Trends in vehicle Licensing by fuel type in the Britain

To analyse how licensed electric, hybrid, diesel and petrol cars have changed in the last 10 years

Daniel Austin

Dataset

- df_VEH0120 data from the department for transport and the DVLA https://www.gov.uk/government/statistical-data-sets/vehicle-licensing-statistics-data-files
- The dataset contains records for every vehicle model licenced and SORN in the uk.
- Contains fields for fuel type (petrol, diesel, electric and hybrid), body type (cars, motorbikes, vans ect) and number of licenced vehicles in each quarter from 1994Q4 to 2024Q2

	A	B	C	D	E	F	G	H
1	BodyType	Make	GenModel	Model	Fuel	LicenceSta	2024Q2	2024Q1
2	Cars	ABARTH	ABARTH 124	124 GT MULTIAIR	Petrol	Licensed	16	16
3	Cars	ABARTH	ABARTH 124	124 GT MULTIAIR	Petrol	SORN	3	4
4	Cars	ABARTH	ABARTH 124	124 GT MULTIAIR AUT	Petrol	Licensed	24	25
5	Cars	ABARTH	ABARTH 124	124 GT MULTIAIR AUT	Petrol	SORN	2	2

Transformation and analysis

- Data transformation and analysis was complete using python with the pandas library.
- The dataset was obtained pre-cleaned and contained no null values
- The data was filtered for licensed vehicles only as not to contain SORN Vehicles
- A pivot table for each visual was generated. This gave a quarters as columns, which was transposed quarters as rows for plotting
- Matplotlib was used for plotting visuals

Code

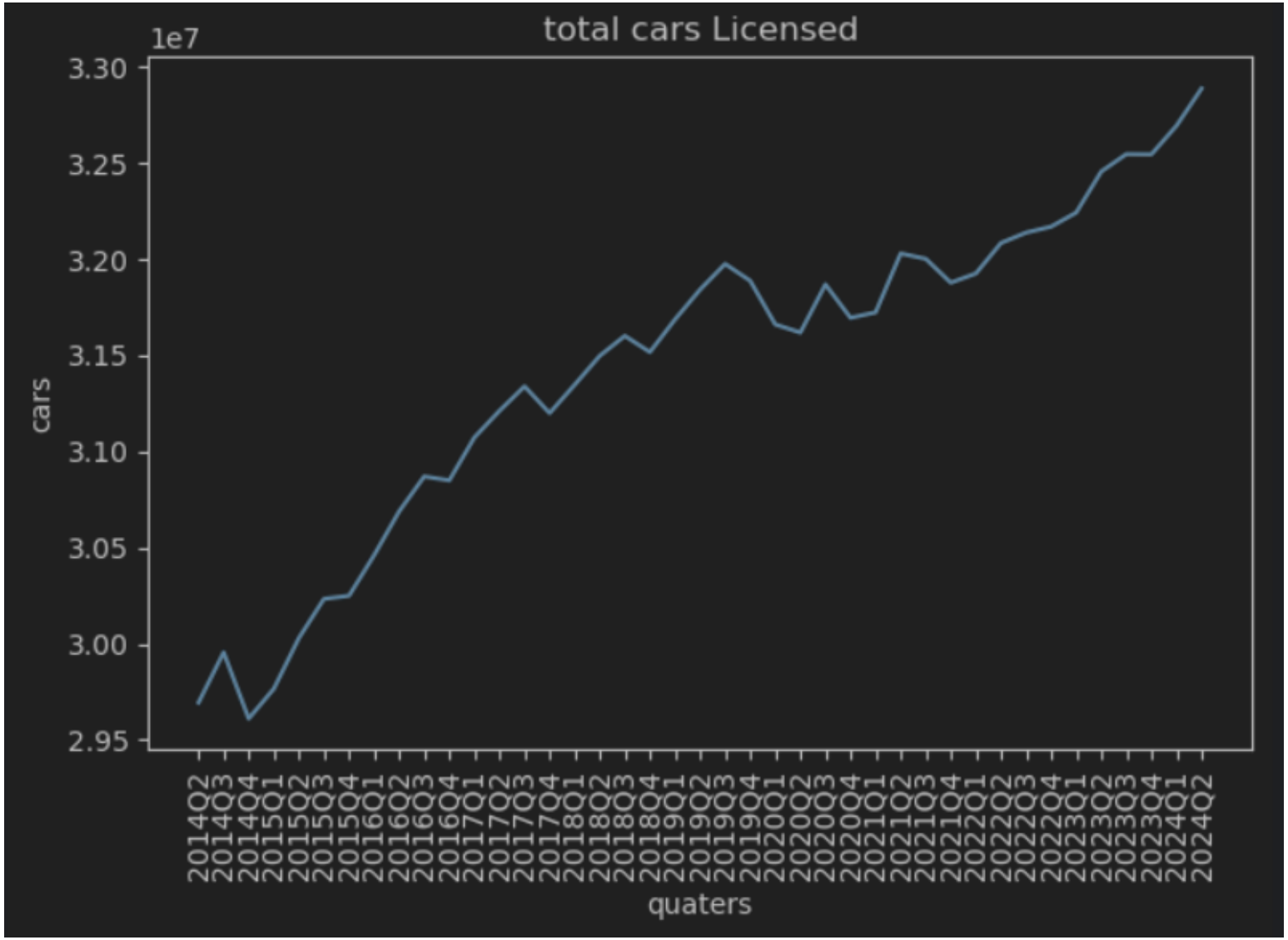
```python
import pandas as pd
import matplotlib.pyplot as plt


df_vehicles_raw = pd.read_csv("C:\\Users\\danie\\Downloads\\df_VEH0120_GB.csv")
df_vehicles = df_vehicles_raw[df_vehicles_raw['LicenceStatus']=='Licensed']
print(df_vehicles.head())
df_vehicles_T = df_vehicles.transpose()

