




IDEA	Phase 5 Technology Demonstration Highlight	
<p><b>Company</b> Legend Power Systems</p> <p><b>Technology</b> SmartGATE Active Power Management</p> <p><b>Demonstration Site</b> Q263/PS295, located at 222-14 Jamaica Ave</p>	<p><b>Demonstration Period</b> One week</p>  <p><b>Systems Involved</b> Two Electric Services</p>	<p><b>Type Of Savings Generated</b> Electricity, demand</p>  <p>Annual energy savings in this demonstration</p> <p><b>95,386 kWh</b></p> 

## 1. Overview

The scope for the project consists of installing SmartGATE technology on the two electric services of the school Q263. Two SmartGATE 1000-volt modules were installed to improve the electric quality of the supply voltage.

Legend Power installed a power meter to verify electric energy savings for the installation of the project. The measurement and verification demonstration consisted of a one (1) week period. Results indicate that electricity consumption and demand reduced by approximately 4.1%.

## 2. Demonstration Results & Discussion

Data for the reduction of demand kW for a period of one-week period was provided by Legend Power. The data provided consisted of optimized demand values and bypass demand values. Edison Energy reviewed the data provided for the M&V period and calculated the weighted average demand savings for the two (2) SmartGATE installations. The data is summarized below:

SmartGate	Total kW Reduction	Total Bypass Demand kW	kW % Reduction	Hours	The reduction in demand kW for the two services was averaged (i.e., average of 4.5% and 4.0%) and the average demand reduction for the school comes to 4.13%.
QV1	889	19,773	4.50%	176	
QV2	2,790	69,335	4.02%	176	
Total	3,679	89,108	4.13%	-	

### Energy Savings

The most recent twelve months of energy consumption for the facility was summed by Edison Energy from the data provided by DCAS. The total electrical consumption and demand from August 2021 to July 2022 is 2,309,600 kWh and 425 kW, respectively.

In order to calculate the electric energy savings, the total most recent electric consumption was multiplied by 4.13%. The total projected annual electric savings of 95,386 kWh/yr and 30.5 metric tons of CO<sub>2</sub>e was calculated for the facility as noted in the following table.

Annual Electric Consumption (kWh)	Average Monthly Demand (kW)	% Reduction	Annual Electric Consumption Savings (kWh)	Average Monthly Demand Savings (kW)	Annual Cost Savings (\$)	Annual Carbon Emissions Saved (MTCO <sub>2</sub> e)
2,309,600	425	4.13%	95,386	17.6	\$10,960	30.5

Note that annual cost savings were calculated using an electricity supply cost rate and demand cost rate of \$0.038846/kWh and \$34.35/kW, respectively. Similarly, the annual carbon emissions saved was calculated using an emissions rate factor of 0.32023 kgCO<sub>2</sub>e/kWh.

## 3. Optimal Facility Characteristics

Following are the optimal characteristics listed by manufacturer for the implementation of their technology:

- High electricity consumption
- Recent large dollar new equipment
- Known electrical supply irregularities and concerns
- High electricity demand
- Pending large dollar new equipment