Institute for Transport Studies
FACULTY OF EARTH AND ENVIRONMENT

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Consumer behaviour: priorities for progress

LowCVP Conference 2018

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Jillian Anable

Professor of Transport and Energy

The Institute for Transport Studies (ITS), University of Leeds

J.L.Anable@leeds.ac.uk

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Whose responsibility is it?

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"We expect this transition to be industry and consumer led"

HM Government Road to Zero Strategy, 10th July 2018 (p2)

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PEVs: now an aspiration, not a compromise?

19th May 2018 Duke and Duchess of Sussex departing their wedding reception in an all-electric E-Type Jaguar

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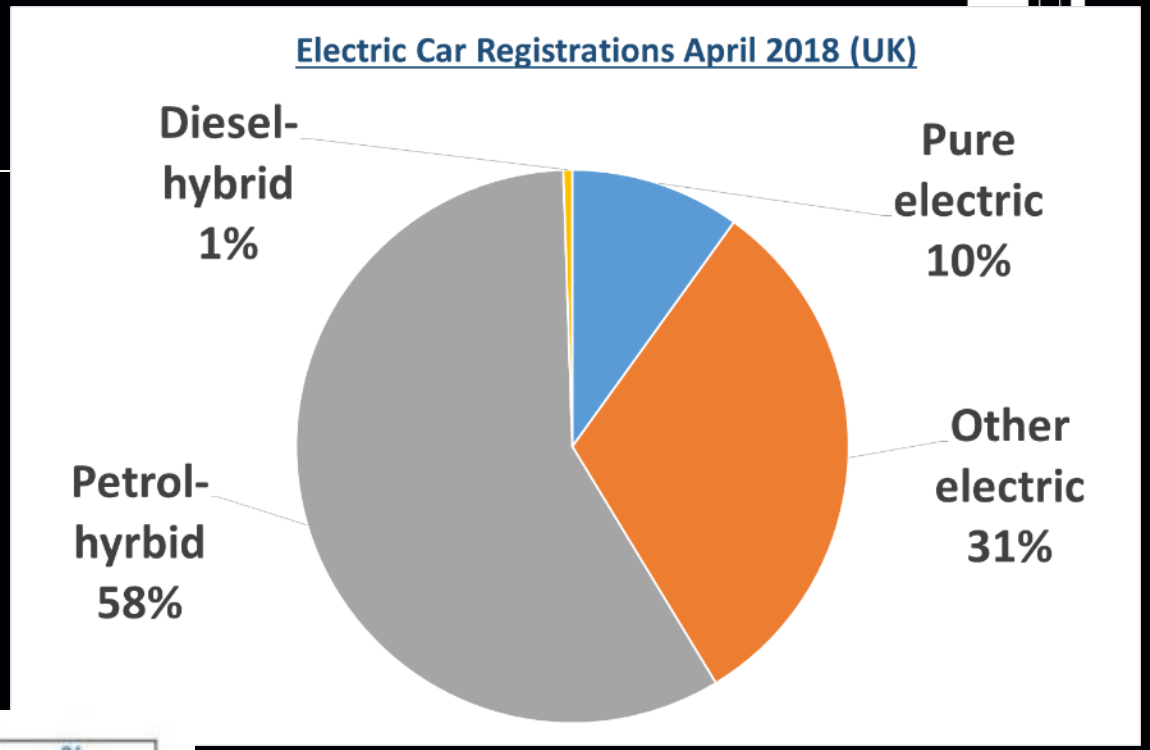
Market Transformation?

- PHEV registrations are up 28% year to date
- Pure EV registrations are DOWN -9%



Vehicle category		April 2018	April 2017	% change	YTD 2018	YTD 2017	% change
Plug-in	Pure electric	929	668	39.1	4,823	5,302	-9.0
Plug-in	Other electric	2,929	2,153	36.2	13,196	10,308	28.0
Hybrid	Petrol-electric	5,433	3,412	59.2	27,823	23,750	17.1
Hybrid	Diesel-electric	49	41	19.5	190	299	-36.5
Cars eligible for the Plug-In Car Grant		3,645	2,486	46.6	16,470	13,784	19.5
Total new cars registered		167,911	152,076	10.4	886,400	972,092	-8.8

Table courtesy of SMMT

http://www.nextgreencar.com/news/8379/ev-registrations-up-more-than-40-in-april-2018/

The Policy Gap

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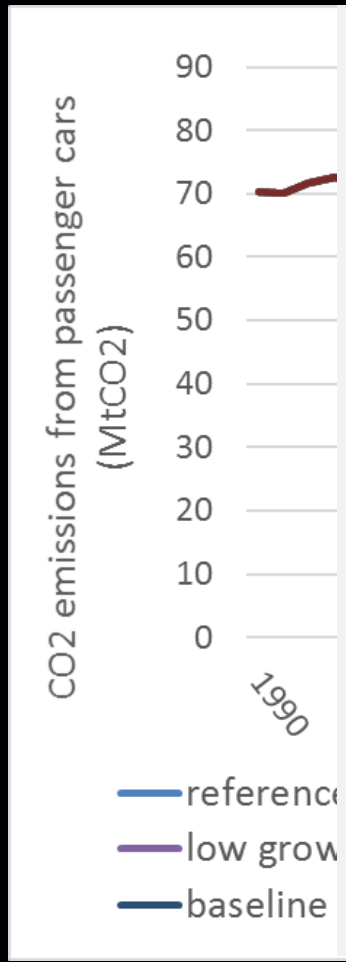

The government's pledge to end the sales of pure petrol and diesel cars by 2040, which is reportedly being watered down, is far too unambitious, Lord Deben said. **"We think that to move much closer to 2030 is essential, because the figures don't add up otherwise."** Other countries, including the Netherlands and Norway have already set such a date. (CCC 2018)

