

## Study shows: New mobility services are only sustainable when combined with public transportation

As part of the Mobility and Fuel Strategy of the German federal government, PTV examined the shifting and environmental effects of mobility as a service & Co.

**Karlsruhe, 19/02/2020. E-scooters, mobility as a service, carsharing – there are more and more new mobility offerings on our streets, new providers are constantly entering the market. But how can these contribute to making transport more eco-friendly in the future? A recently published study that was commissioned as part of the Mobility and Fuel strategy (MFS) of the German Federal Ministry of Transport and Digital Infrastructure focused on precisely this question.**

The study, which was managed by PTV, examined how new mobility services will develop in interplay with conventional modes of transport in the future (by 2030 or 2050) and what impact this will have on transport and the environment. First, the scientists created an extensive market overview of current mobility offerings and the demand for these. They analyzed which various factors influence people to change their mobility behavior.

Using these analyses, the researchers formulated two possible future scenarios. In Scenario A, the “Cautious mobility change,” it was assumed that on-demand services will be legally facilitated, but that transport policy and behavior will change only moderately in the coming years. In Scenario B, an “Extensive mobility change” was assumed – that is, there will be a holistic, intermodal and thus long-lasting transport policy with targeted promotion of public transport, as well as bicycle and pedestrian traffic. Since the conditions and demand structure differ sharply between urban and rural areas, they examined a total of four different areas: From the big city to urban and rural areas, on through to sparsely populated rural areas.

To validate future solutions, the research team then simulated various scenarios with PTV software. How efficient are ride hailing (commercial trips with private cars) and on-demand services in the different areas? How does mileage, that is, the total number of kilometers covered by all means of transport, change? How does the utilization of vehicles shift?

**The key findings of the study**

To compare the results, the MFS reference scenario was used, which includes all transport-related measures set in motion by the German federal government before 2017.

- In Scenario A, “Cautious mobility change,” new mobility offerings accounted for 5% of transport service in 2030; in Scenario B, “Extensive mobility change,” the figure was 11%.
- By 2050, the share increases further; in Scenario A to approx. 9% and in Scenario B to nearly 17%.
- In Scenario B, the share of private vehicle usage in the urban environment continues to decrease, by nearly 14% by 2030.
- In Scenario A, the mileage; that is, the total number of kilometers traveled with all means of transport; increases by 1.2% by 2030.
- In Scenario B, the mileage decreases by 8% by 2030.
- CO2 emissions decrease in both scenarios by 2030. In Scenario A by 1.8%, in Scenario B by 13%.

“Our evaluations clearly show that mobility concepts must be considered as a whole in order to achieve significant climate and environmental effects. New and enhanced mobility services initially create new options, which means that they increase the mobility of the population overall,” explains Rimbart Schürmann, director of the study at PTV Transport Consult. “Despite the additional traffic this causes, new mobility offerings can make a contribution to reducing greenhouse gas emissions. The best effects occur if more than just the new mobility services are promoted. At the same time, conventional, non-motorized and public transport must be improved and linked to the new mobility offerings, and private vehicles must become less attractive.”

From their analysis, the research team derived concrete recommendations for action in order to encourage new mobility offerings as part of integrated mobility concepts.

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### About the study

The two-year study (2017-19) "Shift effects and environmental effects of changed mobility concepts in passenger transport" was commissioned as part of the Federal Ministry of Transport and Digital Infrastructure's Mobility and Fuel Strategy (MFS). In addition to the PTV Group, Fraunhofer Institute for Systems and Innovation Research ISI and the company M-Five participated in the study.

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### Imagery



In an MFS study, a research team directed by PTV examined how new mobility offerings can contribute to more environmentally-friendly transport in the future.

### Contact for further information:

Internet: [www.ptvgroup.com](http://www.ptvgroup.com)

Stefanie Schmidt, Global Communications  
Tel.: +49-721-9651-7451, [stefanie.schmidt@ptvgroup.com](mailto:stefanie.schmidt@ptvgroup.com)

PTV Planung Transport Verkehr AG  
Haid-und-Neu-Str. 15, 76131 Karlsruhe

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More than 2,500 cities deploy PTV products. Trips and routes for over one million vehicles are planned with our software. The European transport model, which encompasses all passenger transport and freight movements in Europe, is developed using PTV software. We currently have approx. 900 colleagues worldwide committed to driving the high performance of our products. The company's headquarters located in the heart of the Karlsruhe technology region houses its center of development and innovation. From here, PTV plans and optimizes everything that moves people and goods worldwide – it's the idea which has accompanied the Group since its foundation in 1979.

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