

Hybrid 2W demonstrator

Situation and outcomes

- The client wanted to develop a hybrid version of a current model and wanted to explore new component suppliers in the EV industry
- Ricardo received a request for developing the motorcycle from concept, layout and hybrid architecture, through to the build of a running demonstrator vehicle

Ricardo responsibilities

- Design, procure and develop a vehicle to a fully developed prototype status, with mass production in mind
- An initial concept study included options for the basic layout of the vehicle, and size of the electric components to meet the performance targets in hybrid and pure electric modes, weight estimation and vehicle performance simulation
- Engaging the main components suppliers
- Design, procurement, build and validation by testing of all the components, including power train and vehicle testing on bench and on-road
- Software and functional safety development

Results and benefits

- The hybridisation of an existing model has been completed by Ricardo
- This demonstrator includes:
 - Possibility of switching from hybrid to pure EV in automatic or manual mode with running vehicle
 - Fully calibratable and customisable control software
 - Additional application specific features
- In parallel and overlapping the design, purchasing and testing tasks allowed to compress the timeline to ~16 months from design start to fully developed vehicle ready for industrialisation phase