THE FUTURE WILL BE RIDING GREEN.

MAN Lion’s City Hybrid.
Man – moved by mobility.

The alternation of sun and moon, the four seasons, ebb and flow, the path of the electrons in every single atom – movement is inherent in our universe. And mobility is part of being human. Only people who can move around can also enjoy freedom. Mobility allows us to discover unknown territory and experience new horizons. We take advantage of it for travelling, getting to school or work, doing the shopping or going to the theatre or football stadium.

Life as we know it today would be inconceivable without modern means of transport. But vehicles use energy – and most of them consume fossil resources, pollute the air and emit carbon dioxide (CO₂). This is why we at MAN see the central challenge in ensuring the mobility necessary in our society in the most environmentally compatible way possible – so that we can all breathe easier.
Into the future with new energy.

Everyone’s talking about environment-friendly power. We have it. With its innovative technology the new Lion’s City makes a big step forward in protection of the environment. Here a series-produced MAN Euro 6 diesel engine with automatic start-stop system powers a high-performance alternator that in turn supplies the energy for two electric drive motors. The result is convincing: the Lion’s City Hybrid consumes up to 30 per cent less fuel. Indeed, in a year it saves up to 10 000 litres of diesel. The CO₂ output is reduced by up to 26 tonnes per year. With this system it is also possible to move away from bus-stops purely under electric power. No fumes, no noise – a real blessing for residents and passengers alike.

Even today, going by bus incurs noticeably lower CO₂ emissions. A city bus emits less than one-third of the greenhouse gases of a car. At peak traffic times the CO₂ emissions of a conventional city bus per passenger are only about five per cent of those of a car; that means figures of around 10 grams of CO₂ per person-kilometre. Since even that is too much for us at MAN, we are harnessing a very special kind of power: the power of two hearts. What we mean by this is hybrid technology, where a conventional internal-combustion engine and highly efficient electric motors with an electric storage unit divide up the work between them to achieve major cuts in fuel consumption and emissions of CO₂.
How innovative technology helps the environment.

The combination of diesel engine and electric motors makes it possible to achieve major improvements in efficiency too. Besides this, new techniques come into play to help reduce fuel consumption and CO₂ emissions.

Just switch off.

Red lights, traffic jams and, of course, time spent at bus-stops – in urban traffic a bus diesel engine idles for up to 40 per cent of the time. The Lion’s City Hybrid therefore has an automatic stop-start system that simply switches off the engine automatically when the vehicle is at a standstill – and starts it again automatically only when it is needed. That’s intelligent MAN Energy Management.

The brake power plant for saving energy.

Driving, braking, standstill. Driving, braking, standstill. This stop-and-go cycle costs not only time but energy too, so it’s good that the Lion’s City Hybrid is now making a virtue of necessity. The buzz term is brake energy recovery; the technical experts call it recuperation. The principle is as simple as it is intelligent: every time the brakes are applied energy is released, but until now this energy has not been used. In the Lion’s City Hybrid this energy is now stored in high-performance capacitors and drawn off from there as required. In this way the energy won from braking can be used for different purposes – or for moving away from bus-stops under electric power – i.e. without exhaust emissions or noise.

Being phlegmatic is sometimes a good thing.

Energy is recovered during braking, and the engine is switched off when the vehicle is at a standstill. But what happens when the Lion’s City Hybrid is moving? It’s all quite simple: Peak power requirements are covered from the energy saved in the electric storage unit. The diesel engine can be phlegmatized, i.e. made to operate in the most favourable efficiency range at all times. That too reduces fuel consumption and emissions.

The benefits of the Lion’s City Hybrid.

- Fuel savings of up to 30 per cent or 10,000 litres/diesel/year, depending on route profile – thanks to “MAN Energy Management”, the intelligent hybrid control system.
- CO₂ reductions of up to 30 per cent or 26 tonnes/year
- No exhaust fumes and only minimal noise at bus-stops thanks to moving off under electric power
- Virtually maintenance-free energy storage units (ultra-caps) designed to last as long as the vehicle itself
- Optimum aerodynamics and additional reductions in consumption achieved by the new MAN Efficiency Design
Environmental awareness can take exciting new forms.

We call it EffizienzDesign. The Lion’s City expresses its inner values with lines that are at once elegant and striking but at the same time set a functional note. The ambitious design integrates the components of the hybrid system harmoniously in the stylish appearance of the bus and also makes it possible to locate all power-conducting parts outside the passenger area. Its characteristic features are the streamlined, air-cooled ultracap storage system housed over the front part of the vehicle with a favourable influence on the weight balance, the dynamic “AeroLine” extending from the B-post over the entire roof and the rear spoiler as a defined breakoff point. The Lion’s City’s unified formal language continues through the entire design of the bus, lending this modern high-tech product an attractive appearance: style all along the line.
Efficiency and environmental compatibility: award-winning!

The future of city buses is called hybrid. MAN offers a product that has proven itself not only in test operation, but also in real daily use, and that makes a telling contribution to increased environmental protection in towns and cities. The innovative concept has been acknowledged by national and international awards and great sales success.

European bestseller.

Fuel and CO₂ savings of up to 30 % and electrical, exhaust-free and quiet moving off at bus stops: these arguments are convincing more and more public transport operators in Europe. The Lion’s City Hybrid is not only in regular service in metropolises such as Paris, Vienna, Munich, Milan and Barcelona, but has now also been introduced in many other European cities.

ÖkoGlobe 2011 environmental award.

The MAN Lion’s City Hybrid was the only bus in the “Vehicle innovations in public transport” category to be recognised by the panel of judges for the renowned “ÖkoGlobe 2011” environmental award. The ÖkoGlobe is the first international environmental award for the automotive industry in which only ecological criteria are evaluated. Characterised by its elegant outlines, the hybrid bus can be recognised as a future-oriented vehicle at first glance. It thereby scooped the red dot award in 2011 for its Efficiency Design.

“Bus of the Year 2011” in Spain.

The MAN Lion’s City Hybrid was nominated for "Autobús del Año 2011" in Spain. The winner of the award set up by the “Revista Viajeros” trade journal is determined by a panel of judges made up primarily of experts from Spanish public transport companies. The judges were won over by the findings of the comprehensive test operation of the hybrid buses in Munich, Barcelona and San Sebastian. The tests showed that the MAN Lion’s City Hybrid has great potential to save fuel and CO₂ and that it is highly suitable for everyday use. The Lion’s City Hybrid was awarded the Green Bus Award 2013 for fuel-saving and quiet operation in city traffic, once again demonstrating its environmental credentials.