```

✓ [412] 1s 725ms

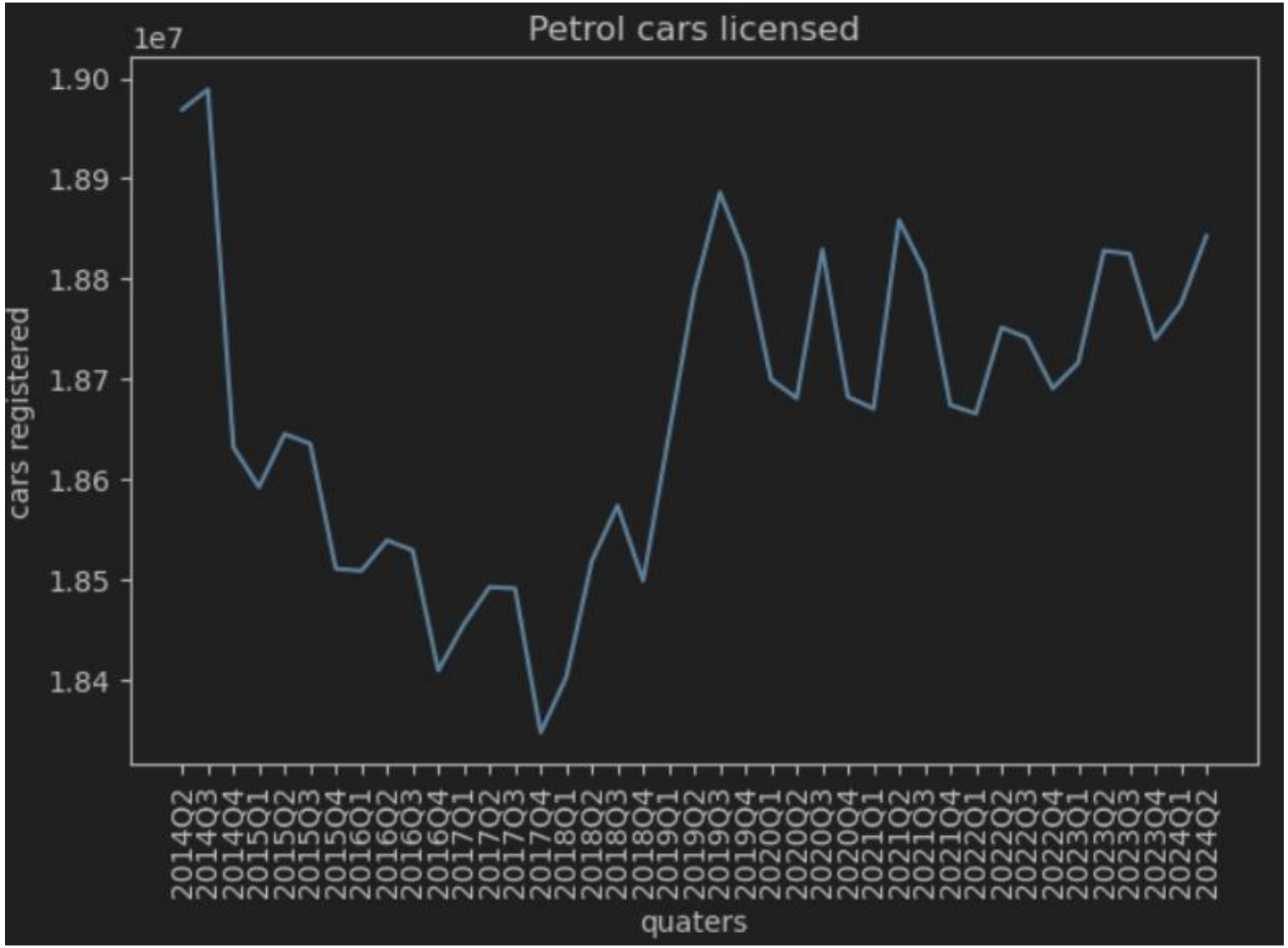
```python
df_cars_table=df_vehicles[(df_vehicles['BodyType']=="Cars")]     df_cars_table      df_vehicles
df_cars_pivot = pd.pivot_table(df_cars_table, index=['BodyType'], values=['2024Q2','2024Q1','2023Q4', '2023Q3',
 '2023Q2', '2023Q1', '2022Q4', '2022Q3', '2022Q2', '2022Q1', '2021Q4', '2021Q3', '2021Q2', '2021Q1', '2020Q4', '2020Q3',
  '2020Q2', '2020Q1', '2019Q4', '2019Q3', '2019Q2', '2019Q1','2018Q4','2018Q3','2018Q2','2018Q1', '2017Q4','2017Q3',
 '2017Q2','2017Q1', '2016Q4', '2016Q3', '2016Q2','2016Q1', '2015Q4', '2015Q3', '2015Q2', '2015Q1', '2014Q4', '2014Q3',
 '2014Q2'], aggfunc = 'sum')
df_cars_transposed = df_cars_pivot.transpose()
plt.plot(df_cars_transposed)
plt.title("total cars Licensed")
plt.ylabel("cars")
plt.xlabel("quaters")
plt.xticks(rotation=90)
plt.tight_layout()
plt.show()
```

