Charging into the Future

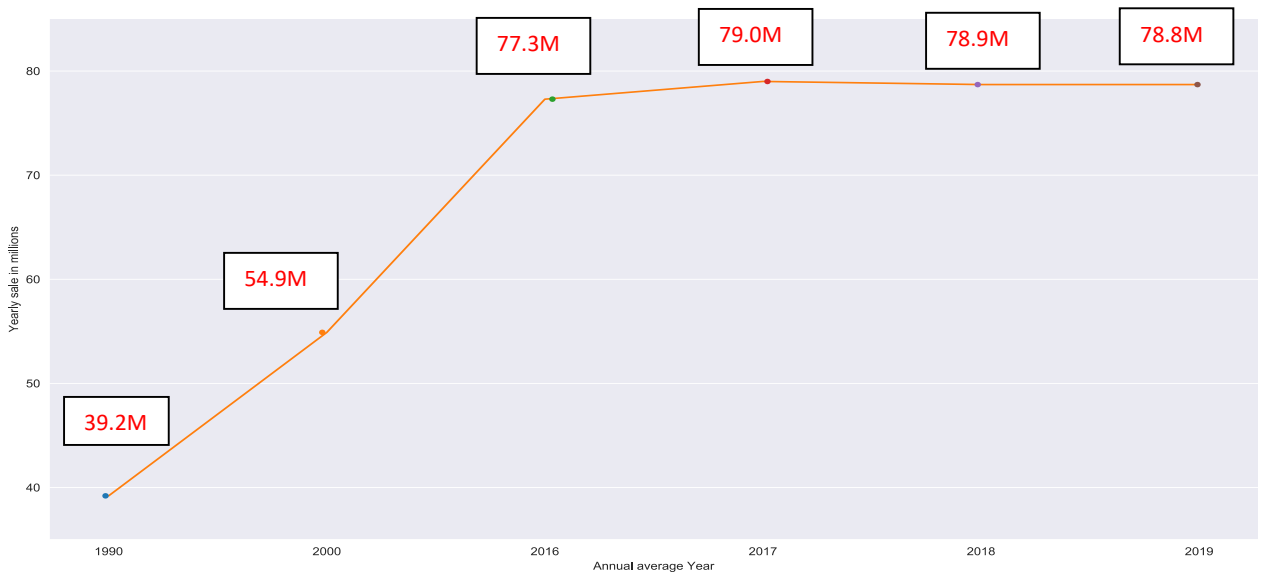
A report on car sales

Introduction

The engines of an electric car are as silent as they possibly can be. So is the advent of electric car revolution coming onto us. Silently.
We are in the endgame now. A famous character in the popular movie franchise 'Avengers' blurted these words in one the movies in witness of fans from all over the world. These words could not ring anymore truer for the automobile industry as well. Well at least for the sector which relied heavily on the sales of cars using the fossil fuels. The automakers are now making a move and we are witnessing a major transformation not seen in the automobile sector in the past many years. Albeit slowly, but the change is coming. Norway is leading the revolution with its target of 100% new cars to be powered by electric batteries or at least a hybrid of electric batteries and petrol or diesel. The target Norway had set for 2025 is very well within their grasp. With recent investments made by the governments in the Middle East and Asia only signifies the necessity of shifting gears in embracing the new technology.

A look into the past

From the figure 1, we can see that for the past thirty years, the sales have been consistently improving. The sales figure are annual figures for the past three decades. With automobile technology improving rapidly, the design of the car and its parts have improved tremendously. The battery lasts longer. The smart technology intuitively makes good use of various accessories. With the advent of artificial intelligence, the cars are becoming less prone to accidents and the general satisfaction levels has improved. Everyday more and more scientific outlets are making the general public aware of the climate change. The governments are encouraging use of public transport system. All these changes have finally the growth rate to a stop. The year 2018 is an estimated figure and 2019 is a predicted figure. All leads point to stagnation in the automobile market.



The Dark horses

Figure two shows the major car manufacturing countries in the world. It is very clear that China is undisputed leader by far and more. It has at least five times the prowess of manufacturing cars than its next competitor. The United States has lost quiet a share in past twelve years. The USA was the leader until 2008. China went ahead and capitalized greatly on the event of economic depression. The lead that USA lost has not yet been regained and doesn't seem likely for the next decade, if the trend has to say anything. The year 2017 again seems to be the year of decline for the USA. Their biggest growth for the period depicted in the graph came in the year 2014. Whereas China has surpassed their own records consistently. The next big players, Japan and Germany have had steady sales for the past twelve years. China wins the race by far. The initiative and layaways given by the government to the different car manufacturers around the world should be analysed for economic development.

