

# the future is electric



**COMMUNITY ENERGY –  
THE NEXT GENERATION**

14<sup>th</sup> November 2018

*Peter Crone*

# Renewables just can't do it

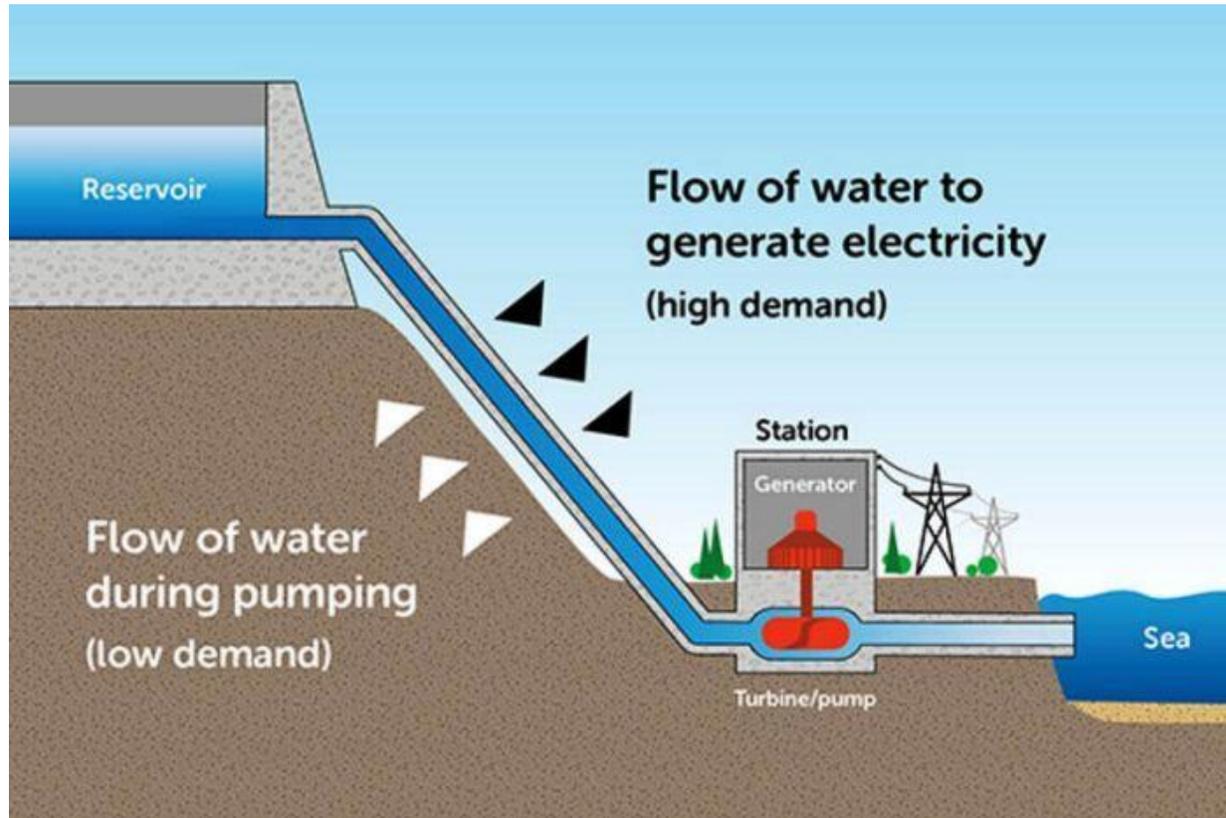


- ❖ We have to decarbonise electricity
- ❖ Solar and wind are the least cost options
- ❖ But they're both variable
- ❖ So we'll ALWAYS need something to provide back up!
  - ❖ gas fired power stations?
  - ❖ Nuclear?



# What about storage?

## Pumped storage



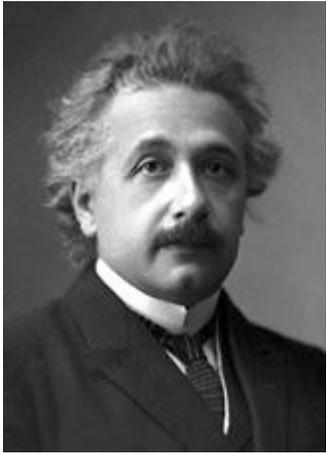
## Large scale battery storage



*Expensive options more than 20p per kWh*



# .....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	175	miles
Daily consumption	5	kWh
Daily spare capacity	32.38	kWh
Daily electricity consumption in UK	978 million	kWh
Daily consumption with 31.7m Leafs	1,137 million	kWh
Spare capacity 31.7m Nissan Leafs	949 million	kWh

