

Austin Energy Operations Report 4th Quarter FY2018

Electric Utility Commission

Charles Dickerson
Chief Operating Officer



November 19, 2018

© 2018 Austin Energy

Austin Energy Operational Update

Discussion Topics



Safety
Performance



Carbon Footprint



On-Site Energy
Resources
Future State



Austin Energy Operational Update

Safety



Safety

Data	FY 2017	FY 2018	
Annualized Employee Count	1708	1722	↑
Sum of Hours	3150952	3174841	↑
Sum of Near Misses	63	117	↑
Sum of Injuries	91	82	↓
Sum of Recordable Cases	45	34	↓
Sum of Total Vehicle Accidents	85	67	↓



Typical Downtown Network Electrical Vault



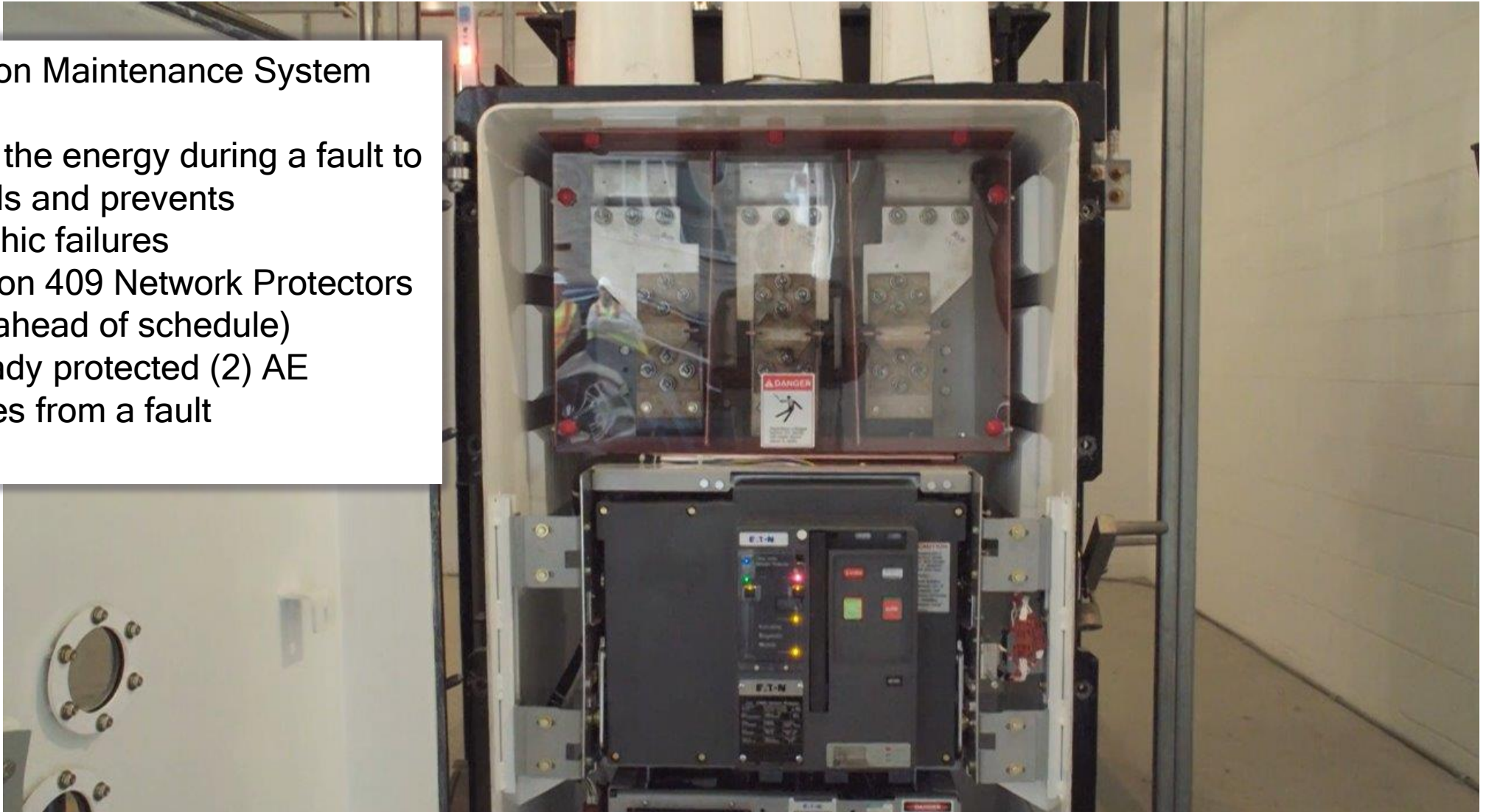
An Electrical Vault After A Fault



Grid Modernization – Making Electrical Vaults Safer

Arc Reduction Maintenance System (ARMS)

- Reduces the energy during a fault to safe levels and prevents catastrophic failures
