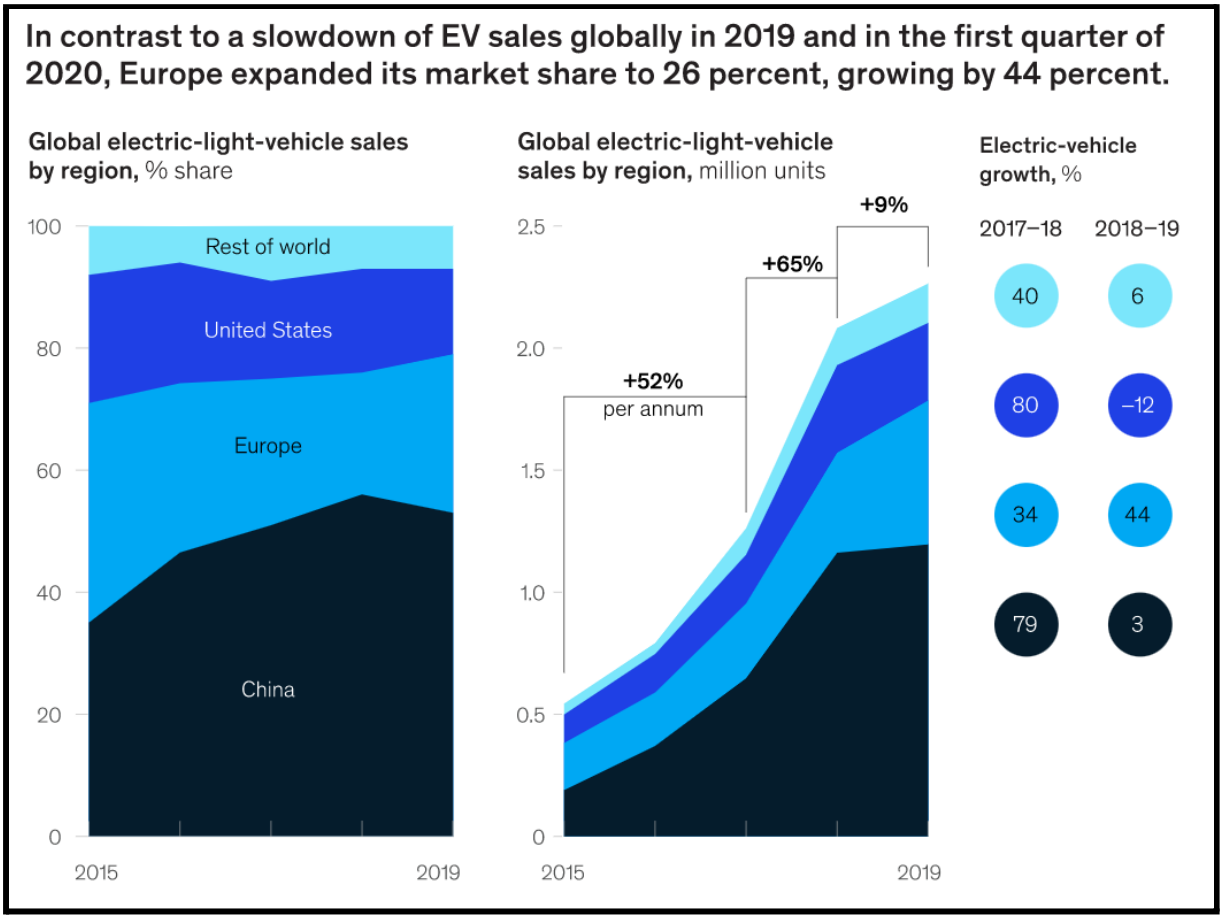
Do you think EV's will be able to give competition to the petrol & Diesel vehicles?

