CASE STUDY

CLIENT: **Motorcycle Manufacturer**

PROJECT SCOPE: **Development of Electric powertrain**

PROJECT TARGET: **Technical and Manufacturing feasibility and costing. Supplier Selection and Prototype Assembly**

RESULTS: **Two working prototypes delivered**

We were approached by a small company that had secured to the rights to market off-road motorcycles in the name of a well known British motorcycle manufacturer. They had also acquired a large batch of unsold and prototype parts.

They called us because the unsold motorcycles were powered by 50cc engines but they wanted to sell electric motorcycles for youngsters to use. Their business model was to sell bikes direct and also hire them at events for the kids to ride around a short bumpy track.

A great idea, but it would mean that they were going to be used by lots of people with varying degrees of experience. It also meant that safety, simplicity, and easy-control were paramount in the operation of the bikes.

The company had put together a basic prototype and gave us the instructions *"we want to make at least 200 of these to use up the stock we've inherited, but first can you get that one working properly so we can see how well it works. Oh, and here's a list of parts we think we could use but can you advise if they're any good and safe."*

So we did that, soon returning with two working models – one a complete bike and one a mounting plate with the components fitted to show how production versions would look. We also had a list of questions for them and a number of options for a speed controller to make the bikes safe for beginners or nervous riders.

They soon came back with their thoughts on which features they liked and, armed with this knowledge, two bikes were kitted out (a 24v and a 36v version) and returned to the company. This time they were accompanied by a manufacturing/assembly sheet, the test protocol and certificates, and a database to record test results and ensure traceability of components for service and warranty. They were also provided with a full cost breakdown for:

[a] supply of parts, [b] assembly and test of drive packages for them to fit, and [c] assembly and test of complete bikes ready-to-ship. They were delighted to be 'production ready' and could confidently approach investors with their demonstrator machines and an accurate projection of costs.

WEALD

Weald Technology Ltd has won awards for engineering and innovation in low-carbon and sustainable transport. Our collaborative design and engineering projects are used to generate industry-relevant STEM activities that inspire the UK's next generation of engineers and scientists.

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