✓ [405] 267ms

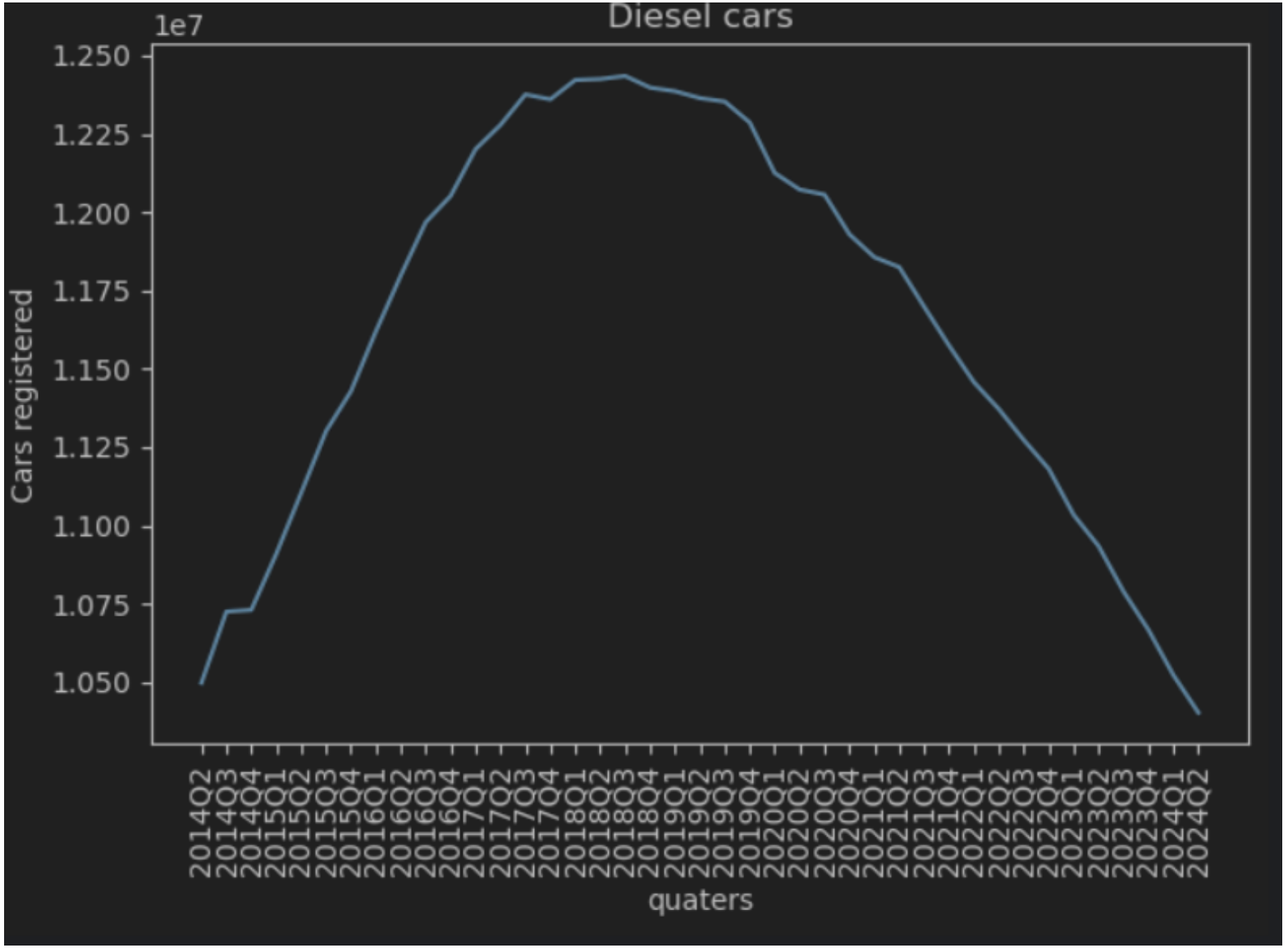
Total cars licensed



Petrol cars


Petrol cars licensed
1e7
1.90
1.89
1.88
1.87
1.86
1.85
1.84
cars registered
quaters

Diesel Cars


Diesel cars
1e7
1.250
1.225
1.200
1.175
1.150
1.125
1.100
1.075
1.050
Cars registered
quaters

What's going on with diesel?

Diesel cars: What's all the fuss about?

Diesel cars are taking a right hammering at the moment.

Dirty engines spewing out noxious fumes that are polluting our cities causing all manner of health problems is the **principal charge laid out in various reports** splashed across the media this summer.

Questions have even been asked about the previously unchallenged assumption that diesel engines produce less carbon dioxide (CO_2) than their petrol counterparts and are, therefore, better for the environment.

But how bad is the problem and why isn't more being done to address it?

https://www.bbc.co.uk/news/business-34257424

Air pollution: Are diesel cars always the biggest health hazard?