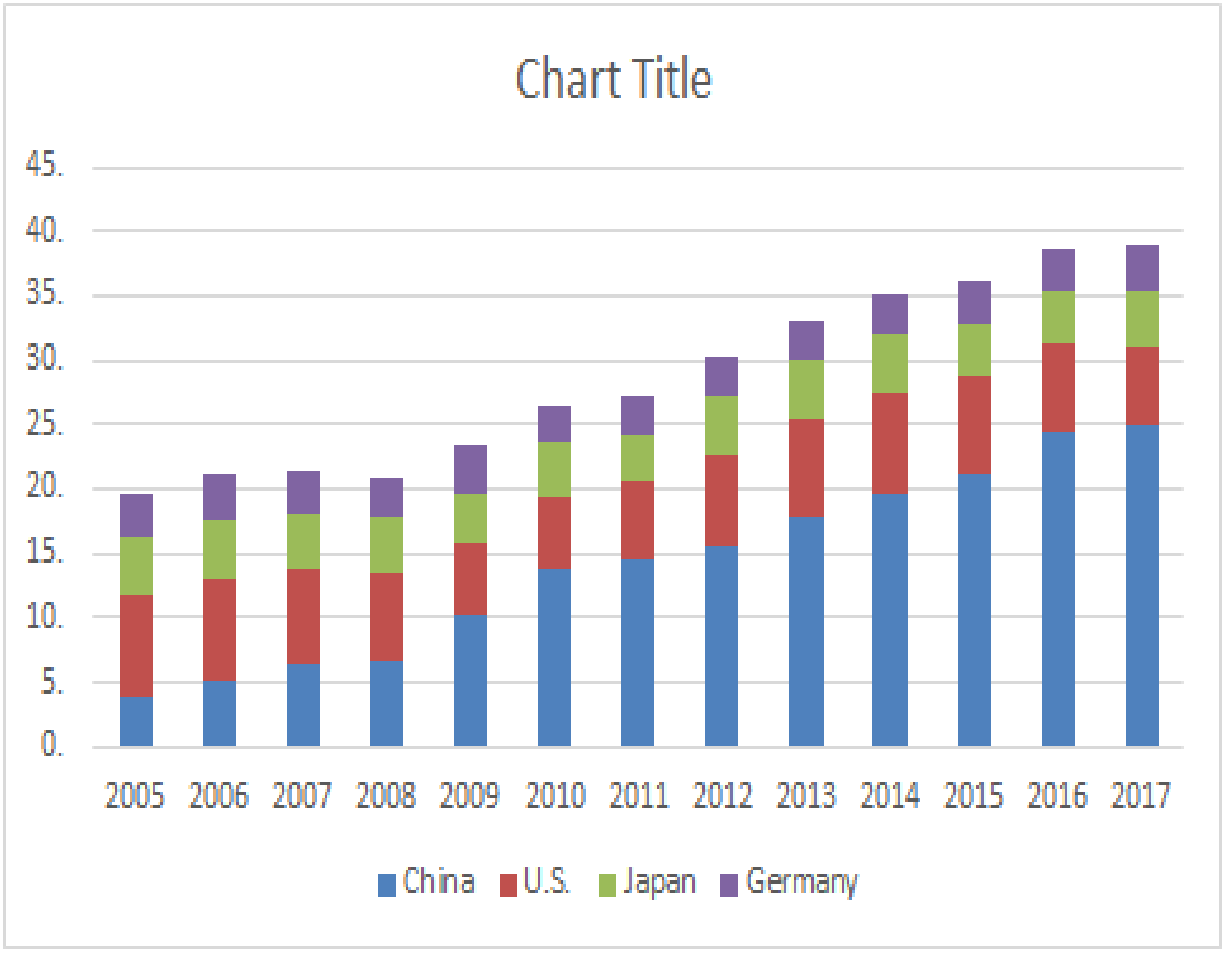


Figure 2: Car manufactured in millions by top four countries

The power of fuel

In figure 3, we see the percent share of vehicles, of whole world, using different types of fuel to power their car. The figure shows value for the years 2017 and 2030, later being a predicted value.
For the year 2017, the share of cars using gasoline, 75% far outstripped the number of cars using other type of fuels.

