Key Accounts Meeting
Spring 2018
Welcome & Safety Minute

Jackie Sargent, P.E.
General Manager
Downed Power Line Safety

Safety Starts with Me

www.austinenergy.com

To safely deliver clean, affordable, reliable energy and excellent customer service.
Stay Safe When a Power Line Is Down

- Consider all wires energized and dangerous
- Never Touch a Downed Power Line or anything or anyone in contact with a power line
- Stay at least 35 feet away from downed lines
- Do not come near or touch a tree limb, structure, any other object that comes into contact with downed line
- Do not try to rescue someone who makes contact with a downed power line
- Never use any object to move a downed power line
- Rubber gloves and rubber-soled shoes will not protect you from electrocution

Call Austin Energy at 512-322-9100 and report the location
When a Vehicle Comes in Contact

• Call 9-1-1 immediately
• Warn others not to touch the vehicle
• Do not leave the vehicle unless it becomes unsafe due to immediate dangers, such as fire or smoke
• If you must leave the vehicle
  – Jump as far away from the vehicle as possible
  – Land with both feet on the ground at the same time
  – Never touch the vehicle and the ground at the same time
  – After exiting the vehicle, keep your feet together, hop, and don’t run
Stay Safe When a Power Line Is Down

Know What to Do When Hazards Strike

Be aware of hazards presented by downed power lines. Your life or the life of someone else depends on it.

Never Touch a Downed Power Line

Never touch anything or anyone in contact with a power line. You could be shocked by contact with the line or a secondary object or person.

When a live wire touches the ground, electricity fans out through the ground, similar to when a pebble hits water. You could be shocked when in the area of a downed power line. The minimum safe distance from a downed power line is 35 feet.

- Consider all wires energized and dangerous. Even de-energized lines may become energized at any time.
- Stay at least 35 feet away from downed lines.
- Electricity can travel through the ground, fences, hoses, and playscapes. A live wire, either on the ground or in trees, can harm you, even if you don’t directly touch the line.
- Electricity can also travel through tree limbs. Never remove tree limbs or other items touching or near a downed wire. Call Austin Energy at 512-322-9100 to report the tree limb.
Agenda

• PSA & Regulatory Charge update
• Solar power purchase agreement
• Commercial Value of Solar
• Repowering downtown & meter exchange program
• Customer collaboration
• Open discussion
Power Supply Adjustment And Regulatory Charge Update for Fiscal Year 2018
Power Supply Adjustment Costs Components

Twelve Months Ending January 2018
Difference between Load Zone and Power Supply Cost - $10M

Cost

$ Millions

$391

$139

($23)

($6)

$381

($120)

($100)

($200)

Load Zone Costs

Contracted Assets Net Cost

GreenChoice & Value of Solar

Bilateral & Hedging

Net Power Supply Costs

Customers have benefited by $10M from generation and hedging
Power Supply Adjustment History

Rising load zone cost shows need to keep PSA stable

Drop in load zone costs results in over-collection

Load zone cost didn’t maintain downward trend; results in under-collection

Load zone cost trending up

Load zone cost trending down

Load zone cost stable

Decreasing load zone costs and over collection caused price volatility
Starting in Nov-16, monthly natural gas prices increased 56%, contract assets Los Vientos IV and Roserock increased MWh production by 30%, and congestion costs increased by 25% due to contracted assets.

PSA adjusted to return over collection to customers
Increase in PSA for FY18 reflects a stable power market
Power prices have risen due to changes in supply and demand.
Postage Stamp Rate Trend in ERCOT

Transmission system expansion and tax laws impact forecast
PSA and Regulatory Observations

• The PSA is expected to return the over-collection to customers by October 2018 which would indict an upward price correction.

• Price volatility emerging in ERCOT market due to recent retirements and load growth.

• Austin Energy positioned to manage price risk with generation and hedging.

• Austin Energy’s Regulatory Charge is expected to increase mimicking the trend in the Postage Stamp Rate.

