

PROJECT PROFILE / **GRID MODERNIZATION**

OPTIMIZING INFRASTRUCTURE FOR THE NEXT-GENERATION GRID

Southern California Edison — one of the nation's largest electric utilities — is modernizing its distribution grid to help propel its communities into the future. It is working to reduce energy usage and streamline its net energy metering application process.



CUSTOMIZED SOLUTIONS FOR COMPLEX CHALLENGES

Data-driven algorithms and strategic program assessments lead to transformative upgrades.

PROJECT STATS

CLIENT

Southern California Edison

LOCATION

California

ANTICIPATED COMPLETION

2021

5M

CUSTOMER ACCOUNTS

15M

ENERGY USERS

50K

SQUARE MILE AREA

12,635

MILES OF TRANSMISSION LINES

Southern California Edison (SCE) supplies power to more than 15 million people in Central, Coastal and Southern California. As the needs of these energy users evolve, SCE is modernizing its electric distribution grid to deliver safe, reliable, efficient and affordable power to homes, hospitals, schools and businesses in the region.

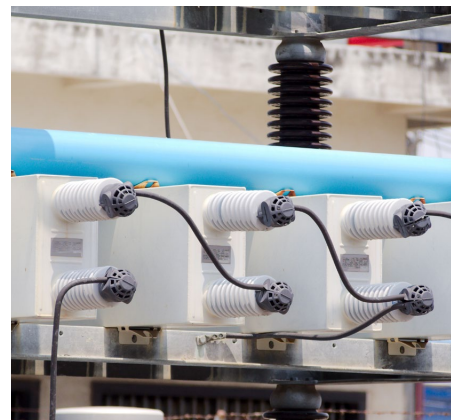
To keep pace with distribution grid changes such as the growing presence of distributed energy resources, voltage optimization and aging infrastructure, our team is working with SCE on projects such as distribution volt/VAR control (DVVC) and net energy metering. These efforts will revolutionize how new challenges can be addressed.

DISTRIBUTION VOLT/VAR CONTROL

As part of this transformation, SCE established a program devoted to maintaining and upgrading its infrastructure to implement conservation voltage reduction on its system, along with VAR control. This program seeks to maximize the distribution system's value, save money for customers and SCE, enabling SCE to further improve its operations and planning for the next-generation grid.

SCE is leveraging DVVC to look for an optimal system configuration that increases the efficiency of its distribution assets, including substation and field capacitors. Our team developed a dashboard for SCE that tracks the program over time and compares those results against key performance indicators set by the DVVC team. The dashboard also helps increase situational awareness of the DVVC system to support troubleshooting field issues and determining contributors — system topology, distributed generation or system dynamics — to program performance issues.

DVVC uses a data-driven algorithm that requires the investigation and verification of assets, equipment





settings and operational configurations. Our engineers and data scientists work alongside SCE to maintain and update the algorithm settings, pull performance data analytics, automate tools and troubleshoot field issues. The DVVC algorithm enables SCE to fine-tune the average system voltage and distribution voltage to more quickly and reliably react to system changes. This results in more data-driven decisions and customized solutions.

NET ENERGY METERING

SCE customers who install solar, wind, biogas or fuel cell generation facilities

to serve all or a portion of their on-site electricity needs are eligible for the state's NEM program. This offering allows customers who produce their own electricity to receive a credit for any surplus electricity they supply back to the grid.

To enroll in the NEM rate, SCE customers need to meet certain criteria and complete an application for interconnection and NEM. These applications are often complex and unique to each customer's situation.

Our team is helping SCE streamline the application process for customers

interested in NEM. At the start of this program, our team worked with SCE to assess the existing application process and identify aspects that worked well and those that needed improvement, to inform a new consistent and efficient process.

As this improved application process is put into practice, there are nearly 1,000 applications per month that need to be promptly approved or denied. Our team is seeing that all applications have the right materials before approving or denying. We are also conducting studies to support the applications when necessary.



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