Ecochurch: Electric vehicle experiences 06/12/23

Nick O'Riordan

Denise Herrington

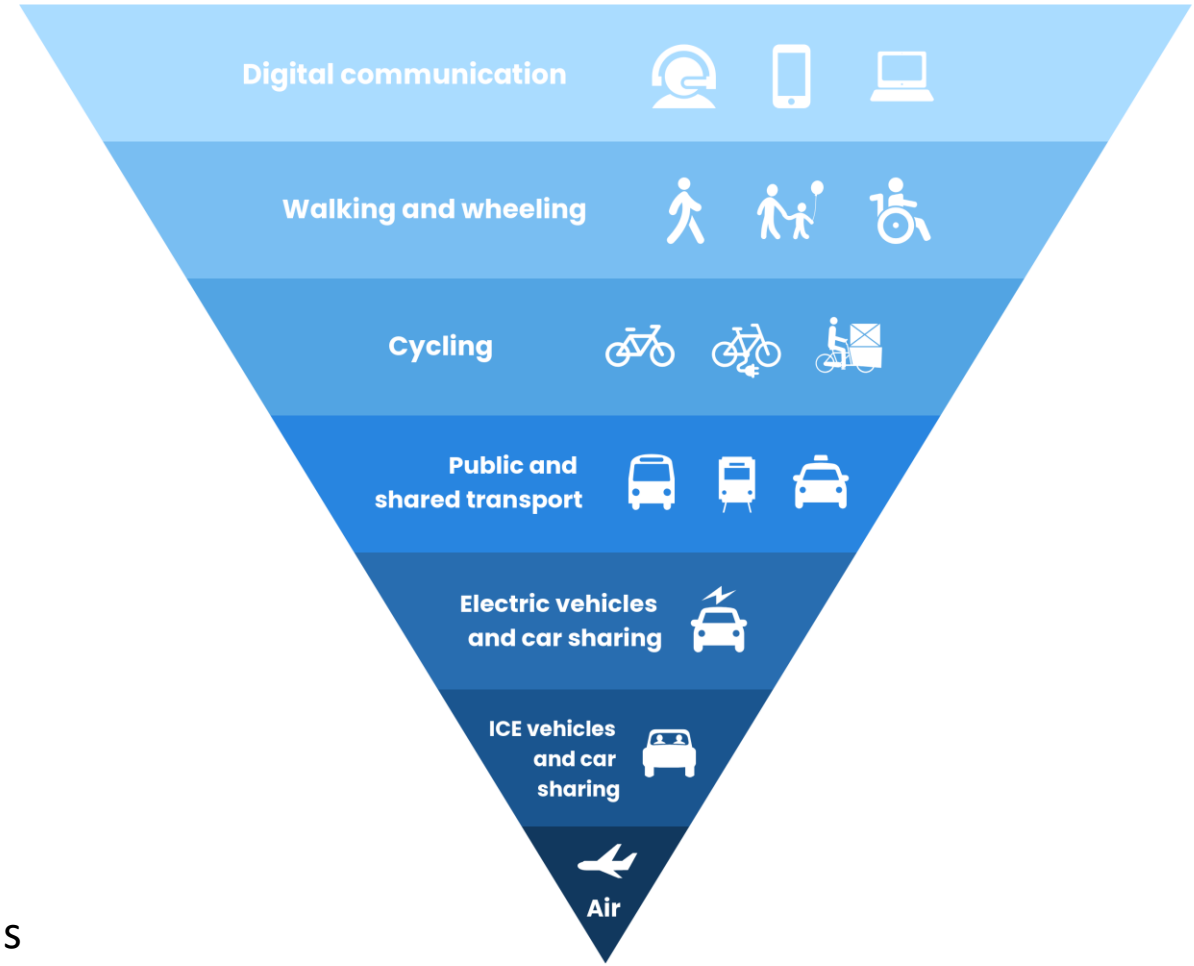
Brenda Large

Transport choices: travel heirarchy

Imparting information

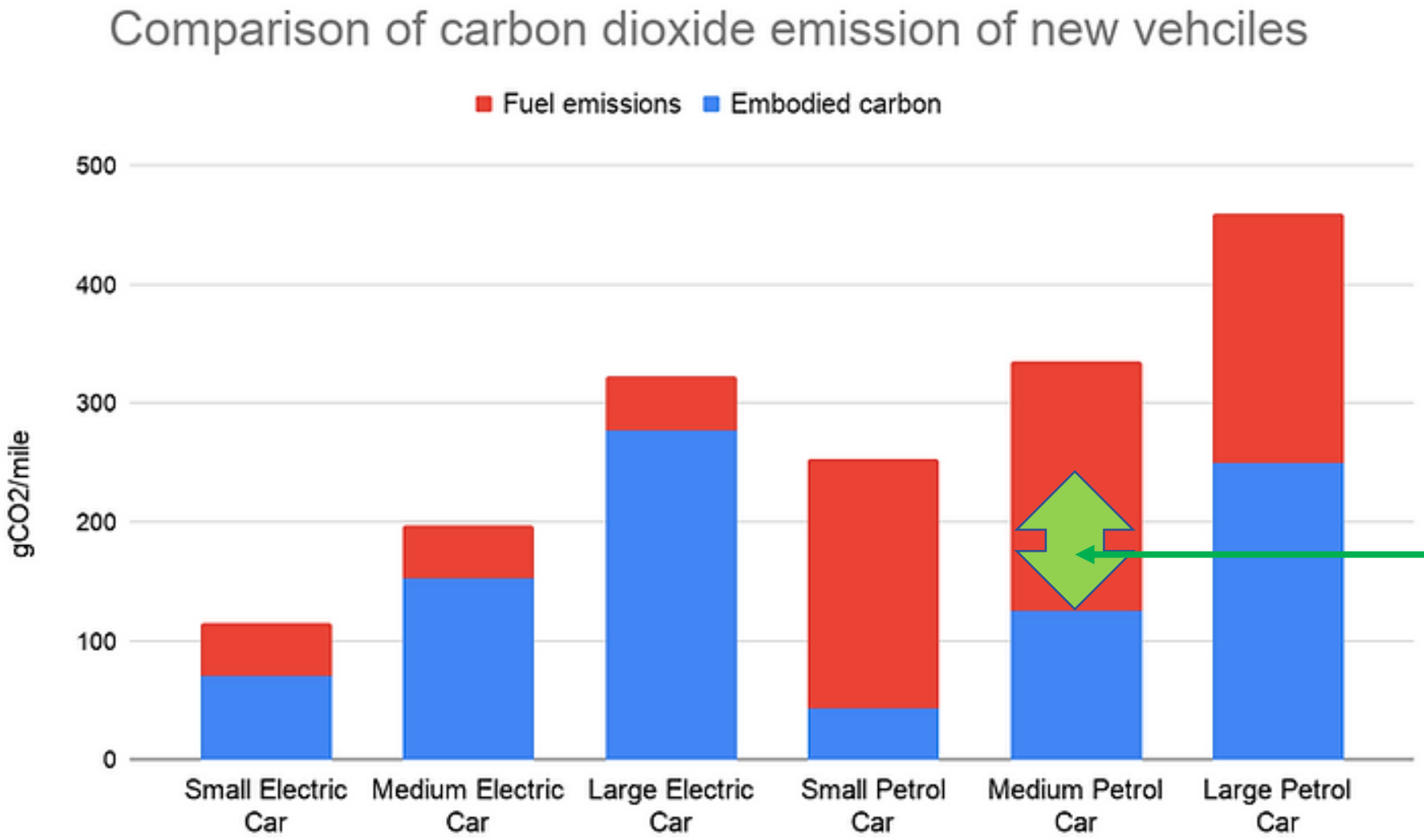
Events

Influencing/changing hearts and minds



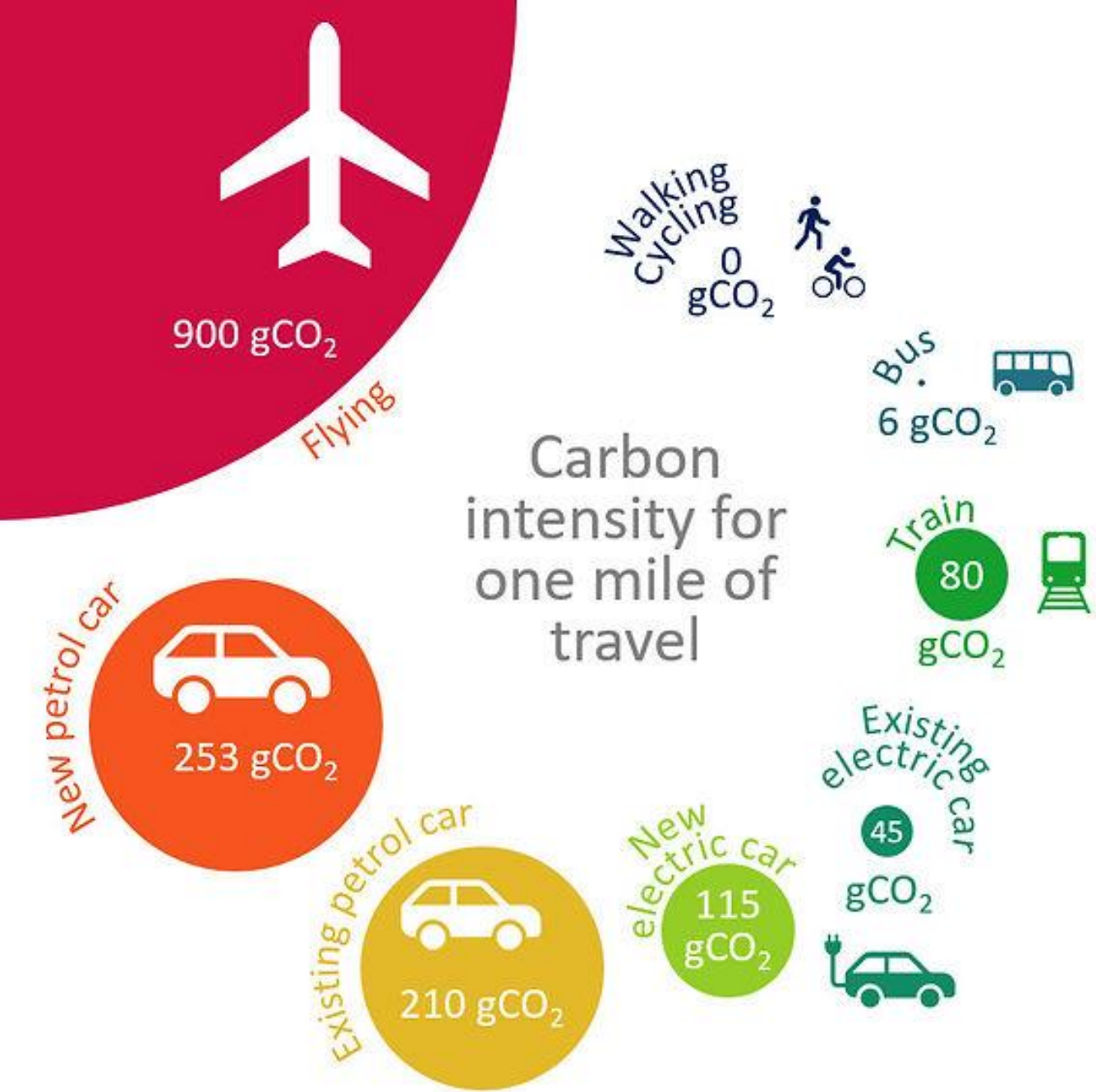
https://energysavingtrust.org.uk/an-introduction-to-the-sustainable-travel-hierarchy/

New Cars: 200,000 miles before taken to scrap/recycling



BMW 218i
3 cylinder. 1.5litre
turbo petrol
(119 gCO_2/mile)

https://www.zerocarbonguildford.org/



