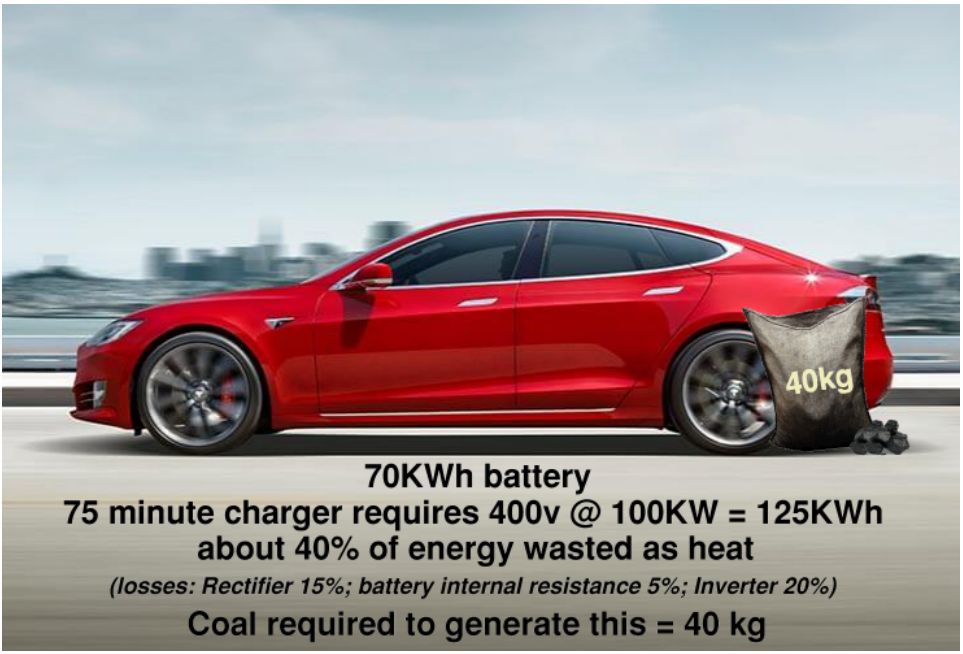
Here’s Why Electric Cars Are Useless



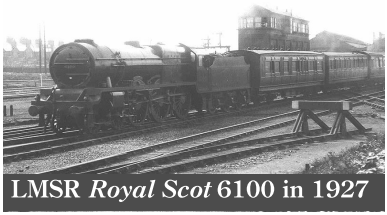
To suggest, as some ignorant people have, that electric cars 'emit no CO_2' is absurd because the power stations that charge them do. To charge an electric vehicle (such as a Tesla), *just once*, requires the burning of 40 kilogram of coal. A petrol car will require about 20 kilogram of petrol for the same distance. It follows that the electric car is emitting about double the CO_2 of a petrol car.

Here are the sums:

Drax (*see back page*) uses about 0.31 kilogram of coal per KWh generated.[1]

A Tesla battery is rated at 70 KWh and fast charging is only 60% efficient. It will need 125 KWh of electricity for a single charge; this works out as about 40 kilogram (0.31×125) of coal for a full charge [87kg on *Greenpeace* data].

The cost of electricity for the range available in a Tesla—200 miles in summer; 100 miles in winter—works out at ~ £19. The petrol for 200 miles costs more but most of that cost is tax (currently about 60%)—about £28. In winter, for 100 miles, the petrol costs just £15.

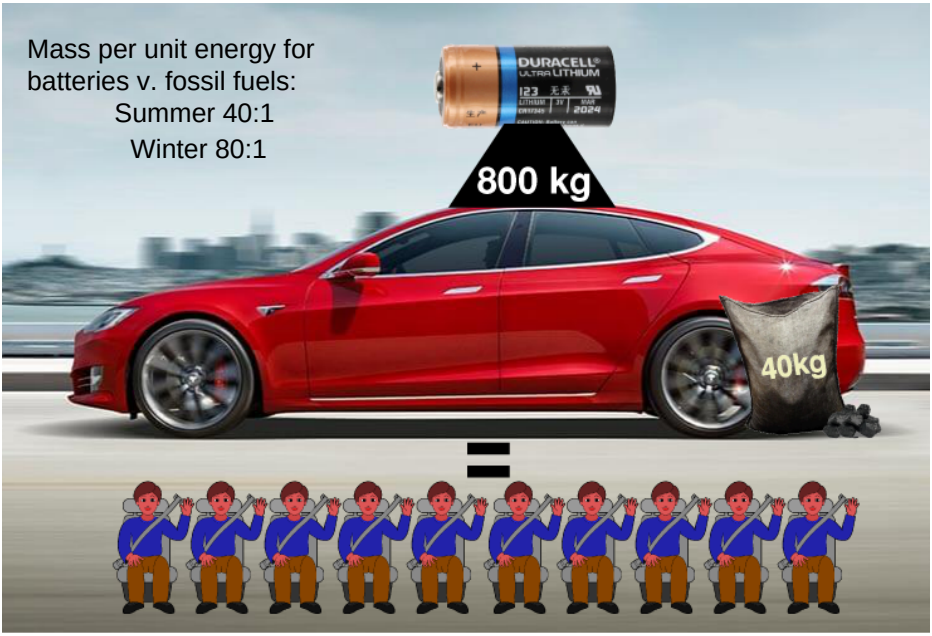

LMSR *Royal Scot* 6100 in 1927

During trials, between 1927-30, of British steam locomotives a typical result was that, for a 500 ton express train, coal was consumed at the rate of 20 kg per mile.[2] Over 200 miles therefore 4000 kg was consumed. Scaling down to a two ton car: 4000÷250=16 kg coal. Even allowing for economies of scale, compare this to the 40 kg required by a Tesla.

