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Hot topic

As I write this, we in the South East have been experiencing a cold snap. In these conditions, bus operators have a daily challenge: warming up the seating areas. I'm told that on frosty mornings, many drivers switch on the bus and let it idle for 10 minutes – wasting fuel and polluting the neighbourhood air. More to the point, while a diesel bus would still have fuel to spare after that, hybrid electric models may not.

Featuring in a new bus research project (with Vantage Power and the University of Edinburgh) is a clever chemical heating technology from Scottish supplier Sunamp. This relies on the heat generated during the phase change of a mineral salt from liquid to solid. Encased in a sealed heat exchanger with no moving parts, a 17-litre unit provides 7kW of sustained heating. And since the process is reversible, the device can be reused for thousands of cycles; the intention is to recharge it from waste heat. Even better, it can be used for cooling, too: an Innovate UK study (IDP12) with Paneltex, Route Monkey and LowCVP will see another heat battery installed as a fridge in a Fiat e-Ducato van later this year.

Other electric vehicle technologies aim to capture energy lost as heat during braking. Originally developed for Formula 1 race cars, a so-called kinetic energy recovery system, KERS, takes energy during braking to spin a flywheel, and then taps the flywheel for power when the truck next needs to accelerate. The FlyBrid system, commercialised by Torotrak, is being developed for use by WrightBus and Arriva. A new variant that I saw recently, developed by Adgero, Alternattech and rental company Fraikin (see also pp33-34), stores electricity in a supercapacitor battery that drives an electric motor running alongside an internal combustion engine. TrILERmaker Schmitz Cargobull has won a sustainability award for a similar system developed in a European collaborative research project with Bosch and German institute Fraunhofer IVI.

These examples show the benefits of keeping an open mind. Although I'm not an advocate of electric powertrains for long-distance haulage, that doesn't mean that diesel vehicles won't benefit from electric technologies. If the future of diesel engines is all about doing more with less – downsizing and downspeeding – then these power-saving marvels, and others, can help save fuel. That's good for operators and for the environment.

Will Dalrymple
Editor