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Sleeping and waking up in darkness on days when electricity distribution does not reach my street is something I have always hated, so when I was given the privilege to write this essay, I thought to myself: ‘*If I could invent something new*…, it would have to be something practical, something grand, I mean something awesome’, and that is how my idea of **Energy generating roadways** came to existence.

How do these **Energy-generating roadways** work? One word, 13 letters: - Piezoelectricity. Piezoelectricity means electricity generation due to pressure. So basically, some materials which can generate electricity from pressure called piezoelectric tiles are put in the materials used to make roads and so when people drive, walk, or cycle on the road, it generates electric energy and transfers it to nearby buildings and when that cycle continues, electrical energy would eventually reach every home in the neighborhood. The process begins with selecting suitable piezoelectric materials, like piezoelectric ceramics which are then inserted into the roadway design, with factors such as traffic volume, speed, and load being considered. As vehicles pass over the ceramic plates, the mechanical pressure applied produces an electric charge which is captured and converted into usable electricity and fed into electrical grids to power nearby houses and businesses.

The benefits of this invention in every aspect of life are incredible. Piezoelectric roadways would generate electricity without using expensive infrastructure and reduce energy production costs, assisting the global economy. This invention would make the world safer for asthmatic people as the use of fossil fuels and gas will be reduced and global warming would be prevented. It will also reduce parents' stress since they won’t need to pay electricity bills anymore as my invention would empower people to take charge of their energy needs. Imagine also, that you could earn money from walking or driving on the road as you are giving electrical energy to nearby houses by applying pressure on the piezoelectric tiles, definitely encouraging people to exercise by walking more and improving individual health and standards of living. The energy generated from this invention would be used to power important societal infrastructure like hospitals, schools, and emergency services, contributing to the growth and development of society. Additionally, piezoelectric roadways could positively change our current transportation and technological system as electric cars can be charged easily which would make long-distance travel more practical. Individuals will have the ease of charging phones and electric vehicles with clean energy generated simply from under their feet!

Of course, this invention would have so many benefits, maybe even some that we might not even think of. By taking advantage of the power of piezoelectricity, I would like to create a cleaner, more efficient energy future that would improve the lives of individuals, communities, and societies worldwide and secure a more sustainable future for all. If I could invent something new, it would be this - a technology that would leave a lasting impact on our planet and its people.