MARKET ANALYSIS



Source: [1] McKinsley & Company (July 2020)

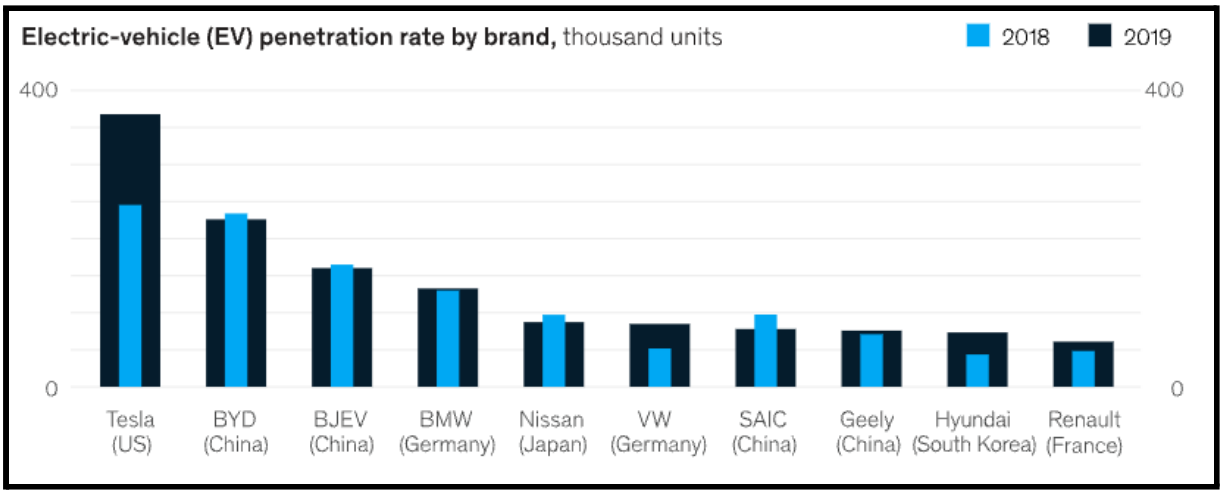
Main EV markets suggest shifting regional dynamics, with China and the US falling behind Europe.

September 26, 2021

EVs outsell diesel vehicles in Europe in August for the first time ever

- Total market volume fell by 18% in August, marking the second consecutive, monthly double-digit decrease
- Electric vehicles and plug-in hybrids secured record market share for the month
- The Dacia Sandero once again secured the top spot as the most registered car in Europe

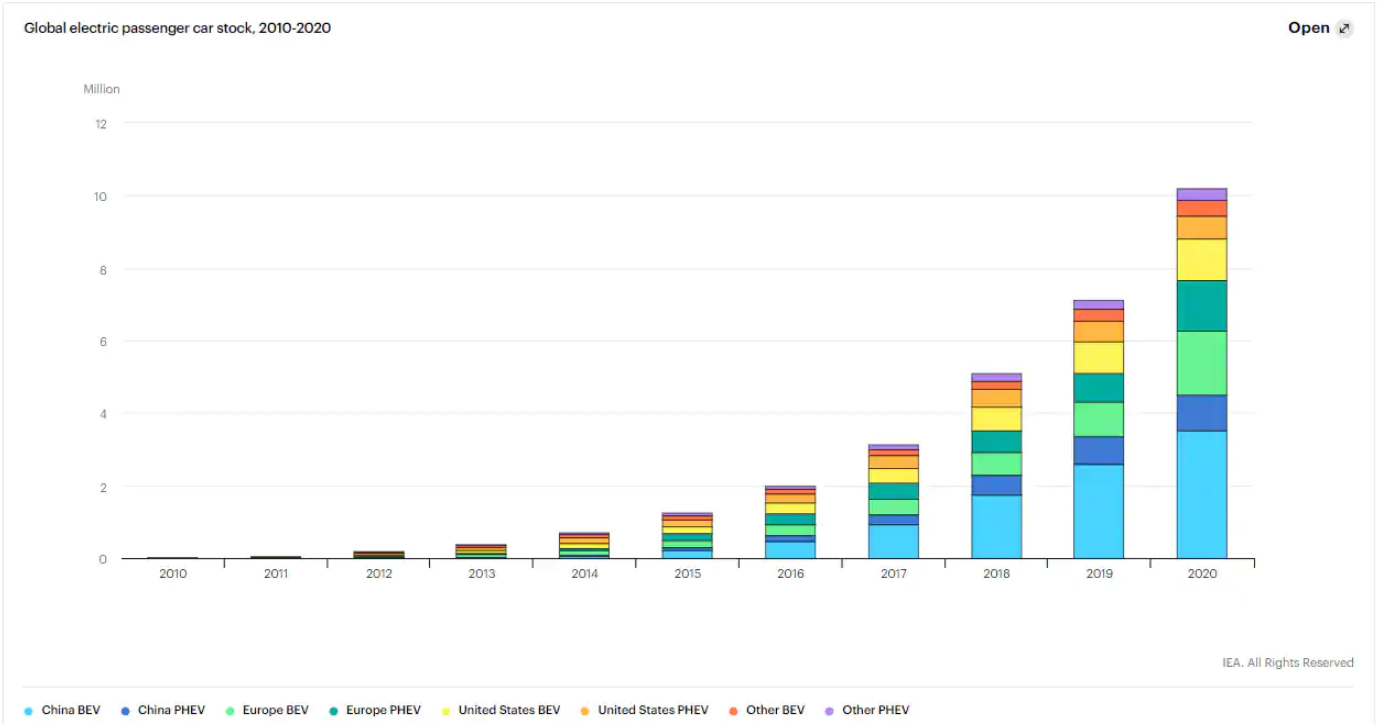
This is a recent and significant milestone in the growth of EV's.