- Installed on 409 Network Protectors (2 years ahead of schedule)
- Has already protected (2) AE employees from a fault



Austin Energy Operational Update

Performance



Commercial Availability & Start Success

Commercial Availability

Generation Resource	FY2018 Commercial Availability (%)	FY2018 Commercial Availability Target
Decker Steam Unit 1	85	97
Decker Steam Unit 2	64	97
Sand Hill Combined Cycle	83	97
Fayette Unit 1	97	97
Fayette Unit 2	92	97
South Texas Project Unit 1	100	100
South Texas Project Unit 2	91	100

Start Success

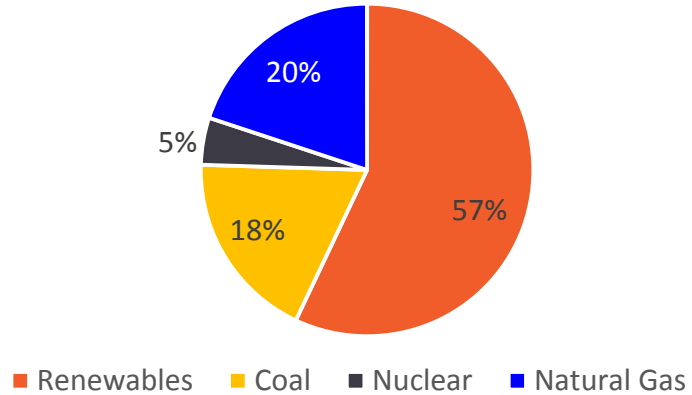
Generation Resource	FY 2018 Start Success (%)	FY 2018 Target
Decker Simple Cycle Start Success	100	99
Sand Hill Simple Cycle Start Success	99	99



* Three failed starts on Sand Hill Gas Turbines in Q3 2018.

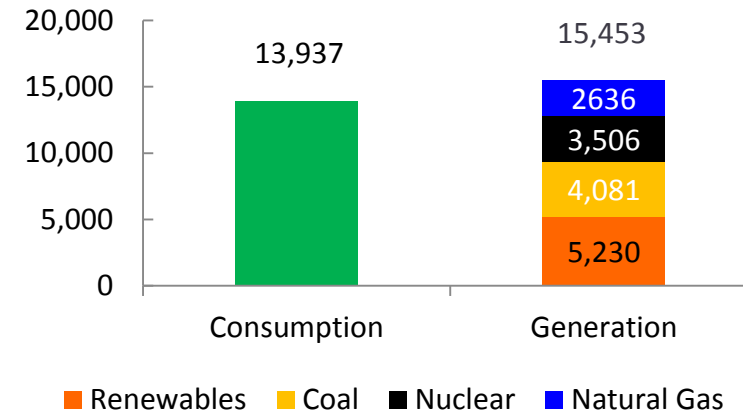
Net Generation and Load Analysis FY 2018