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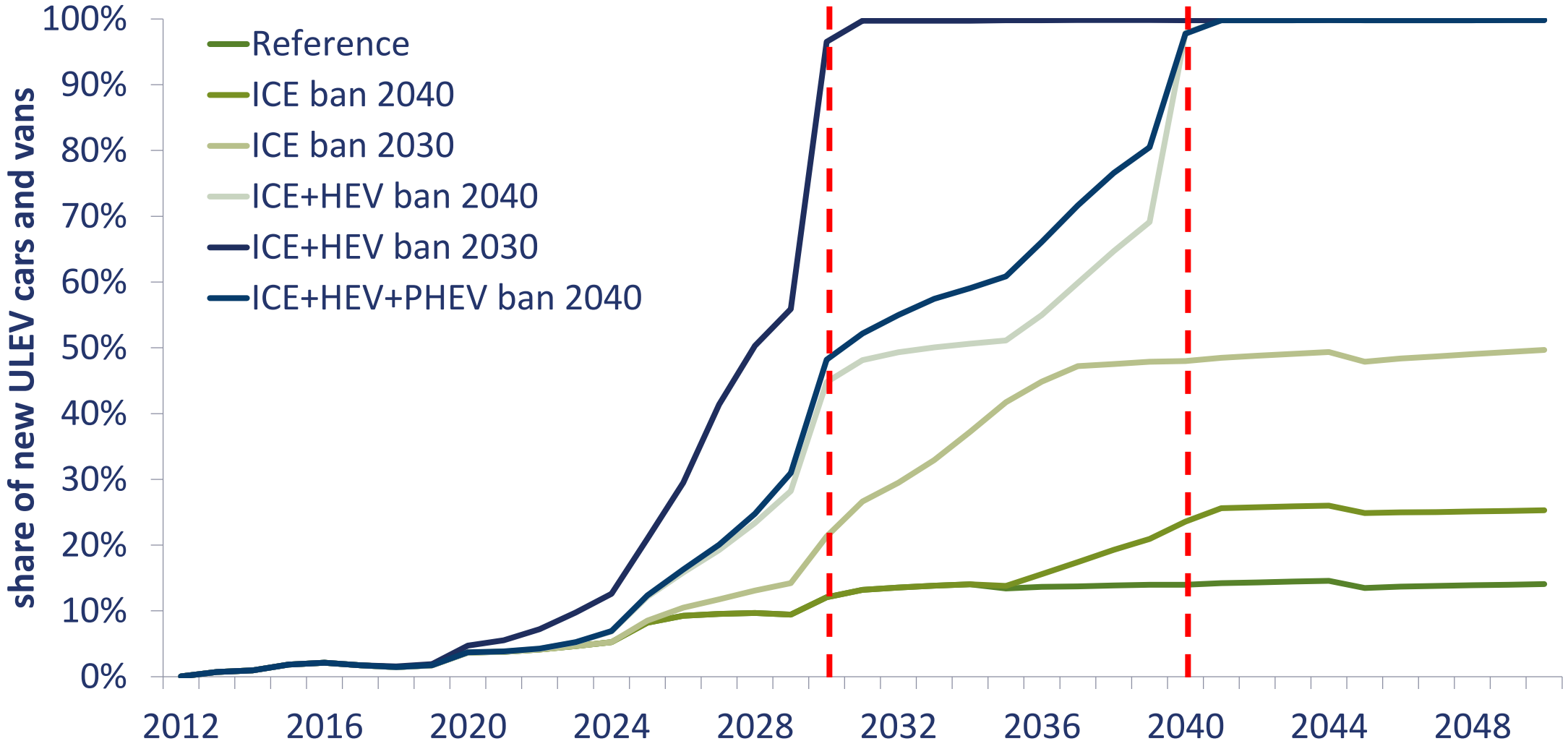
UKERC
UK Energy Research Centre

Analysis: ULEV uptake cars and vans



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“Consumers are not the problem.

The problem is that they are treated as a problem.”

(Anable, July 2018!)

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Consumers are rational

… just not always
***economically** rational*

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TCO = TMI

- Short payback periods
- Value upfront costs higher than running costs
- And they DO NOT *DO THE MATH!*

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Consumer ‘rationality’

- In choice experiments:
  - PHEVs emerge consistently more popular than BEVs
  - Even where optimistic cost and range parity is tested, ICEs are preferred
- It is the combination of range and running cost that is important

… it is also not about the environment

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- Environmental issues have little direct effect on car purchasing decisions
- Other issues are prioritised: vehicle price, size (+practicality, comfort), reliability, brand, appearance, performance, other costs signals
- Environmental claims are not trusted

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It is perfectly rational to be worried about this:

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70% have dedicated parking. Really? Of cars, homes, buildings? How can a 100% sales target be reached without this?

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People do not plan their days by individual trips

JOINED UP ACTIVITY SCHEDULING IS THE KEY to understanding range anxiety

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The consumer journey is no longer a funnel but a spiral

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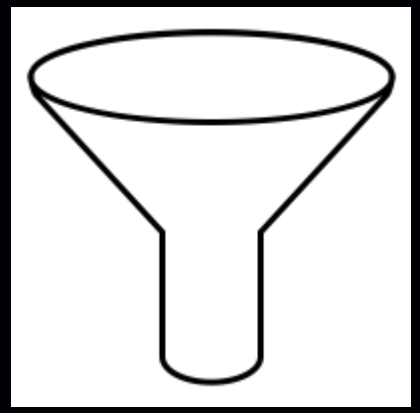

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- Initial stages shaped by anticipated positive/ negative attributes – these can fluctuate ‘randomly’
- Choices tending to expand initially rather than contract
- But, social identity shifts more slowly

PRESENT

Klöckner, C.A., 2014. The dynamics of purchasing an electric vehicle–A prospective longitudinal study of the decision-making process. *Transportation Research Part F: Traffic Psychology and Behaviour*, *24*, pp.103-116.

The top five factors which influence current EV ownership:

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Identity	the degree to which people feel they associate with ‘typical’ EV owners
Anxiety	perceived suitability of these vehicles particularly in relation to range
Parking Difficulty	perceived ease of being able to charge a vehicle at home
Willingness to pay	willingness to pay more for plug-in technology and/or environmental benefits
Symbolic motives	capture the perceived status, social acceptability and embarrassment or otherwise of owning an EV.

ANABLE, J., et al. (2016) Consumer segmentation and demographic patterns. Report for Energy Technologies Institute Plug-in Vehicles Infrastructure Project (April 2011). Transport Research Laboratory Published Project Report PPR769.

