VOLVO 7900 ELECTRIC
Go where people want to go
The new Volvo 7900 Electric is so much more than an electric bus. It’s an enabler, a tool that gives you totally new possibilities to develop your public transport – and your entire city.

The new Volvo 7900 Electric can run literally everywhere. Silent and clean, with no climate emissions, it can go where people actually want to go. The shorter way, the better way. Through residential areas, sensitive zones, into the mall, out on the square. Across instead of around.

You have a choice. You can make it possible to create routes never taken before. And run at night without waking people up. You can reduce noise in busy areas, literally turning them into quality areas. You, and your city, can benefit from the Volvo Environmental Effect.

[electric.volvwuses.com]
A whole new range of possibilities for your city

A turn-key solution
Introducing the Volvo 7900 Electric means peace of mind. In order to maintain uptime and minimise operational and financial risk we offer it as a turn-key solution. The capacity you need at a specified cost per kilometre.

Efficient charging
Rapid and fully automatic charging at end stations keeps productivity up – and helps you keep your schedule. Opportunity charging is much more cost-efficient than overnight charging in the depot.

Manage sensitive zones
Many cities apply restrictions on city-centre traffic. Zones that impose limits on emissions, noise and speed are becoming more and more common. The Volvo 7900 Electric can meet such emission and noise limits by itself, and with the help of Volvo Bus Zone Management it can also handle speed limits.

The future is here and now
Electromobility is the way to sustainable transport solutions. Volvo can ensure you are safely guided through the technology change.

Go across instead of around
Operating the Volvo 7900 Electric offers a whole new set of possibilities to make public transport attractive. New routes, silent traffic in sensitive areas and bus stops where people want them.

The driver in charge
Driving a Volvo 7900 Electric is smooth and straight-forward, just as with any other Volvo. Add to that one of the best driver environments available, with world-class ergonomics.

True uptime
7900 Electric shares technology with Volvo Hybrids and Electric Hybrids proven in operation by thousands of buses, top-ranked in uptime by operators and PTAs throughout Europe.

Environmental performance
The Volvo 7900 Electric is not only fossil-free. As opposed to ICE solutions it’s also silent which is the next huge challenge for city planning and public health. Add to that an energy saving of 80%.

Silent comfort
The Volvo 7900 Electric offers an extremely silent and comfortable experience – for passengers on-board, those waiting at the bus stop and residents along the route.
Think Electric

Listen to your city and
Redefining environmental care

Cities worldwide are facing the same challenge: how to grow in a sustainable way. Public transport plays a key role here. Many cities have even set clear goals on fossil-free public transport and the deadlines are approaching fast.

But for us at Volvo Buses, there is so much more to it than just clean air. It’s about the need to reduce noise, and offer both a clean and silent transport solution that brings all-new possibilities for modern city development.

With the introduction of the Volvo 7900 Electric, we redefine the concept of what a bus actually can do. Because it’s so much more than a silent bus. It’s a tool allowing you to develop and grow a sustainable city – for people.

Not in the future, but here and now.
GO ACROSS instead of around

The Volvo 7900 Electric allows you to think different. Clean and silent, it opens up a whole new perspective on how you can improve public transport, but perhaps even more importantly how to develop your city for its citizens.

You will be able to traffic routes never taken before, with indoor stops in a mall or railway station along the way. You will reduce noise in busy areas, turning them into quality areas.

Run close to hospitals, schools and through residential areas even at night without waking people up. And with a silent bus route closer to the people using it, you will even be able to free up valuable land for housing or other developments.

All while offering modern and attractive public transport that can go where and when people actually want to go. Just imagine the possibilities.
TURN-KEY
an all-inclusive offer

With our turn-key solution you can introduce Volvo Electric buses with complete peace of mind. Instead of purchasing vehicles you develop your public transport system. Jointly we define the terms, conditions and capacity need for specific routes. Our commitment is guaranteed, scheduled availability of fully serviced and operational vehicles at a specified kilometre cost.

The operation benefits from improved equity and cash-flow, as well as reduced financial and operational risks. Monitoring and optimised maintenance are included in order to secure maximum availability. Just like everything else needed to ensure trouble-free operation.