Source: [1] McKinsley & Company (July 2020)

Tesla increased its global market share to about 16 percent in 2019, with the model 3 accounting for 13 percent of sales.

Growth of EV's:



Source: IHS Markit

The rapid increase in the number of EV's sold can be easily seen from the above graph. There are multiple factors that are responsible for his increment. Some of the major ones are:

- Improvement in the EV technology
- People have become more conscious about clean energy.
- Vast difference in the daily running costs due to high fuel price.

COMPARISON

Features	Electric Vehicle (EV)	Fuel Cars
Power Source	100% Electric	Petrol or Diesel
Carbon Emissions	Very Low	Very High
Operating Costs	£	££££
Purchase Costs	£££	££
Government Incentives	Plug in Car Grant	None
Mileage	150-300 Miles	250+ Miles
Integrated Home Benefits	Home Solar Panels	None
Maintenance	££	£££

Source: Mantis Energy

The chart above shows that EV's are equivalent or better than petrol cars in almost all features. The only place where it falls behind is the higher initial cost of purchasing but this gap is reduced by subsidies given by governments in an effort to promote green energy.

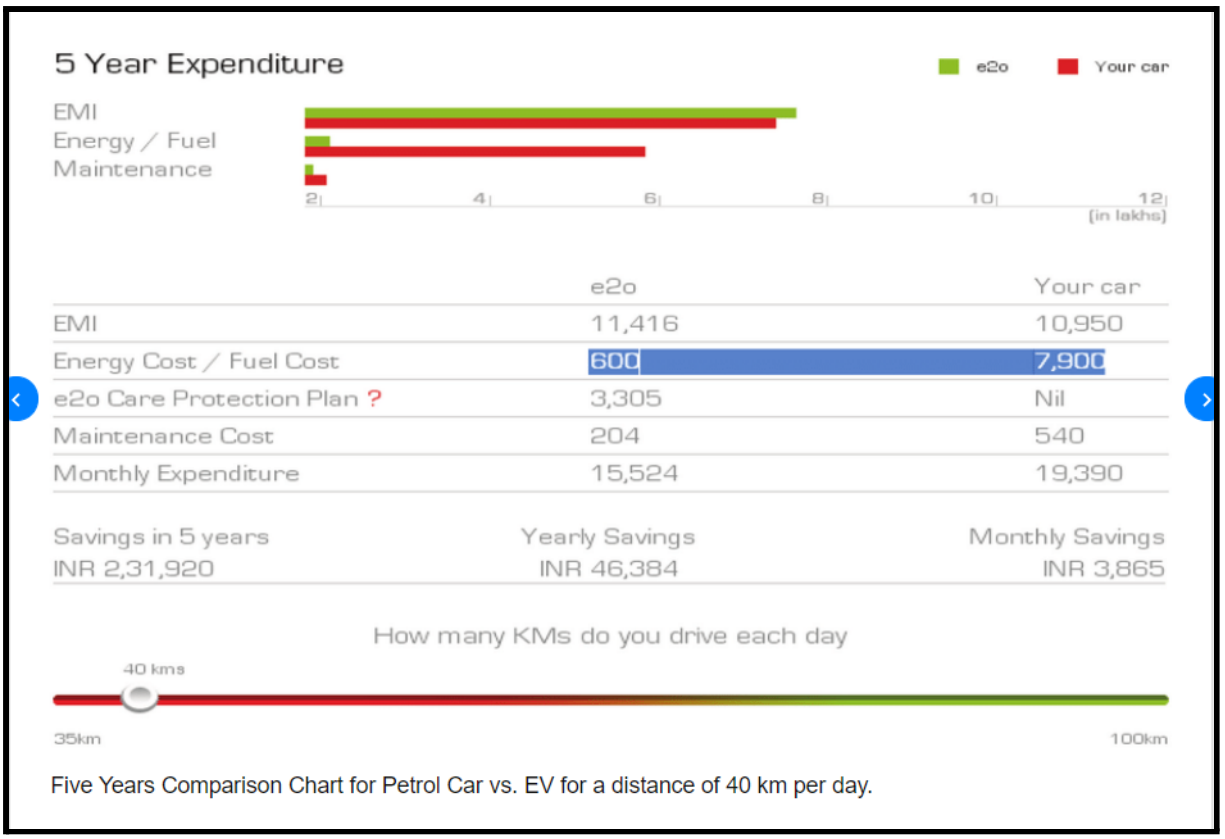
Are EV's worth shelling out the initial higher cost?

COST ANALYSIS

	Electric Car (Mahindra e2o plus)	Petrol Cars
Mileage	120 km	620 km (approx)
Energy Consumption	12 units	40 litres (approx)