*So if all the UK cars were Nissan Leafs they could keep the lights on for over 20 hours?*



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

Battery capacity	100 kWh
Range	300 miles
Daily consumption	
Daily spare capacity	
Daily electricity	
Daily consumption	
Spare capacity	

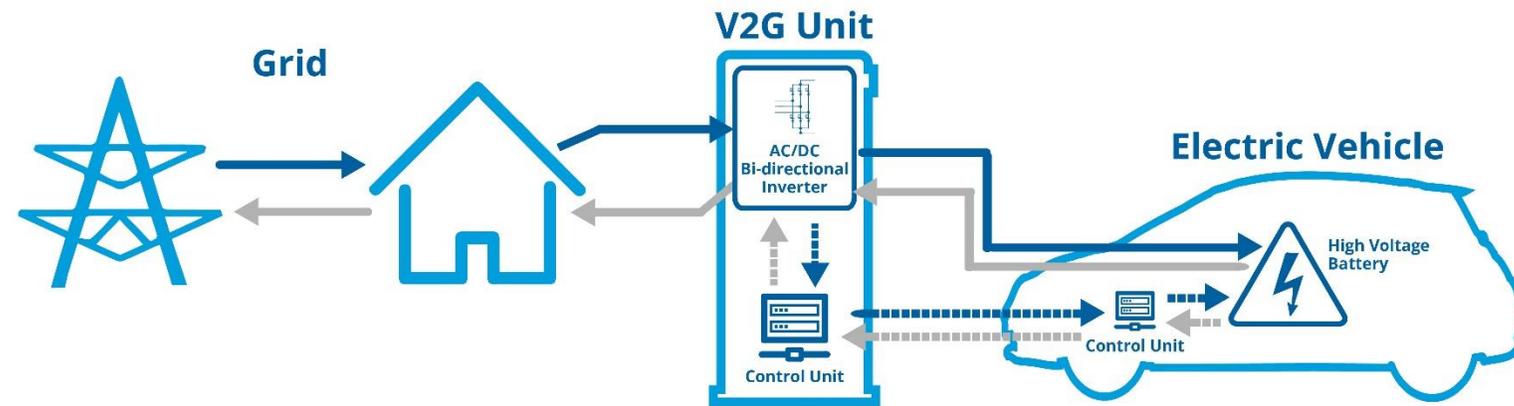
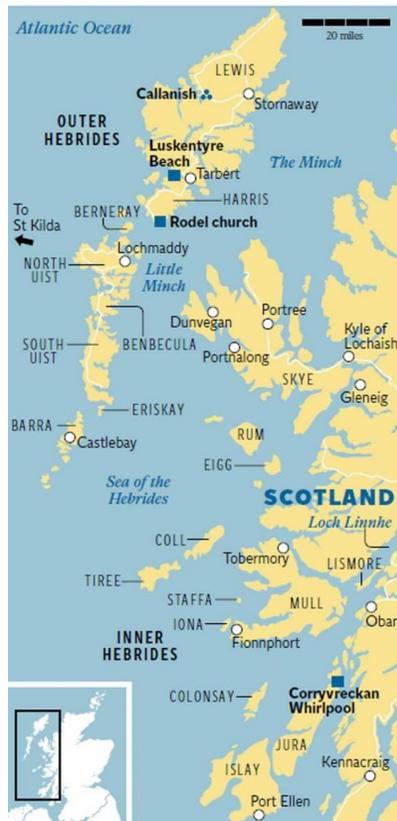


