

# NATIONS, REGIONS, GROUPS & FORUMS

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## NORTH WEST REGION

### GREATER MANCHESTER & CHESHIRE GROUP

#### Visit to Sharston bus depot

In April, members of CILT's Greater Manchester and Cheshire Group visited Sharston in south Manchester to view Stagecoach's all electric Enviro400EV zero emission vehicles.

These are a British and Chinese joint product. The batteries and traction system are designed by BYD ('Build Your Dream') in Shenzhen (China) and built into a powered chassis at BYD's works in Komarom (Hungary). The bodywork and interior fittings are added by ADL (Alexander Dennis Ltd) in Scarborough (UK).

Stagecoach Manchester put 32 of these double deck vehicles into service at their Sharston depot\* in March 2020 – just before the UK went into lockdown. Initially the vehicles were mainly used on the 43 (Airport) and 111 (Southern Cemetery) routes to keep the vehicles close to the depot in case of problems. They have now begun to appear on other routes such as the high frequency 86 (Manchester to Chorlton). All use the high frequency Oxford Road corridor through the city's universities.

Two vital lessons were learned early on in the construction of a stabling and recharging point. Keeping the existing fleet of diesel and hybrid vehicles running while construction was under way was a big challenge – it would be easier to incorporate recharging facilities into a completely new facility. And connection to the National Grid via a new sub-station cannot be done at just any time. A date has to be set well in advance and adhered to.

Solar panels on the depot roof were another addition to Sharston, reducing demand for power from the grid.

Driving the electric buses is rather different from driving the diesels but for Sharston's drivers, it is a joy. The vehicles are quiet, they accelerate quickly and smoothly, and the regenerative braking is equally quick and smooth, feeding energy back into the batteries. And the electric buses can recover from traffic delays much more quickly than diesels.

Maintenance is simpler and many costs are lower, notably brake pads – regenerative braking means they don't wear out as quickly.

There are some downsides in the sheer bulk and weight of the batteries needed. They take up a lot of room at the back of the bus, losing eight seats compared with a diesel bus of the same length. As lockdown immediately reduced passenger numbers, this was not an issue for the first year or so, but it does now mean that vehicles fill up more quickly.

However, battery size will come down in the future. These first batteries have a guaranteed life of 15 years and results so far suggest that they will achieve that. When retired from front line service they can be put to use at the depot storing cheap off-peak energy.

The move to emissions free vehicles comes at a cost of £16.5m to Stagecoach. UK government grants also helped. Operating

costs are lower than with diesel, though recent rapid inflation in the cost of both electricity and diesel fuel make comparisons with the initial projections difficult.

Vehicle range is quoted as 190 miles between charges but drivers are instructed to return to depot once the range drops to 30 miles. This is because the operation of ancillaries may not be guaranteed at this range. Nevertheless, it is sufficient to power the buses on all day schedules.

The buses are reckoned to remove 2,200 tons of CO<sub>2</sub> a year compared with the existing fleet.

We are very grateful to Lesley Hester (Operations Manager) and Mark Povall (Fleet Engineer) who showed us around their depot and answered a great many questions.

*NB: It is a Depot, not a Garage, because it replaced the Princess Road depot, originally built for Manchester trams.*



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