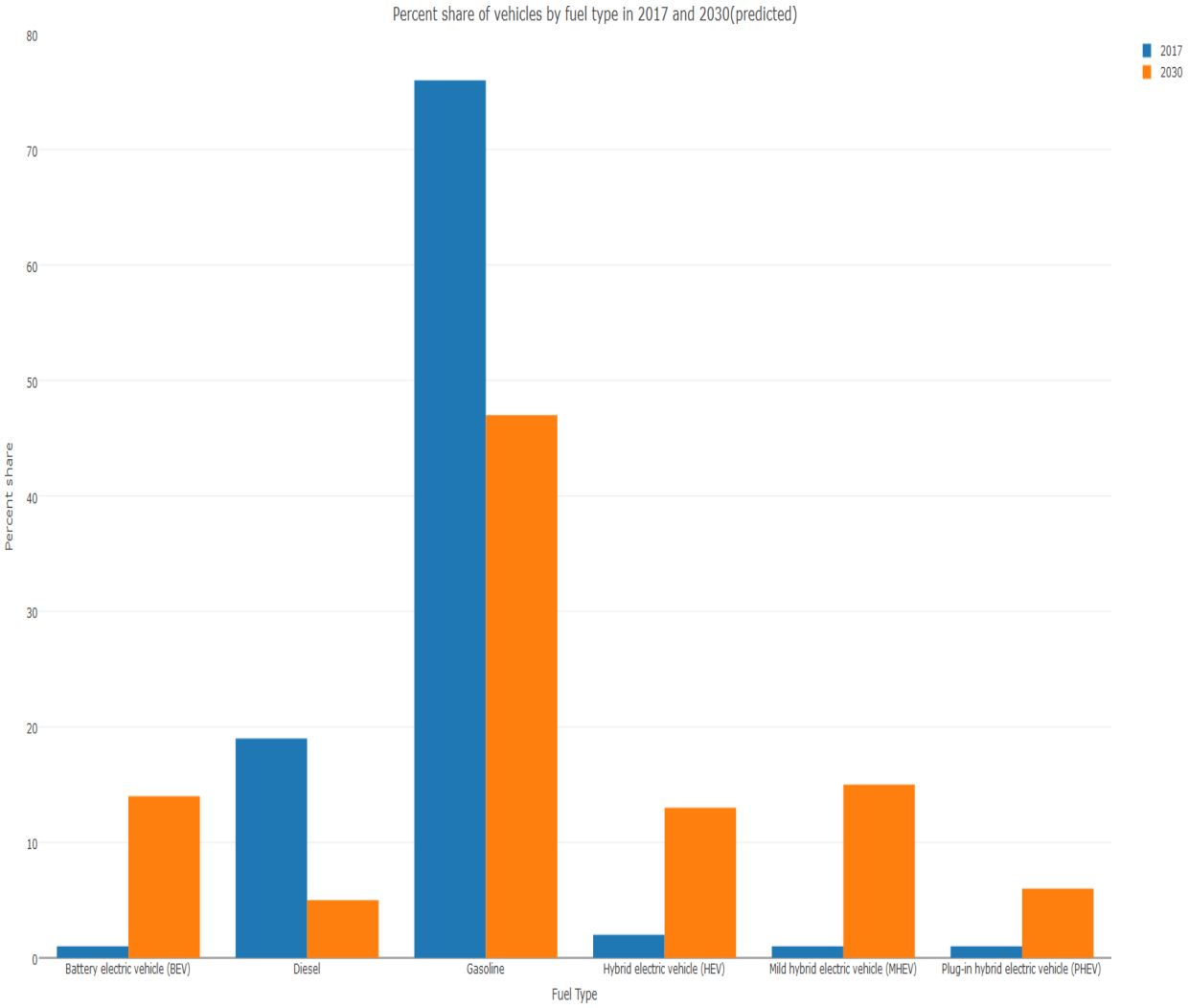


Figure 3: Percent share of cars based on fuel

In second place is Diesel with almost 20% share. This leaves other types of fuel using cars less than five percent of the total world market share.

But the predicted values show a totally different scenario. The share of gasoline and diesel powered cars has drastically fallen. The share of diesel engines car has fallen to more than half. The fully battery electric vehicle, hybrid electric vehicle and mild hybrid electric vehicle all jump up a significant value. It goes in hand with various initiatives undertaken by different governments.

Money talks

In figure 4, we can see how much we need to spend to buy cars in different European countries. As far the parameter of two different year goes, in all the countries buying car in 2013 was cheaper than buying a one in 2017. The highest price to be paid to drive a car is that in Norway. It is almost double the price of buying a new car than its counterpart nation of Greece. The prices stand at 44,000 and 25,000
in Norway and Greece respectively.
The countries Switzerland, Denmark, Luxembourg show the sharpest incline in buying prices of a car in year 2013 and 2017.