If you need a new car: buy electric, but buy pre-owned!

https://www.zerocarbonguildford.org/

Early adopter, 2015 to 2017

Mercedes Benz B class electric

Tesla innards

28 kWh battery: too small!

Range in Summer:130 miles
Range in Winter: 70 to 90 miles: depending on weather

Software: we felt like ‘guinea pigs’/beta testers

Public charging: sparse, low power and often unusable due to poor upkeep

Car failed on way to Portslade (nearest electric car service station) with software fault

MB stopped production in mid-2017

Handed car back to MB and bought a BMW 218i

Home charging point installed 2015

Delivers 7 kW at single phase 240 V domestic board

Secure key, lockable supply

Compatible with PV Solar on roof

Octopus electricity supply costs: 7p/kWh midnight to 5 am
30p/kWh ‘normal hours’
‘Bump charge’ option before midnight

June 2023: BMW i4 MSport!

Ex-demonstrator from BMW dealership in Three Bridges, 7000 miles since new in October 2022

83 kWh battery

Real world driving

Eco Pro: 4.3 miles/kWh (Summer)

2.9 to 3.2 miles/kWh (Winter) depending on weather

Range in Summer:350 miles

Range in Winter: 240 to 270 miles: depending on weather

Software: ‘touch screen computer on wheels’; has a reset button!

