

# Smart Communities In Focus

## Spotlight: San Jose, CA



*San Jose's Smart City Vision effort is aided through its partnerships with Pacific Gas & Electric (PG&E), Bay Area Rapid Transit (BART), Enphase Energy, General Electric, Philips, Proterra, Santa Clara Valley Transit Authority (VTA), Silver Spring Networks, and Tesla.*

**S**mart communities are built on smarter energy infrastructure and leverage the power of data and technology to improve sustainability, spur economic development, help drive efficiencies, and enhance the overall quality of life for their citizens. This summary focuses on specific opportunities where communities and electric companies can collaborate to make communities smarter, including projects that advance: Smart Street Lighting, Smart Transportation, Smart Buildings, Distributed Energy Resources, and Data Analytics and Intelligent Services.

### San Jose's Goals

- Leverage technology to enhance safety
- Broaden access to digital infrastructure to all residents
- Enable deployment of energy management technology
- Expand civic engagement
- Utilize open data and visualization to inform decision-making

## What Makes San Jose Smart?



**Smart Street Lighting**—*Saves energy, improves safety, and reduces traffic congestion.*

- The City of San Jose retrofitted one-third of its 60,000 street lights with LED lamps and is in the process of bidding the remaining upgrade.
- PG&E, Philips, and San Jose are collaborating on a Smart Poles project that integrates a low-profile, two-way communicating meter on top of the pole, eliminating the need for a standalone meter box on the sidewalk, and allows for energy monitoring and lighting control, accurate billing of pole-mounted telecom equipment, and expanded 4G/LTE broadband applications.



**Smart Transportation**—*Improves safety and mobility, reduces carbon footprint, and provides greater access to services.*

- The City of San Jose installed 53 electric vehicle (EV) chargers in public parking garages.
- The California Public Utilities Commission authorized PG&E to move forward with installing 7,500 EV charging stations throughout its territory.
- BART is extending electrified rail service to San Jose by the end of 2017.

- VTA is piloting electric buses in collaboration with Prospect Silicon Valley, a cleantech innovation hub, and electric bus manufacturer Proterra. Five electric buses will be operational in 2017 and 35 more by 2019. The pilot includes an energy management system that minimizes cost of bus charging and assists integration of variable renewable energy sources.
- The City of San Jose opened a request for information in 2017 for autonomous vehicle pilot demonstrations in five corridors of the city, with the goal of providing mobility options to the underserved, offering alternative modes to incentivize drivers off the road and help reduce greenhouse gas emissions.



**Smart Buildings**—*Save energy and improve sustainability.*

- Over an 18-month period, PG&E partnered with 448 San Jose businesses to inspire employees to adopt energy-savings actions in the workplace. As of January 2017, these employees achieved 27.6 gigawatt-hours of energy savings, which is equivalent to the electricity needed to power 2,800 homes for one year.



**Distributed Energy Resources**—*Improve sustainability, efficiency, and reliability.*

- PG&E is working with General Electric to demonstrate a distributed energy resource management system (DERMS) in San Jose. This demonstration is expected to run from September to December 2017, and will include up to 150 residential customers and up to 20 commercial customers in San Jose. The demonstration will evaluate a DERMS' capability to use smart inverters and battery storage to enhance power quality and power flow management as more third-party distributed energy resources—such as residential and commercial solar—connect to the energy grid.
- A key part of the DERMS demonstration is leveraging the automated dispatch system of the Yerba Buena 4-megawatt sodium sulfur battery energy storage system, located in the foothills of San Jose, for CAISO market participation.



**Data Analytics and Intelligent Services**—*Increase efficiency, improve city services, and enhance quality of life.*

- San Jose has identified and will make available up to 50 transportation data sets related to traffic on the city's Open Data Portal to encourage innovation in transportation and civic technology.
- San Jose is collaborating with Facebook to deploy Terragraph, a free 60-gigahertz wireless network, which uses phased array antennae mounted on city street lights to route and steer wireless connections around urban area interferences like tall buildings that create dead zones or internet congestion due to high user traffic.

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