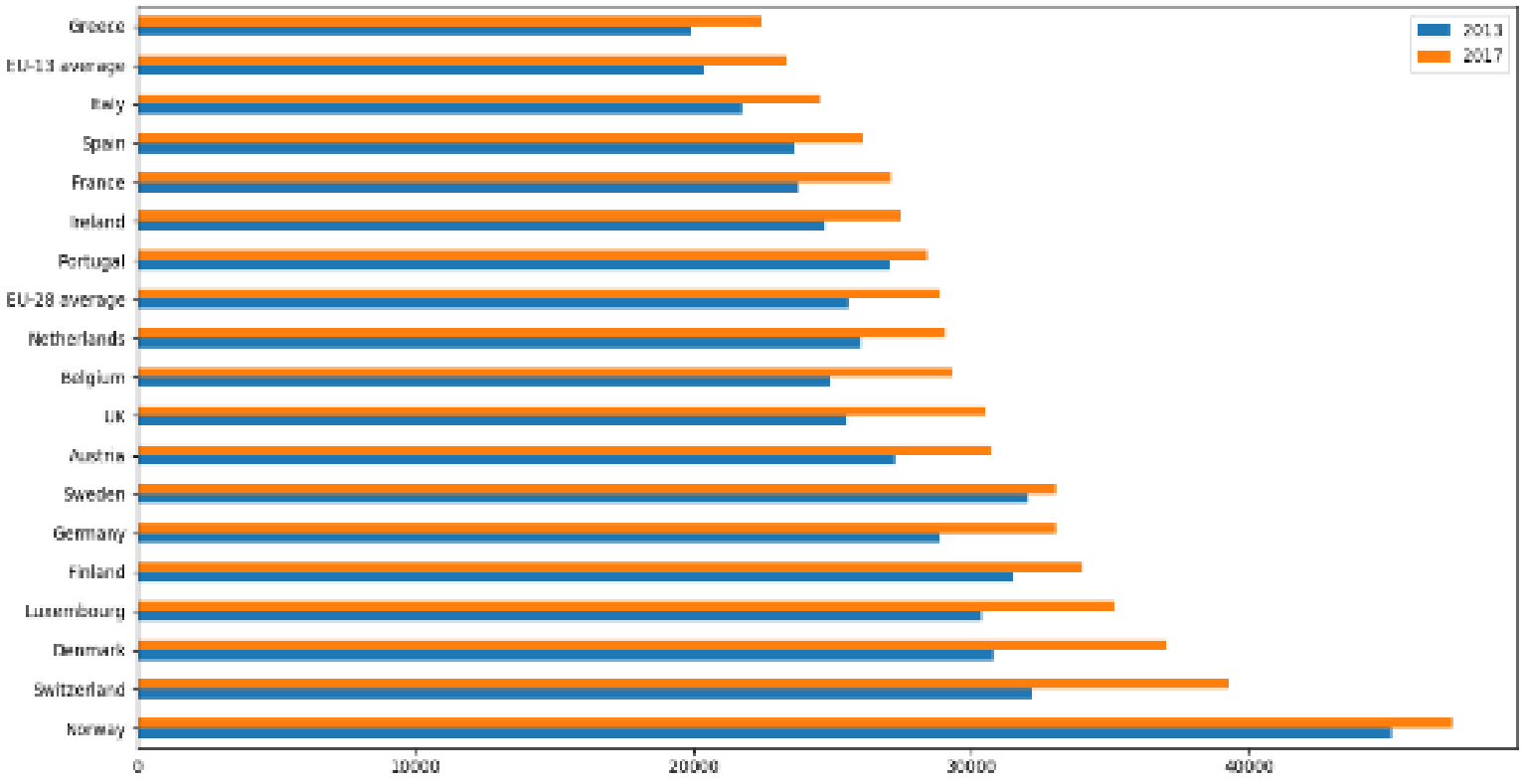


Figure 4: Price of buying a new car in European countries

Sweden has managed to keep the prices under check. From being the second most expensive European country to buy a car to the sixth place, much to delight of its citizens.
Ireland lies dormant in less expensive zone of the figure, with a slight increase in the overall average price.

Something for everyone

The number of cars per person has gone up at steady rate. In the year 2016, the number of 428 is 187% bigger than that in 1990. These are very encouraging numbers. This figure establishes Ireland as the country where almost every other citizen at some point in his life has owned a car. As seen in the previous figure, Ireland is one the least expensive country in Europe to buy a car. Even after inclusion of different taxes it is still affordable to buy a car here.

Coupled with the factor that few parts of Ireland is sparsely populated compared to other, less time in traffic, stable fuel prices and ease of buying a
car is encouraging to the buyers to get a new car for the daily transit.