We need:
To understand non-economically rational consumer motivations

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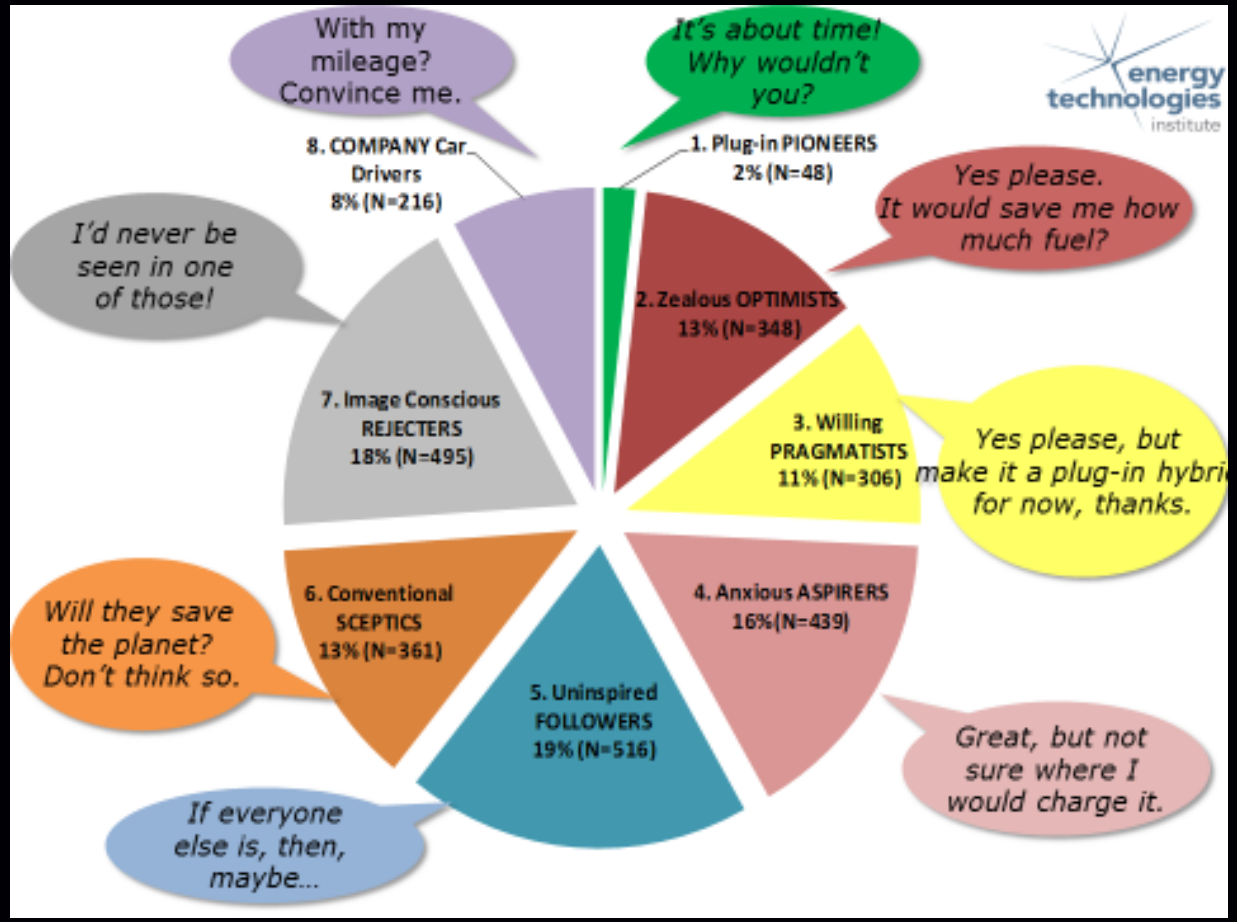

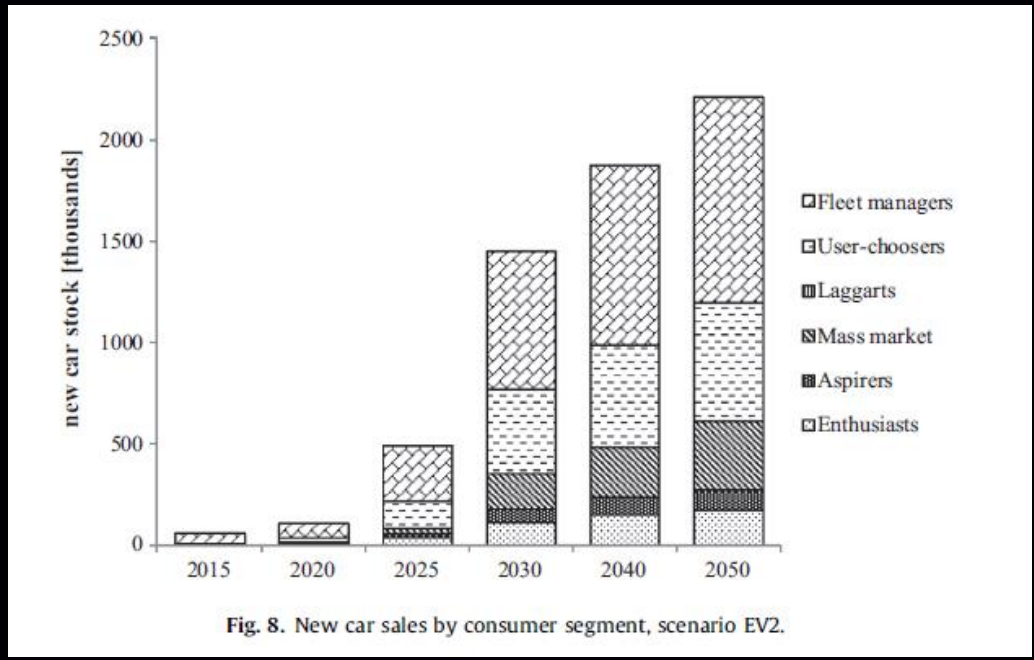

Fig. 8. New car sales by consumer segment, scenario EV2.

Brand, C., Cluzel, C. and **Anable, J.** (2017) Modeling the uptake of plug-in vehicles in a heterogeneous car market using a consumer segmentation approach. *Transportation Research A*: Policy and Practice, 97: 121-136.

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The focus must be on the added benefits, not comparison to ICEs

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ICEs are positioned as the ‘ideal car’ against which EVs are compared

Instead, what are the opportunities provided by the differences?

Historically, similarity is not a prerequisite for purchase. E.g.:

- mobile phones – here the acquisition of new technology was considered independently of existing ones with eventual impact on total patterns of purchases (i.e. reduced land-line usage)
- early automobiles Pawere purchased alongside horses, yet the two didn’t compete because they occupied different market niches (Geels 2005, p. 448)
- Empowering consumers by paying them to store/feed back electricity may over complicate, but may be the ‘added value’ that is required