21 January 2018

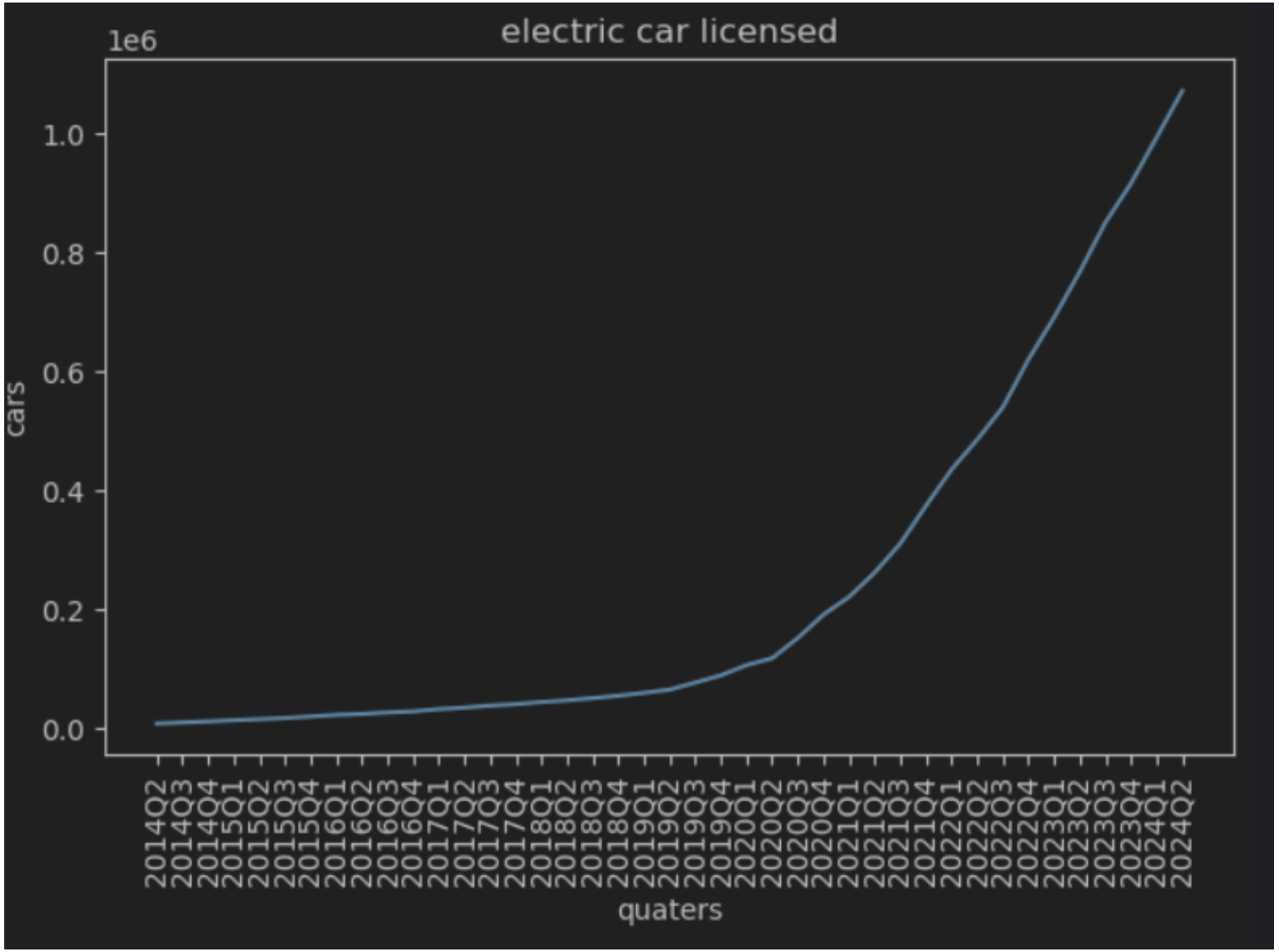
Sales of diesel-powered cars fell dramatically last year, declining more than 17% compared with 2016.

People within the industry blame anti-diesel rhetoric from the government, local authorities and clean air campaigners for eroding consumer confidence.

They insist that modern diesel engines are actually very clean and the health risks have been overstated.

https://www.bbc.co.uk/news/science-environment-42666596

Electric cars



The future electric?

Electric cars are the future, but is the UK ready?

25 July 2023 · 2666 Comments

The future is electric for the cars on our roads, but is the UK ready for such a major change?

At the risk of infuriating all you petrolheads out there, let's just get it out there - electric cars are the future.

