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A TRAILER THAT GENERATES ENERGY AS IT IS BEING TOWED

 MOBILITY & TRANSPORT

The system stores energy for on-demand and on-the-go power

Spotted: Globally, [transport](#) contributes 15 per cent of the world's annual greenhouse gas emissions. One of the worst offenders is the trucking industry, which also lags far behind cars and buses in the transition to zero-emission models.

With the goal of helping to build a net-zero economy by developing clean energy solutions, Ecolution Power Company has created a mobile power plant that captures kinetic energy generated by moving trailers. Compatible with anything that plugs in, the technology turns trucks into a travelling source of power, and also provides companies with the means of earning additional income through a surplus of clean energy and carbon credits.

The vehicle-to-grid technology is called the Module Active Response System (MARS), and Ecolution has patents pending for its commercial use in South Korea, China, Japan, Germany, and the United States. The system works through alternators connected to disc brakes on a trailer. When the trailer moves, the kinetic energy is sent through a converter and then stored in a battery for on-demand power. During tests, the generation of power was found to have negligible impact on the fuel efficiency of the towing vehicle. Results ranged from no impact to less than one additional gallon of fuel per 70-mile route. The system works on both wheeled trailers and rail cars, further expanding the opportunities for clean energy generation.

MARS is ideal for refrigerated freight trucks and sustainably powered vehicles, and large fleets are likely to generate more energy than they need, resulting in a source of additional income. Companies with excess energy could sell the energy itself or their unused carbon credits. Currently, Ecolution is testing prototypes in locations across Asia, Europe, Latin America, and North America. The company also recently launched its pre-Series A round of crowdfunding on StartEngine.

ec energy is an underexplored area of green power, Springwise's archive includes innovators working in this area, like the vehicular and pedestrian [traffic](#) energy generator and a wearable [microgrid](#) that uses sweat and motion to power electronic devices.

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Takeaway:

According to the World Economic Forum, while heavy-duty trucking accounts for just one per cent of vehicles on the road, it causes [15 per cent](#) of global road emissions. Decarbonising heavy trucks is also more difficult than it is for lighter passenger cars, as the heavy weight of the goods trucks carry – particularly if they are liquid or bulk goods – makes them less suitable for electrification. The core challenge is therefore the energy source, with hydrogen fuel cells and synthetic fuels [tipped](#) to be good candidates for future clean trucking. However, these remain some way off widespread adoption, and, in the meantime, innovations like MARS can play a role in mitigating heavy transport emissions, particularly in vehicles with additional energy needs like refrigerated trucks.