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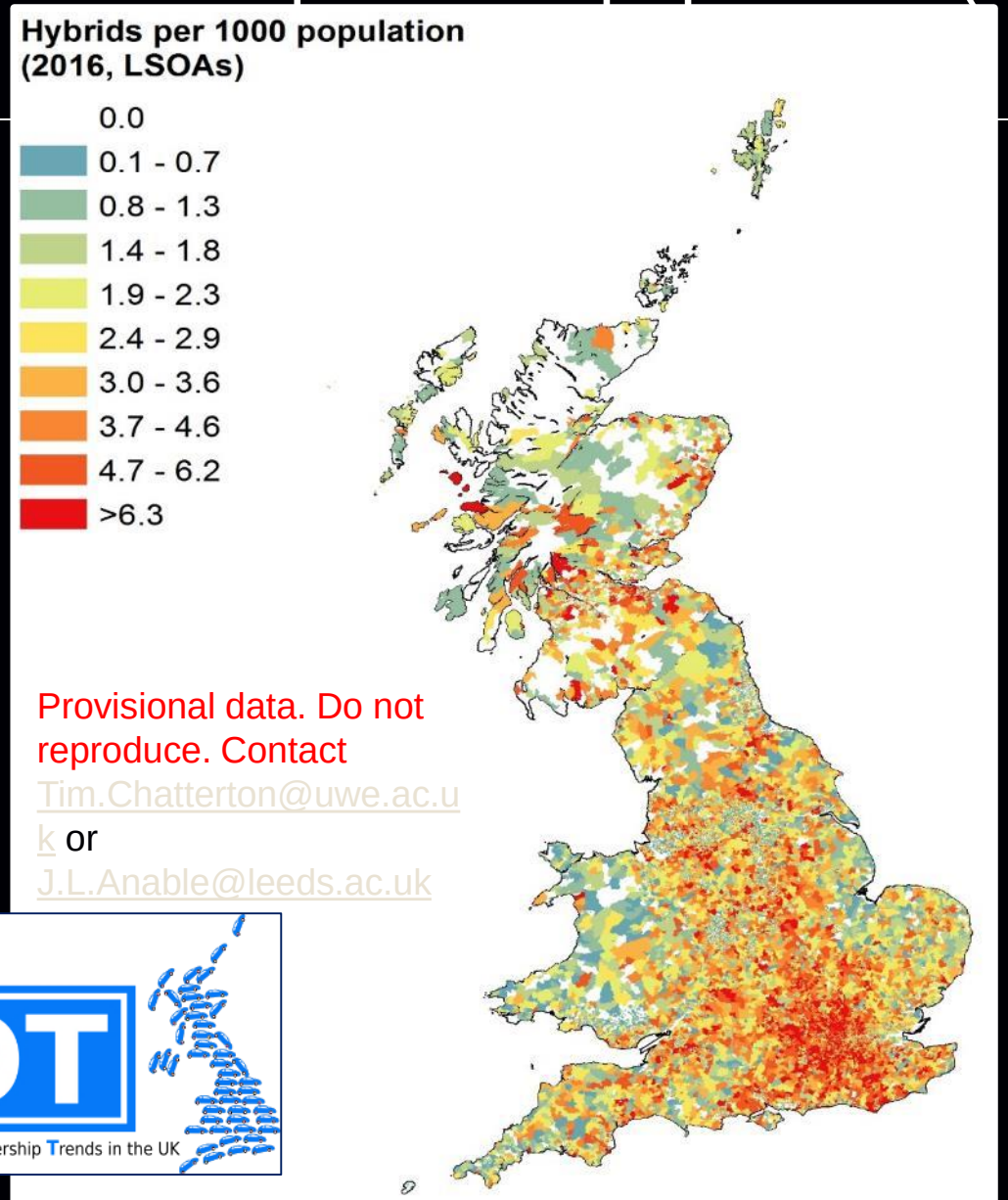
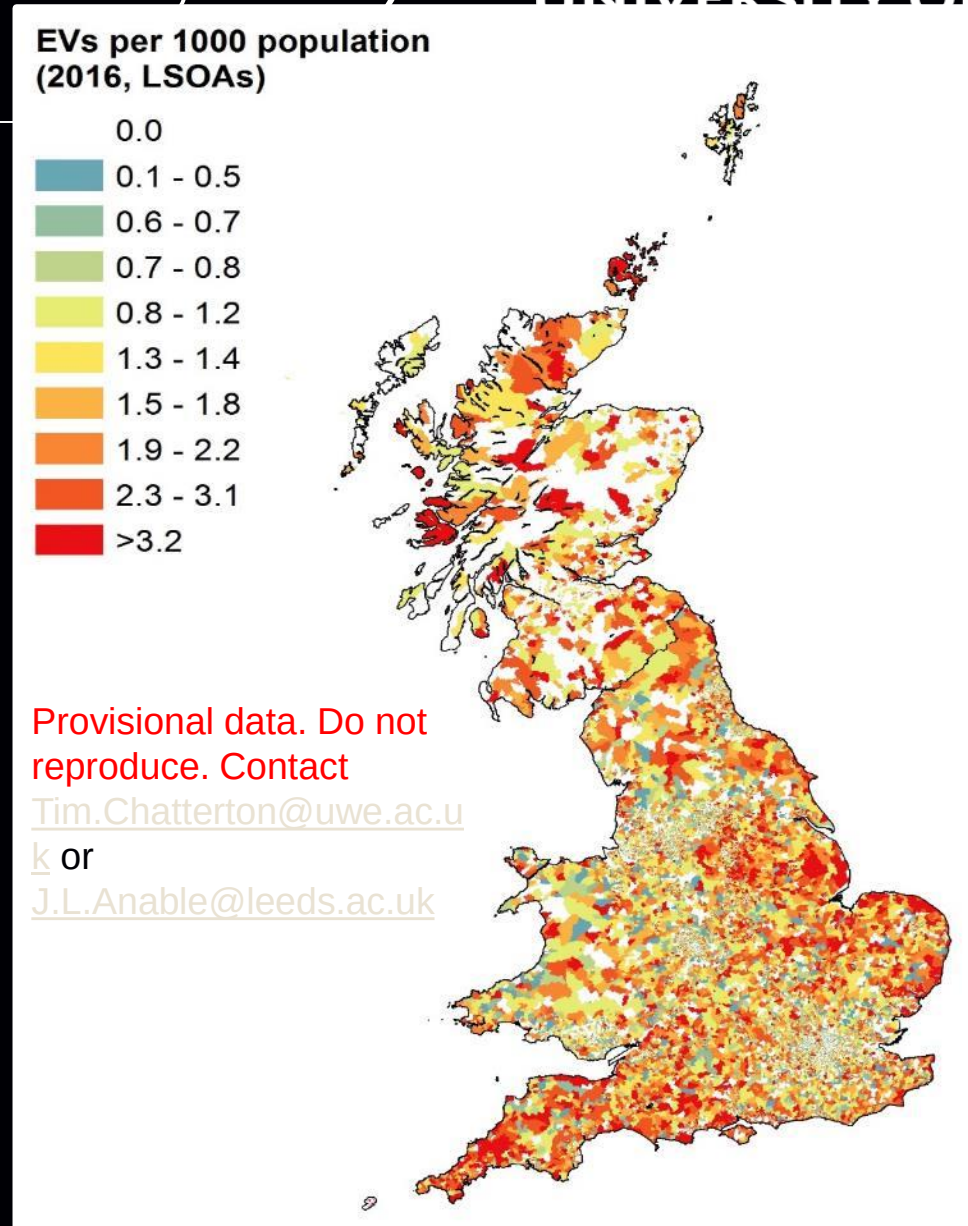
Hybrid/ EV per 1000 population (LSOA, 2016)



Provisional data. Do not reproduce. Contact Tim.Chatterton@uwe.ac.uk or J.L.Anable@leeds.ac.uk



