

CATAGEN

— green emissions testing

PARTNER CASE STUDY

Accelerated Motorcycle Catalyst Ageing for a TVS - Norton Vehicle Model



CUSTOMER PROFILE: TVS | Norton Motorcycles

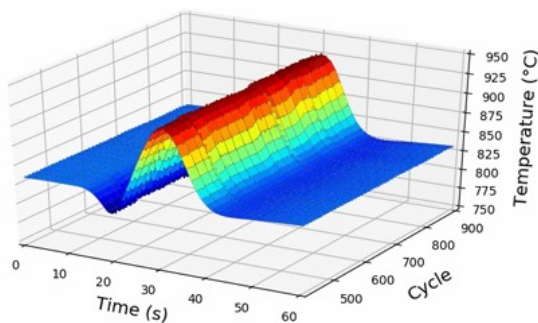
TVS Motor Company Ltd is a reputed two and three-wheeler manufacturer globally, championing progress through sustainable mobility with four state-of-the-art manufacturing facilities located in India and Indonesia. Rooted in 100-year legacy of trust, value, and passion for customers, it takes pride in making internationally accepted products of the highest quality through innovative and sustainable processes. TVS Motor Company endeavours to deliver the most superior customer experience across 80 countries in which they operate. Norton Motorcycles, based in the United Kingdom, a premium British motorcycle manufacturer, was acquired by TVS Motor Company in April 2020. Norton now operates from a modern manufacturing facility in Solihull, West Midlands, where it produces British motorcycles using traditional hand crafted techniques combined with contemporary production technologies to ensure consistently high quality.

PROJECT OVERVIEW

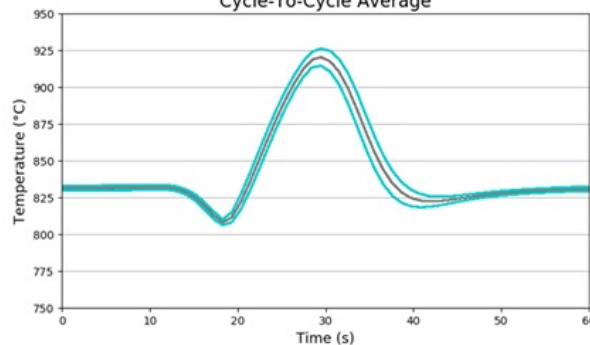
TVS Motor Company engaged CATAGEN Green Emissions Testing to deliver accelerated catalyst ageing for a new motorcycle model undergoing homologation certification.

With the model release imminent, the project required immediate execution and regulator aligned data delivery. CATAGEN Green Emissions Testing completed a controlled accelerated ageing cycle using its patented, recirculating OMEGA synthetic gas reactor.

Catagen Ageing - 8 Hour Sample



Cycle-To-Cycle Average



All ageing was performed engine-free, ensuring repeatable, regulator-ready data while removing the variability and risk associated with conventional engine-based ageing.

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PROJECT TIMELINE



DAY 1 - Catalyst collection and preparation

The catalyst was collected directly from the TVS engineering team. Adapter fabrication and test system preparation were completed the same day. Alternatively, partner can ship catalyst to CATAGEN facility with delivery timelines between 3-7 days to be expected.



DAY 2 – Accelerated ageing commenced

Following installation and final checks, ageing began immediately on the OMEGA reactor. The SBC ageing protocol was applied for the required number of hours at the data derived test condition.



DAY 5 – Ageing completed

The full ageing programme was completed exactly to the defined test conditions.



DAY 6 – De-fit and readiness for onward testing

The catalyst was de-fabricated and prepared for collection by lunchtime, ready for onward testing.



DAY 8 – Reporting and data delivery

The full ageing report and complete raw data pack were issued, providing full traceability and confidence for homologation submission.

WHY THIS MATTERS FOR INDIAN OEMS (BS-VI AND BEYOND)

As BSVI OBD Stage II B takes effect, India's two wheel industry faces increased regulatory emphasis on in use emissions, catalyst durability, and data traceability beyond fresh cycle compliance. OEMs must now demonstrate that aftertreatment systems remain effective over defined ageing periods under conditions representative of real world use.

Future post BSVI developments are expected to further prioritise repeatable ageing data, witnessed testing, and alignment with global homologation practices, particularly for manufacturers catering export markets. For high volume Indian OEMs, this elevates the need for ageing strategies that are fast, controlled, and ready for regulatory review.

CATAGEN Green Emissions Testing's engine free OMEGA reactor addresses these needs by delivering controlled, repeatable ageing aligned with BSVI requirements, while providing a scalable platform for future legislative phases. The TVS project illustrates how accelerated ageing can support urgent homologation timelines today while strengthening readiness for post BSVI compliance. With mile accumulation expected under BS-VII, durability and real world performance over extended use will become even more critical.

TECHNOLOGY AND DELIVERY

CATAGEN Green Emissions Testing's patented OMEGA reactor enables precise, engine-free catalyst ageing under tightly controlled temperature and flow conditions. This approach allows motorcycle manufacturers to compress homologation timelines, reduce cost, and significantly lower CO₂ emissions compared to conventional engine-based ageing methods.



Our visit to CATAGEN Green Emissions Testing in Belfast, including the demonstration of the OMEGA reactor in operation, provided us with a high level of confidence in their methodology and the robustness of the data generated.

The catalyst ageing programme was executed with precision, fully meeting our technical requirements, and was supported by rapid turnaround times and clear, comprehensive reporting.

CATAGEN's extended prompt support throughout the programme played a significant role in ensuring its successful and timely completion, demonstrating their commitment to responsiveness and customer partnership. The combination of technical capability, operational excellence, and the professionalism consistently demonstrated by the CATAGEN team has been exemplary. We look forward to continuing our collaboration with CATAGEN Green Emissions Testing for our ongoing and future catalyst ageing needs, including forthcoming legislative programmes.

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