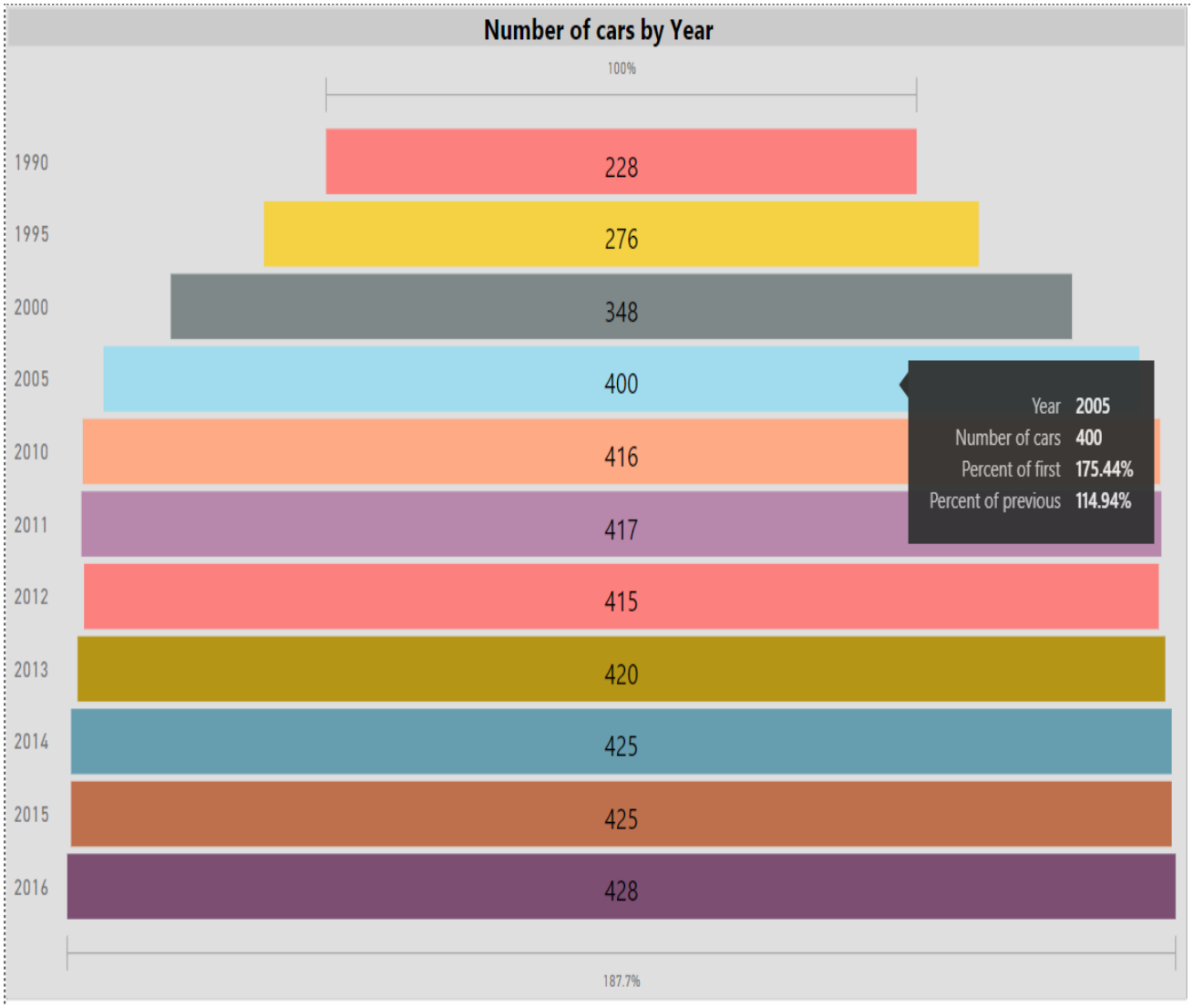


Figure 5: Number of cars per 1000 inhabitants in Ireland

What's in a name? Everything!

Figure 6: Popular car brands by number of cars sold in Ireland (2017)

Volkswagen Golf, Ford Focus, Toyota Corolla were the top selling cars of the year 2017 in Ireland. Hyundai, Renault, Kia, Skoda, Nissan were some of the other competitiors in the race. The German automaker Mercedes-Benz and the Japanese Suzuki failed to entice the Irish market with their offerings.
Ford has always held a tight grip on the Irish market. Volkswagen served an ace with its Golf model selling north of 13500 models in the year. The affordable yet uncomrpising Ford Focus sold 12700 models and Hyundai's Corolla came very close with 12300 sales to it names. The last one standing in the list Citroen, has 1200 sales to its names.

