

CLIENT: New UK electric motorcycle manufacturer

PROJECT SCOPE: Technical and Manufacturing support during Development phase

PROJECT TARGET: Technical support to Designers
Manufacturing and Production review
Detailed cost and supply-chain analysis

RESULTS: Project delivered with three pre-production bikes built

A designer we met had come up with a lightweight electric moped for urban commuting incorporating some excellent ideas to reduce weight and maximise efficiency, but was struggling to do it at an affordable price. Matters were complicated (in his eyes) because he wanted to build a range of bikes for different markets and it all seemed to be getting very confused.

We started by walking around the bike to gauge, visually, where there were opportunities to cut costs. Not all of the ideas could be accommodated; that's often a problem with a modular design for multiple configurations, but we could identify a number of opportunities to shave cost with more likely to be picked up in a comprehensive design review and value-engineering exercise.

Following this the cost-data was collated so we could focus on the main cost-drivers; the 80/20 rule is always a good starting point. We also spoke to the suppliers for advice.

The next step was to separate the cost of common parts (that could be made in large batches) from the options that the customer would choose when ordering (wheel type, mudguard options etc).

Once this was defined it was relatively straightforward to produce a 'configurator' allowing the company to input any product mix, with all it's options, and see the cost (and labour) to manufacture.

This showed that some products were unrealistic to manufacture at the target sales price, but the designer was happy to take away the results of this analysis and look into re-designing. Finally we helped build three pre-production models, in various configurations, so he could start testing.



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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