in Rear axle) |
| **Motor** | Max.power | 90 (kW)\*2 |
| Max. torque | 350 (N·m)\*2 |
| **Suspension& Steering** | Front | ECAS |
| Rear | ECAS |
| Steering system | EHPS |
| **Power Battery** | Battery type | Fe battery |
| Battery capacity | 600 (Ah) |
| Battery energy | 324 (kwh) |
| **Recharge System** | Standard charge | 5h (30kW\*2) |
| ＊Actual EV range might vary due to different driving conditions.  All parameters above are for show products only and might vary during commercial launch. All rights reserved. | | |

**Charging Facilities**

**With the 380V on-board AC charger, ebus can be fully charged in 5 hours.**

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| --- | --- | --- |
| Model | | EVA080KI |
| **Electrics** | Rated input voltage | 3￠400Vac |
| Rated input current | 126A ac |
| Output voltage | 380V ac |
| Output current | ≤126A ac |
| Rated input power | 80 kW |
| Rated output power | 80 kW |
| Output method | Constant power |
| Standby power consumption | ≤10 w |
| Operating frequency | 50 Hz |
| Output connector | IEC standard 7PIN connector |
| **Physical property** | Length (mm) | 400 |
| Width (mm) | 200 |
| Height (mm) | 690 |
| Net weight | 30 kg |
| Length of charging cable | 4.5 m |
| Mounting method | Wall-mounted, fixed with screw on bottom |
| **Safety** | Protection function | Short circuit protection |
| Leakage protection |
| Over-temperature protection |
| Lightning protection |
| **Others** | Noise | ＜65 dB |
| Cooling method | Natural cooling |
| Operation temperature | -25~+40 °C |
| Environment humidity | 20%～90% (no condensation) |
| Display method | LED indicates charging status |
| Control method | Touch screen control |

**BYD ebus Models**

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| --- | --- | --- |
| **Key Items** | **Unit** | **8 Meters** |
| L×W×H | mm | 8060×2400×3190 |
| Wheelbase | mm | 4420 |
| F/R Overhang | mm | 1915/1725 |
| Ground Clearance | mm | 190 |
| Approach/Departure Angle | ° | 8/10 |
| Static Roll Inclination Angle | ° | ≥33 |
| Turning Circle | m | ≤9 |
| Curb Weight | kg | 8300 |
| Door |  | 1-2 (inward) |
| Clear Width of the Door | mm | 650/930 |
| Tyre |  | Michelin 275/70R22.5 |
| Top Speed | km/h | 70 |
| 0~50km/h Acceleration Time | s | ≤15 |
| Gradeability |  | ≥20% |
| Battery |  | BYD Fe battery |
| Battery Energy | kWh | 165 |
| Range | km | ≥180 |
| Charging Power | kW | 30×2 |
| Charging Time | h | 2 |
| Drive Model |  | Wheel-hub motor driving |
| Electric Motor Model |  | Wheel-hub motor, permanent magnet synchronous motor |
| Motor max. Power | kW | 150×2 |
| Motor max. Torque | N·m | 550×2 |
| Motor max. Rotational Speed | rpm | 10000 |

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| --- | --- | --- | --- |
| **Key Items** | **Unit** | **7 Meters** | **18 Meters** |
| L×W×H | mm | 7005×2040×2650(2890 with sunroof ) | 18000×2500×3300 |
| Wheelbase | mm | 3935 | 5650+6690 |
| F/R Overhang | mm | 1290/1780 | 2710/2950 |
| Range | km | ≥190 | ≥230 |

**For further information please contact:**

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