

the future is electric



S.D.C.E. AGM

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Renewables just can't do it



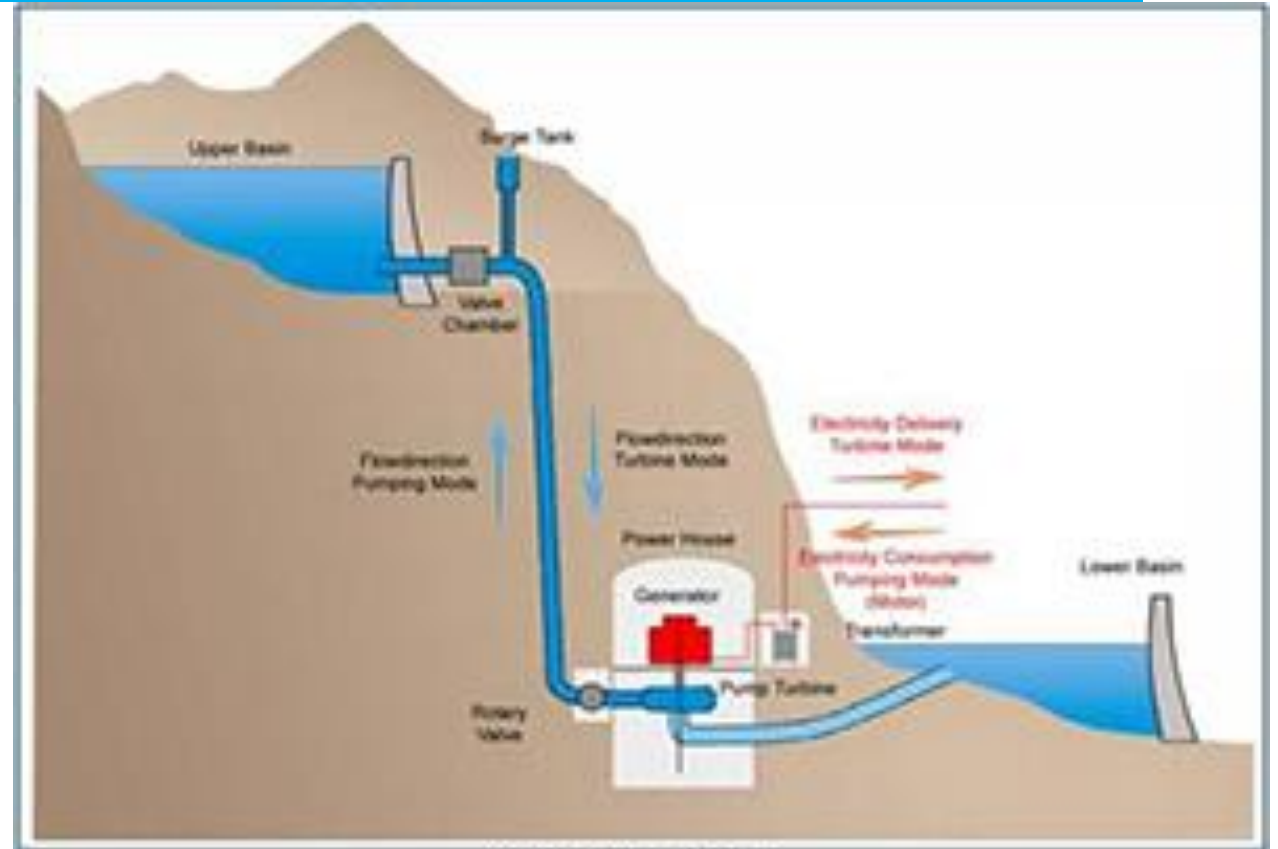
- ❖ We have to decarbonise electricity
- ❖ Solar and wind are the least cost options
- ❖ But they're both variable
- ❖ So we'll ALWAYS need something to provide back up!
 - ❖ gas fired power stations?
 - ❖ Nuclear?

What about storage?

Large scale battery storage

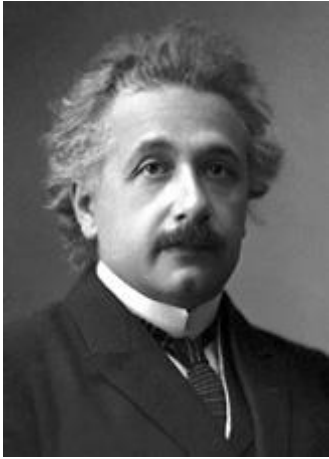


Expensive options more than 20p per kWh



Pumped storage

.....or is there another way?



