

# MANIFESTATION OF ENERGETIC IMPACT LIKE A TOOL TO OPTIMIZE THE WATER EFFICIENCY IN THE CUTZAMALA SYSTEM, MÉXICO.

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Without the implementation emergency of regulatory policies based on energy control to expand global access to water resources, it is likely that by 2050 more people will be connected to a digital media power supply such as the Internet than will be connected to a source of drinking water. This paper presents a tool for quantifying electrical energy as an application methodology for a system of treatment, conduction and distribution of water drink, located in the State of Mexico, which has an average volume of approximately 15.1 m<sup>3</sup>/s. The water supply was determined in a planning horizon of ten years, obtaining an energy consumption per extraction volume of 315.36 kWh/Hm<sup>3</sup>. Also the water demand defined by the fixation of the fluctuations of the energy prices, shows a serious problem for the complex water tariff system, which is stabilized only with the intervention of the energy cost and the fixation of the prices of drinking water. The exchange rate constant based on the water pricing was also calculated with a volatility ranging from 0.18 USD/m<sup>3</sup> to 4.21 USD/m<sup>3</sup> for the period 2013-2023 and related to the probable global energy crisis. In this economy scenario of application in the “Cutzamala system” reveals an increase in oil prices (oil shock) that directly affects the prices of drinking water (water shock). The tool proposed in this work to stabilize the prices of the water-energy binomial is called: Manifestation of Energetic Impact applied to water supply. The tool defines the process to be followed by water supply companies to reduce the cost of water based on the cost of energy. In conclusion, in this project show the water privatization as a response to the energy crisis is a challenge not only for society but for future water investors, including the government.

**Keywords :** *Water resources, Cutzamala system, Manifestation of Energetic Impact, cost energy.*