WinACC
Winchester Action on Climate Change

Climate Change and Transport: are electric vehicles a low-carbon solution?

Electric cars will have a role for emergency workers (doctors, fire personnel etc.) and people with mobility disabilities. But their widespread use will guarantee the extension of high-carbon electricity production. It would not be appropriate for WinACC to promote their use. Electric bikes require so little energy that they are a good replacement for local car journeys. But they mustn't replace pedal bikes and walking.

Tactics

Some people argue that it is better to encourage people to shift to electric vehicles as a transitional aim, because that is a much easier change to make than giving up your car. Meanwhile, they suggest, we argue for better public transport, so that it is feasible for people to give up their cars later on.

This makes short-term sense, but this isn't something that WinACC wants to do. We don't want to reinforce the view that life isn't possible – or worth living – if you don't have a car.

Hampshire County Council are busily developing recharging facilities, and electric car companies are encouraging people to shift. It is not necessary or desirable for WinACC to urge greater progress.

Air and noise pollution

Electric cars are a good way of tackling the air and noise pollution problems, but do nothing for the space pollution and congestion caused by cars filling the roads. There could still be traffic blight.

How much energy do they use?

Electric cars have a slightly lower carbon footprint than conventional cars, even if they use non-renewable electricity, where the production involves substantial carbon emissions.

Electric car technology is developing rapidly. But by itself, electric cars can't deliver carbon-free land transport by 2050. At current efficiency levels, if all road vehicles were to run on electricity, we would not have enough carbon-free electricity to power them.

Better facilities for electric cars would indeed reduce pollution at the point of use. A few people would be able to use green energy, but if a majority of current drivers switched to electric propulsion, zero-carbon suppliers would soon run out of power and larger suppliers would also run out of their green electricity.

Renewable energy can't supply enough for us all to drive

Arguing for a shift to electric cars means extending the life of dirty electricity. A switch would keep the demand for electricity so high that we will not be able to switch enough production to zero carbon electricity.

The Stockholm Environmental Institute says that to hit the 80% target, all road and rail transport would have to be powered by zero carbon electricity. This would allow air and sea transport to continue using carbon-emitting oil and kerosene, because appropriate zero-carbon technologies may not be available.

If all the current proposals for non-nuclear zero-carbon electricity were developed (large arrays of wind turbines, wave power, water mills on the Itchen, solar power, the Severn barrage etc.) we would still need large numbers of nuclear power stations or gas-fired power stations with carbon capture to produce enough electricity to meet even current demand.

The complete electrification of land transport would raise the overall national requirement for electricity to 50% more than current demand. Currently only about 4% of the energy used in Winchester is low carbon or zero carbon, and there are no plans to increase zero-carbon energy the twenty-five-fold that would be necessary even to meet current demand.

Better recharging facilities would encourage people to continue using cars and cause the demand for energy to remain too high to enable more than a marginal switch from dirty power. In the medium term this would inevitably bring about the continued use of coal and gas to meet the greater demand for electricity as people switch from petroleum products.

Incidentally, any sudden take-up would probably blow the electricity supply network.

We have no option but to reduce our current demand for electricity. Transport consumes over half the energy in Winchester district, so finding ways of reducing the energy needed for transport is a top priority. A successful modal shift from cars could reduce the energy needed for transport by about 50% to 75%.

We need:

- Much more walking and cycling (including electric bikes) for local journeys
- A major expansion of public transport and a major reduction of personal (car) transport. With average loadings, trains are twice or three times more efficient as users of energy than cars.
- A major reduction in the need to travel (through homeworking, changed holiday habits, local employment policies, skype conferencing etc)
- Technological developments to eliminate inefficiencies in electricity supply, to reduce the weight of vehicles and increase the efficiency of motors for all modes of transport, and to improve battery technology.

We must start changing our travel immediately and not miss any opportunities.
It is more important to review your transport habits than to buy an electric car.

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