

GUIDE

CATAGEN's PGM Optimisation Strategy

Executive Summary

The legislation of emissions from internal combustion engines is becoming ever more stringent and with more attention from the public and legislators alike, the development of aftertreatment systems has become one of the most important activities in the powertrain development process.

Challenges

When developing an effective aftertreatment system a number of key areas need to be considered:



Compliance - means that engine manufacturers not only guarantee emissions performance at the point of sale but throughout the lifetime of the vehicle in real life scenarios with a range of changing variables, for example how people drive, type of journeys, etc.



Cost - The price of precious metals has increased substantially over the past few years and this trend is set to continue.



Legislation - Emissions legislation has become more stringent with each introduction of new legislation across many global regions. This has led many engine manufacturers to not only decrease the size of their engines but also to over specify their aftertreatment parts.

GUIDE

CATAGEN's PGM Optimisation Strategy

Key Questions to Consider

- Can I alter the ratio of components to get the same results?
- Will the part meet legislation targets?
- Can the PGM of the part be reduced?
- Will this part work with the next generation of engine?
- Can the physical size of the part be changed?

Solutions

The services offered by CATAGEN provide powertrain engineers an insight into their aftertreatment systems in the following ways:

- Detailed chemical analysis provides a detailed chemical breakdown of the aftertreatment device, focusing on key components such as the PGM and washcoat composition.
- Reproducible performance testing provides the activity analysis of the aftertreatment part, giving an understanding of how well the part will perform.
- This analysis conducted across the lifecycle of the aftertreatment device provides extremely valuable insight into not only what is in the part (PGM) but how the specification is performing.

Results

CATAGEN's testing services offer significant advantages to engine manufacturers by delivering clarity, confidence, and understanding of their components. By leveraging this knowledge, manufacturers can devise optimisation strategies to effectively minimise both the expenses associated with individual parts and the overall costs of vehicles. Consequently, this approach establishes a well-informed foundation for the next generation of powertrain, resulting in reduced future development time and expenditure.