

(Some of the..) Big Trends in the Motor Industry

VRA Meeting Nov 2022

Professor David Bailey

Birmingham Business School

Senior Fellow, UK in a Changing Europe

Today. A quick run through...

1 Covid & Beyond

2 Trade after Brexit

3 Electrification

4 Autonomous Vehicles

5 Business Models and Dealers

6 War in Ukraine

7 What does this mean for automakers like JLR?

1 Covid & Beyond

- Profound impact on economy and auto industry
- Supply side + demand side hit for auto in 2020/21
- ‘Long Covid’: semi conductor shortage
- Hit to global output in 2021 was c7.5m
- → **Make or buy question?** Chips, batteries, e-drives
- Covid accelerated EV shift AND collaboration between firms given high costs of developing Evs
- China?

UK Economy

- 'Stagflation' Rising prices (11%) and slow growth (Brexit will act as a drag on growth)
- BoE: likely to rise interest rates further - but risks economy going further into recession.
- Recent tax hikes and future spending cuts after the Truss/Kwarteng debacle.
- Unemployment low but c.1m 'missing workers'
- Big squeeze on living standards
- Consumer confidence down.
- Trade deficit in goods has widened
- Manufacturing cash crunch.

Last year the new car market stalled +1%

- 2020 had been down by 30% (covid, lockdowns)
- SMMT had forecast a recovery in **2021** in sales *and* production. That didn't happen.
- Stalled supply due to chip shortages. Ongoing.
- **Big** shift away from diesels ongoing - many firms now phasing out
- Economy slowed: *2-3% smaller* than would have been otherwise, post Referendum.

New Car Market so far in 2022?

- So far down by 5.6% year on year and still way below pre pandemic levels .
- Ongoing chip shortages. Ukraine.
- Forecasts for new market: 1.9m in 2022 – still 18% below pre-pandemic
- Return to pre-pandemic ‘normal’ in 2023 of over 2m?
- Over 1 in 5 plug ins last year: SMMT expecting 1 in 4 this year (so far 2022: c21%).
- BEVs expected to outsell diesels this year.
- Ongoing shift from PCP / BCH financing to PCH?

UK car production

- 2022 Year to date: **-12.6%**.
- -6.7% (2021); -29% (2020); -14.5% (2019); -9% (2018).
- Longer term, could get back to around 1.5m by 2030 and 1.7m by 2035, BUT needs support in terms of electrification.
- Production slowdowns owing to the chip shortage across the sector.
- **Firms also focusing on high value models, cutting options and limiting chip use where possible.**



 **die tageszeitung**

10. oktober

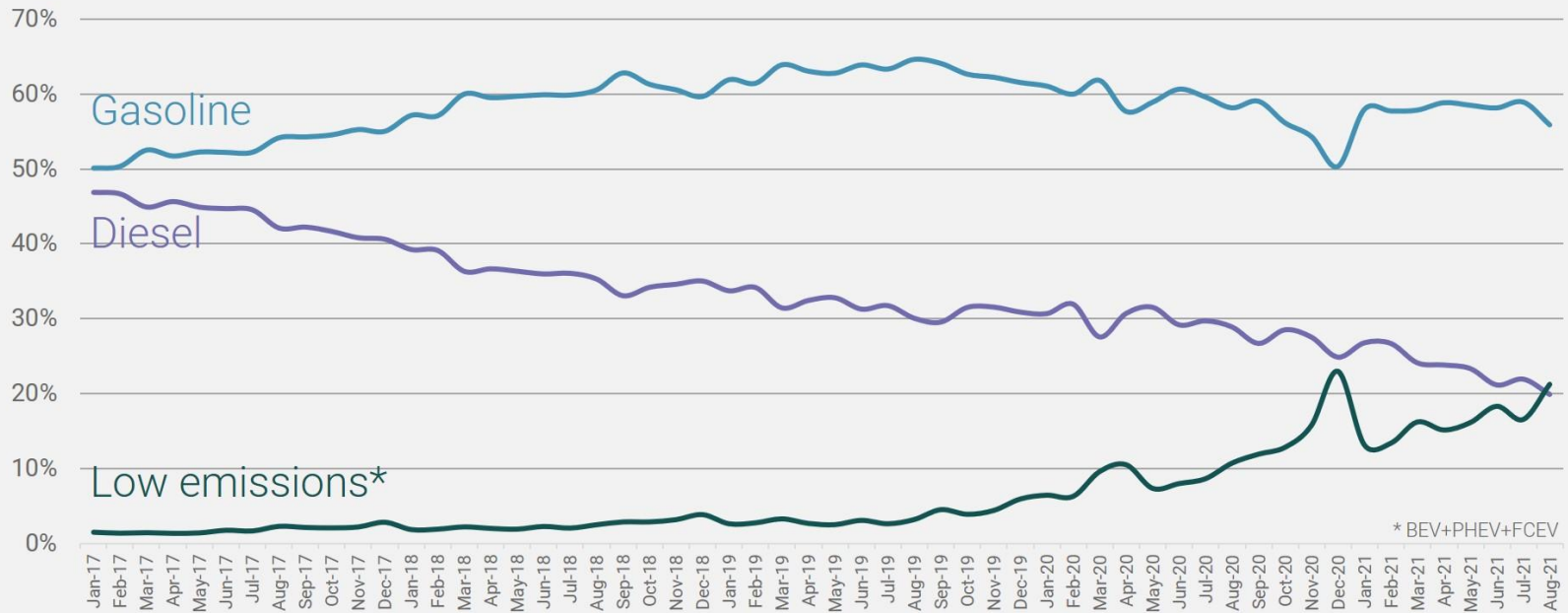
les Urteil: Gericht verfügt Diesel-Fahrverbote in acht Berli

