

Meeting climate action plan and creating savings with local sustainable power plant on campus.



CASE STUDY
San Jose City College

Many campuses across the country are aiming to be carbon neutral in the next couple of years. Savings and meeting the climate action plans are crucial to them.

The San Jose City College microgrid project is a campus-wide, innovative local sustainable power plant project that includes solar, storage, EV chargers, load management, energy efficiency and workforce development.

The goals of this project are:

- 1. Achieving climate action goal**
- 2. Energy and cost savings**
- 3. Resilience and grid reliability**
- 4. Increased renewable generation**
- 5. EV charging infrastructure**
- 6. Workforce development**
- 7. Training and awareness**

Benefits of a local sustainable power plant (microgrid) for campuses:

1. Realise the climate action plan:

On-campus solar energy solutions can help campuses to shift to 100 % green.

2. Savings: For campuses, solar power systems offer a dependable and affordable source of unlimited, clean energy. Cost of electricity has risen considerably over the past few years. Because big campuses use a great deal of electricity, they have been the primary victims of these price hikes and microgrids can help considerably with savings.

3. Achieve environmental stewardship practises.

4. Work force development & green jobs training: Campuses can build partnerships with local communities to expand clean energy and can help create clean energy jobs.

5. Increased resiliency: Microgrids can provide resiliency during outages.



the PROJECT



The project site includes

1. 1.44MW Solar PV Carport System
2. 2,600kWh BESS System
3. Gridscape EnergyScope™ Microgrid Control System
4. 36 EV Charging Stations (including 1 DCFC, 1 V2G and 34 L2 Stations)
5. 12kV Interconnection with PG&E on a single meter
6. Software-driven Load Control and Management
7. Potential upgrade of few 12kV switches
8. Integration with Tritium Niagara Building Management System



This \$8.4M project is funded by Rosemawr LLC, which has signed a 25-year PPA agreement with the San Jose City College. Gridscape and its subcontractor team is responsible for EPC and OAM for 10 years. The project is currently in design phase, and it will start construction in Q1 2023.

Innovation

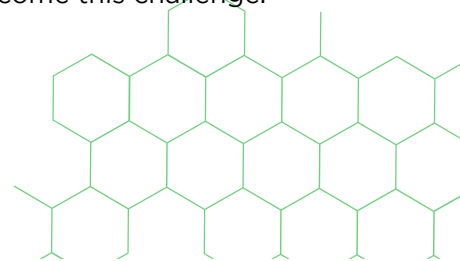
Business Innovation: Gridscape is in the process of designing a renewable energy and sustainable living class that will be offered at San Jose City College (and Chabot College) based on practical knowledge acquired during this project. Several college intern students will be part of the project team. This business innovation will lead to future workforce development, trained in renewable energy and sustainable living.

Technical Innovation: This project includes following technical innovations

- a. Integration with Tritium Niagara Building Management System for load control
- b. V2B EV charging integration with the microgrid
- c. Replicable, scalable microgrid design

Challenges

This project met with few business and technical challenges so far. On business side, since the time Gridscape won the RFP from the SJCC, the cost of material and labor increased by 25-30% making the project unviable. However, the PG&E utility rates also increased by 10%+ and so Gridscape and Rosemawr had to reassess the project economics several times until the project became viable again. On the technical side, the college has a very old (40+ years) 12kV electrical loop around the campus that has an old-style design for hardware based electrical redundancy. This loop makes it harder for the design team to propose a straight replacement of existing 12kV switches with modern, smart 12kV switches, capable of islanding any section or building on campus. The project team is currently evaluating several other innovative options to overcome this challenge.





About

GRIDSCAPE

Gridscape is the largest and a well-established name specializing in developing and deploying standards-compliant future-proof products and solutions for renewable energy microgrids and fleet charging. Intended to serve as a locally produced sustainable power plant, these microgrids allow sites to become less reliant on the grid by using local sources of energy. They can provide as much as 90% independence from the grid energy, and thus reduce overall energy cost & provide backup clean emergency power during PSPS or other power disruption events. Gridscape with its 'Product Centric' approach to microgrids integrated with fleet EV charging solutions allows for lower cost of installation and reduces the time for deployment by substantially lowering integration issues. It expects to deploy and operate over 35 microgrids in California public and commercial facilities over the next 12 months. The list of Gridscape's microgrid and EV charging customers and partners is as follows:

Unlike traditional microgrid developers, Gridscape employs a holistic product-centric, artificial intelligence (AI) based software-driven approach to designing, deploying, and managing microgrids. It also integrates Electric Vehicle (EV) charging and other controllable loads into its solution. Through its broad partnerships with various Tier 1 and Tier 2 financiers, design engineering firms, energy storage manufacturers and other renewable energy product providers, it leverages the best-in-class mix of technology and finance to provide maximum return on investment to customers.

Gridscape's solution is unique, and it differentiates from traditional systems in following manner.

- Product Centric Approach (vs Project Centric Methodology) for scalability, maintainability, and longevity of microgrid assets
- Software driven architecture resulting into no technology obsolescence and ability to adapt to changing PG&E tariffs and distribution grid conditions.
- Dynamically configurable with an ability to change the microgrid operational modes on demand
- Energy Information System: A cloud-based distributed energy resource management system (DERMS) that includes
 - Smart AI-based energy management and optimized load and generation dispatch; and
 - Very powerful visualization dashboard for accessing real time and historical data about PV, Storage and EV charging stations.
- Inherently Integrated with EV charging infrastructure
- Full Energy Management including demand charge reduction, TOU arbitrage, grid services
- Integration with various Cloud platforms such as Google, Amazon for grid services and load management

Gridscape ENERGYSCOPE™ Dashboards



Other PROJECTS:

Site Name	Number of Microgrids	Solar Size in KW	Microgrid BESS size in kWh	EV Chargers
City of San Diego	8	980	2,250	12
Chabot College	1	1,060	3000	25
San Jose City College	1	1,440	2600	35
City of Fontana	5	1,418	1,560	6
San Pasqual Band of Mission Indians, San Diego County- Community Microgrid	1	175	480	6
Imperial Westen Products (IWP)	1	842	1,300	
SMUD (Sacramento), EV ChargingInfrastructure	1	100	112	15
Lancaster Advanced Energy Community	5	2,500	3,750	65
Holiday Inn Hotels, Milpitas	2	450	500	20
Hayward Fire Station/FS6	1	225	240	
City of Fremont- Fire Stations	3	122	360	
Affordable Hosuing Unit, Willowbrook	2	124	240	
American Red Cross, San Leandro	1	62	60	
Total	32	9,498	16,452	184