*So if all the UK cars were Teslas they could keep the lights on for 50 hours?*



# Vehicle to grid on the Western Isles

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

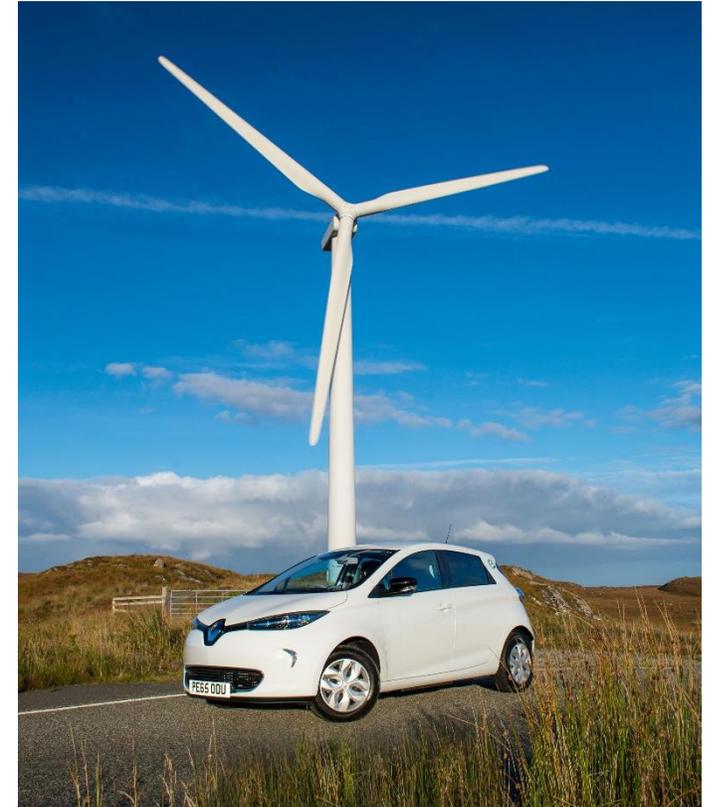


# EMaaS energy and mobility as a service



Hebrides Energy - new '*not for profit*' electricity supplier backed by Our Power

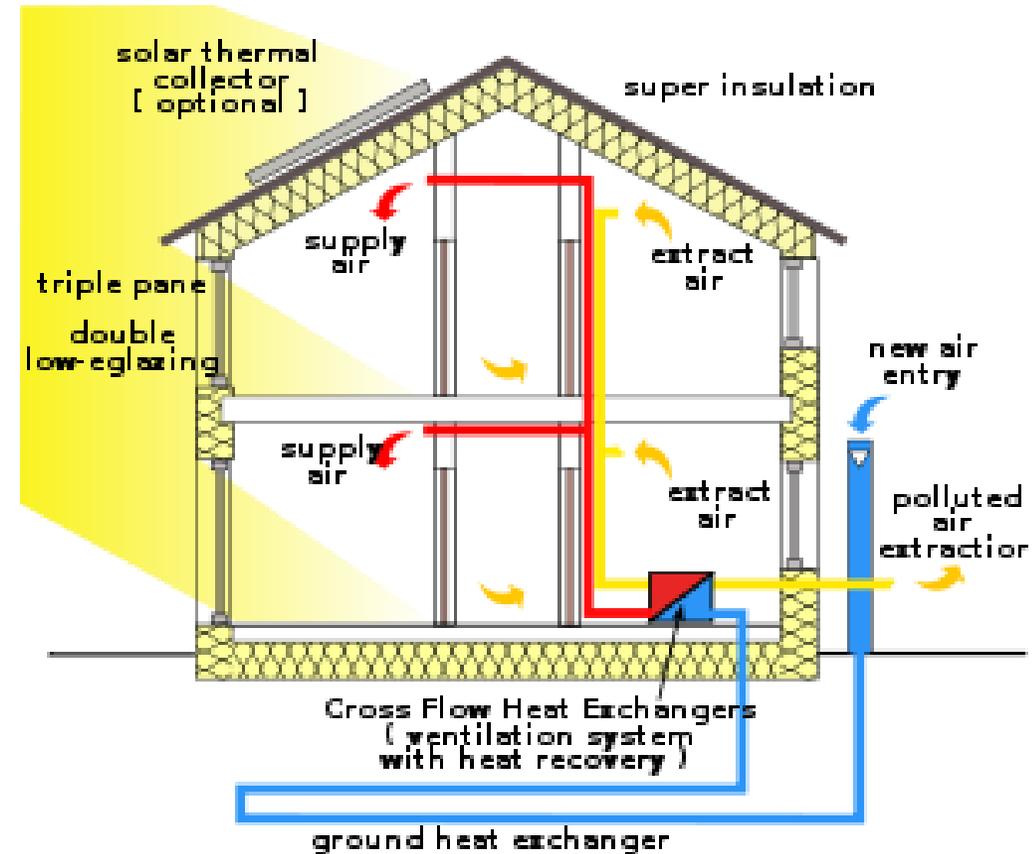
- ❖ Electricity at 10% below market
- ❖ Electricity at 15% below market if you sign up to lease an electric car
- ❖ Or if HebEnergy put an EV on your drive
- ❖ Car battery plugged in behind the meter can supply house at expensive peak times



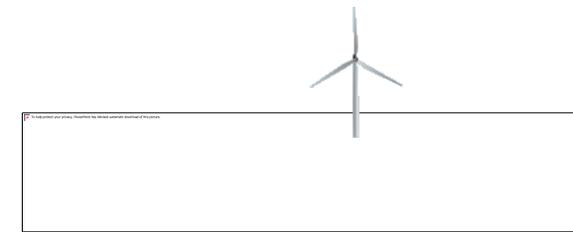
# Housing, energy and mobility as a service HEMs

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*



**thank you**

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