FROM POLICY TO

PRACTICE

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INTRODUCTION

The early 21st century marked a turning point in global discussions on climate change, environmental sustainability, and the need to reduce dependence on fossil fuels. The transportation sector, as one of the largest contributors to greenhouse gas emissions, has become a central focus of policy initiatives aimed at promoting cleaner and more sustainable alternatives. Hybrid vehicles, which combine internal combustion engines with electric propulsion, were introduced as a transitional technology to bridge the gap between traditional fuel-powered cars and fully electric vehicles.

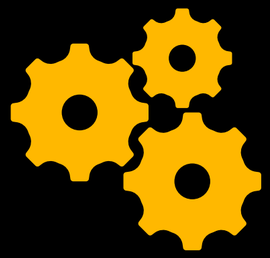
PROBLEM STATEMENT

Despite growing policy initiatives aimed at promoting cleaner transportation, fuel-powered cars consistently outnumbered hybrid vehicles by a factor of 44 between 2000 and 2013 in the UK.

AIM

To identify the key barriers that limit the uptake of hybrid cars compared to conventional fuel cars and assess the implications on emission goals of the UK.

AUDIENCE



Car Manufacturers

Decision Makers

APPROACH

1. To compare cost differences between hybrid and fuel cars from 2000–2013.
2. To examine consumer awareness and perceptions of hybrid technology during this period.
3. To analyze the role of infrastructure availability (e.g., charging/fueling support) in shaping adoption.
4. To assess how technological limitations (e.g., battery performance, reliability) impacted consumer choice.
5. How did the fuel efficiency of hybrid cars compare to conventional fuel cars in the UK between 2000 and 2013?

APPROACH

6. What differences exist in terms of engine performance (e.g., horsepower, acceleration, torque) between hybrids and fuel cars during this period?
7. Did hybrids provide measurable cost savings in fuel consumption compared to conventional cars over their lifecycle?
8. How did the maintenance and reliability performance of hybrid vehicles differ from that of fuel-powered vehicles?
9. Were there trade-offs between performance (speed, power) and efficiency (fuel consumption, emissions) in hybrid cars compared to conventional models?
10. To what extent did technological advancements in hybrid systems improve their performance relative to fuel cars between 2000 and 2013?

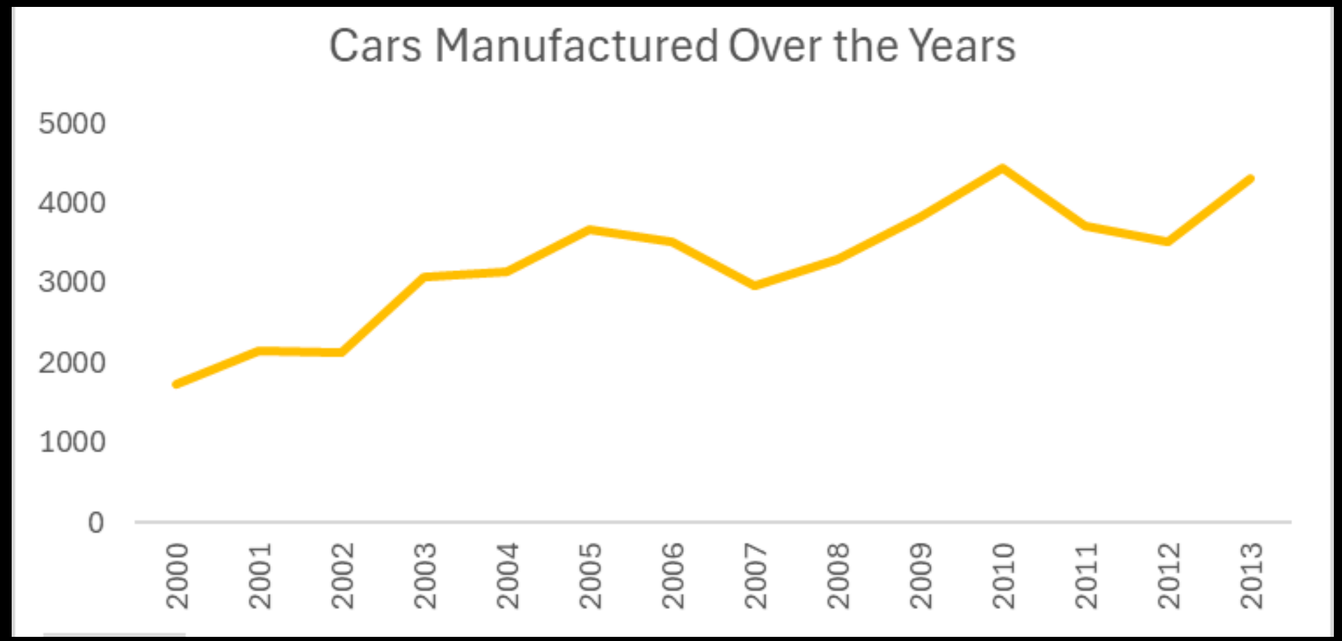
APPROACH

11. How did consumer perceptions of performance (drivability, convenience, comfort) influence the preference for fuel cars over hybrids?
12. To analyze how the dominance of fuel cars influenced the UK's progress toward cleaner transportation goals.

