

FAMU-FSU College of Engineering

Faculty Adviser:Dr. Juan Ordonez

Instructor:Shayne McConomy

FSU's Background

Florida State University spends millions of dollars on utilities each year with a steady increase in the yearly electric utility bill for the past 4 years.

Objective

Research, study, evaluate, and propose a project that reduces Florida State University facility electric utility bill by reducing peak demand and/or the overall electric consumption to generate a financial payback to Florida State.

<u>Energy Storage</u> <u>Technology</u>	<u>Efficiency (%)</u>	<u>Useful Life</u> (Years)	<u>Capital</u> <u>Costs</u> (\$/kWh)
Pumped Hydro	<mark>80</mark>	>25	165
Na-S Batteries	75	14	907
Lead-acid Batteries	72	3	649
Li-ion Batteries	86	10	469
Flywheels	86	>20	11520
Compressed Air	52	25	105
Large CHW TES	93 - 100+	>50	125-300

Results

Expected annual savings = **\$380,000** Return on investment = **15 Years** Initial capital investment = **\$5.7M** Useful life of TES Tank: **>50 Years**

Energy Demand Reduction for FSU's Central Utility Plant

Team 521: Edgardo Cordero, Steven Decker, Mira Meyers, Alec Schoengrund, Juan Villalobos, Keaton Zargham

Our team will save Florida State University \$380,000 Dollars each year





Engineering Mentor:Cameron Griffith