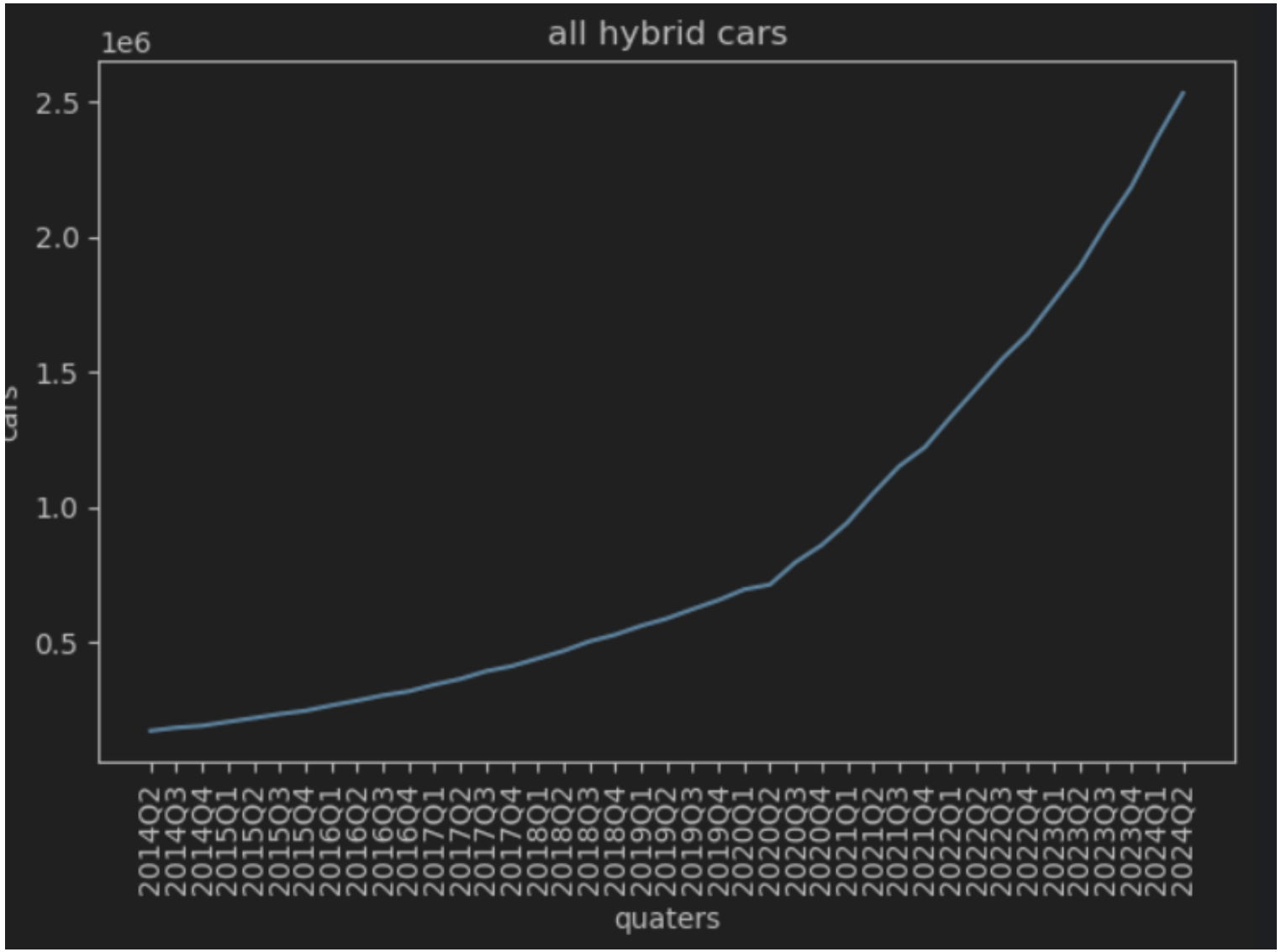
They are clean, quiet, fun to drive and help us tackle the biggest challenge of our era, climate change.

But there are some big bumps along the road to the UK's electric destiny.