DATASET OVERVIEW

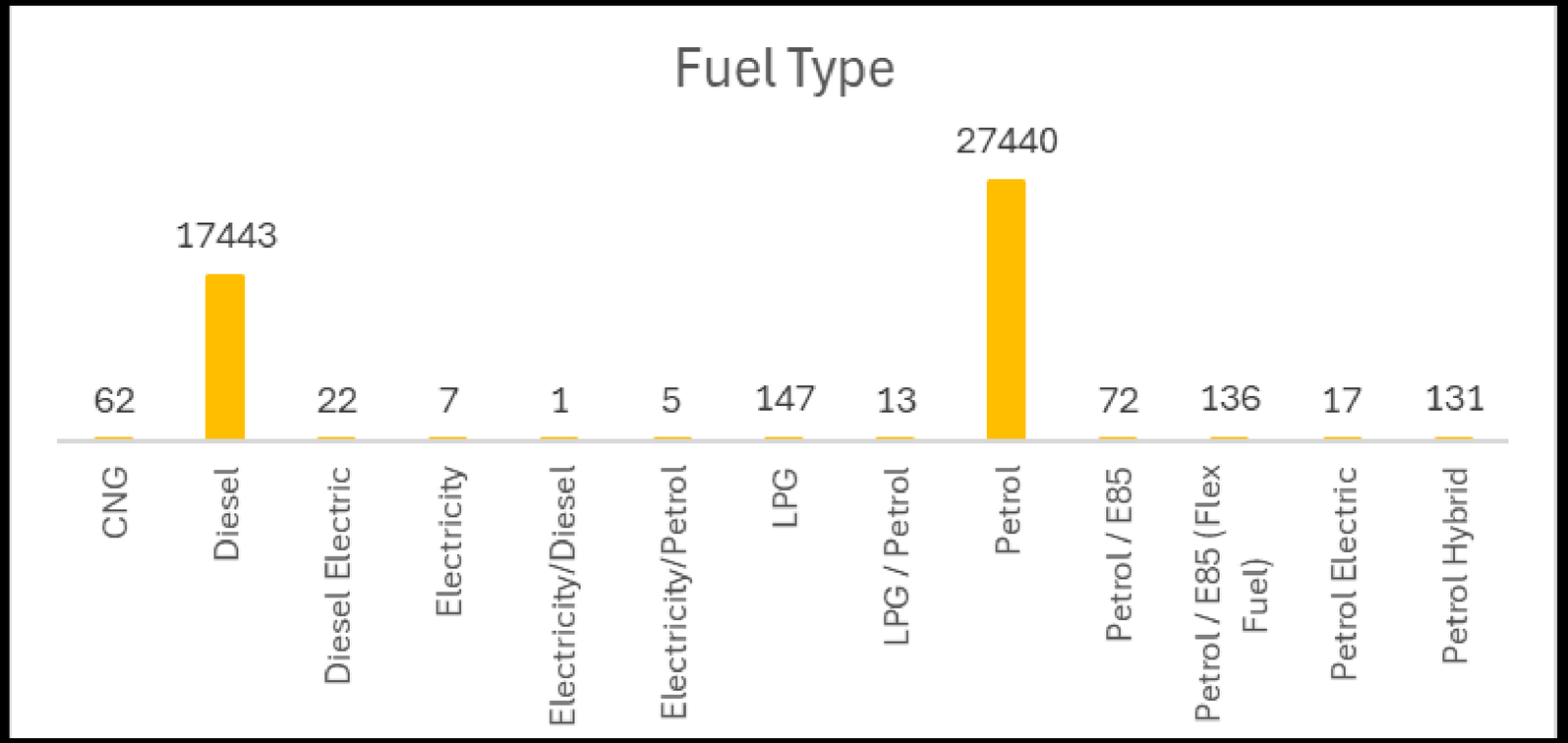
This dataset contains detailed information on car models manufactured between 2000 and 2013, focusing on fuel consumption and emissions.

