Particulate Warning

Dear Reader,

New regulations have been introduced in Stuttgart, the state capital of Baden-Württemberg in Germany, which from 2018 onwards will ban Diesel cars that do not comply with the Euro 6 emission standard from certain parts of the city when a particulate warning has been issued. This means that Stuttgart is the first city in Germany to impose a driving ban on older Diesels. The regulations allow exceptions to be made for delivery vehicles. It remains to be seen whether it makes sense to ban older Diesel cars on certain days. The fact is that it will cause significant problems for residents. For example, the owners of these cars will not only have to look at their diaries when organising business meetings in the city, but also at the air pollution forecast for the date in question.

Pure electric and hybrid mobile machines are currently only used for niche applications. The growing debate about driving bans for Diesel vehicles may well lead to a change of tack, in particular in the case of construction vehicles and machines that are used in inner cities, because it is probable that the issue of particulates will become even more serious in future. Both electric and hybrid drives have their advantages and disadvantages. For example, the use of hybrid drives "often involves additional expense, which needs to be cost-effective," says Professor Marcus Geimer from the Karlsruhe Institute of Technology in the interview on page 16. The added value could take the form of increased productivity. In the case of pure electric construction vehicles which produce no local emissions, the key issue is whether it is possible to provide all the energy that they need for an entire working day.

The transmissions used in mobile machines play an important role in their cost-effectiveness and efficiency. As in the case of combustion engines, detailed

research has been carried out into transmissions over recent decades and there is still significant potential for development. As things currently stand, power-split, continuously variable transmissions are only found in a few types of small mobile machines, despite their efficiency. In the cover story on page 8, RWTH Aachen University and GIF-Entwicklungsgesellschaft mbH explain the potential and the possible applications of these transmissions.

Producing mobile machines cost-effectively is often challenging because of the small numbers of units involved. For this reason, during the development process manufacturers frequently make use of products from the commercial vehicle and car sectors. However, it is well worthwhile taking a closer look at the solutions that have been developed in other areas of industry, as our second cover story on page 20 shows. The Technical University of Braunschweig has investigated gear designs in variable-speed pump drives with the aim of transferring the advantages of stationary hydraulic systems to mobile applications.

I hope you enjoy reading this issue.

Andreas Fuchs
Chief Correspondent