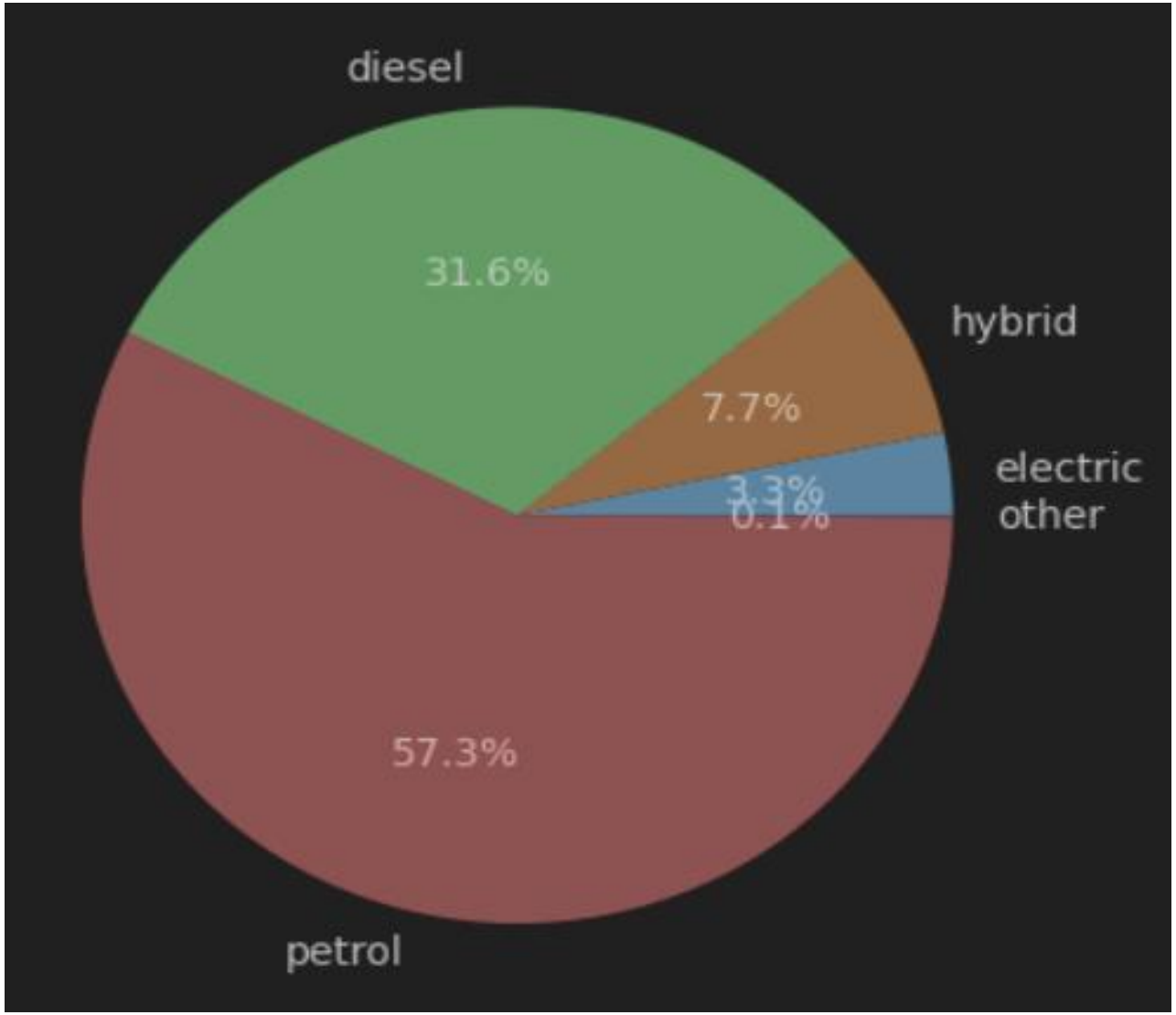
Electric vehicles (EVs) are expensive, there aren't enough chargers, and the switchover could destroy one of the UK's biggest industries.

https://www.bbc.co.uk/news/science-environment-66222554

Hybrid Cars



Fuels in 2024Q2



Conclusion

- The number of cars on the road continues to grow
- There is a move away from more polluting fuels such as diesel and towards electric and hybrid cars.
- To support to growth in electric cars more infrastructure such as charging facilities should be provided