

Executive Summary

This report focuses on the electric segment of the pick-up truck industry. By looking at a spread of push and pull factors to gauge the present market, the paper studies how and where the electric pick-up trucks fit into the existing market. Moreover, how successful could it potentially be in the near future given present and future considerations.

The study begins with introducing the concept of a pick-up vehicle and its origins dating back to even before the world war. The vehicle concept has since been subjected to somewhat radical changes over time to adapt to present day requirements and customer desires. However, it has still lacked in terms of innovation when compared to other vehicle type segments. Researching the market and its driving factors shows a large gap between the existing benchmark of what is currently offered when compared to what must be achieved. The fact that pick-up trucks make up 20% of the vehicles and show a promising rise over the next 5 years clearly illustrates the increasing demand. However, they have only shown a mere 55% improvement in fuel economy when compared to sedans. This, along with mounting emission clampdowns, provides a drive towards a more sustainable pick-up truck market.

Further research was conducted to understand the triggers that have caused the pick-up to transform since its introduction to the market and to clarify consumer needs. By considering the shift in the pick-up from a "farm vehicle" to the urban vehicle, we recognize the drastic improvements in towing capacity. This is used as a performance indicator and was historically also driven by the need to tow large payloads such as quads, jet skis, and mobile homes as higher income urban users began making up a large portion of the customer base. In contrast, there has been little increase in fuel economy when compared to other vehicle segments. The current push for innovation comes as autonomy, sustainability, and luxury become desirable factors.

The paper identifies a set of four electric pick-up trucks. This allows the direct contrast between upcoming innovative companies versus the innovation by the existing 'big names'. Finally, the Tesla CyberTruck enters the equation. Research shows the aggressive and cunning marketing strategies coupled with an innovation-centric business model helps to propel the disruptive product to break through, and shape the market. The company itself, since 2003, has always aimed for disruptive technologies. Though initially breaking through into the EV market using the 'early adopters' of higher income, the focus is now to offer a sustainable alternative that is affordable as compared to traditional brands. Compared to traditional pick-up trucks, the CyberTruck outperforms in every aspect except the cost per pound of towing capacity. When comparing the CyberTruck to other electric pick-up trucks, the AWD CyberTruck shows a clear dominance. By providing compelling performance measures in terms of conventional and electric standards, Tesla shows a promising lead in the yet-to-be established market.

Today's battery technology still lacks the required energy density to rival conventional engines. A breakthrough in battery technology is required if electric vehicles are to ever replace gasoline vehicles. However, the race towards electric vehicles has already begun with models projected to hit the roads by 2021. This will serve as a catalyst towards innovating in the performance limiting areas.