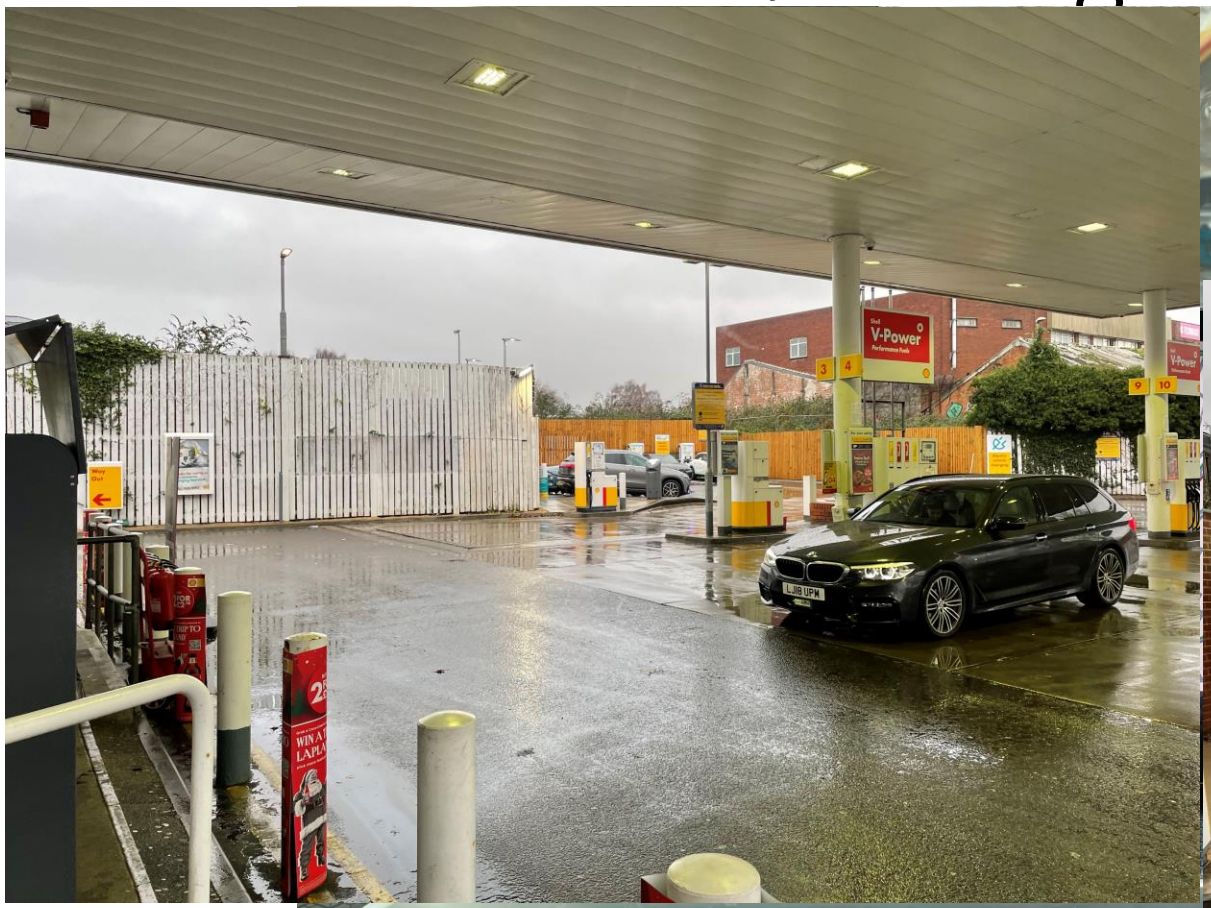
Public charging: now have many more suppliers, contactless payment, smartphone use is easier, DC chargepoints up to 150 kWh!

Range depends on driving style

EcoPro: Comfort: Sport ==== 1 : 0.9 : 0.8

Red thunderclouds form on screen with Sport setting!

Last weekend in Bristol: Shell Recharge~ 60 kW DC until 80% charged




your phone to pay
please put it away
e your mobile phone on forecourt or whilst driving.
TRITIUM
0 kW
0.25 kWh
69 %
0 MIN
48.3 kW
Stop
Please wait until available
PLEASE WAIT
OCCUPIED
CCS2
CHAdeMO


95 % at 10:20 am
DC 0 60 kW 200
190 mi
200 mi
73 %
95 %
OFF
9:48 am
Total 12844 mi
+ 9.0 °C

Journey’s end

Running a VW iD3 & More!