Power Generation Cost by Fuel Type

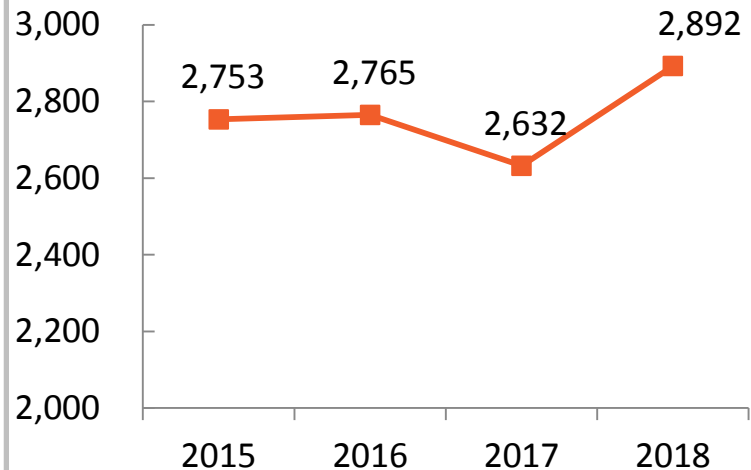


**Costs include fuel for generation, fuel transportation, renewable Power purchases agreements*

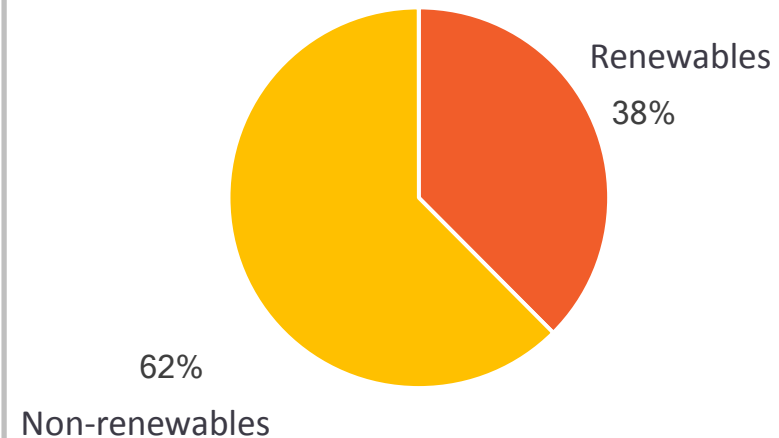
Consumption vs. Generation (GWh)



Historical Q4 System Peak Demand (MW)