Further issues and hazards

- In the battery manufacture for a Tesla model S, around 17.5 ton of CO_2 has been released. That would take a petrol/diesel car some eight years to produce![3]
- Battery cycling—the deterioration of the capacity of a lithium battery with charging—must be allowed for, costing about £3 per cycle.[4]
- Fire: even small lithium batteries are liable to catch fire or even explode, releasing deadly toxins such as COS, HF, CO.[5] The huge dangers for occupants in event of an accident are obvious. Firehoses would only exacerbate the problem, causing electrocution of victims.[6] [The Emergency Services can't touch a crashed EV without calling for specialist equipment - recently a Tesla was ashes in 90 seconds!]

1. www.euronuclear.org/info/encyclopedia/f/fuelcomparison.htm. Figures from *Greenpeace* are higher: 0.7 kg/KWh (www.energydesk.greenpeace.org/2013/02/14/much-coal-burning-will-keep-burning/). Not all electricity is produced from coal of course, but it makes a simple comparator. Wind turbines take around five years to pay off their CO_2 'debt' (concrete, metal mining, refining etc). They seldom last more than ten years. Their main bearings last *less than two years*.
2. *The British Steam Locomotive 1925-1965* by O.S.Nock, Ian Allan 1966. p67 Dynamometer Car Tests 1927 on LMSR Engine Royal Scot No. 6100.
3. According to IVL, the Swedish Environment Institute.
4. Battery 'swopping' is unviable. An average garage refuels 1000 cars a day; how are they going to recharge 1000 batteries every day @ 5-12 hours each? **Also who is going to carry them @>half a ton each?**
5. *Carbonyl sulphide* (similar in action to *cyanide* gas), *hydrogen fluroride, carbon monoxide.*
6. This happens: https://www.bbc.co.uk/news/world-us-canada-44511200 'Tesla spontaneously bursts into flames'



- The Tesla battery alone weighs 800kg—that's nearly a ton—equivalent to ten passengers (an average petrol engine + fuel weighs about 140kg).[7]
- Every servicing garage will be compelled to buy a completely new suite of tools, lifts, ramps etc. under electrical safety regulations for EVs.
- Death from exposure. In winter, travelling, say, over the Yorkshire moors in a blizzard at night, you are likely to die. The car 'dies', as battery power drops due to the cold. There is now no heating. You freeze inside, you freeze outside trying to find help. Petrol and diesel cars do not have this problem.[8]
- As most of the numpties, who think electric cars are viable, live in towns the above point doubtless passes them by, but the huge potential for traffic clogging due to 'dead' electric vehicles has not been considered[9], nor has the issue of time to recharge. Currently an average petrol car takes about five minutes to fill up with petrol, pay and depart. If an electric car takes a minimum of 75 minutes to recharge (five *hours* is more likely), either the queues are going to be astronomical[10] and the time wasted ditto (*see also note 4.*) or there will need to be nearly *five million* charge points installed at an estimated roll out cost of £20 billion.

The BBC took an electric car from London to Edinburgh. It took three days, slower than a stagecoach. People sometimes need to get to places quickly!

In case anyone thinks that there is a miracle battery just over the horizon,

7. Roadside tyre change is impossible without a hydraulic lift for the whole vehicle.
8. Further, any 'off-road' EV would fry its battery and motors (or blow a fuse) if stuck in difficult terrain.
9. One type of electric car is called a *Leaf*. This will give a wholly new meaning to 'leaves on the road/line'!
10. as happened in California in 2019: a two mile queue for 40 super chargers.

I can absolutely assure him or her that there is not. Battery technology is mature[11], and, to quote Mr David Hume, "Miracles do not happen." (at least in technology).

No law was ever required to ban horses and replace them with cars; so why do we have to ban petrol vehicles if EVs are really so wonderful? Oh, don't forget that you'll need to pay to have it taken away when you buy a new one.

Just where is all this power to come from anyway?

The Climate Change Act now requires that by 2030 all gas heating be replaced by electric heating and all new cars be electric. Besides the stupidity of turning huge amounts of electricity back into heat, clearly no one in government has done the maths. The results are horrendous!

22 million gas using households *(to replace gas boiler)*[12]	@ 30kW	660,000,000kW
31 million standard[13] chargers for electric cars	@ 8kW	248,000,000kW
		908,000,000kW

All needed at peak from 5pm when people come home, plug in the car, turn on heating, turn on the oven and take a shower.

This will require: 908,000,000kW ÷ 4,000,000 (1 Drax) ≈ ***227*** extra 'Drax' power stations

Were these to be run on biomass (wood chips)—as 50% of Drax already is—this would consume, annually, the entire timber harvest of the USA!

Plus—we will need to dig up every street to lay much bigger cables.

Estimated cost: between £200 billion and £1 trillion.

Electric HGVs anyone?

Battery alone would weigh 30 tons for just 200 miles

11. There is even now a global shortage of Lithium and Cobalt; also of Neodymium for the motor magnets.
12. **Heat pumps** would be totally impractical for most of the UK's housing stock . But if used - they rate @ 10kW and cost £15,000 - would reduce the number of new 'Drax' sized power stations required to **117**.
13. The 75 minute Tesla super charger requires industrial 400v 3-phase supply (unavailable to domestic homes). 31 million such super chargers would require an additional **770** Drax power stations.

I am grateful to Chris Skerry (a Tesla owner) for some of the data for the Tesla.

Philip Foster MA (Nat. Sci.) 1 Barnfield, Hemingford Abbots, Huntingdon PE28 9AX
01480 399098 philip.foster17@ntlworld.com
He is the author of *While the Earth Endures: Creation, Cosmology and Climate Change*
Available on Amazon UK or order direct; contact details above.