

A unique concept: Emitec provides system support from the development to the production stage

Emitec, a specialist in exhaust gas emission, has developed a unique combination of engineering competence during the past 25 years. As a “single source ideas factory”, the company provides a wide range of technology know how based on the skills of its numerous developers, test engineers and software specialists. Innovative products and individual solutions for clients are the result. If requested by the customer, the company will oversee joint projects that include everything from the first development stage to the final production stage.

The development and validation of SCR-based emission control technology for EU Stage IIIB seemed to be an unattainable goal. The engine development division of a major machine manufacturer instructed Emitec with implementing marketable technology in the space of one and a half years. Apart from the fact that these development cycles usually take three to four years, the job involved not just one specific engine for one machine but four engines for over 40 vehicle/machine configurations. The OEM was working on a number of other in-house developments and was looking for a partner for this project. The idea of using an exhaust system supplier was rejected because they would only be truly familiar with their own components. The machine manufacturer eventually turned to Emitec, which was to take charge of the development and work with the manufacturer in close cooperation.

The responsibilities were quickly divided up: Emitec would carry out the plant design, conduct tests on the engine test benches, develop software for the control units, program the emission control systems and develop the catalyst substrates. Emitec would also advise on application-specific coating and coating technology for the metal catalyst substrates. The engines were set up on the test benches at the company's state-of-the-art test centre in Eisenach and comprehensive tests were carried out on the components of the emission control systems before the emission reduction was validated.

A short chain of command and the seamless co-operation of a large number of specialists with experience in various industries (e.g. automotive, commercial vehicle industry etc.) ensured that the job was completed successfully in just under 18 months, and not just on paper but also on the test bench and, ultimately, in the field.

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This example illustrates that EMITEC develops and produces innovative components and takes the system integration leadership for series applications in co-operation with other specialists. Emitec is an increasingly requested development partner of non-road manufacturers as well as producers of agricultural engines and machines due to its wide product range of catalyst substrates (DOC, SCR and hydrolysis catalysts), particle filters, SCR dosing as well as injector systems. Emitec's unique selling point for all international markets includes:

- The vast experience of its specialists
- The latest design software, such as CFD, FEM and CAD, and project-specific in-house modelling software
- The availability of all necessary exhaust measuring technologies in order to optimise the systems as well as to meet legal exhaust regulations
- A state-of-the-art test centre in Eisenach, which houses the most powerful roller dynamometer in the world today

The advantage for the engine and machine manufacturers is that EMITEC assumes the responsibility for the entire development and validation management of all parties concerned. During the offer and development process, Emitec will put together a complete package, which will include its tried and tested system components - provided they are the best option. In addition, the company also advises on other components and subsystems required for the project development.

Emitec offers another service for this manufacturing market: machines or engines with emission control technology have to be certified by an appropriate authority before they can be sold in order to ensure that they comply with legal emission limits. In co-operation with the Federal Motor Transport Authority in Germany for example, Emitec can run the necessary test cycles on the certified test benches and conduct the project to the point of final official authorisation.

Emitec's business policy is part of a long term vision

Emitec has always aimed to keep one step ahead of upcoming national and international emission legislation. The limits currently applying in Germany and the rest of Europe are set out in EU Stage IIIB, which is equivalent to US Tier 4 Interim. However, all of Emitec's system designs already comply with the future requirements of EU Stage IV (or US Tier 4 Final), which will apply from 2014/2015. This means that SCR systems built by Emitec today have a

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