Renewable Power as Percent of Consumption



System Reliability

CAIDI = Customer Average Interruption Duration Index

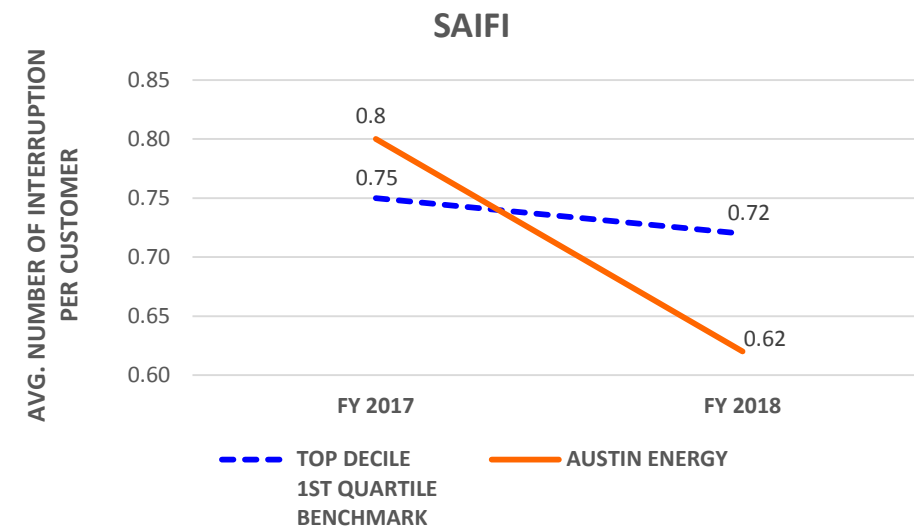
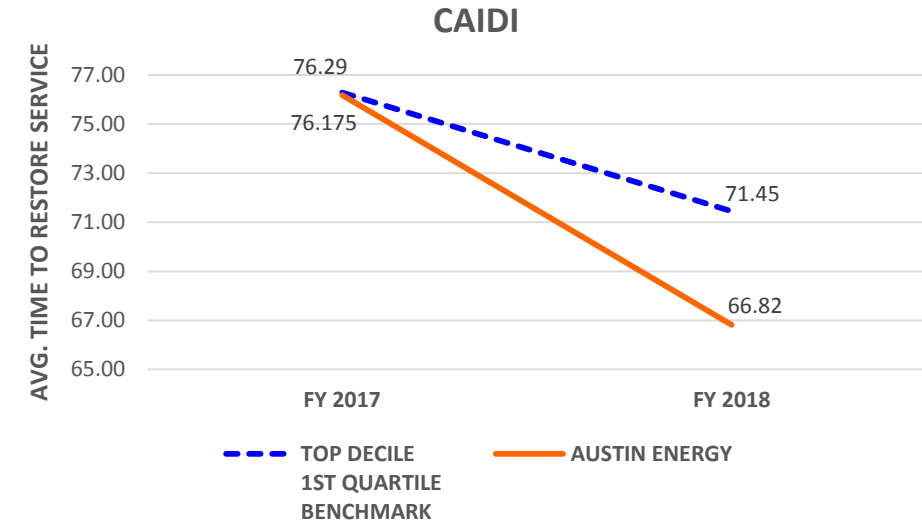
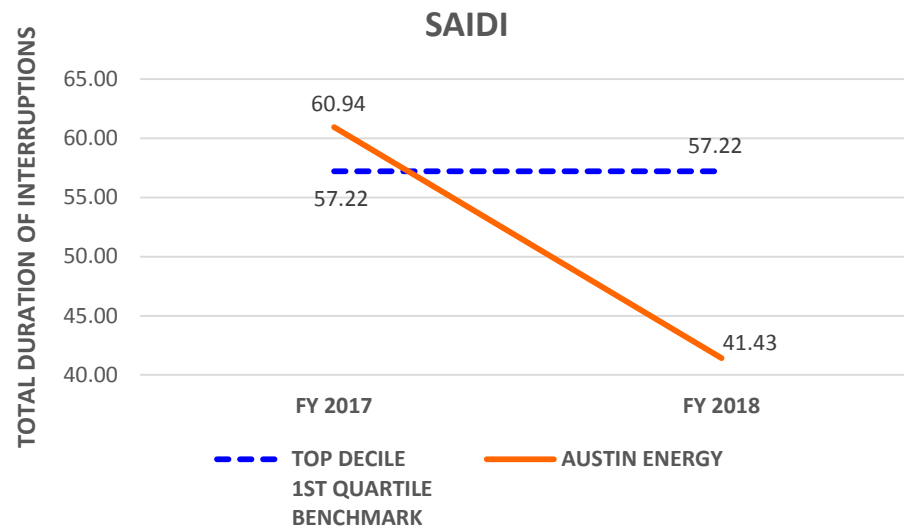
Average time to restore service.

SAIDI = System Average Interruption Duration Index

Total duration of interruptions for the average customer, during a period of time.

SAIFI = System Average Interruption Frequency Index

How often the average customer experiences a sustain interruption, over a period of time.



System Reliability Improvement Projects

Fault Location Isolation & Supply Restoration (FLISR)

- Phase 1 Completed: 194 feeders provide fault data to ADMS (Advanced Distribution Management System).
- Phase 2 Pilot Initiated: A pilot project has been initiated to install reclosers and motor operated switches on ten worst performing overhead feeders.