And there’s no need to wait. Implementation can be done in increments route by route. For the infrastructure we partner with the city’s preferred supplier and energy authority. A planned migration from diesel-powered to electrified public transport can become very smooth and financially beneficial.

Opportunity charging gives rapid charging of the buses as well as efficient deployment of the infrastructure.

In a turn-key solution, Volvo provides Zone Management, in order to comply with local traffic restrictions.

Turn-key means that all the buses you require are ready for operation at the right time.

Volvo is responsible for all maintenance and service work, including vehicle condition monitoring.
Do you know THE COST OF NOISE?

A growing number of reports show that noise is not only a health factor, it is also a huge cost when calculating the overall effects of road traffic.

It is also a major obstacle when it comes to densification of cities and has a huge effect on property value. And it’s one of the main factors limiting further public transport expansion in many areas.

But awareness about noise as a growing problem is rising, and in many cities as well as globally new regulations are in the pipeline. Noise performance is therefore becoming an important factor in Procurements, and the socio-economic benefits of silent public transport are dramatic, with savings in the range of €0.4 per bus and kilometre.

SOCIO-ECONOMIC SAVINGS

This example, based on actual statistics from downtown traffic in Gothenburg, Sweden, shows huge potential savings. Case study from Coucky&Partners, consultancy firm specialising in sustainable transport.

Total yearly socio-economic cost of road noise

<table>
<thead>
<tr>
<th>All vehicle types, with diesel buses</th>
<th>All vehicle types, with electric buses</th>
</tr>
</thead>
<tbody>
<tr>
<td>€464,000/km and year</td>
<td>€311,000/km and year</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Save</th>
</tr>
</thead>
<tbody>
<tr>
<td>33%</td>
</tr>
</tbody>
</table>

Buses contribution to the total socio-economic cost of road noise

<table>
<thead>
<tr>
<th>Diesel buses</th>
<th>Electric buses</th>
</tr>
</thead>
<tbody>
<tr>
<td>€175,000/km and year</td>
<td>€22,000/km and year</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Save</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
</tr>
</tbody>
</table>
Enter the **ZERO ZONE**

In dense city areas, not all types of traffic can be permitted. For reasons of noise, emissions and general safety, restrictions are applied in defined zones or at specific points. It’s a given that the Volvo 7900 Electric can operate in zero-emission zones and low-noise zones, and can even stop at indoor terminals, but there is more to it than that. The Volvo Bus Zone Management service also allows the vehicles to comply with speed restrictions depending on geographical position, day of the week and even time of the day. The driver is informed when entering a defined zone and the vehicle adjusts automatically without any driver intervention.

**Volvo Bus Zone Management**

Public transport can become even more efficient by combining GPS positioning with route maps and traffic restrictions. Volvo Bus Zone Management is a service that enables compliance with restrictions in various kinds of sensitive areas.
Opportunity charging is a winner. Compared to overnight charging, you benefit from reduced cost, higher passenger capacity, increased range and more efficient use of the infrastructure. Charging at the end stops means minimum impact on the schedule and provides a well-defined charging procedure.

Opportunity charging also means that we can use a smaller and lighter battery pack, resulting in higher passenger capacity. And since you don’t have to charge all night you can increase both range and operational hours. All buses on the route share the charging units, while overnight charging requires one charger per bus and, for the depot, a massive power supply from the grid.

Charging is fully automatic and the connectors reach the bus from above, which is optimal in terms of safety. All moving parts are integrated in the pylon, while the contacts on the bus are fixed-mount connectors. This minimises the need for additional vehicle maintenance and reduces weight, thus further increasing passenger capacity.

The main prerequisites for charging electrically powered vehicles are safety, reliability, short charging times and ease of operation. The Volvo Opportunity Charging System delivers on all these criteria, thus ensuring uptime and energy efficiency.
behind the wheel

Driving the Volvo 7900 Electric is impressively easy and quiet. Just press the ON-button and drive. The 2-stage automatic transmission works smoothly, allowing the driver to completely focus on the driving.

The procedure at charging stations is fully automated and the driver doesn’t even need to push a button. Just stop in the right position and the charging process starts. Charging time is only six minutes, so your schedule is safe.

The comfortable driver’s environment is probably one of the best available, with world-class ergonomics and superior visibility. And above all, it’s a silent workspace, which reduces the stress on the driver, helping him or her to stay focused and alert. There’s no doubt – the Volvo 7900 Electric bus is designed around the driver.