YOU ARE LEAVING
THE DIESEL SECTOR
ВЫ ВЫЕЗЖАЕТЕ ИЗ
ДИЗЕЛЬ-СЕКТОРА
VOUS SORTEZ
DU SECTEUR DIESEL
SIE VERLASSEN DEN DIESEL SEKTOR

Photo:
Matthias Schmidt

Diesel's decline - EU

Monthly Car registrations by fuel type
As % of total. 2017 - 2021 Europe-26



* BEV+PHEV+FCEV

Diesel's decline - EU

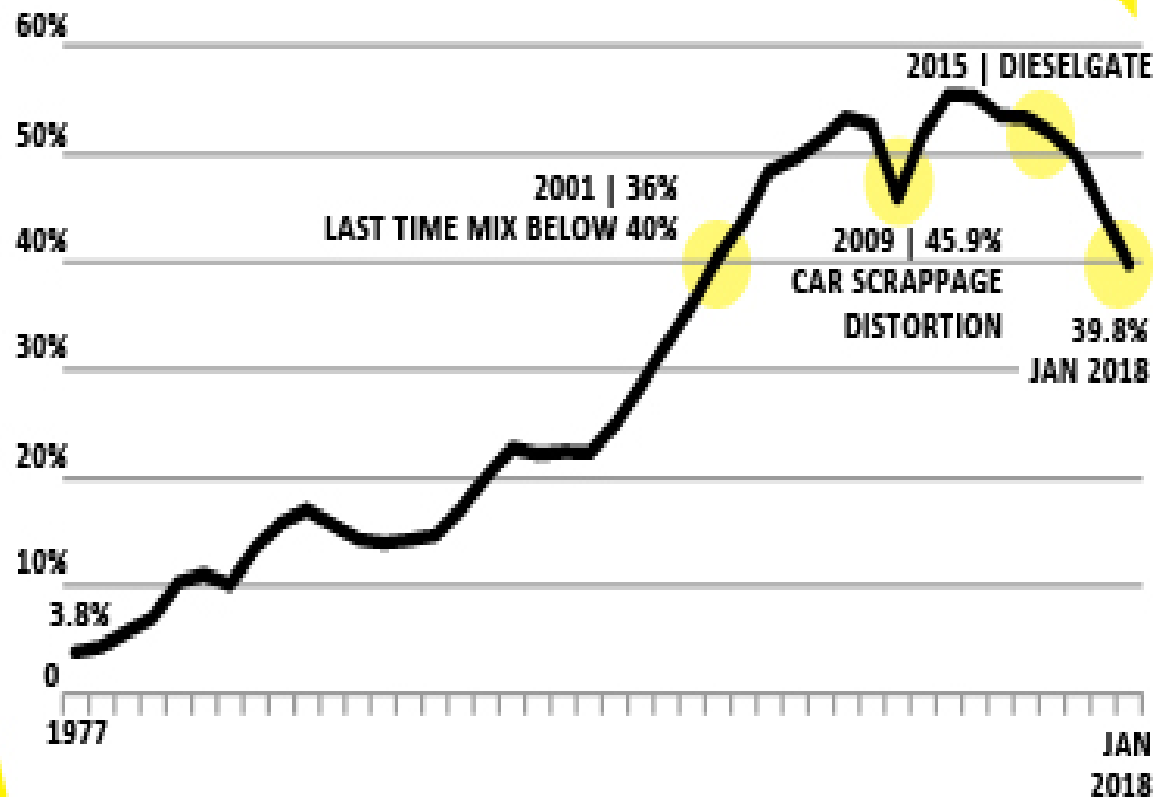


DIESELS DOWN AND BELOW 40%
W-EUROPE DIESEL SALES MIX
ANNUAL DIESEL MIX '77-'17 + JAN 2018

**W-EUROPE
DIESEL CAR
SALES TRENDS**



SOURCE AID



Effects of declining diesels?

