

Electric Roads Could Power Cars

By [Jesse Emspak](#) | Thu Sep 15, 2011 09:15 AM ET



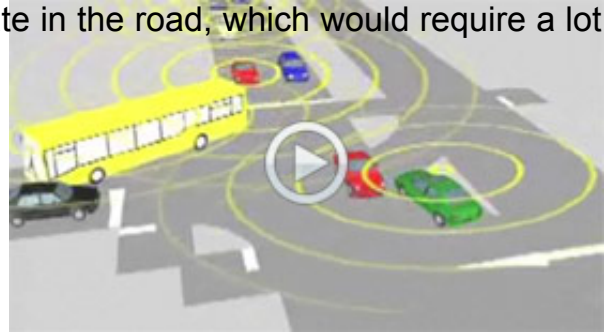
If you are old enough to remember slot car racing, this might look familiar: an electric car powered by the roadway itself, rather than carrying its power supply along.

Some electric trolleys, subways and trains operate this way, because the vehicle is on a track, and the circuit is completed through a contact overhead. Bumper cars operate similarly, as they are always in contact with a metal floor, which completes the circuit through a pole in the back that touches the ceiling. But road cars can't do this -- you'd need something more akin to a third rail system.

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That's what Masahiro Hanazawa at Toyota Central R&D Labs in Japan, working with Takashi Ohira at the [Toyohashi University of Technology](#), say they have. Using steel belts in the tires and a metal plate in the road, they can get a similar effect as in slot cars or third-rail powered trains. The energy, running through the plate, is transmitted to the car through the wheels, powering the motor and eliminating the need for batteries.

The problem with this idea is that you need a metal plate in the road, which would require a lot of work to install. (Imagine tearing up the U.S. Interstate system). You also need very high voltages - - on the order of 50,000 volts, according to a story in New Scientist. (By contrast the New York City Subway carries 600 to 625 volts). That would make the plates dangerous to touch. The magnetic fields generated would also be intense -- probably not enough to harm people, but enough to interfere with radio frequency equipment such as mobile phones.



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Another issue is power loss from the resistance between the tires and the road -- thus far it seems batteries, however heavy and unwieldy they can be, are more efficient. Hanazawa and Ohira say they are working on these problems.

Via: [Green Car Congress](#), [New Scientist](#).

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