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FLEXIBLE FABRIC HARVESTS ELECTRICITY FROM SUBWAY TUNNELS

 SCIENCE

A new company is using piezoelectric fabric to generate electricity from the wind in train tunnels.

The United Nations estimates that, by 2050, two thirds of the world's population will live in cities. As a result of this growing population, the demand for energy will increase dramatically. We have already seen several innovative approaches to this problem, such as using empty [mine shafts](#) to help generate electricity and fish-friendly [hydropower](#). Now, British start-up [Moya Power](#) has come up with a novel approach – using the wind in train tunnels to generate electricity.

Moya Power uses piezo-electric textiles – fabrics that generate electricity in response to movement or pressure. These textiles have slivers of bendable filaments embedded in them which are moved by gusts of air and vibrations. The energy produced is then stored in a battery. Tests indicate that the sheets generate just 10 percent of the energy, per square meter, of a solar panel. However, the piezoelectric sheets have the advantage that they can be installed in areas where solar panels will not work. For example, under bridges or indoors, taking advantage of urban spaces that would otherwise be wasted. As part of a pilot project, Moya is installing grids of the plastic sheets in tunnels on [London Crossrail](#) routes. Drafts in the tunnels cause the sheets to wave and flutter, generating electricity.

The company suggests that, in the future, the sheets could be mounted on a range of surfaces. For instance, the sides of skyscrapers and along railways, making use of the windiest parts of the city.

Says Moya's founder Charlotte Slingsby, "I wanted to create something that works in different situations and that can be flexibly adapted, whether you live in an urban hut or a high-rise." Although the yield from the sheeting is low, Slingsby sees Moya as one element in powering cities from a mixture of energy sources. What other unused places in a city could be used to generate small amounts of electricity?

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