A CLEANER AND MORE RESILIENT POWER SYSTEM FOR COMMUNITY DEVELOPMENTS
Emera, a $32 billion energy company, created its skunk works division to understand the disruptive forces in energy and their impacts on the industry.

Business, residential, and military customers want cleaner and more reliable energy as we become more dependent on energy for daily and critical needs.

New technologies are opening transformational opportunities in the energy landscape.
Sandia is Creating the Future

• **Assuring** a safe and reliable nuclear deterrent
  
  • **Safeguarding** homeland and global security
  
    • **Creating energy technologies of the future**
  
    • **Enabling** a diverse and productive workforce

Exceptional service in the national interest
DoD is the single largest energy consumer in the US.

Challenges

80% of total federal energy consumption

DoD is focused on ensuring military operations with ongoing efforts that enable resilient, efficient and cyber-secure energy for the joint forces, weapon systems and installations.
New Mexico Can be a National Security Model
Leadership in Clean Energy, Water Security, Education, and Job Creation

RESILIENT ENERGY:
• Physical Security
• Cyber Security
• Energy/Resource Security

TECHNO-ECONOMIC APPLICATIONS:
• Energy Storage
• Microgrids
• Blackout Recovery
• Fossil Retirement
• Renewables Integration
• Energy/Water Infrastructure
• Disaster Response (natural/human caused)
• Transportation
• Hydrogen

BUILDS ON SANDIA WORK:
• California
• Alaska
• Hawaii
• Puerto Rico/US Virgin Islands
• Texas
Military Interest is Robust

- **Sandia National Labs Engagement on DC Microgrids**
- **CRADA Signed**
- **CRADA Amended to include DOE-OE $200K commitment**
- **Tours with U.S. House Members Haaland and Smith; Col. Miller interview in Albuquerque Journal**

**Timeline**

- **Q1 2018**
  - Cooperative Research and Development Agreement ("CRADA") Initiated
- **Q2 2018**
  - Meeting with Office of Electricity; $200K DOE Commitment
- **Q3 2018**
  - Demo installed, ribbon cutting; Sen. Heinrich tour
- **Q4 2018**
  - Demo commissioned; TCF\(^1\) cyber application; $8.5M SETO\(^2\) grant awarded
- **Q1 2019**
- **Q2 2019**
- **Q3 2019**
- **Q4 2019**
- **Q1 2020**

\(^1\) Technology Commercialization Fund
\(^2\) Solar Energy Technology Office
BlockEnergy launched eight months ago. The smart platform has operated without interruption, helping pave the way for a more resilient future.

BlockEnergy has also entered a Collaborative Research and Development Agreement (CRADA) with Sandia National Labs, (the country’s energy thinktank). Sandia will be stress testing the resilience of BlockEnergy’s system under various conditions such as lightning, fault conditions, and a sudden loss of grid power.

- **12+** Months of autonomous operations
- **12** Accelerated construction timeline (in months)
- **100** Kilowatts of installed rooftop solar
- **200** Kilowatt-hours of battery storage