

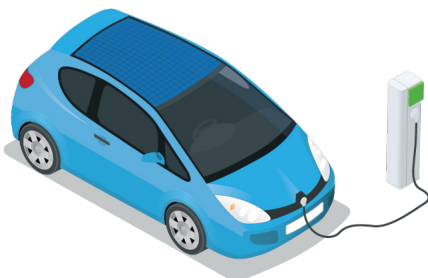
THE POWER GRID OF THE FUTURE

Building a Smarter Grid for Southern California



At Southern California Edison, we are developing an electric grid to support California's transition to a clean and sustainable future that meets the needs and expectations of our customers.

This 21st-century power system will be more customer friendly, integrating technologies that allow us to deliver safe, efficient, resilient and reliable power while reducing environmental impacts.



INVESTING IN THE POWER GRID

We have requested approval from the California Public Utilities Commission to spend \$1.3 billion for 2019-2020 to improve safety and reliability while supporting the continued growth and integration of customer-side environmental technologies. Major areas of investment include:

- Upgrading portions of the grid to increase capacity, improve reliability, and address technology obsolescence
- Increasing automation of monitor and control equipment to provide real-time response and improve flexibility of grid operations
- Expanding communication network

WHAT IS CHANGING?

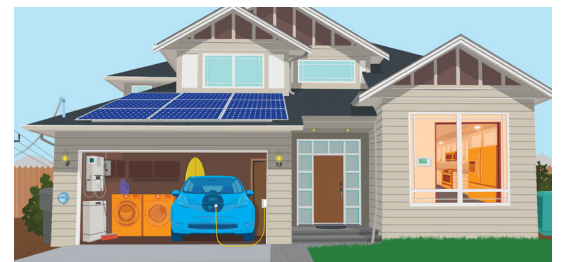
Over the last century, we have delivered power from large, centralized power sources to customers – requiring only a one-way power flow. By 2020 however, all new homes in California will be required to have solar panels, and these new homeowners, as well as other customers with solar panels or home battery systems require two-way flow so that the power they generate or store can be delivered back on the grid.

At the same time, we will increase the capacity of our distribution system to support our strategic Clean Power and Electrification Pathway and its vision of having 7 million electric vehicles on California's roads by 2030.

In 2015 our company filed a plan with the California Public Utilities Commission to modernize and safeguard the power distribution grid.

The plan is based on five key guiding principles:

- Ensure a safe, reliable and resilient power network
- Promote customer choice of new technologies
- Provide affordable and equitable costs of electric service
- Use competition in purchasing clean-energy resources
- Reduce greenhouse gases



MAKING LIFE EASIER FOR CUSTOMERS

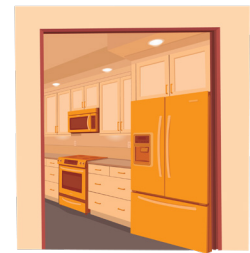
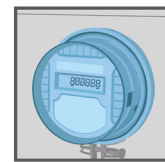
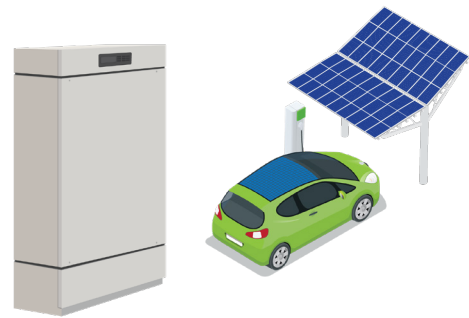
The coming power network will make it easier for customers to plug in many types of energy technologies," says Edison International President Pedro Pizarro, "whether it's an electric vehicle, solar panels or energy storage devices."

Our investments in local communities will help ensure that customers receive safe, reliable and affordable electricity now and in the future.

NEW TECHNOLOGIES FOR THE GRID OF THE FUTURE

SCE is modernizing the grid to support the continued growth and integration of key environmental technologies, referred to collectively as Distributed Energy Resources, or DERs. The five DERs in the SCE grid modernization plan are:

- **Distributed renewable generation resources:** Solar power generated from rooftop solar panels or other energy sources on the customer end of the power grid.
- **Energy efficiency:** Reducing demand for energy through upgrades such as improved lighting, smarter appliances and better insulation.
- **Energy storage:** Batteries that can be charged during off-peak times, such as mornings, and then discharged during peak times, such as hot afternoons, to reduce peak energy needs.
- **Electric vehicles:** Plug-in cars and other innovative vehicles that will reduce our dependence on fossil fuels.
- **Demand response:** SCE's Summer Advantage Incentive and similar programs that give customers incentives to reduce the use of electricity at peak times.



THE ROADMAP

The Clean Power and Electrification Pathway is SCE's strategic vision to achieve California's 2030 GHG reduction goals. It is available at [sce.com/pathwayto2030](https://www.sce.com/pathwayto2030)

The **Distribution Resources Plan** is SCE's official roadmap for achieving our grid modernization goals. It was filed with the California Public Utilities Committee on July 1, 2015, and is publicly available at <http://www.cpuc.ca.gov/infrastructure>. Click on Distribution Energy Resources Plan near the bottom of the page.

DISTRIBUTION VS. TRANSMISSION

The grid modernization efforts discussed here are on the distribution system, which is distinct from the transmission system. The transmission system takes electricity from its transmission point through high voltage transmission lines, which are usually strung between large transmission towers, and end at distribution substations. The distribution system begins at these substations.

The electricity flows from substations through lower voltage distribution lines on distribution circuits to customer locations.

