



manganese-cobalt batteries can be fitted with a capacity of 50kWh apiece.

Maximum range between recharges is around 300km, says Rosenbauer. The six batteries take 10.5 hours to recharge if you plug the truck in overnight, falling to 1.5 hours with a rapid charger. The motor also acts as a generator that converts the kinetic energy normally lost during braking into electrical energy, and feeds it into the traction batteries.

Aside from the fact that it produces no exhaust emissions, Rosenbauer cites another advantage of FL Electric; low noise levels. "When idling it is almost 40dB quieter than a diesel FL," it says.

UK manufacturer Emergency One has developed an electric fire appliance that also uses a 16-tonne Volvo platform, this time with a crew cab. Its 350kW drive system is supported by a 280kWh battery pack said to be rechargeable in less than two hours if a rapid charger is employed. Regenerative braking helps keep

the battery topped up and the truck carries a 1,750-litre water tank plus 100 litres of foam.

Not content with the FL Electric, Rosenbauer has embarked on something more ambitious. Using a modular all-electric platform devised by Volvo Penta as a base, it has come up with what it modestly describes as the RT - Revolutionary Technology - fire truck (main picture, above). A futuristic-looking 18-tonner that has already been assessed by fire brigades in Berlin, Amsterdam and Dubai, it comes with two electric motors - one at the front, one at the back - that can deliver up to 360kW between them.

Volvo Penta was not quoting a torque figure at the time of writing but

claims that the platform can provide a level of acceleration equivalent to that of an airport crash tender with a 1,000hp engine. That would suggest that the torque on tap is substantial. "Fire trucks have got to be capable of moving really quickly," remarks chief project manager, Paul Jansson.

Volvo Penta already supplies diesel engines for our conventional fire trucks.

A tailor-made cooling system has been developed for RT's 100kWh lithium-ion battery pack. Rosenbauer has additionally installed a 3.0-litre 200kW (268bhp) six-cylinder BMW diesel engine which is used as a range extender, turning RT into a plug-in hybrid.

The engine drives a generator sourced from Volvo through a transfer case supplied by Rogelberg which also connects the range extender to RT's fire pump. This means that the pump can be driven either electrically or mechanically, says Rosenbauer. The pump is a Rosenbauer NH35 with a normal pressure output of up to 3,500 litres/min at 10 bar with a high pressure output of up to 400 litres at 40 bar. With pressure outlets on both sides and at the front, RT carries 2,000 litres of water plus 200 litres of foam.

Permanent all-wheel drive, all-wheel steering and independent suspension are fitted. Kessler has developed the differentials and the two-speed transmissions on each axle, along

with a hydropneumatic system for the chassis. Using cylinders sourced from Hendrickson, this system raises the chassis to provide ground clearances of from 175mm to over 350mm. "It makes it easier for fire-fighters to climb in and out of the vehicle wearing heavy equipment," Jansson says; good news for crew safety. 

