This project is aimed at supporting the Mizzou Advantage strategic initiative in the area of Sustainable Energy. In particular, the project focuses on preparatory studies that will enable us to compete for national funding and recognition in the area of renewable energy resources.

The design and analysis of this project describes an idea for storing hydroelectric energy in municipal water towers that exist in abundance throughout the United States. The primary aim of this idea is to reduce the capital cost of construction to near about $200 per kWh. The second advantages include the ability to use renewable energy for providing municipal water pressure, and to leverage other common attributes that exist between water pressure and hydroelectric energy storage. Technical analysis shows that the storage and generation capacity of single water tower are 69.5 kWh and 10 kW respectively. Moreover, 2.05 GW of power can be stored and delivered throughout the United States using this method, which is the amount of power generated by a Hoover Dam! Again, the energy storage cost per kWh of this water tower energy storage system is $328 per kWh.