Segmentation

Segments like Jeep/SUV Standard, Small standard and Mini Standard were the preferred choices of the people. Medium standard, Jeep SUV / Prestige
There are some other segments that people bought cars from. Jeep/SUV prestige make up 28 percent of sales. Small standard vehicles make 24 percent of total sales. Mini standard vehicles share 16 percent of the sales for the year 2017.

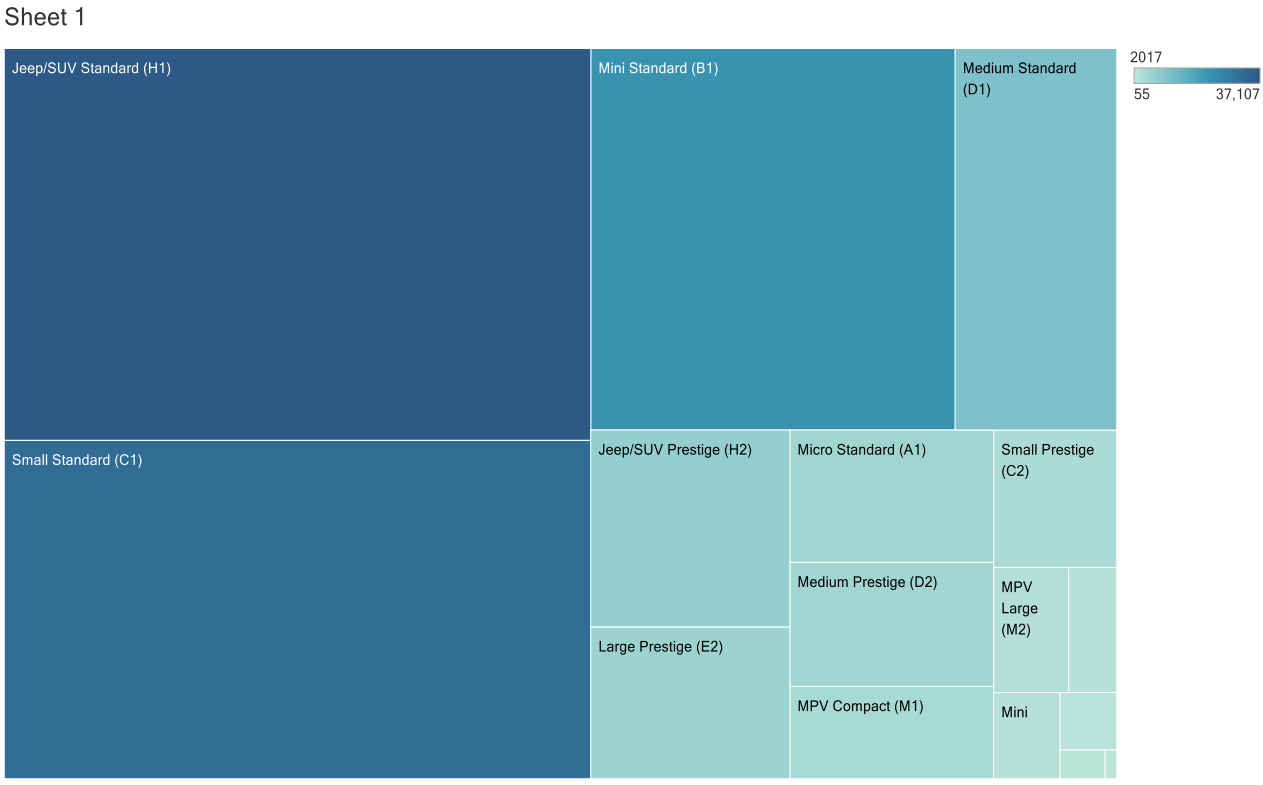


Figure 7: Car sales by segment (2017)

Technology vs Traditional

Nissan Leaf is priced at €33.3K. With the grant provided by the government, since it is priced under €35K it is exempted from vehicle registration tax which is normally at least 14% of the total price of a new car.
Maximum grant is of €5K which brings the price of a Nissan Leaf to €28.3K.
Compared to the most affordable in the non-electric battery vehicle, a Ford Focus comes at a very reasonable price of €26.7K. Since it is a non-electric battery vehicle, the vehicle registration tax, at the very minimum would be €3.1K. This brings the total price of the Ford Focus to €29.8K, pricing it further than the Nissan Leaf.