A thought experiment

- ❖ There are 31.7m cars in the UK
- ❖ Average car spends 96% of its time parked
- ❖ Average car mileage is 22m per day

.....but what if all those cars were electric?



...and we could borrow the spare power in the batteries?

Battery capacity	40	kWh
Range	200	miles
Daily consumption	4.4	kWh
Daily spare capacity	35	kWh
Daily electricity consumption in UK	978 million	kWh
Daily consumption with 31.7m Leafs	1,118 million	kWh
Spare capacity 31.7m Nissan Leafs	1,110 million	kWh

So if all the UK cars were Nissan Leafs they could keep the lights on for over 23 hours and 50 minutes?

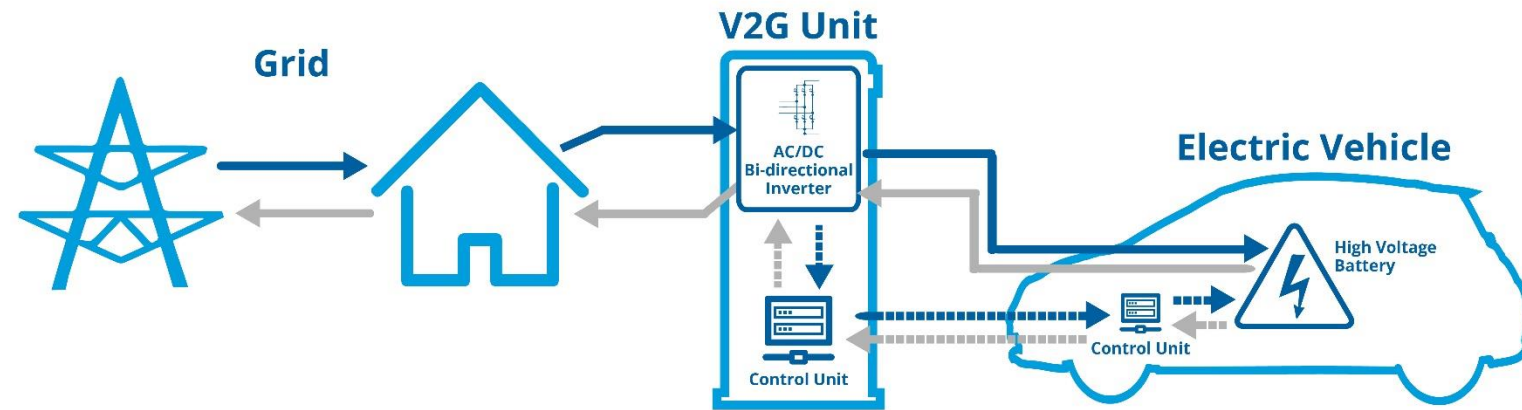
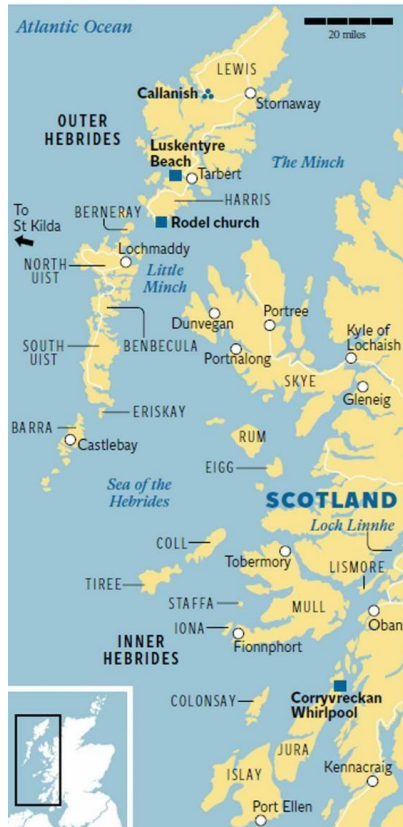
.....but what if they were all Teslas?