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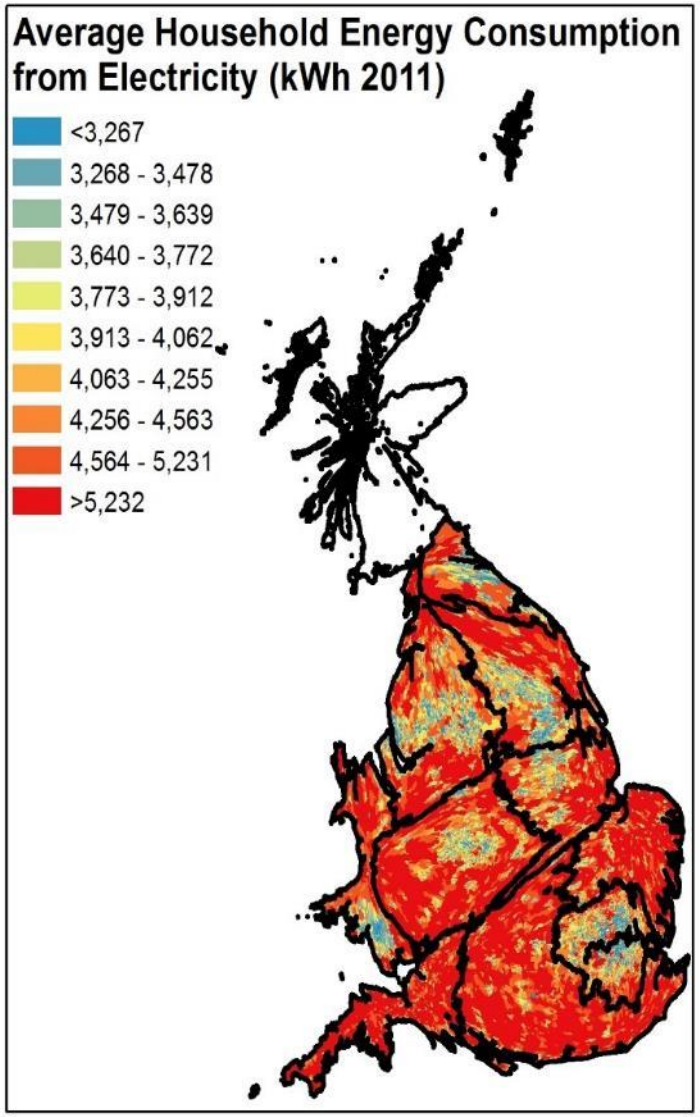
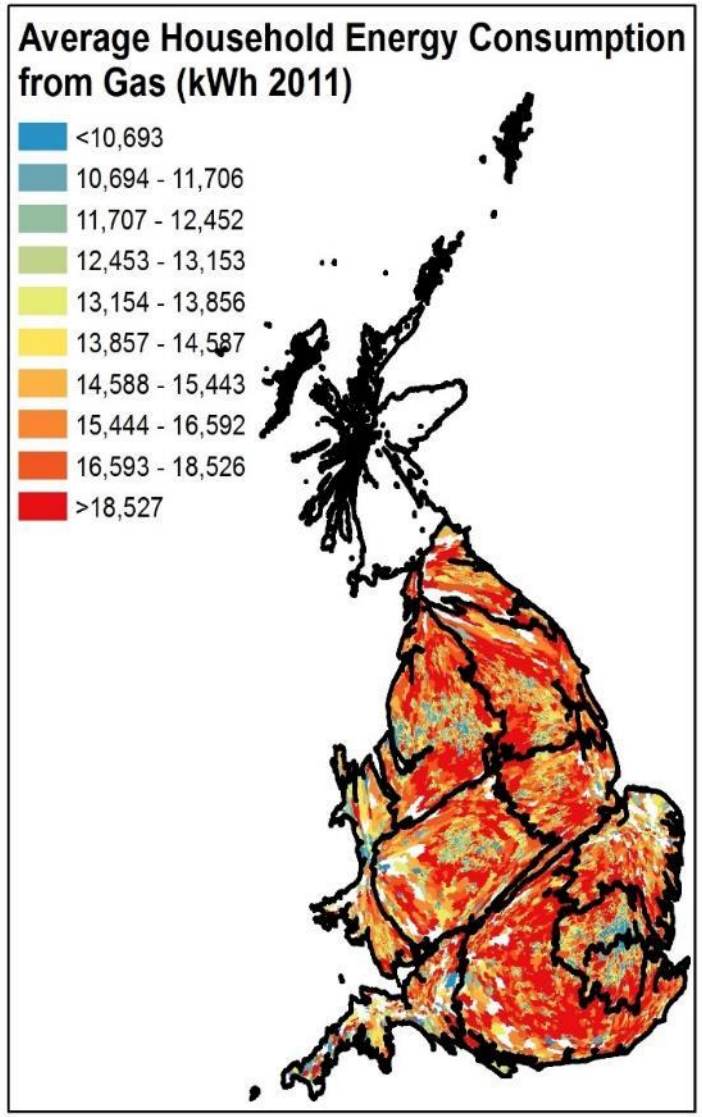
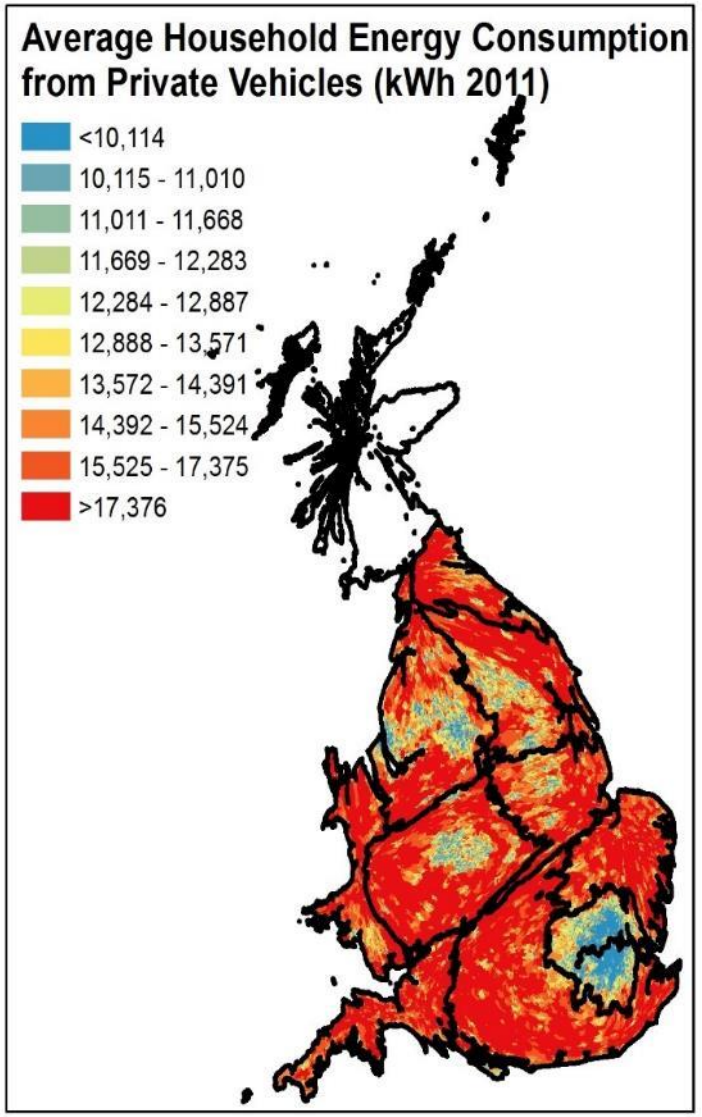
MOT
Motoring and Vehicle Ownership Trends in the UK







Chatterton, T., Barnes, J., Anable, J., Yeboah, G. (2016) Mapping household direct energy consumption to provide a new perspective on energy justice. *Energy Research and Social Science,* 18: 71-87. doi:10.1016/j.erss.2016.04.013

EV ownership by income (UK LSOA, 2016)

