Community resiliency
Leveraging the power of microgrids

CU Boulder is developing an integrated, smart and resilient microgrid on our East Campus. This initiative will provide a living sustainability laboratory that will promote efficiency, integration of smart technologies and clean energy, and protect critical infrastructure to better serve our community. It is a collaboration with the city of Boulder, the Department of Energy and the National Renewable Energy Lab aimed at achieving our three campus strategic imperatives of shaping tomorrow’s leaders, becoming the top university for innovation, and positively impacting humanity.

Short-term goals

- **2017**
  - Conceptualization, study & analysis with city, county, NREL, private vendors

- **2018**
  - Campus installs first solar-powered electric-vehicle charging stations

Long-term goals

- **2018**
  - Conceptualization of the most energy-efficient, resilient, intelligent and cost-effective system

- **2019**
  - Study & analysis of how best to integrate the production & storage of renewables into our new infrastructure

- **2019**
  - Microgrid pilot initiated on East Campus to include the Sustainability, Energy, and Environment Complex (SEEC)

- **2021**
  - Smart system pilot initiate and install pilot program for Smart Control System components and devices

- **2028**
  - Community resiliency
    - Leverage big data, integration of systems and artificial intelligence to enhance sustainability and resiliency

**Be innovative.**

- Cultural innovation that changes the way we think about what is possible through campus and community partnerships

- NREL Microgrid challenge to allow CU Boulder to transition seamlessly between on-site renewable generation and the main power grid

- Community collaboration that drives us to work together toward shared goals of regional resiliency

- Energy analytics that generate data to help better manage energy use by integrating building and utility systems

- NREL multisite study to produce high-level vision and design of future microgrids and infrastructure

**Be resilient.**

- Updating infrastructure to ensure a secure future

- Mission always by enabling rapid recovery during crises that impact education and research

- Protect infrastructure & research by identifying critical research spaces and systems, improving redundancies, and protecting against cyberattacks

- Energy security through local renewable energy generation and increased efficiencies that cut our dependency on grid-based sources

- Energy system control increases whole-campus resiliency and ensures power flows to critical buildings for research and learning

**Be sustainable.**

- Efficiency to achieve automated, near real-time energy analysis of the East Campus microgrid

- Transportation that promotes the use of renewable energy

- Fiscal responsibility by avoiding multimillion-dollar losses in research because of power failures and other interruptions

- Social responsibility through improved ability to support our neighbors in times of crisis

- Clean energy through greater production of on-site solar energy to lower our carbon footprint and reduce transit and maintenance pollution