Battery capacity	100	kWh
Range	300	miles
Daily consumption	7.33	kWh
Daily spare capacity	83.87	kWh
Daily electricity consumption in UK	978 million	kWh
Daily consumption with 31.7m Teslas	1,210 million	kWh
Spare capacity 31.7m Teslas	2,561 million	kWh

So if all the UK cars were Teslas they could keep the lights on for over 52 hours and 44 minutes?

Vehicle to grid V2G

V2G is two way charging and discharging of EVs



- ❖ 2015 ZCM and London based E-Car Club launched fleet of 10 EVs in Stornoway
- ❖ 2018 Innovate UK provide funding for V2G feasibility study in Western Isles

EMaaS energy and mobility as a service



New 'not for profit' electricity supplier



- ❖ Electricity at 10% below market
- ❖ Plus free membership of E-Car Hebrides electric car club



- ❖ Electricity at 15% below market if you sign up to lease an electric car



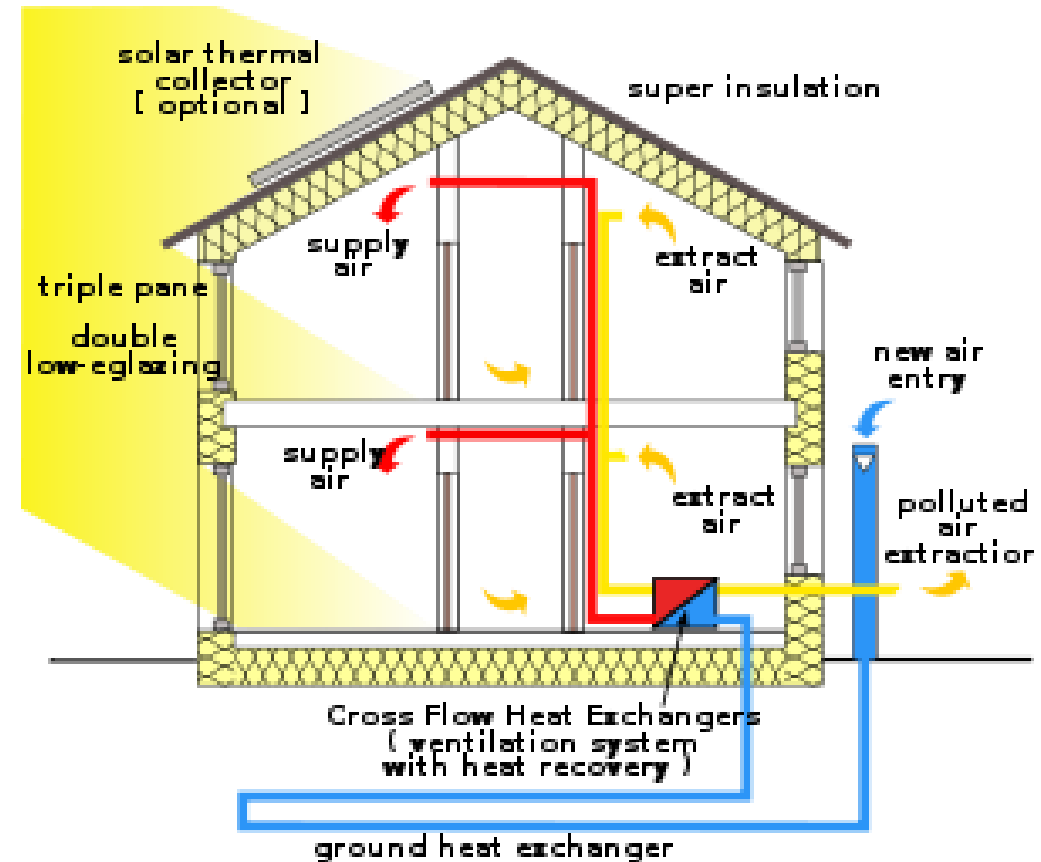
- ❖ Car battery plugged in behind the meter can supply house at expensive peak times



Housing, energy and mobility as a service HEMs

Coming soon to a site near here!

- ❖ Housing development of PassiveHouse + standard
- ❖ Affordable homes for rent only
- ❖ Electricity supply at 10% below market and free membership to:
 - ❖ Pool of car club EVs onsite
- ❖ Option to lease personal EV with further reduction in electricity charges



Housing, energy and mobility all on one monthly bill