• Effects of changes in corporate tax rates and timing of rate filings by transmission providers will impact future Postage Stamp Rates.
Solar Purchase Power Agreement & ERCOT Emergency Policies

Key Account Customer Meeting

March 21, 2018
2017 Solar RFP

- RFP Closed May 31st
- 45 Respondents
- 82 Projects
- Approx. 400 Proposals

ERCOT Regional Split

- West: 52%
- South: 23%
- Panhandle: 6%
- North: 16%
- Houston: 3%
Intersect Power

**Highlights**

- Top ranked project
- Model shows solar farm helps offset congestion for existing solar assets
- Benefits from projected load growth in the area
- Planned 345 kV transmission projects later in contract term provide increased export capacity
- Location produces later into the day

**Terms**

- Size: 150 MW
  - Option to increase facility size by 30MW
- Term: 15 years
- Commercial Operation Date (COD): 2020
  - $12.2 Million reduction in contract costs versus 2019 COD
- 2021 PSA Year estimated reduction of 1.02%

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*Achieve 51% renewable at COD*
### AE Utility Solar Portfolio in ERCOT Market

<table>
<thead>
<tr>
<th>Contract Date</th>
<th>COD</th>
<th>Project</th>
<th>Capacity (MWs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2010</td>
<td>Webberville</td>
<td>30</td>
</tr>
<tr>
<td>2014</td>
<td>2016</td>
<td>Roserock</td>
<td>157.5</td>
</tr>
<tr>
<td>2015</td>
<td>2017</td>
<td>Bootleg</td>
<td>118.5</td>
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<tr>
<td>2015</td>
<td>2017</td>
<td>Upton</td>
<td>157.5</td>
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<tr>
<td>2015</td>
<td>2018</td>
<td>Midway</td>
<td>182.5</td>
</tr>
<tr>
<td>2017</td>
<td>2020</td>
<td>Proposed</td>
<td>150</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>796</strong></td>
</tr>
</tbody>
</table>

![2017 Pie Chart](chart.png)
Before and at Emergency Condition

• Operating Condition Notice
  – Serves as a market notice to TOs and QSEs about possible adverse conditions

• Advisory
  – Conditions are developing
  – Notifications go out

• Watch
  – Conditions have developed such that Emergency Condition exists or is imminent
  – Notifications go out

• Emergency Condition
  – ERCOT is an insecure state
  – Notifications go out

Energy Emergency Alert (EEA)

• EEA1
  – Maintain total of 2300 PRC (physical responsive capacity)

• EEA2
  – Maintain system frequency at 60 Hz or maintain total of 1750 PRC

• EEA3
  – Maintain system frequency at 59.8 Hz or greater
  – Firm load shed in 100 MW blocks per load shed table (AE 3.85 MWs)

ERCOT can jump to EEA3 if needed. It is not required to call EEA 1 & 2 first. Load Shedding is a reliability requirement and therefore not a paid service.
Transmission & Distribution Operators maintain the table on their desks at all times

- Table is reviewed each year for updates and necessary changes
- Critical load identified (load that cannot be shed, military, hospitals)
- Load that is difficult to restore identified
- Load that remains takes turns as operators have a process of shedding load for 15 – 30 minutes, rolling the shedding process throughout the service area
- The cost associated with this activity is not allocated
- The utility does not recover the lost revenue
Commercial Solar and VOS

Key Accounts Meeting
March 21, 2018
Since 2004, over 450 commercial customers have installed a total 20 MW of solar in Austin, including:

- 2021 E 5th Street Ltd
- Apple
- Applied Materials
- Austin Community College
- Austin Housing Authority
- Austin, Eanes, Lake Travis, Pflugerville, Round Rock ISDs
- HEB
- Huston Tillotson College
- IRS
- LCRA
- Oracle
- Seton Healthcare
- St Edwards University
- State Parks & Wildlife
- Texas Military Dept
- The Overlook at Rob Roy
- Travis County
- TMF Health Quality Institute
- University of Texas
- US GSA
- Westlake Medical Center
Commercial Performance Based Incentives

• Commercial Solar projects are eligible for Performance Based Incentives (PBIs)
  – PBIs are monthly bill credits based on actual solar production, credited for the first 10 yrs of the system’s life
  – Must be installed by an AE Participating Contractor
  – Incentives ramp down as capacity is installed

• Incentive Caps:
  – 2.8MW cap per customer
  – 1 MW per interconnection
  – PBI rate depends on system size, current level at time of application
Commercial PBI Incentive Levels

AE Commercial PBI Ramp Down

Current incentive levels are available at [www.austinenergy.com/go/currentsolar](http://www.austinenergy.com/go/currentsolar)

Subject to change due to budget limitations or market changes that warrant incentive level review.