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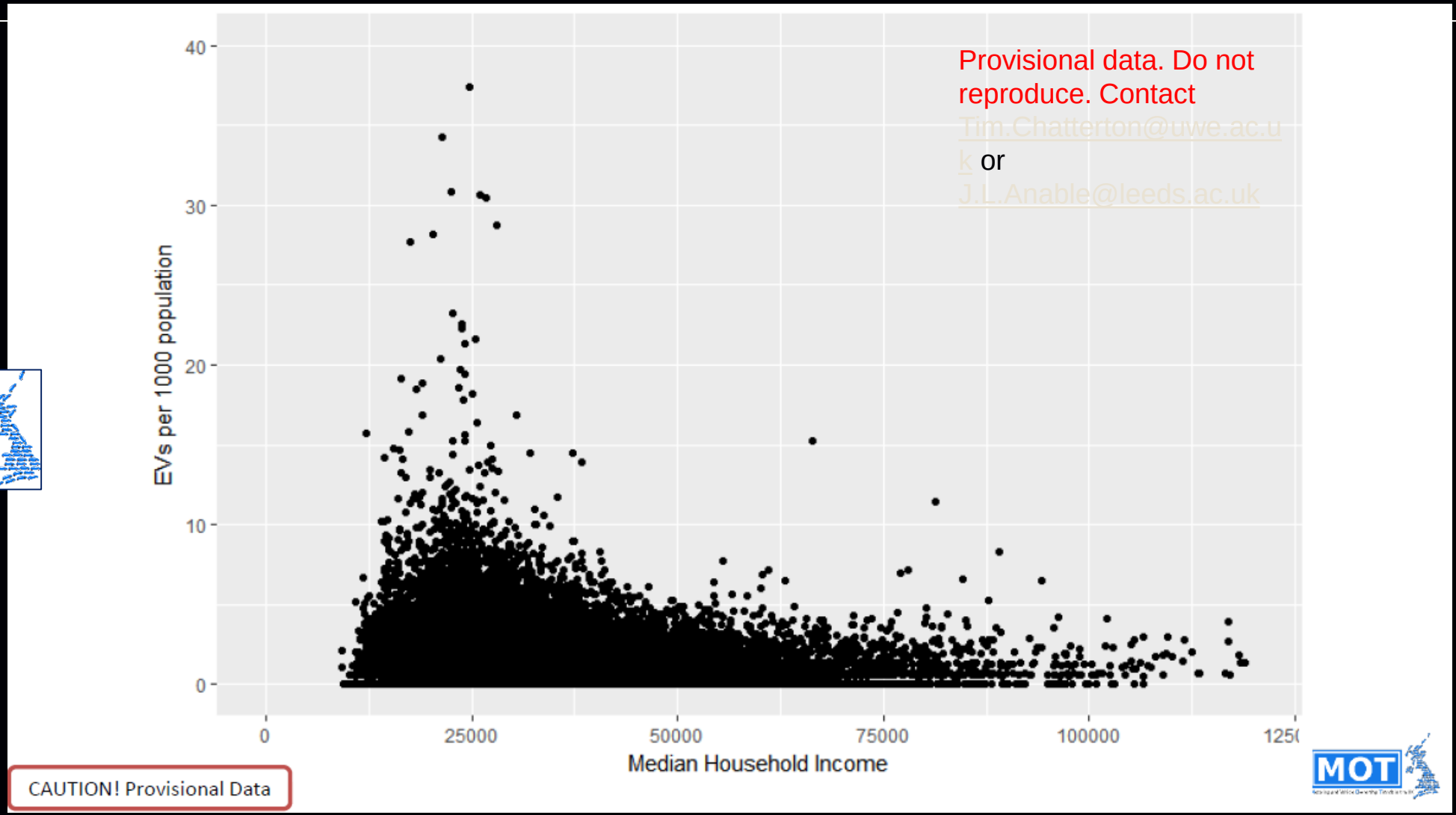

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Motoring and Vehicle Ownership Trends in the UK

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ARE YOU READY FOR THE …

REVOLUTION ?

Thursday 1 September 2016 7:00pm

Ten ways the electric car revolution will transform the global economy

Share

Michael Liebreich and Angus McCrone

Which cities are leading the autonomous car revolution?

Posted on October 6, 2016 in TRANSPORT

Is the electric car revo here?

It's been a long time coming, but with increased ba mainstream players joining the market, EVs are fina

Publications & Events

ating the autonomous vehicle on

For the Autonomous Vehicle Revolution?

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Showing results for revolution definition
revolution
/rɛvəˈluːʃ(ə)n/
noun
1. a forcible overthrow of a government or social order,
"the country has had a socialist revolution"
synonyms: rebellion, revolt, insurrection, mutiny, riot, rioting, rising, insurgence, insurgency, coup, overthrow, regime change; More
2. an instance of revolving.
"one revolution a second"
synonyms: single turn, turn, rotation, circle, whirl, twirl, spin, roll, round, cycle,
"the prop shaft turns 4.7 times for one revolution of
Translations, word origin, and more definitions
Feedback
in favour of a new system.

Reason #1:
An electric car is JUST a car

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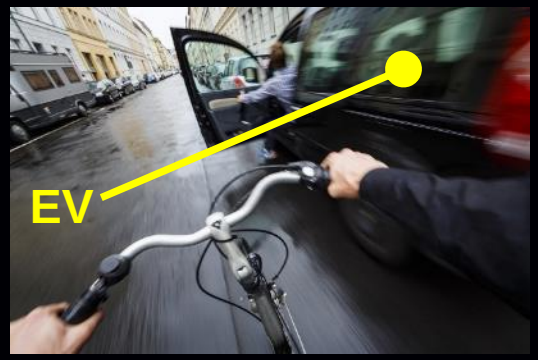
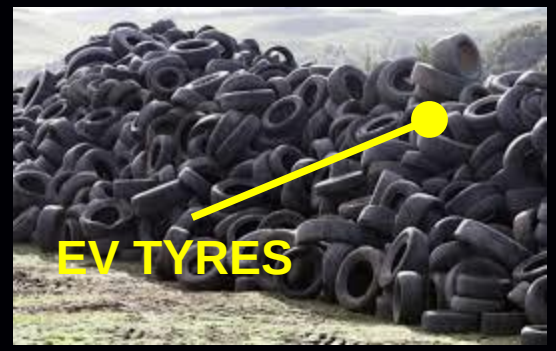
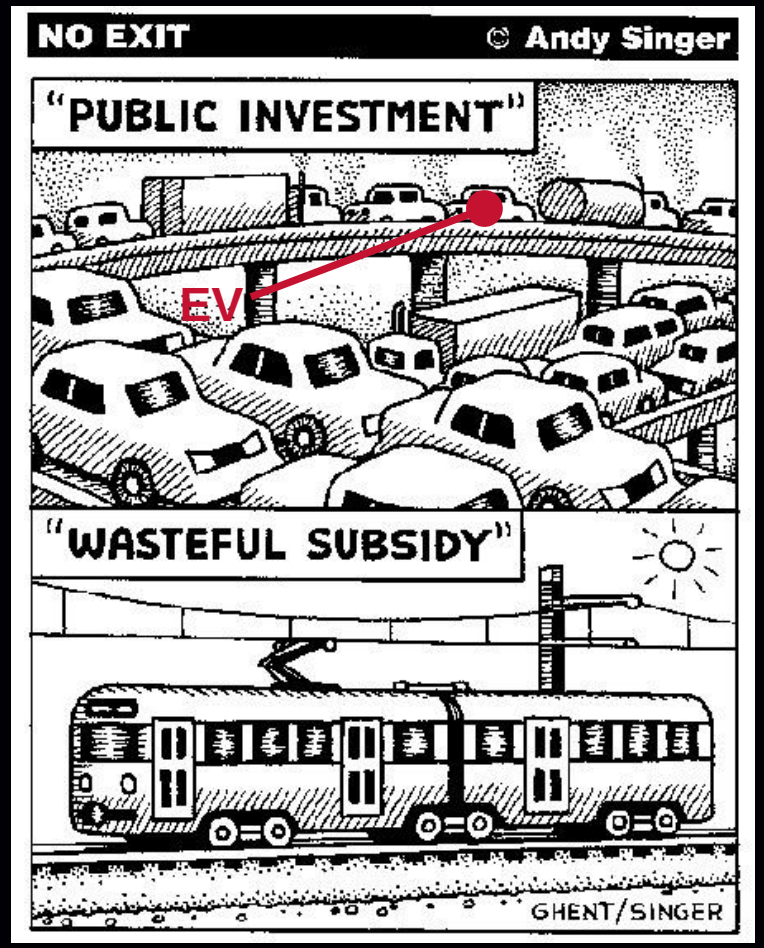
*Accidents
*Parking pressures
*Road user conflicts
*Congestion
*Mineral extraction
*Energy supply & emissions
*Disposal
*Subsidy