Energy Usage	12/120= 0.10 unit	3.125 litres per day
Cost	Rs 7.30 per unit for 400-800 units	Rs 82.25 per litre
Cost per km	Rs 7.3 X 0.10 units= 0.73 paisa	Rs 5.140 per kilometre
One day expenditure (50 km average travel)	50 km X 0.73 paisa= Rs 36.50	50 km X Rs 5.140 = Rs 257.03
Monthly expenditure (25 days travel)	Rs 912.5	Rs 6,425

Source: Google Images

There is a significant difference in the daily running costs which can be easily seen above. Another point to be mentioned is that the petrol cost has increased significantly since this comparison while the electricity cost has increased by a minor amount only.



Five Years Comparison Chart for Petrol Car vs. EV for a distance of 40 km per day.

Source: Google Images

Car	Rate of petrol/ electricity	Efficiency	Per km cost	Total Run/Month	Monthly Expenses	Yearly expenses	Saving by the end of the year
Nexon Petrol	Rs 90.56/litre	11kmpl (assumed)	Rs 8.23	1000km	Rs 8230	Rs 98,792	--
Nexon EV	Rs 4.5/kWH	250km (assumed)	Rs 1.83	1000km	Rs 1830	Rs 21,960	Rs 76,852
		Single charge					

Here we have compared two categories of cars and have seen the cost differences. Tata Nexon Petrol Variant costs INR 11 lakhs while the Nexon EV costs 14 lakhs. The price difference of 3 lakhs is easily recovered within a period of 4 years.

REFERENCES:

[1]
https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/mckinsey-electric-vehicle-index-europe-cushions-a-global-plunge-in-ev-sales