- Value of Solar (VOS) and Performance Based Incentive (PBI) credits based on solar generation, measured by PV meter.
- Customer is billed for all on-site electric use.
- Customer is credited at VOS for all PV production.

* PV = Photovoltaic
Commercial VoS on the Bill

• All commercial classes on demand rates are eligible for the Commercial VoS except Transmission Voltage classes
  – Commercial Demand VoS will be $0.067/kWh up to a system size of <1 MW
    • This provides a greater value than net metering for all commercial demand rate customers
  – Commercial Demand VoS for systems >1MW will be $0.047/kWh due to additional transmission costs
  – Commercial Solar customers may be able to reduce their peak load with solar, reduce their demand charges
FAQs

• How will the energy charges change after installing solar?
  – They Don’t!
  – You will still be billed at your usual rates for energy used on site.
  – The difference is now the solar energy produced is multiplied by the VOS rate and shows as a credit on the bill, reducing the bill.

• Is the customer still eligible for PBIs?
  – Yes!

• What about existing PBIs?
  – Yes!

• What if I have more VOS credits than I can use in a month?
  – Excess VOS credits will roll to the next month’s electric bill. VOS credits cannot be used to reduce other COA utility charges, or be refunded.

• Will the VOS rate change?
  – The VOS rate is locked in until the next Rate Case (expected ~2021). It will be evaluated in the Cost of Service study and updated based on changes in the market, regulatory and transmission costs, etc.
Downtown Then and Now

Downtown Skyline 1997

Downtown Skyline in 2017
Downtown Customers

• Residential Customers
  – 15,000 - Population of Downtown Residents
  – 946 - Condo Units Under Construction
  – 3,297 - Condo Units Built Downtown Since 2000
  – 634 - Apartment Units Under Construction
  – 5,398 - Apartment Units Built Since 2000

• Commercial Customers
  – 86,226 - Downtown Employees
  – 9 Million - Square Feet of Multi-tenant Office Space
  – 955,571 SF - Office Space Recently Completed (879,571 Multi-tenant)
  – 1,601,500 SF - Office Space Under Construction (1,151,500 SF Multi-tenant)

Source: Downtown Austin Alliance
Downtown Network

Safe, Extremely High Reliability, Fully Redundant, Compact, Low Visibility
Repowering Downtown Project

- Increase Distribution Tie Circuits
- Add 70 MVA Transformer to Seaholm Substation
- Build New Downtown Substation
- Rebuild Brackenridge Substation
- Upgrade Network Distribution Feeder Circuits
- Convert 69kV Transmission Lines to 138kV

Total cost of $60M over the next 6 years
Proposed New Substation
New Substation Drivers

- Capacity
- Resiliency
- Reliability
New Substation Drivers

- **Capacity – Load Growth**
  - New Central Business District development and anticipated redevelopment along the Waller Creek area
  - Existing Seaholm and Brackenridge substations will not support the anticipated demand and load growth
• Waller Creek redevelopment
• U.M.C. Brackenridge redevelopment
• Medical District, Capitol Complex expansion
• A.P.D., Palm School, Municipal Court sites
• 37-story Fairmont, 33-story Mirabeau
• 1.4 million sq. ft. Waller Park Plaza
• Block 87
• Villas of Town Lake site redevelopment
• Rainey Street District development
• South Central Waterfront
## Alternatives Considered

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Description</th>
</tr>
</thead>
</table>
| Rebuild Brackenridge in Alternate Location | • Unable to secure alternate suitable site  
• Cable tie limitations  
• Limited reliability in case of loss of substation |
| Expand Seaholm to Serve Increased Demand | • Short term solution (2022)  
• Cable tie limitations  
• Limited reliability in case of loss of substation |
| Construct New Substation to Serve Full Demand | • Cable tie limitations  
• Limited reliability in case of loss of substation |
| Deploy DER/DR/EE | • Technically and financially not feasible due to limited rooftops capacity, significant battery storage requirements  
• Will done regardless and intrinsically |
| Alternative Sites | • Limited by accessibility, geographically, and availability of properties |
Performed a thorough search for properties that meet the following criteria

