



Electric Freight Transport

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This is a guest post by Jeroen Haringman introducing a novel concept under development by Siemens for electric freight transport. Jeroen [runs a Dutch and English energy blog](#) and is a system administrator at ENECO Energy in the Netherlands. This post originally appeared on Jeroen's blog [here](#).

Electric bicycles, scooters and cars are becoming a normal sight in traffic. The developments happen very fast, and more and more people use some form of electric transport. One area that remains behind in that respect is electric freight transport. Experiments are carried out with [freight trams](#) in city centres here and there, but so far the system hasn't grown to be an operational system anywhere. That's a shame, because in heavy inner city start-stop traffic, fossil fuel-powered lorries burn an unnecessary amount of fuel and cause local air pollution. For inner city use, the relatively short range is usually not a big problem, but the high purchase price is. It's likely to just be a question of time before ever stricter emission restrictions in inner cities, together with increasing fuel prices, will stimulate electric freight transport in whatever form.



For medium and long distance freight transport, it's different. The current generation of batteries cannot store enough energy to make this practical. Hydrogen and biofuels may play a role in that arena, but both have their own problems with regards to infrastructure, the possibility to scale up, and sustainability.



Siemens Trolleytruck

To circumvent the limitations of batteries, Siemens is experimenting with a possible solution - a cross breed between a freight tram and an electric lorry. They developed a hybrid lorry under the name 'eHighway' which can be powered by both its diesel engine and electricity. In this case, the electricity isn't stored in on-board batteries but comes from an overhead wire, using a

modern form of the system used by a trolleybus – which makes this a [trolleytruck](#).

Constructing the infrastructure for this won't be cheap, but probably cheaper than constructing a rail network or batteries for a whole fleet of lorries. This system also offers flexibility; if a lorry has to leave the electrified route for whatever reason - an obstacle on the road, a sudden change in destination of the freight - it can be done on diesel. Once the infrastructure is there, it's a small step to construct a number of modern trolleybuses using the same system.

The video below shows how the lorry can switch between electricity and diesel at the press of a button by the driver, without stopping:

[This animation](#) shows more or less the same.

I think this an intriguing concept. I also think it will be a while before this is turned into an operational system somewhere because it suffers from a typical catch-22 problem: it only becomes beneficial to purchase these trucks when there is a sufficiently developed infrastructure for them – but without a sufficient number of these trucks on the road developing such an infrastructure is going to be very expensive. Here lies a pioneering task for the government. Possibly a large harbour area could be an attractive test area, as that represents a relatively compact area with high transport needs.



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