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Shared (car) travel is NOT growing; its been DECLINING for 30 years

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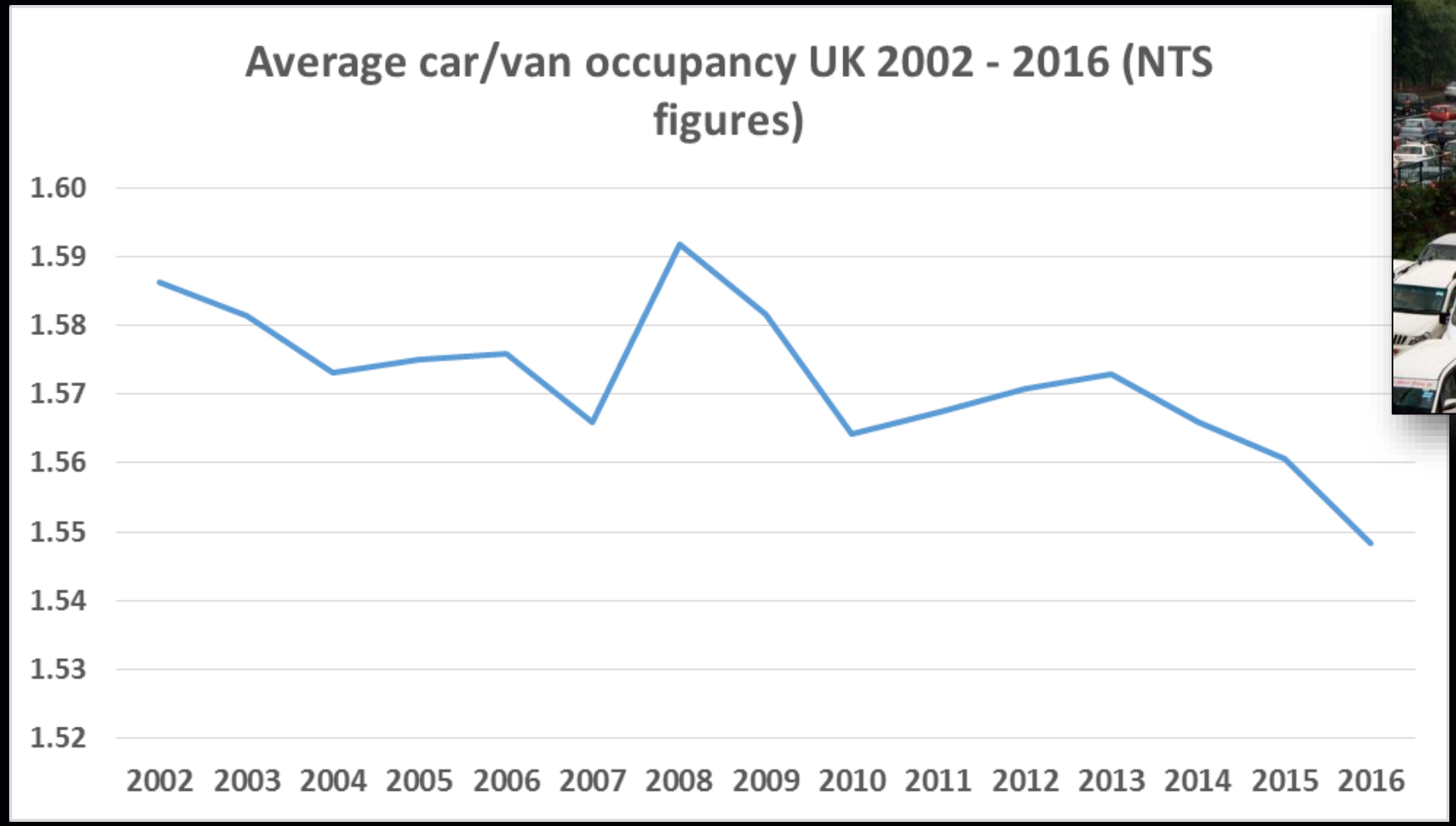

