



This is a summary of a virtual Go Electric Event organised by Transition Chesterfield in June 2020 with presentations by 5 electric car owners and 5 electric bike owners. This was intended to answer common questions people have about buying and owning electric vehicles/bikes. The following are the views of the owners of the ecars and ebikes and do not represent any manufacturer's views or guidance. Please note other models of electric car and bike are available!

Renault Twizy

- 2-seater, 2 door, 2012 model
- Cost: approx. £7,200 (with optional doors) to purchase, around 40p to charge from flat on Econ7, free with solar panels
- Range: 30-50 miles – lower range in cold weather
- Battery: under driver seat.
- Recharge using 3 pin plug (3 hours)

Pros – easy parking, low cost, very stable round corners, fits on back of trailer, ideal as a run around

Cons – no windows (though you don't get wet or cold) and limited storage space



Nissan Leaf

- 5 seater, 4 door. Size of VW Golf.
- Cost: approx £26,000 new to purchase, use solar panels so free to recharge in summer
- Range: 100-110 miles in summer, but 70-80 miles in winter. Been to Edinburgh with couple stops for charging.
- Space: good boot capacity – fits bike or 2
- Battery – 30kWh though come in different sizes

Pros: drives well

Owners tip: Lease before you buy and use zapmap to locate charging points



Renault Zoe

- 5-seater, 2 door
- Cost: £7900 2nd hand (66 plate with 5,000 miles on it). Very cheap to charge (and use solar panels)
- Space: limited though can fit bike in back
- Range: 120 miles for older models. In winter 80-100 miles. New models 250 miles
- Charge: rapid charge on motorway 35 mins or 50 mins in winter; charge at home for free using solar (12 hours)

Pros: good road handling, very efficient, cheap to run

Cons – early models had software problems

Owners tip: Watch out for motor variants (R and Q which alter speed of charging. Purchase your car but lease your batteries so can replace them.





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Kia Soul

- 5-seater, 4 door
- Cost: approx. £33,000 to purchase with government grant (equivalent of Range Rover). Very cheap to recharge
- Range: 250 miles (in reality) – advertised at 280-290 miles. Have done 240 mile round trip to Yorkshire and went down to 30%.
- Battery: 64 Kw battery. V good acceleration even on lowest eco setting.
- Recharge: Podpoint on wall can recharge in 6 hours. On 3 pin plug 12 hours



Pros: excellent range and drive, lots of storage room

Cons: high cost

Owners tip: Switch off auto lane correction which pulls you back in when overtaking on motorway and watch your speed as so powerful.

BMW i3

- 4-seater, 2 door
- Cost: approx. £35,000 new
- Range: 110-130 miles and up to 150 miles
- Recharge: 15 hours on 3 pin plug. Free with solar.
- Battery: this version has a petrol generator but owner has only used 2 gallons in a year



Pros: brilliant to drive, lots of gizmos, works well for 2 people

Cons: Doors.

Owners tip: Not recommended as a family car

General tips on electric cars

Before you buy: Watch “fully charged” for good reviews of different electric cars.

<https://www.youtube.com/user/fullychargedshow>

Check out SpeakEV Forum <https://www.speakev.com/>

Consider leasing: Although electric cars have a much higher purchase cost than petrol/diesel equivalents they have much lower lifetime costs when you factor in the zero Vehicle Excise Duty and the very low running costs. So if you can't afford a new electric car consider a second hand one or leasing a car which will save you money over it's lifetime. Also consider leasing rather than buying of batteries

Charging: Zapmap lists all the public EV charging points across the UK including Chesterfield (63 in the borough at the last count!)