Silent and safe with Driver Training. Driving an electric bus is different. Silent propulsion means you can drive in denser and sensitive areas, getting closer to people, and can even drive and stop indoors. This puts new demands on the driver when it comes to driving safety. With Driver Training, your drivers can enhance their skills and learn the new dimensions of driving safety that come with driving silent buses.
Give your passengers

A QUIET MOMENT

Silence is a relief. It enables conversation, and when listening to music you can lower the volume – and the stress level. Your passengers will definitely appreciate the difference.
The silent ride is quite an experience

The Volvo 7900 Electric welcomes your passengers silently and gently. And thanks to its silent propulsion it can get closer to where people live and work and shorten the walking distance to the bus stop. But electric drive is not only free from engine noise; it also offers a smooth and comfortable ride.

On board the Volvo 7900 Electric the passengers enjoy an efficient layout, comfortable seats and a bright and roomy ambience. Wide doors, electrically powered, make for swift and easy boarding and exit. And the low noise makes it easier to talk to others, listen to music or simply enjoy the ride.

**Comfortable.** Ergonomic, comfortable seats, a smart layout with space for 95 passengers and a powerful electric heating, ventilation and air conditioning system make every ride in the Volvo 7900 Electric a pleasure. All year round.
Volvo is the world leader in electromobility. The new Volvo 7900 Electric is the most recent addition to our offer and it benefits from our long experience of hybrid and electric hybrid technology. As of September 2015 more than 2200 such vehicles have been sold in Europe, the Americas, Asia and Australia.

**Gothenburg: The ElectriCity project**
Like many modern cities, Gothenburg considers pollution, noise and congestion major issues in the municipal planning process and sees public transport as a key element of a greener future. Gothenburg’s first route for electric buses opened on the 15th of June 2015. The route connects the two main campus areas and features an indoor bus stop with a café area. The Volvo Electric buses are silent and emission-free and run on electricity from wind power and hydropower.

**Stockholm**
Stockholm, the capital of Sweden, is a growing city with more than 2 million people in the metropolitan area. The city sees traffic as the major environmental issue and public health is a focus area. On route 73, eight Volvo 7900 Electric Hybrid buses have operated successfully on the existing schedule. The route is 8 km long and stretches from a suburban terminal to the Karolinska University Hospital.

**Hamburg**
The Innovation Route 109 of HOCHBAHN will be almost exclusively served by buses with innovative drive technologies. Volvo’s current electrified buses have been serving the route since December 2014. The Volvo 7900 in hybrid, articulated hybrid and electric hybrid versions are part of the project. Conventional diesel buses will be used on the route to serve as reference vehicles in the scientific comparison of the innovative drive concepts.

See the film at youtube.com/watch?v=sCL-s4qh32c

See the film at youtube.com/watch?v=FseBmNiard0
Dimensions and weights

- Length [m]: 12.0
- Width [m]: 2.55
- Height [m]: 3.28
- Permitted GVW [kg]: 19 000

Powertrain

- Electric motor:
  - Power output, max [kW]: 160
  - Torque, max [Nm]: 400
- Energy storage system:
  - Capacity (kWh): 4×19
  - Voltage: 600 V
- Transmission: Volvo 2-speed automated transmission

Axles, suspension and steering

- Front axle: Volvo RFS-Low beam axle
- Rear axle: ZF AV 132
- Suspension: Electronically controlled air suspension with kneeling function
- Power steering: Electrically powered hydraulic steering
- Tyres: 275/70R 22.5"
- Rims: Steel rims, 7.5×22.5"

Charging system

- Opportunity charging.
- Fully automatic fast charging sequence.
- Rapid charge time: up to 6 min.

Passenger capacity

- No. of passengers: 105
- No. of seats, max: 34+1
- Type of seats: Volvo City bus seats available in several variants, optimised for easy cleaning and maintenance.

Doors and door system

- Door system: Electric
- Door layout: 2+2+2

Climate system

- Zones: Separate climate zones for driver and passengers
- Ventilation and heating: Powerful ventilation, roof heating units
- AC max [kW]: 26

Facts and figures

Discover more on volvobuses.com
Volvo Buses. Driving quality of life