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Harnessing Kinetic Energy: Piezoelectric Tiles as a Sustainable Solution for India's Growing Energy Demand

India faces a critical energy challenge, heavily relying on coal, and anticipating a doubling of demand by 2040, which jeopardizes green energy targets. A proposed solution involves deploying Piezoelectric Tiles in high-traffic public areas such as airports and metro stations.

Piezoelectricity, the generation of electric charge in response to mechanical stress, forms the foundation of these tiles. As people walk, mechanical stress shifts charge centers, creating an electric field and generating power. Comprising special materials like crystals and ceramics, these tiles also serve as self-powered sensors, tracking movement in public spaces.

Piezoelectric tiles present numerous advantages by transforming foot traffic into a clean energy source. This technology's global adoption is evident in the UK, where sidewalks charge mobile devices, Chicago with a piezoelectric dance floor, and Australia with a kinetic tennis experience. Surprisingly, India has not yet embraced this innovation.

Our model stands out for its cost-efficiency, priced at ₹10,000 less than existing options that cost around ₹1,499 - ₹1999, maintaining the same size. It is also user-friendly and designed to seamlessly blend attractiveness with functionality. This approach is aligned with India's sustainable development goals, providing affordable, reliable, and environmentally friendly energy for its citizens.