<https://www.zap-map.com>

<https://www.zap-map.com/locations/chesterfield-charging-points/>

Council carparks:

- Durrant Road Car Park: Fast 8
- Soresby Street Car Park: Rapid: 1 (60-200 miles of range in 20-30 min)
- St Mary's Gate Car Park: Fast 8



Calibre Kinetic

Details: Mountain bike – off shelf bike with added extras. Hard tail (no suspension on back)

Cost: around £1000 new

Battery: Lithium ion – pushes price up but gives more range and weighs less than lead battery. Can remove and recharge inside

Motor: on rear wheel (more expensive than front) means you don't lose traction up hills

Pros: owner can get up Hady Hill without needing lie down! Only time they use electric assist.



Haibike SDuro

Details: Dutch hybrid bike suitable for trails and road. 8 speeds and electronic gear shift. 4 settings for assistance - Eco, Tour, sport and Turbo. 8 gears. hydraulic brakes. Front suspension only

Cost: about £2000 new

Battery: Lithium-iron Battery - heavy but holds charge and reliable. Removable but heavy. On eco mode it is supposed to do about 50 - 60 miles but it depends on the hills. Owner cycles from Chesterfield to Matlock and back and the battery still has 3/4 of its charge.

Motor: situated in the bottom bracket i.e where the peddle crank turns - most efficient location.

Range: if keep on eco lasts about 60 miles.

Pros: Owner cycles over moors to Matlock and describes it as a godsend

Cons: heavy



Kalkhoff Pro Connect)

Details: Intermediates tyres, suitable for both road use and OK on unpaved paths. Motor mounted at crank.

Cost: new: £2000 (9 years ago). Assistance only, 3 levels; 8-speed hub gears. Other costs included motor replacement (after about 7 years) £600; gear box replacement (6 months ago) about £300. Routine maintenance negligible compared with a car.

Battery and range: the supplied Panasonic battery was rated as 18Ah/453Wh, with a claimed range 85 miles but more like 60 miles, with moderate use of the assistance. Over time this has dropped to 40 miles. Range varies with wind direction and speed.

Pros: Reduction in car use and health benefits: owner is severely asthmatic but bike has considerably improved overall fitness. Owner never uses high assistance and rarely drops below 5th gear, although regularly undertaking climbs of about 200 meters.

Cons: cost and quality of replacement batteries. The original, which Panasonic no longer make, started to lose capacity after about 6 years. Replacement batteries suffer from a problem of the voltage dropping as the charge level drops, and falling far short of claimed rating.

Owners tip: buy a spare battery from the manufacturer (at the time of purchase) rather than rely on 3rd party versions of doubtful quality.





Electric Brompton

Details: classic folding bike, 6 gears (though 2 gear version cheaper). Sensor in hub. 3 levels of assistance and can ride without assistance. Good integrated lights.

Cost: £2800 though regular Brompton costs £1500

Battery: Fits on the front where the luggage clip is.

Range: 50-60 miles on full battery.

Motor: in the hub and very sensitive.

Pros: very practical, fits in car easily. Can carry a lot of luggage weight



Cube hybrid touring)

Details: Hybrid bike.

Cost: £1600

Battery: on parcel shelf (different to picture which is later model with built in battery)

Motor: in crank

Pros: Even with health problems can cycle to Hope Valley and up Wynatts Pass (with full assist). With panniers can do a full shop so good for utility cycling too

Owners tip: Get biggest battery you can afford



Raleigh Centros Low Step Hybrid

Details: Hybrid with low step through. Smaller 26 inch wheels so more manageable. 4 levels of assist.

Cost: around £2000

Pros: Will happily do 30 miles.

Owners tip: Get a torque sensor (Bosch) which integrates the assistance with how you ride.



General tips on ebikes

Motor: Crank motors are more efficient than hub motors – the latter don't work efficiently at slow speeds. Bosch or Panasonic crank drives are the best.

Security: If your batteries are removable take them off rather than leaving them in the shed (lots of thefts). If batteries integrated make sure you use the best lock.

Retrofits: One participant had fitted a couple of Swytch aftermarket electric bike kits which seem to work well and cost around £500.