Denise Herrington

iD3

General facts:

- 0-62 mph in 7.2 seconds
- Maximum speed 99 mph
- Car battery stores a usable 58 KWh of energy
- Winter usage with aircon on – 2.5 miles/KWh
- Summer usage without aircon – 4.0 miles/KWh
- Normally run from 80% battery – up to 196 miles range round town

Car range on 100% battery (averages over 20 months):

Town use cold weather	210 miles
Long range travel cold weather	155 miles
Town use mild weather	232 miles
Long range use mild weather	208 miles

Charging 1

General facts:

- Car battery stores a usable 58 KWh of energy
- iD3 has a Type 2 adapter (also uses CCS2 rapid outlets)
- Can use a 13A wall plug @ 2.3 KW – but takes 29 hours 50 minutes to charge
- Home Podpoint charger 7.4 KW – takes 9 hours 15 minutes to charge to 100% from zero
- High energy charging point 22 KW – takes 6 hours 15 minutes to chargeiD3 has a Type 2 adapter (also uses CCS2 rapid outlets)
- Rapid charging CCS2 (like the new installation at BP Faygate)
  - 50KW unit takes 51 minutes from 10% to 80%
  - 124KW unit takes 31 minutes from 10% to 80%

Charging 2

Costs for charging vary:

- *When solar power at maximum, costs 0p/KWh*
- 7KW outlet (like Podpoint at home) 9-22p/KWh (depends on time of day)
- 22KW outlet around 57p/KWh
- 124KW outlet (like Faygate) 85p/KWh

- This means the cost of charging a battery to full for the iD3 can vary between £0 in the summer if using our solar panels to £49 for a fast charge from zero charge
- Our calculated annual average has been £1000 for 190 recharges which equates to around £6 per recharge
- ~3p per mile

Charging from home solar

- 18 solar panels total capacity 6.58 KW
- House battery capacity 6 KWh
- First year of charging 6.54 MWh produced
- 2.42 MWh used, 1.72 MWh to house battery, 2.39 MWh fed back to grid

7 Wildgoose Drive 2022

- Home yearly electricity consumption 14.8 MWh
  - Direct usage of solar 2.4 MWh
  - Use of battery stored solar 1.34 MWh
  - Purchase from the grid 11.06 MWh (largely to charge our car!) - this is around £1000
  - Our Mini used to cost around £3,300 pa in petrol (£65/week)

How to choose:
RAC Best EV Car Report 2023
*Auto Trader

Make	Cost from	Mile range from …	2021 Reg Used car*
VW ID3	£35,835	259	15-18k
Tesla 3	£42,990	374	25-31k
Nissan Leaf	£26,990	239	10-17k
Mercs EQA	£45,645	264	22-26k
Hyundai Ioniq	£30,550	193	15-16k
MG ZS	£27,495	273	13k
Mini	£27,000	145	17-20k
Peugeot E-208	£28,260	225	13k

Why choose an EV?

- Lower running costs
- Technology improving all the time
- Increase in number of charging sites – 49,220 EV devices across UK*
- Ban on sales of petrol and diesel cars – now 2035

* DVLA Oct 23 report

How to Buy

- Outright purchase
- PCP (personal contract purchase)
- Hire purchase
- Leasing
- Salary sacrifice

Pros and Cons of Funding choices

- Outright purchase vs. credit?
- Depreciation
- Advances in technology
- Tax benefits

Other Considerations – Road Tax

- Currently free

- 1 April 2025 duty will apply + “expensive car” supplement

Car Registered	Cost per annum
After 1.4.25	£10 – 1st year £180 - thereafter
After 1.4.45 List price >£40k	£355
Between 1.4.17 – 31.3.25	£180

Other Considerations – Range anxiety!

- ZapMap
- Alerts on satellite navigation systems
- Google Maps
- Popular networks – BP Pulse, Shell Recharge, Genie Point, Charge your car etc

Brenda Large: Kia Niro electric

- Owned since August 2021, driving about 7000 miles/year: mostly 10 to 40 mile round trips and with a few 300 to 800 mile round trips (about 12 long trips/year).
- Range is 300 miles (summer), 200 miles (winter)
- Charges at home, reckons on electricity charge costs of 4p/mile
- Public charging: by experience, better to wait for an available slot than to travel to next only to find it isn’t working

Likes

- Lower costs per mile than petrol
- Fast acceleration
- Easy, quiet drive: no gear changing
- Easy to charge at home

Dislikes

- Initial cost of car and home charger
- Unreliability of public chargepoints
- Lack of standardisation of public charge points
- Having to plan charging stops on long journeys