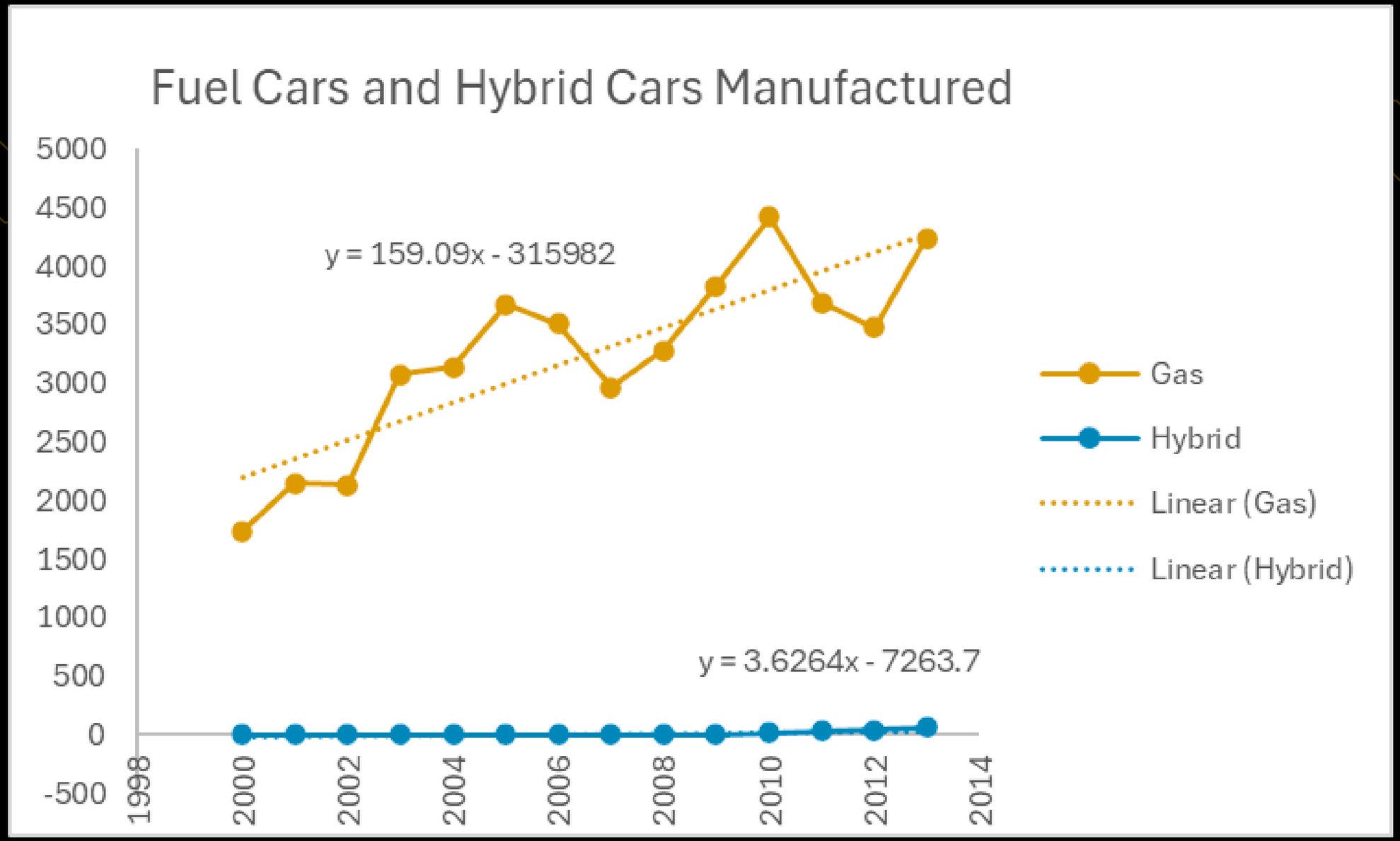
45496



CNG
Diesel
Diesel Electric
Electricity
Electricity/Diesel
Electricity/Petrol
LPG
LPG / Petrol
Petrol
Petrol / E85
Petrol / E85 (Flex
Petrol Electric
Petrol Hybrid

Euro Standards:
2 to 6




Fuel Cars and Hybrid Cars Manufactured
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
-500
1998
2000
2002
2004
2006
2008
2010
2012
2014
y = 159.09x - 315982
y = 3.6264x - 7263.7
Gas
Hybrid
Linear (Gas)
Linear (Hybrid)

Transmission type	Count
Automatic	18385
Manual	26770

Min of engine_capacity
209

Max of engine_capacity
8285

Average of engine_capacity
2182.809514

THANK YOU