

Guidance on Electric Vehicle Chargers for Community Halls

This guidance

This guidance had been drafted by the Orkney Renewable Energy Forum for the benefit of the management of community halls in Orkney.

The guidance seeks to explain how electric vehicle (EV) charging works and how it is expected to fit into life on Orkney in the coming years. It has been written out of concern that committees may seek to put in the 'wrong' sort of chargers and in doing so waste money.

EVs

The days of petrol and diesel fuelled cars are numbered. The Scottish Government has announced its intention to make the purchase of new fossil fuelled vehicles unnecessary by 2032. It expected that they will be absent from Orkney's roads by 2050, possibly sooner.

EVs are presently charged more often than fossil fuel cars are fuelled. The batteries of these early EVs limit their range to under 100 miles and some very early ones that barely half that. However it is expected that all EVs entering the market in the coming years will tend to have ranges closer to 200-300 miles. Their need for charging is therefore going to be less than the EVs we see today.

Charging

EVs charge by plugging into the mains. They do this through a variety of types of 'chargers' and a cable that links the car to the charger.

The EV will take charge until its battery is full, or until someone interrupts the charging operation. It is not necessary to fully charge an EV, nor is it a problem if an EV battery is run low. Indeed many EV drivers get used to getting to their next charge with only a few miles of range left. This would be equivalent of getting to a garage with only a cup full of petrol in the tank!

It is expected that most EV charging will take place at home or work. Most EV drivers already have charge points at their homes and tend to plug the car in at night when they get home. OREF believes this 'domestic' charging model will be used by most EV drivers in the future.

Some properties will not lend themselves to EV charging, such as flats or dense urban areas. In these cases OREF expects some drivers will charge at work during the day. There may also be simple chargers in public car-parks where urban drivers park at night and finally OREF expects there will be 'Charge hubs' with very powerful chargers in Stromness and Kirkwall that are more akin to petrol stations of today where EVs will take on large amounts of electricity in a short burst, but at a price. It is not expected that these sites will be the normal choice for most drivers.

The charger types break into three groups and the outline costs including fitting are shown:

- A. The sorts of chargers people will have at home (£300 + £500) (Presently called 'DOMESTIC' chargers)
- B. The sorts of chargers that the Council put in as pillars or posts (£5,000 + £5000) (Presently called 'FAST' chargers)
- C. The sorts of chargers that look like fuel pumps with the cables instead of fuel nozzles. (£30,000 + £20,000 supply upgrade) (presently called 'RAPID' chargers)



Type A - DOMESTIC



Type B – FAST



Type C - RAPID

Halls

It has been suggested that community halls could form a central part of the charging infrastructure for the county, however OREF believes this is unlikely and probably is undesirable for the following 5 reasons.

1. The popularity and use of the halls is well understood and OREF believes that this popularity may cause problems if they were to become the charge hubs. Although the halls are the centre of the social web of many local communities, the use of the halls is extremely periodic. i.e. users tend to arrive and leave in bursts as activities start and finish before being replaced by other groups who arrive and leave. A popular hall may also involve people arriving before the last group has left to use a subsequent 'slot' in the hall. This makes it extremely hard to provide enough chargers for all those coming to the hall if that is to be their preferred charging location. Additionally the Halls are often not necessarily near houses and when they are shut there is little else to do there whilst charging.
2. It is likely that most people in the community do not visit the hall every day. Indeed, it is likely that many only visit weekly or less often. In which case they will have had to make alternative charging arrangements for their 'non-hall' periods. OREF contends that most charging will be done at home, so it is likely that those arriving at the hall will have driven from home and will have charged there. Alternatively, they will be going home afterwards and can charge there. Most users of the hall will therefore not need to charge at the hall anyway.
3. OREF also contend that the only way to make a 'hall-centric' model work would be to put enough large type C chargers in at £50k each and type B chargers at £10k each to satisfy all demand AND for everybody to only charge at the Hall. This latter point is unrealistic. In addition, the cost of installing a bank of expensive chargers would not be cost effective.
4. It is also worth pointing out that vehicles will come and go, so creating traffic. It is unlikely that putting the equivalent of a petrol station forecourt into the middle of the community hall car-park would be an optimum solution from a road safety point of view.
5. Finally, the matter of maintenance is also an issue. The larger the charger the more maintenance they require with air filters to change and other maintenance tasks. These larger chargers may

also represent a drain on resources and with low utilisation rates they could easily become a white elephant for a hall to support.

OREF believes the optimum model will be for there to be inexpensive domestic chargers at every suitable house/parking area (£300 each + fitting and grant aided). In doing so the need for a hall charger practically disappears.

However, there is an advantage in having one or more simple domestic charger(s) at a hall. They can give the odd charge for those caught out, but OREF contend it is not worth putting in an overly expensive charger. If a hall is near property without off road parking then a bank of such simple and cheap chargers could be a cost effective solution.

Money

There are grants available for chargers and this is likely to continue. OREF is keen, however, to see public money used wisely and contends that a community initiative to equip houses and tourist accommodation with cheap chargers will be a better use of money rather than over complicated and oversized chargers. Unfortunately, there seems to be a push to put in bigger chargers and OREF would urge hall management not to be suckered into wasting public money.

What to watch for

In OREF's experience, the siting of the chargers is critical.



- Chargers should not be put in the corner of car-parks as this can make it hard to get to, particularly if someone else blocks a space.

- The cables from the charger to the car will trail on the floor. Make sure they do not cross pathways as shown. A pole at the edge of the kerb may be better than one at the back of the path.
- It may be possible to use a lamp column for a simple power supply if suitably sited, but is likely to be limited due to power supply.
- Don't get sold a complicated charger when a simple one will do!



Finally

This is advice, it is not a dictat.

The particular conditions that apply at each hall may be different and the management may have a reason to depart from this guidance. OREF offers this guidance simply as a means of preventing hall committees from wasting money by either putting in chargers in the wrong places or putting in more complicated chargers than necessary because grants are available.

If you would like to discuss any part of this then OREF member Martin Lee would be happy to run through the options with anybody (free of charge).

Please mail office@oref.co.uk for advice or to provide feedback on this guidance.