- Market pull outs: JLR, Nissan, Toyota, Suzuki, Mitsubishi, Fiat Chrysler, Porsche, Volvo, Honda and Renault all phasing out passenger vehicle diesel sales.
- Peugeot: “made a mistake with pushing diesels”
- Others to follow?
- Only BMW has committed to diesel – one of the firms not signing up to COP26 commitment
- Some segments still diesel dominated

Clean air zones

- CAZ Framework released in 2016; aim to reduce NO_x levels
- Euro 6 diesel / Euro 4 Petrol is good enough *for now*
- Principles: **‘One of the aims of Clean Air Zones is to support the transition to ULEVs (Ultra Low Emission Vehicles)’**
- Local authorities to explore all non-charging methods before justifying use of a charging zone.
- 5 English cities **mandated to create a CAZ by 2020; Leeds, Derby (dropped), Nottingham (cancelled), Birmingham & Southampton.**
- Further 15 zones required CAZ plan, & another 7 required to develop a local action plan
- **Delayed but Birmingham came in June 2021**

Bans coming on 'ICE-only' vehicles

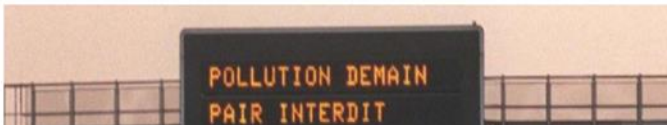
News > World

Paris to ban all petrol and diesel cars by 2030

CHRIS BAYNES | Thursday 12 October 2017 11:05 | 0 comments



Click to follow The Evening Standard



News > World

European cities announce bans on petrol and diesel cars as green initiative spreads across continent

'It's not a human right to pollute the air for [Oxford](#)

Official: Government to ban new petrol and diesel car sales in 2030

Updated: The car world reacts to decision to end pure combustion-engined car sales in the UK by 2030

Plans for world's first zero-emission zone with petrol car ban

Phasing out polluting vehicles including taxis, cars and area in 2020



All diesel and petrol-engined cars are to be banned



With Hiscox, art and collections are covered up to £10,000 as standard

HISCOX HOME INSURANCE Find out more

Environment > Climate Change

Norway to 'completely ban petrol powered cars by 2025'

'What an amazingly awesome country', Elon Musk tweeted in response to the plan

Jess Staufenberg | Saturday 4 June 2016 | 264 comments



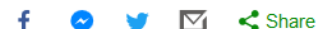
NEWS

Home | UK | World | Business | Politics | Tech | Science | Health | Family & Education

Europe | European Elections 2019

Ireland to ban new petrol and diesel vehicles from 2030

© 17 June 2019



2040...2035... 2032... 2030 Ban

- UK Petrol/diesel ban from 2030
- 'Road to Zero'
- Govt to ban hybrids by 2035 (but what form?)
- SMMT: a 'date without a plan'
- 'Moonshot' that needs a NASA

2 Trade after Brexit

- Uncertainty: 80% decline in investment over 2016-2020.
- TCA critical. Investment at Nissan and Stellantis.
- TCA avoids tariffs and quotas **IF** Rules of Origin regs complied with: 55% local content.
- **Battery manufacturing 2026 deadline.**
- Extra costs: customs costs, Rules of Origin.
- Weighs heaviest on smaller firms in the supply chain.
- Skills, Regulation, Research networks and funding

Trade after Brexit

- OBR economic forecast sees serious trade disruptions with the EU (around 15% lower exports and imports, compared to if the UK had stayed in the EU).
- Latest research suggests imports more impacted than exports.
- OBR estimates that UK GDP will be around 4% lower due to Brexit in the long run, as against a 2% hit from Covid-19.
- Full effects of Brexit disruptions to trade (and GDP) won't be fully felt until all the terms of TCA come into effect: Customs checks on incoming goods were delayed.

3 Shift to EVs now underway...

- First competitive BEVs are now here and hybrids now mainstream.
- As range improves and battery cost fall (to under **\$100** per kilowatt-hour) over next decade, **tipping point for BEVs 2023-2028.**
- Forecasts vary but **UBS' latest forecast is for EVs to cost the same to make as ICE cars by 2024.**
- ***“There are not many reasons to buy an ICE car after 2025”***
- Dutch bank ING has for some time foreseen the European car market being *fully* electric by 2035

EVs: some policy implications

- Brexit deal → battery manufacturing, Critical.
- Need to think holistically – eg Norway
- Industrial strategy for EVs; technology, skills, supply chain AND *consumer take up* – subsidies, taxes, infrastructure etc.
- 2030: Long term commitment and certainty re take up of BEVs but ‘date without a plan’
- Infrastructure lagging; new strategy.
- VAT on charging?
- Impact on revenue for govt: shift to road pricing?

