

## Abstract

Battery electric vehicles are considered by many the future of the automobile in the transition from fossil fuels to less polluting energy sources. It has become clear that, although they still have a noticeable carbon footprint and have their own environmental issues, battery electric vehicles are overall less polluting than internal combustion cars, and they are the next step forward to reduce pollution, and consequently global warming. Sales for electric cars have been steadily increasing over the past years, and the public is more inclined than ever to purchase an electric vehicle instead of a combustion engine car.

Nevertheless, there currently exists a very limited amount of different battery electric models in the European market which are in the low price range, and the existing ones are still noticeably more expensive than the most affordable internal combustion engine cars. This is one of the causes for the current low number of battery electric vehicles sold worldwide when compared to combustion engine cars, and the focus of this project's objectives.

The aim of this project is to assess what design specifications are needed in order to manufacture the most affordable BEV for the European market, with a number of desired specifications as starting points; and to calculate its approximate price to see if price parity with the most affordable A-segment combustion engine cars can be achieved, without sacrificing the utility of the vehicle.

Even with all the cost-cutting measures applied on this design, the desired price parity is not quite achieved, although the proposed BEV does decrease in price substantially when compared to the most affordable European BEVs. A vehicle like the one proposed still holds potential to help with the transition to BEV mobility for people who do not have the budget to currently afford an electric car, by filling this yet unaddressed gap in the market.