**EFFICIENT WATER COOLER**

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 **ABSTRACT**

In the torrid heat of the Indian summer, cool water is a priceless commodity. However, those traveling and living in the rural areas know that with summer comes erratic power supply. The ubiquitous earthen pots prove ineffective once the mercury rises beyond a point. They are also not suitable for public use. Water coolers are expensive and require electricity. Existing water- cooling solutions for public consumption at 150litre capacity may require more than 1200 W of power to operate and employ air compressors that circulate environmentally harmful refrigerants for cooling to occur. Innovator has developed a water cooler, which provides cool water, consumes less energy (solar PV) and does not require much maintenance.

The Natural Water Cooler is a low cost, energy efficient, environment friendly water cooler that is based on the principle of heat exchange. It cools water naturally according to the external temperature and humidity. Water passes through cotton string covered copper coils, which are continuously being moistened by a dripper. A small DC fan operated through solar panel mounted on roof top facilitates the air circulation and evaporation of water from the cotton string on the coil cools the water inside. It reduces the temperature of input water by 8 to 10 degree centigrade depending upon the external temperature and humidity. It also has an in-built filter that provides clean and hygienic water. The external casing of copper coil is made of steel with sufficient ventilation. The use of copper tubes for flow of water has health benefits too. It has to be located in an area where there is sufficient ventilation and should not be directly exposed to sunlight