A slow motion car crash...

- Arrival
- Britishvolt
- Mini
- LEVC

4 Autonomous technologies: Short term

- Fully autonomous vehicles unlikely to be available before mid 2030s.
- BUT ADAS will creep up on us & play role in preparing regulators, consumers, and firms
- **ADAS features: market growing quickly to some \$50bn+ by 2025.**
- ADAS: key challenges impeding take up are pricing, consumer understanding, and safety/security issues.
- tech players and start-ups are / will play a key role.
- Regulation and consumer acceptance may represent additional hurdles for autonomous vehicles.

Longer run: 'Intelligent Mobility'

- Autonomous features, autonomous cars
- **25 years** ahead: '90, 60, 30' benefits (Boston Consulting)
- 90% fewer accidents, 60% more throughput, 30% less fuel use and emissions
- Longer term: no need to own car in cities?
- Hail a driverless taxi (hence Google investment in Uber)
- 'Multimodal fusion' with public transport etc
- Need to regulate carefully.

Before then: Mobility as a Service?

- MaaS covers a range of business models.
- Market growth forecasts of 23-38% pa by 2027.
- Now a significant niche in Europe – e.g. Share Now scheme (recently sold to Stellantis).
Subscription model and pay per hour.
- **Monthly e-mobility packages** may be a major driver of EV take up amongst those curious; likes of Onto and Elmo.
- Business model lends itself to EVs

5 Business Models

- Scale is critical: given high costs, even big firms like VW and Ford are collaborating on EV development or 'skate boards' which will be shared across multiple brands.
- A few '**mega platforms**' will dominate the industry.
- Shared mega platforms: some dealers could service a range of different models across different brands based on a few mega-platforms
- EV change coming could mean fewer dealers perhaps servicing a wider range of models and brands based on shared technology.

Future Business Models: dealers

- New disruptors → new business models.
- Customers buy from Tesla and don't haggle over the price. They are also buying a **range of services** as part of the deal. Tesla wants to extend this – e.g. insurance.
- Moving **seamlessly from online to physical** will be *expected*.
- New car: design a car online and then go into dealer to visualise it and try out a similar model. So more build to order more but *not* end of mass production as economies of scale so important.
- The dealer itself *may not need to hold so much stock* if this 'omnichannel' approach is done well.
- Second hand: on line in much more detail before even getting to the dealer. BEVs: **state of the battery** will be a critical piece of info.

Future Business Models: dealers

- A car dealer's website may need a different entry platform.
- Think of how Netflix makes recommendations on what to watch, for example.
- Customer will likely be buying a bundle of services at a fixed price.
- The 'art of the deal' will be in making this process easy, intuitive, fun and personalised.
- Customising and tailoring the package to what the customer wants will be key in terms of creating value.
- Making clear *how the package adds up in a transparent way* to give an overall price will also avoid the need to haggle, a major source of stress for many buyers.

Future Business Models: dealers

- Whether or not dealers and servicing need to be co-located is another question. Given the ease of servicing EVs, this could be mobile, with mechanics increasingly visiting home and workplaces for routine minor servicing.
- Still expect a delivery centre for the consumer experience of the hand over? The handshake (or post-Covid elbow bump) between buyer and salesperson and big unveil will still resonate for many people.
- Short term, electrification and a shift to selling services will change the economics of dealerships.
- Longer term (twenty years away) fully autonomous cars may finally arrive in cities. That too will bring big changes.

We've been here before...

Easter morning 1900: 5th Ave, New York City. Spot the automobile.

Easter morning 1913: 5th Ave, New York City. Spot the horse.



Source: George Grantham Bain Collection.

Source: US National Archives.

6 War in Ukraine

- Energy prices → Supply side and demand side hit.
- Trade with Russia.
- Supply chain disruption: electric wiring harnesses; raw materials (neon, palladium)
- Increase in costs of aluminium, nickel etc
- Overall: chip shortage set to continue and high oil prices will encourage shift to BEVs.

7 Where does this leave JLR?

- Decent order book but sales down 5% in last quarter
- China biggest market
- Particularly exposed on diesels
- Lagging behind in electrification – ipace? (XJ scrapped – EV models not expected until 2025)
- Separate platforms for Jaguar?
- 1m target dropped – where next?
- Battery partner? → where make cars?
- Partnerships – edrives (BMW), autonomous tech (Nvidia), chips (wolf speed) – platforms?
- What will it do in-house?

Thanks for listening.

Comments, Questions welcome.

[@dgbailey](#)

d.g.bailey@bham.ac.uk