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Q&A

Charging without off-road parking

Q: How can you recharge your electric car if you don't have off road parking?

A: many people in London pop a socket or a charge point behind their front wall & run the charging cable across the pavement under a cable mat (the kind you'd get in a meeting room to lay out an extension lead)

Q: I live in a council flat. The wide bit of open grass in front of my front door is not only not mine, it is not even a garden. Would it be feasible to run an electric vehicle relying on public charging points? Would it be expensive? Has anyone tried the cable protection 'mats' to cross the pavement?

A: Yes, it is possible to rely solely on public charging points, especially now Chesterfield has more of them. There are six at St Mary's Gate car park and another six at Durrant Road car park. These are known as fast chargers, but they're not very fast! So, for a typical car with a 30 kWh battery able to charge at 7kWh, a full charge would take about four hours. With a Chesterfield resident's permit, parking is free outside 10am to 3pm. That would cost a bit over £5, at 20p a kWh. Now that's quite a long time to be charging, but maybe two or three shorter visits a week while shopping or at the Pomegranate Theatre would do the trick. There are another six fast chargers in the new Saltergate car park but you have to pay there at all times.

Chesterfield also has three rapid chargers, capable of filling a near empty battery in about 35-40 minutes. There's one at the Highfield pub on Newbold Road, which costs 25p a kWh for members of the Polar Instant network (free to join) and a full charge there for the same 30kWh car would cost just under £7 and get you around 100 miles.

The rapid at Morrisons is more expensive and would be nearer £10 for a full tank and the council one in Soresby St car park isn't worth bothering about as the parking fee and electricity costs are both expensive and the space is very tight.

Note that residents who charge their car overnight at some council car parks are not charged for parking [we are still checking if this is the case in Chesterfield].

A: The approach with cable mats is not hypothetical - in fact many councils actually provide guidance for this. For example: <https://www.hants.gov.uk/transport/ev-charging-points/ev-charging-guidance> In a flat with a wide verge, this would become more difficult & the preferred solution would probably be for the social landlord to provide shared charging points in a nearby off street car park or kerbside charging pillars. It is also possible to charge at Monkey Park for a donation to the non profit organisation which runs it. It is a 16A charger (due to the constraints of the building), so does take a while.

A: (official guidance): If you want to run a cable across the pavement you need to get agreement from Derbyshire county Council on a case by case basis, subject to strict criteria.

Maintenance of electric cars

Q: Maintenance - do you have to do MOTs, services the same as petrol/ diesel cars?



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A: Yes they need a full MOT and have to tax them but it's a zero rate. Servicing an electric car costs a lot less than petrol/diesel cars as no engine/oil. Same costs for brakes, tyres etc but lower costs for oil, engine maintenance etc. One owner serviced his for £60 (checking wheels and tyres).

Security of electric bikes

Q: : can you secure electric bikes against theft - common for your average push bike

A: it's advisable to get the best lock you can. And remove the battery and computer if you can

Life cycle carbon of electric cars

The full lifecycle carbon footprint on an electric car is very low because the lifespan is longer - because there is no engine, they can go for 500,000 miles.

A report on life cycle greenhouse gas emissions of different cars can be found here

https://theicct.org/sites/default/files/publications/EV-life-cycle-GHG_ICCT-Briefing_09022018_vF.pdfxxxx]

The BMW i3 is produced in a carbon neutral factory & the car itself is 95% recyclable (eg the dashboard is made of natural material)

Derbyshire County Councils Low Emission Vehicle Strategy and Action Plan

<https://www.derbyshire.gov.uk/environment/climate-change/electric-vehicles/electric-vehicles-and-charging-points.aspx>

The government have announced a further £20m funding for charging for 2020/21. Derbyshire County Council are now working with the districts and boroughs again to see what car parks maybe suitable for similar purposes. If you have suggestions for where you think chargers are needed in Chesterfield please contact your local councillor.

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