



GREENING
THE ECO WAY OF ENGINEERING

THE ELECTROMOBILE CITY SCOOTER

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AN INNOVATIVE ELECTRIC VEHICLE FOR SUSTAINABLE URBAN TRANSPORTATION

Reducing traffic congestion

The steady rise in the number of vehicles on the roads, particularly in city centers, is putting an increasing strain on both people and infrastructure. Sub-A segment vehicles, which are even smaller than compact cars, are one way of tackling this problem. Developed by Fraunhofer IAO in collaboration with the company Greening, the Electromobile City Scooter is one example of a vehicle belonging to this category – and one that doesn't compromise on ride quality. With one front wheel and two rear wheels, this electric scooter boasts chassis technology that car drivers are bound to find appealing. Add that to the minimal parking space the Scooter requires and it becomes an interesting option for urban mobility sharing concepts.

Increasing driving pleasure

Despite being a multi-track vehicle, the Electromobile City Scooter is designed to lean into bends. This is made possible by having each of the two rear wheels mounted on its own trailing arm, which in turn are supported by semi-active air springs on the frame. At higher speeds, the Scooter gives the liberating feeling of driving a motorcycle under full control. And at lower speeds, the chassis design provides stability on the move and when stationary at traffic lights or parked. This makes the Electromobile City Scooter easy to drive – even by those who have never driven a two-wheeler. Wheel hub motors at each of the rear wheels also offer outstanding longitudinal dynamics.

The scooter for sharing

As part of Fraunhofer's GeMo project, the Electromobile City Scooter is being developed into a demonstrator vehicle, providing a glimpse into the sort of urban microcars that will feature in sharing schemes.

GeMo project

Sharing cars instead of buying them – the concept of car-sharing already exists in many large towns and cities. Fraunhofer scientists predict that in the electro-mobile future, urban dwellers will make shared use of the infrastructure and the majority of vehicles. In the Fraunhofer "Beyond Tomorrow Project" entitled "Shared use of e-mobility: vehicles, data and infrastructure" or "GeMo" for short in German, they are working hard to transform this vision into reality.

For more information visit:
www.gemo.fraunhofer.de

Beyond Tomorrow Projects

GeMo is one of seven Fraunhofer "Beyond Tomorrow Projects". In these projects, our scientists are working on solutions to address the burning issues of tomorrow.

Tapping potential

Since it is similar in design to scooters that have been successfully mass-produced, the Electromobile City Scooter could also be manufactured for a very reasonable price. Its simple and cost-effective design extends to its innovative rear axle with individual trailing arms and semi-active air springs. And as a city vehicle used to make short trips, the scooter can even offer adequate range without having to run on expensive lithium-ion batteries. Classed as an electric scooter, it can be driven by anyone holding the equivalent of a German "S" driver's license, and as such can be driven by people aged 16 and over and by anyone licensed to drive a car. All of this together with its high stability and compact size make the Scooter an ideal addition to intermodal sharing schemes.

Next steps

Thanks to its novel chassis design, the Electromobile City Scooter can be used as a platform for innovative urban vehicle concepts. The following extras are currently in the pipeline:

- Increased weather protection
- Passive and active safety systems
- Smartphone integration
- Luggage-securing systems
- Head-up display
- Light signal segments
- Inductive charging technology
- Helmet-free driving, etc.



Watch a short video to see how
the Scooter drives by visiting:
youtu.be/GO2X00pZanQ