Andreas Schell
is CEO of Rolls-Royce
Power Systems AG

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At the Crossroads

The diesel engine has for decades not been given the amount of media attention it has received in the last two years. Negative publicity has dominated the headlines and nobody seems to believe in a long service life any more. Are the diesel engine and internal combustion engines as a whole to be replaced completely by other types of engine in the near future, such as an electric drive?

No, in my opinion they will certainly be around for quite some time! The power and performance that large engines deliver for ships, haul trucks or trains, for example, cannot currently be matched by other drive systems. Electric drive systems incorporating battery energy storage are alternatives, but their output still needs to be further increased. Internal combustion engines will remain an important component of the drive systems required to meet the growing demand for mobility and energy for some time to come. However – the internal combustion engine will not remain what it is today. We will make it more intelligent and even cleaner, to ensure that it will continue to meet the requirements of our customers in the future. What they are looking for is efficiency, performance, reliability, comfort and environmental compatibility in order to meet current emission regulations.

We launched a “Green and High-Tech programme” at Rolls-Royce Power Systems in 2016. It is enabling us to make targeted investments in ecologically sound solutions for the future that will be designed to produce fewer emissions and reduce the con-

sumption of energy and raw materials. The combustion engine will nevertheless remain part of the solution for quite some time. Our ultimate aim is to achieve a 30 % improvement in CO₂ emissions by 2030. We are focusing our efforts on exhaust gas after-treatment, alternative fuels, electrification, digitisation and total systems capability (integration of individual components to produce complete drive and energy generation systems).

Commencing in 2018, we will be supplying the first certified series production gas engines for marine applications. The fact that a number of customers have already opted for our gas propulsion systems for marine applications in sensitive ecosystems shows us that we are moving in the right direction. Our hybrid propulsion projects demonstrate just how high the potential is in terms of reducing fuel consumption and noise emissions. The greatest challenge to be faced as we pursue this path into the future of the internal combustion engine is the successful development of the right technologies, particularly with regard to the development costs required. In order to come up with sustainable solutions as manufacturers of large engines, we will have to work closely with both the transport sector and the power generation industry – the common aim being to generate fuels in a regenerative manner (“power to gas”, etc.) and to develop the infrastructure that will be required, such as the LNG infrastructure. This will enable us to jointly maximise the benefits for the customer and ensure that the technologies we have developed are successful.