

Battery Storage – The Co-op Way



Your Touchstone Energy® Cooperative 

United Power: *Powering Lives, Powering Change & Powering the Future*



Overview

- Electric Co-op / 90,000 meters
- 500 MW Summer Peak
- North Denver / Metro area
- Separate smaller Mtn territory
- Double digit growth (%) in sales
- Significant Oil & Gas load
- Profile: 1/3 res - 1/3 com -1/3 indus
- Manage Growth / Control Costs

Battery Storage Project - 4 MW / 16 Mwh



- Study began 2015, Board approved 2017
- Size and Duration of Battery based on United Power monthly load profile
- Designed to peak shave during all 12 months of year
- Signed Contract 2017, Operational 2018
- Manage Utility Growth / Peak Shaving
- Contractor SoCore Energy / Engie
- Lithium Ion / Tesla Battery
- Located at our new West Office / off I-25

Business Case



Proven Technology – Lithium Ion

Proven Battery Vender – Tesla

Proven Contractor – SoCore Energy / Engie

Sized to meet all 12 months load curves

Expected to save \$1,000,000 / yr in wholesale capacity charges

Simple payback 7 – 8 yrs

Output Warranty from Manufacturer

15 Year Expected Life of Asset

Business Purpose - Staying Relevant



The Industry is Changing

- Customer Choice
- Battery / Utility Storage
- Higher Penetration of Renewables
- Load Growth / Attracting Business
- Flexibility in Power Mix
- Flexibility in Pricing
- Partnering with Industry / Cities
- Providing Creative Solutions

Summary –

- A lot of the Electric Industry has moved to the Distribution Level
 - Generation / Renewables
 - Peak Shaving
 - Battery Storage
 - AMI Metering
- **Understanding storage is the next logical step in the progression of renewable generation. Without the ability to store energy, renewables will have an artificial cap placed on its utilization.**
- **As a co-op, we have an obligation to our communities and individual members to explore these new options to meet this ever changing energy environment.**
- **Status Quo is no longer an option, understanding and utilizing this new technology may very well be critical in how the utility of the future operates and serves its members.**