Emera Technologies

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.
A New Rate-Based Distributed Energy System for the Electric Utility

Utilities can own and operate this local renewable energy system as a grid asset. Create energy locally, store it locally and distribute it locally on a data-rich digital platform. Cleaner energy with advanced resilience for your communities.
** BLOCKENERGY's ** modular microgrid builds and bolts seamlessly like building blocks. The infrastructure and design have all been tested and trailed in various applications for safety, reliability, and interoperability to make it the most advanced solar and storage community in market.

** A Simple Kit of Parts **

1. ** BlockHome **
   - Rooftop solar
   - Battery modules and management
   - DC-AC inverter to the home
   - Distributed controller, APIs, optimization

2. ** BlockLoop **
   - Fiber, conductor, conduit

3. ** BlockCentral **
   - Additional battery modules
   - Optional generation (gensets, solar, etc)
   - Bi-directional AC-DC grid-tie converter
   - Central controller, APIs, optimization
   - Smart protection interface
   - Utility transformer
The BLOCKENERGY Platform Offers Seamless Growth

New BLOCKCOMMUNITIES can be seamlessly added to the platform as communities grow.

THE NEW COMMUNITY ENERGY CONCEPT
Winter Storm Uri – February 2021

- 702 Deaths
- Statewide power outages, food/water shortages
- 4.5 million homes and businesses were left without power
- Texas power grid was "seconds or minutes away from" complete failure
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

TECNO-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
**History and Evolution of BlockEnergy**

**2018**
Launched extensive assessment of market to identify opportunities to meet growing renewable and resilience demand. Decided to focus on DC microgrid opportunity.

**2019**
Developed, built and installed first DC microgrid on Department of Defense site at Kirtland Air Force Base in NM. Has been operating seamlessly since installation. Now in discussion for three additional microgrids on base.

**2020**
Developed and built V2 of the BlockEnergy Smart Platform. TUV Rheinland conducted product testing review. Secured UL Certification. Launched BlockEnergy Smart Platform at NA Smart Energy Week. Secured first pilot with Lennar, largest residential builder in U.S.

**2021**
Commissioned BlockEnergy in 37 Home Lennar Neighborhood at Southshore Bay South Tampa. Installed second project at Silver Cloud Winery in California. Advanced development of V3 product, the first fully commercial version.
Proof of Concept: Kirtland Air Base

The Kirtland Air Force Base project is a demonstration project that was designed and installed in collaboration with the Air Force Base (US DOD) and Sandia National Laboratories, (US DOE) under a cooperative research and development agreement (CRADA). The project has been in continuous operation since commissioned in 2019. Kirtland continues to serve as a platform for continuous development of the BlockEnergy technology platform with ongoing testing and evaluation.

2019
Installed

17
Months of Autonomous Operations

200 kWh
Battery Storage

100 kW
Rooftop Solar
Program Expansion: The East Ring

- **$5,000,000** NDAA 2020 (Expansion of East Ring)
- **$110,600** NASA (Terrestrial Space Energy)
- **$500,000** DOE Solar Energy Office
- **$250,000** DOE Tech Commercialization (HyGain)
- **$5,000,000** NDAA 2020 (Expansion of East Ring)
- **$30,000+** SNL LDRD
- **$4M+** CRADA Expansion
Why we’re here today:
ETL is Seeking Opportunities for Partnerships, Collaboration & Information Sharing with Public, Private and Tribal organizations in New Mexico.

1. Partnerships and Collaboration opportunities. Tribes, Local Communities Developers.

2. Regulation and Policy input. State agencies (ETA Council, PRC, MNERD, State Land Office). As a Utility and an Innovation Driven Climate Technology Company we sit at a critical intersection to help inform policy makers of opportunities in the new systems of energy generation & storage deployment and overall resilience development.

3. Investments in Resilience. With potentially game changing Infrastructure opportunities on the horizon, ETL would like to be a partner in deploying resilience and energy assurance across New Mexico.
Resilient Energy Distribution Network for Critical Infrastructure

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