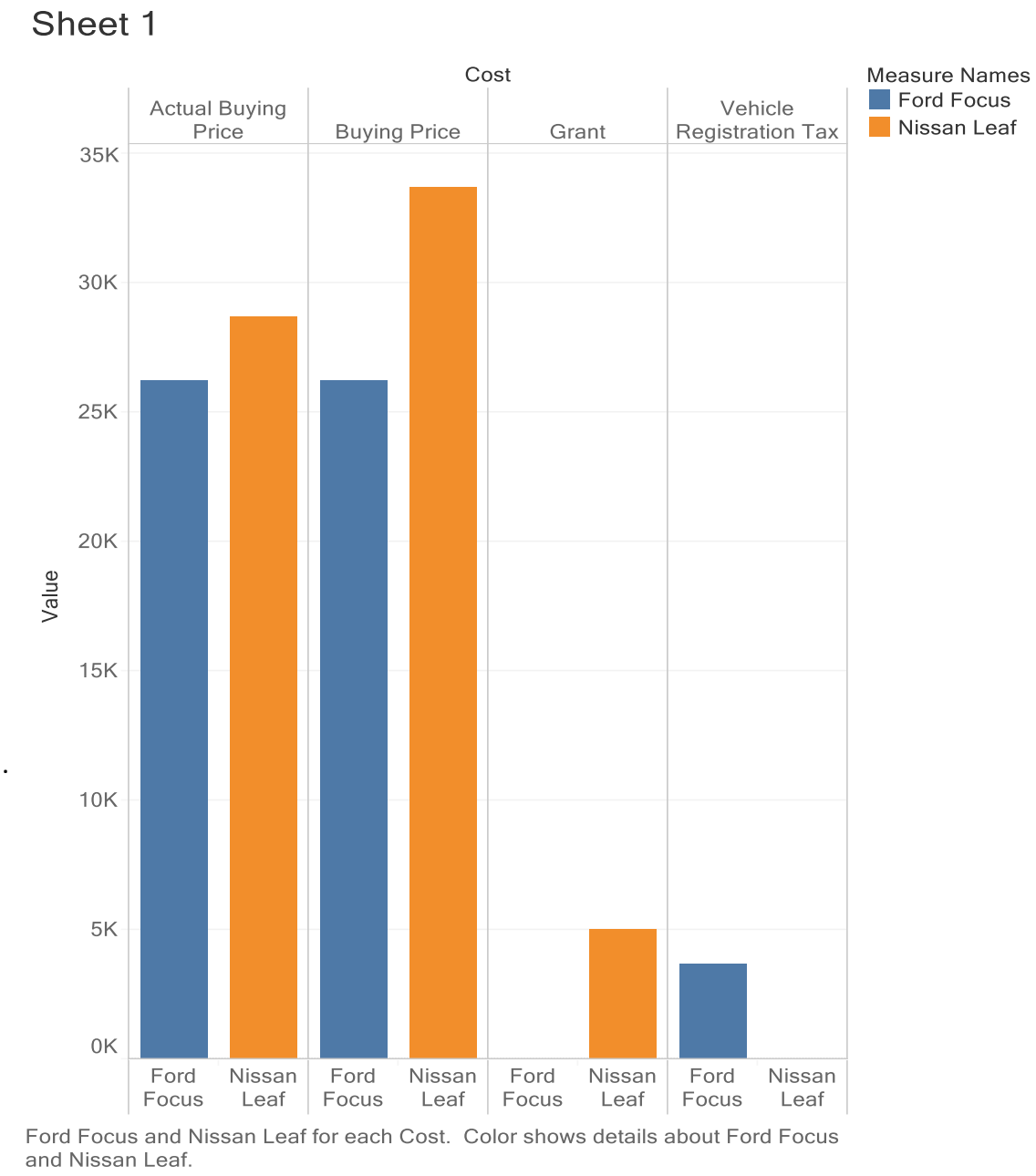


Figure 8: Nissan Leaf vs Ford Focus total buying charges

Cost cutting

The Nissan Leaf, on a single charge can run for 200 Kilo meters. A fast charger can charge the Nissan Leaf up to 80 percent in 50 minutes.

Installation charges of a charging station adds €450 in expenses. Monthly charges in electricity charges are an estimated €22, turning it into €265 per year. If availing a public charging station, even these charges cancel out.

There is an exemption for the electric car in form of tolls, €500. Yearly tolls for private vehicles are capped at €1,096 per year. With exemption, price of yearly tolls come to €596.

Along with other perks, even the motor tax is low at €120. Service charges for an electric car is another €120. Total cost €1,551.

Figure 9: Maintenance and running charges (Nissan Leaf vs Ford Focus)

The Ford Focus, uses fuel worth €1070. Four times that of Nissan Leaf.
Motor tax is €180. Yearly highway toll is €1,096, 183% higher than the Leaf.
Service cost is an estimate of €200 per year.
This brings the grand total of running and maintaining a Ford Focus to €2,546 per year.

