Luminous Rickshaw: A Traditional Vehicle Turns into an Energy Efficient One

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Air Pollution Impacts in Bangladesh

On February 17, 2014, Dhaka's air quality was measured 172 AQI which is considered unhealthy and on January 25, 2017 it was measured 361 AQI, that is deemed extremely unhealthy according to the standards for Bangladesh (NAAQS).*

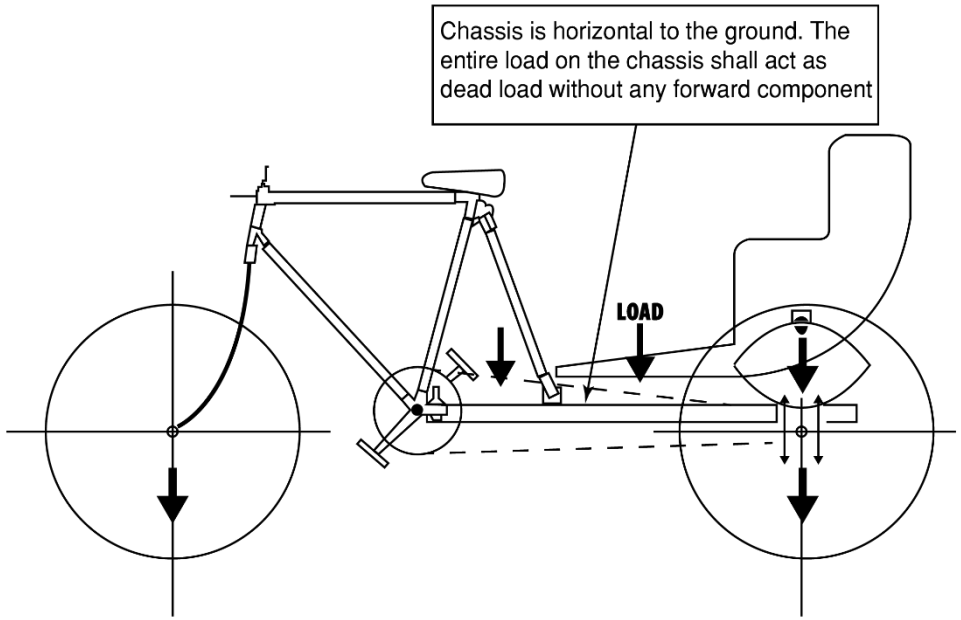
A World Bank study says that nearly 2X10to the power 5 tons of air pollutants are emitted from motor vehilcles alone in Dhaka City.

Another world bank study says, as many as 15000 deaths, a million cases of major illness and 8.5 million cases of minor illness are caused by air pollution in Dhaka and three other cities of Bangladesh

***Dhaka air pollution: Facts, measures and commandments, The Daily Star, February, 2017**

The Traditional Heritage: with Zero Air Pollution

Basic design of rickshaw



Rickshaw originates from Japanese word “jinrikisha”. In Japanese language, jin means human, riki means power or force and sha means vehicle. So, literally, “jinrikisha” means human powered vehicle.

Constrains with the Traditional Model

Health studies done in Bangladesh on a standard cycle rickshaw indicate that the level of stress on the cycle rickshaw driver operating with two passengers in level conditions (without wind) is somewhat less than the average level of stress from most other forms of manual labor.	**But…** If the conditions are windy, the roads are bad, the weight being hauled rise above 130 kg, or there are steep hills, or the drivers are not eating sufficiently, the level of strain on the human body can become as bad as other forms of manual labor.
Traditional model represents simplicity with very less mechanization	**But…** Having no indicator light, associates potential risk of fatal accidents, especially in dark
The cycling by human makes it easy to operate via pedaling	**But…** The energy efficiency is not used upto maximum level for achieving productivity
Heritage to our culture	**But…** Not contextualized with gender, age and disability needs

Source of kinetic energy

Pulling of the rickshaw by pedalling is a rich source of kinetic energy.

collecting the energy from the rotational motion of the wheels

harvesting the kinetic energy from the small-scale motions of bicycling, such as weaving back-and-forth to maintain balance.

Mechanical description

The rotational force of peddling the rickshaw causing the wheels to spin, this spins a rotor that spins a generator, ultimately producing electricity which is then stored in a battery.

Our Innovation

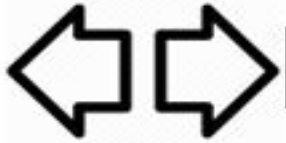
PRACTICAL ACTION Consulting

Rickshaw

energy will be generated using the dynamo. Solar panel can be installed for energy generation

Gear mechanism for the ease of pedaling

LED panel will be lit in the front and rear at night for safer journey. Organization's branding can be incorporated here.



Indicator with left or right selection

The Rickshaw will also have a foot stand for people to climb on the Rickshaw easily

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Safety Elements

Key Features