

New design for motorcycle engines powered by compressed air

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Most motorcycles in the world today use engines that burn gasoline, contributing to greenhouse gasses and adding air pollution to the surrounding area. Now two scientists in India have conceptually designed a new, cleaner motorcycle engine that uses compressed air to turn a small air turbine, generating enough power to run a motorcycle for up to 40 minutes.

Their design, described in a recent issue of the *Journal of Renewable and Sustainable Energy*, could be combined with a compressed air cylinder as a replacement for traditional internal combustion engines. In areas where motorcycles are a major source of public transportation, such a technology could cut emissions substantially if widely implemented.

According to Bharat Raj Singh, one of the two authors on the paper and a researcher at the SMS Institute of Technology in Lucknow, India, some 50 to 60 percent of present emissions in some areas could be reduced with the new technology, though a number of technical challenges remain. Designing a compact but high-capacity air tank to store sufficient "fuel" for long rides is a major hurdle. Existing tanks would require someone to stop about every 30 km (19 mi) to swap tanks.

More information: The article, "Study of the influence of vane angle on shaft output of a multivane air turbine" by Bharat Raj Singh and Onkar Singh was published May 6, 2010 in the *Journal of Renewable and Sustainable Energy*. See: jrse.aip.org/jrsebh/v2/i3/p033101_s1

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