The Next Stage of Light Rail’s Evolution

In the past, the energy recouped during regenerative braking had to be used immediately or it was lost. But on the TriMet Orange Line in Portland, that energy is saved for when it’s needed most.

The Siemens Desiro SES (static energy storage) system stores it, then discharges it back to the line to stabilize voltage during commuters’ peak travel times.

It’s the first system of its kind in the U.S.—and the future of the light rail market.

As a light rail vehicle brakes, it feeds electricity into a supercapacitor, where it is stored for future use.

If needed, future trains can draw that electricity from the overhead line.

The SE Tacoma St/Johnson Creek station houses the country’s first system to harness regenerative energy.

The approach has a straightaway with a steep grade that requires more braking, resulting in a storage unit that is filled and emptied multiple times a day.

Not only does this stabilize the line, but it is projected to reduce CO2 emissions by 391 tons and save 500,000 kilowatt-hours per year...

...the energy equivalent of 50 U.S. households.