- Geographically located to meet electrical requirements
- Accessibility to existing Transmission and Distribution Circuits
- Low impact to downtown residents and businesses
- Utilization of existing COA property

The proposed property meets all of these criteria

- Highest and best use of City property to serve the City of Austin due to its proximity to IH-35 and TxDOT’s proposed service road widening
New Substation – Smart Substation

- New Gas Insulated Switchgear (GIS) Substation – reduced footprint
- Station will be cut into existing Seaholm-Pedernales 138 kV Transmission Circuit
- Engage citizens, stakeholders, boards and commissions in design of project
- Design to reflect values and culture of Austin and community
- Employ smart technologies such as solar, LED lighting, security and communication, automation
- Interoperable infrastructure to leverage Distributed Energy Resources and Load Control and Energy Storage capable
New Substation Costs: $26M

Key Milestones:

• Brief Mayor – June 2017
• CMO/Council Member Communication – July 2017
• Media & Website Release, RFQ Issued – July/August 2017
• Contract w/ Engr & Public Engagement Consultant – Winter 2017
• Public Engagement & Design – Spring 2018 to Summer 2019
• Install 3rd Transformer at Seaholm – Summer 2018
• Construction – Summer 2019 to Summer 2020
• Rebuild Brackenridge Substation – Summer 2020 to Summer 2022
Commercial Meter Exchange

• Provides advanced functionality to support customer experience and operational efficiencies
  – Increased customer energy data (15 min interval)
  – Enhanced event and meter alarm functionality
  – Streamline metering operations

• Scope
  – 48,312 meters

• Schedule – 5 years
  – May 2017 – May 2022
**Advanced Metering Infrastructure**

### Commercial Meter Upgrade Initiative:
AMI Meters Capable of Advanced Functionality
March 20, 2018

#### Percentage of Commercial Meters by Advanced Functionality

<table>
<thead>
<tr>
<th></th>
<th>Simple Commercial</th>
<th>Advanced Commercial</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>44,523</td>
<td>23,606</td>
<td>68,129</td>
</tr>
<tr>
<td>Percentage</td>
<td>65%</td>
<td>35%</td>
<td>100%</td>
</tr>
</tbody>
</table>

23,606; 35%
44,523; 65%
Working the Plan

- Customers will be contacted before an outage by a meter technician

- Current Project Status
  - Exchanged to date ~7,500
  - Remaining to exchange ~41,500
  - ~8k meters exchanged per year
  - 1-2 hours required for transformer rated installation
  - 5-10 minutes for a self-contained installation

- Approximately 4,600 transformer-rated meters remaining
  - Plan to complete the transformer rated meters by end of the year

- Approximately 36,000 self-contained meters remaining
  - Work an area thru completion and then move to an adjacent area
Energy Profiler Online

• What is Energy Profiler Online (EPO)?
  – EPO is a cloud based software application
  – Utilizes authentication to access
  – Provides detailed energy usage data to better manage your facility
Features and Benefits

- View 15 minute interval data in graphical or tabular format
- View load profiles and usage history for multiple sites over multiple years
- Quantify energy efficiency and conservation efforts
- Manage and analyze consumption
  - Identify normal vs abnormal usage
  - Shift your energy usage to lower-cost time periods and move dollars to your bottom line
- Increase budgeting and reporting capabilities
Customer Collaboration

Key Account Customer Meeting

March 21, 2018
E Source Overall Large Business Customer Satisfaction - 2017

- Utility1: 8.8
- Austin Energy: 8.7
- Utility3: 8.6
- Utility4: 8.5
- Utility5: 8.3
- Utility6: 8.3
- Utility7: 8.3
- Utility8: 8.2
- Utility9: 8.2
- Utility10: 8.1
- Utility11: 7.9
- Utility12: 7.1

Average: 8.2
Questions and Feedback