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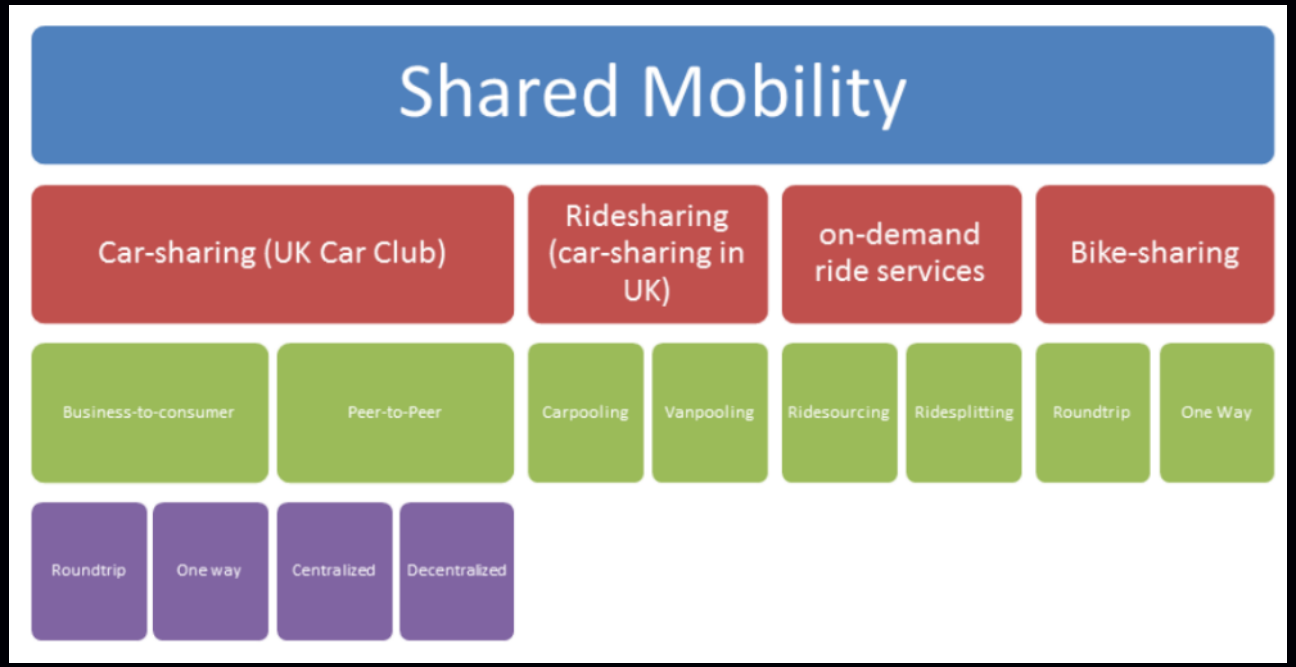
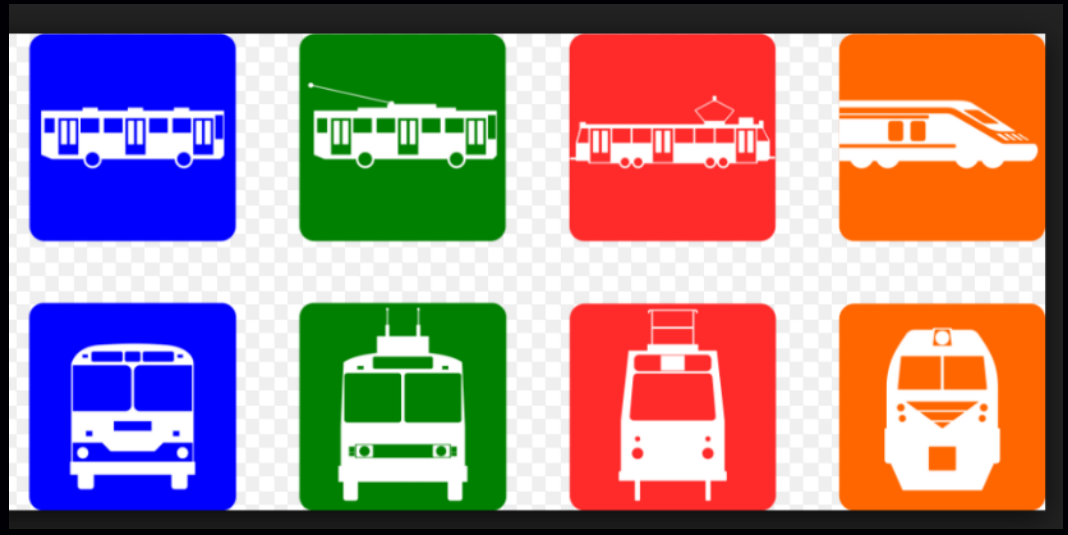
This is called ‘SHARED MOBILITY’

This is NOT Called ‘SHARED MOBILITY’!





Distinguish between ‘shared ownership/access’ and ‘shared at the point of use.
People are resistant to sharing their space with others …

The great sharing lie

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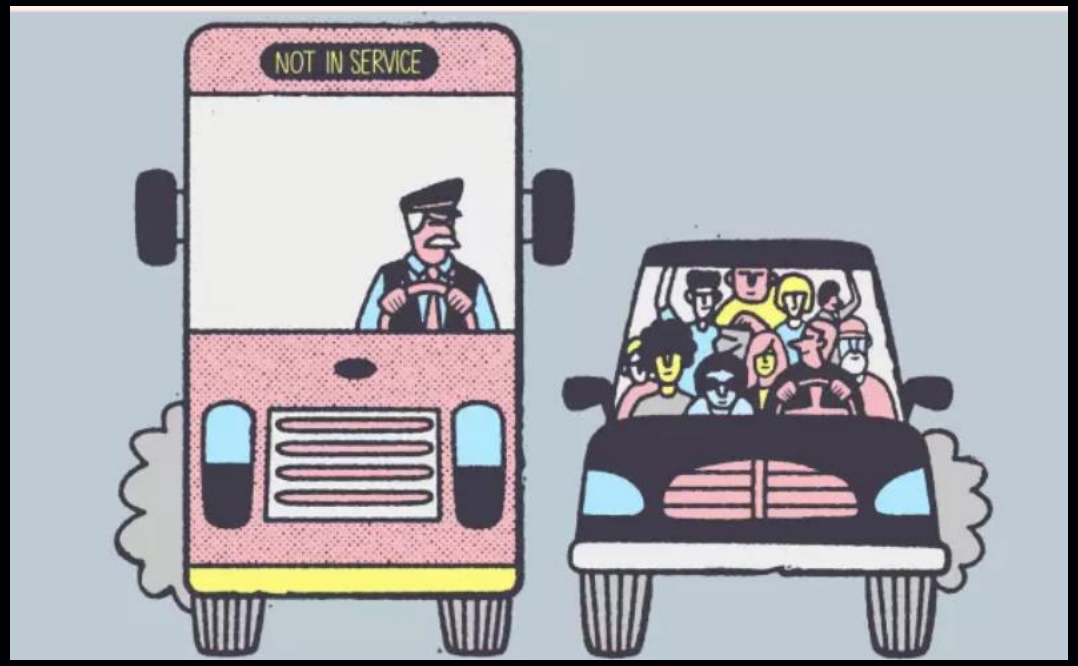
<u>The Great Shared Mobility Lie</u>:
Shared Mobility involves vehicle sharing



- *"unscrupulous use of the word "sharing" by technologists to imply that new mobility modes are good and incorrectly asserts they involve lots of shared vehicle occupancy. This is to show they are much better than urban public transport which is not good and doesn't involve sharing in any good sort of way and which has to be got rid of as soon as possible."* (Prof Graham Currie, 22-06-2017)

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Smart Cities are only as good as the policies that govern them

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- We don't do transport governance well *now* when it's relatively simple …
- We are only at the beginning of the digital revolution for the city - but can we really have a city run by data?
- How will the benefits and any negative externalities of such a transition be managed?
- How will be ensure the objectives of each 'revolution' are aligned?
- We are at a critical juncture for new regulatory mechanisms to impact the outcomes we want

Access

~~MAAS~~

The more mobility the better …

Priorities (1)

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- A full assessment of off street parking capacity at home and in businesses
- A targeted (spatial and demographic) roll out of charging infrastructure (and grid improvements) in existing residential neighbourhoods
- Regulation, regulation, regulation – consumers accept ‘level playing fields’
- Analysis and conversation about winners and losers:
  - who could and should pay for this new infrastructure?
  - Where is it more cost effective to use investment on alternatives to car ownership & use?
  - who cannot park/ charge at home?
  - what will happen to fossil fuels during the later stages of transition?
- Compulsory minimum spend for OEMs on EV advertising + creative public engagement campaign

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