Charging in to the future

Electric charging stations are present throughout Ireland for the usage.
If still on fence about buying an electric car, this should be an insight into the presence of electric charging points in the area of your residence. Highest number of electric charging points being offered in county Dublin.
County Dublin also houses the highest population in Ireland, but this shouldn't deter any Dubliner's from buying an electric car. ESB Charge map can provide detailed information about the location of charging points and the type.

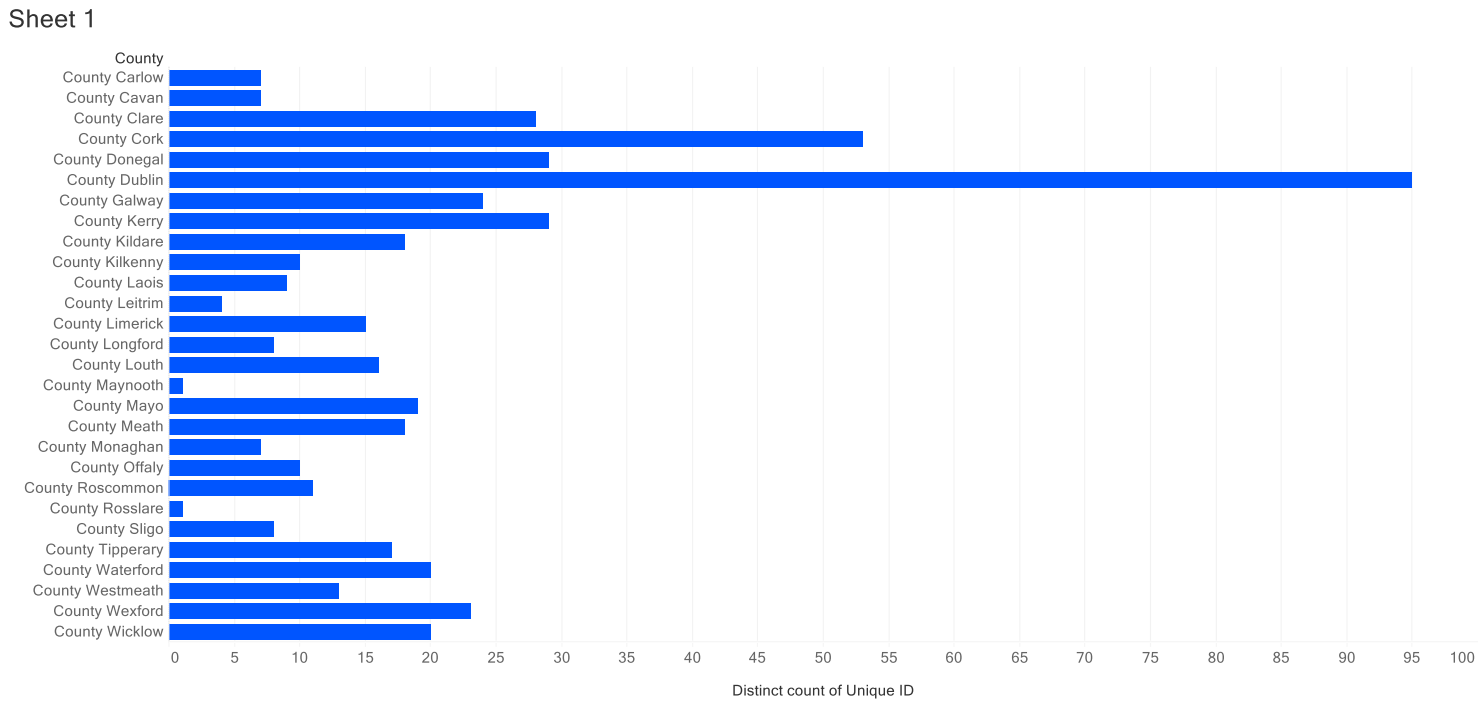


Figure 10: Number of charging stations in each county

Conclusion

As time moves forward and more people will embrace the electric car revolution, there will be some deduction in perks which are currently bestowed. But more important is the fact that we will be reducing our carbon footprint. The effects of global warming are starting to get worse every year. Any step, no matter how small, needs to be taken. This change of fuel in our cars is one way to go for it.

References

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a. Sales of cars worldwide
b. Car sales by major countries
c. Percent share of cars based on fuel
d. Price of buying a new car in European countries
e. Number of cars per 1000 inhabitants in Ireland
f. Popular car brands in Ireland
g. Car sales by segment

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