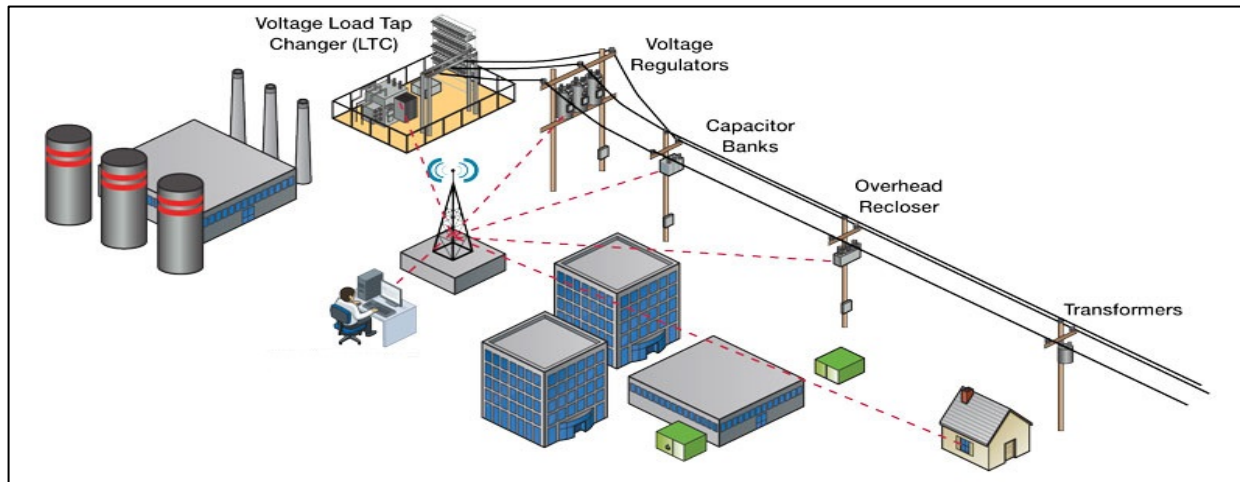


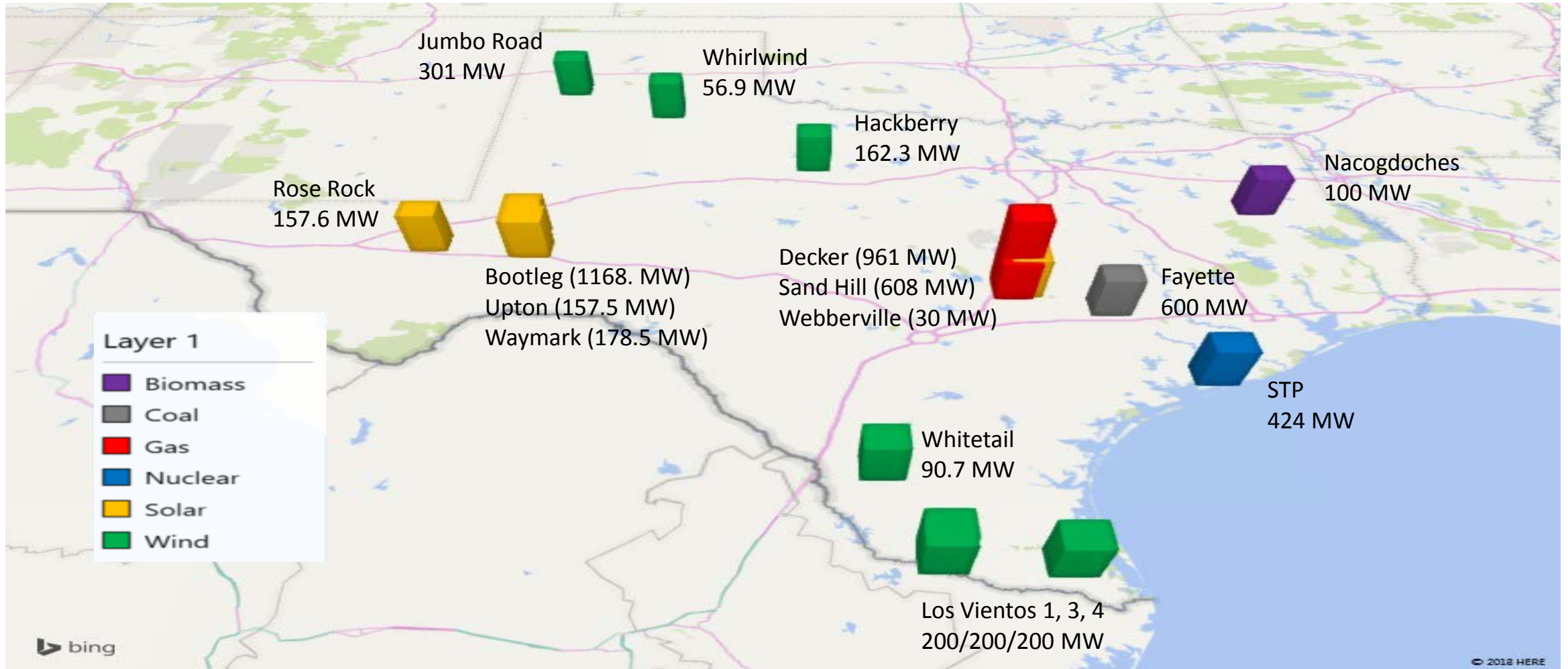
Photo courtesy of nema currents



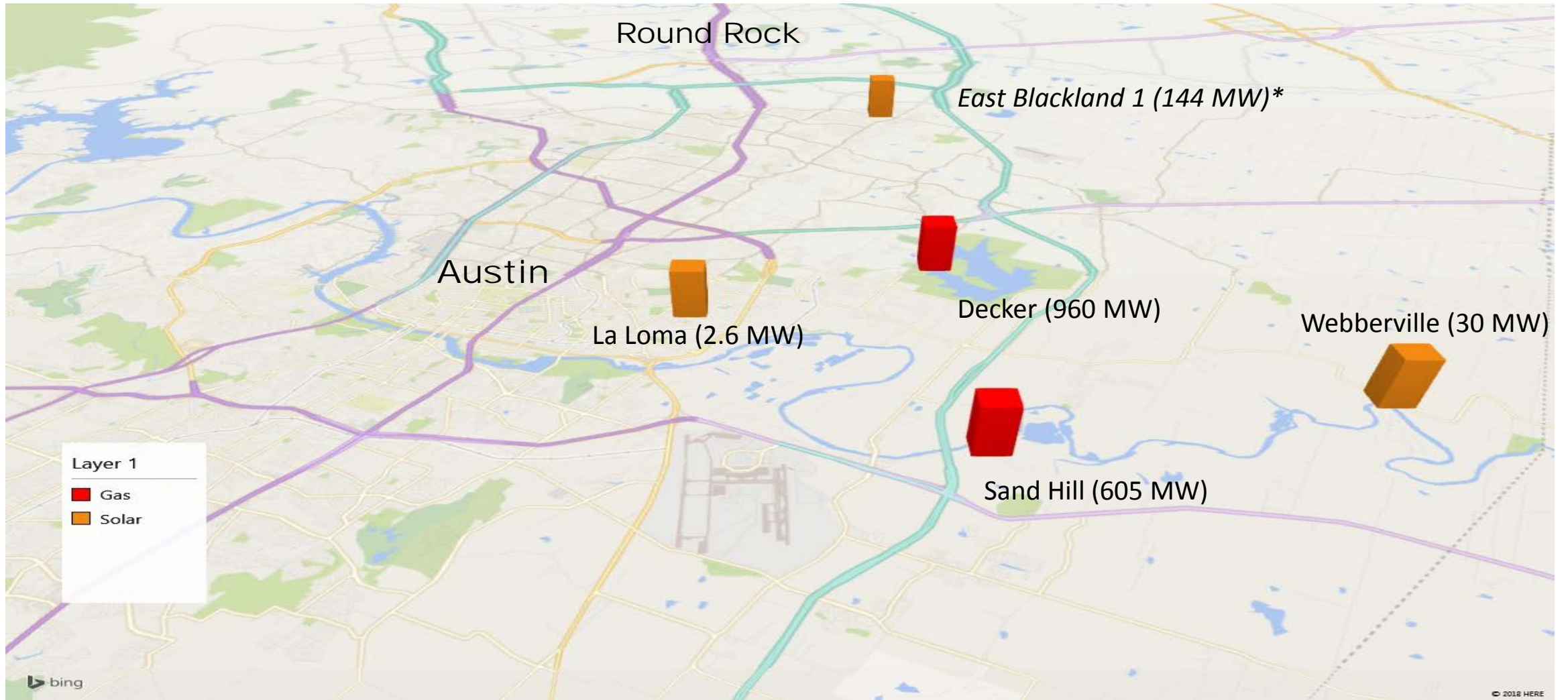
Distribution Maintenance Program

- Targeted Vegetation Management Program.
- Completed investigations on six worst performing overhead feeders (Condition Assessment).
- Contract crews to support maintenance program.
Distribution pole hardware starts Dec. 3, 2018
Distribution switchgear estimated start Feb 2019

Austin Energy Generation Assets



Local Generation Assets



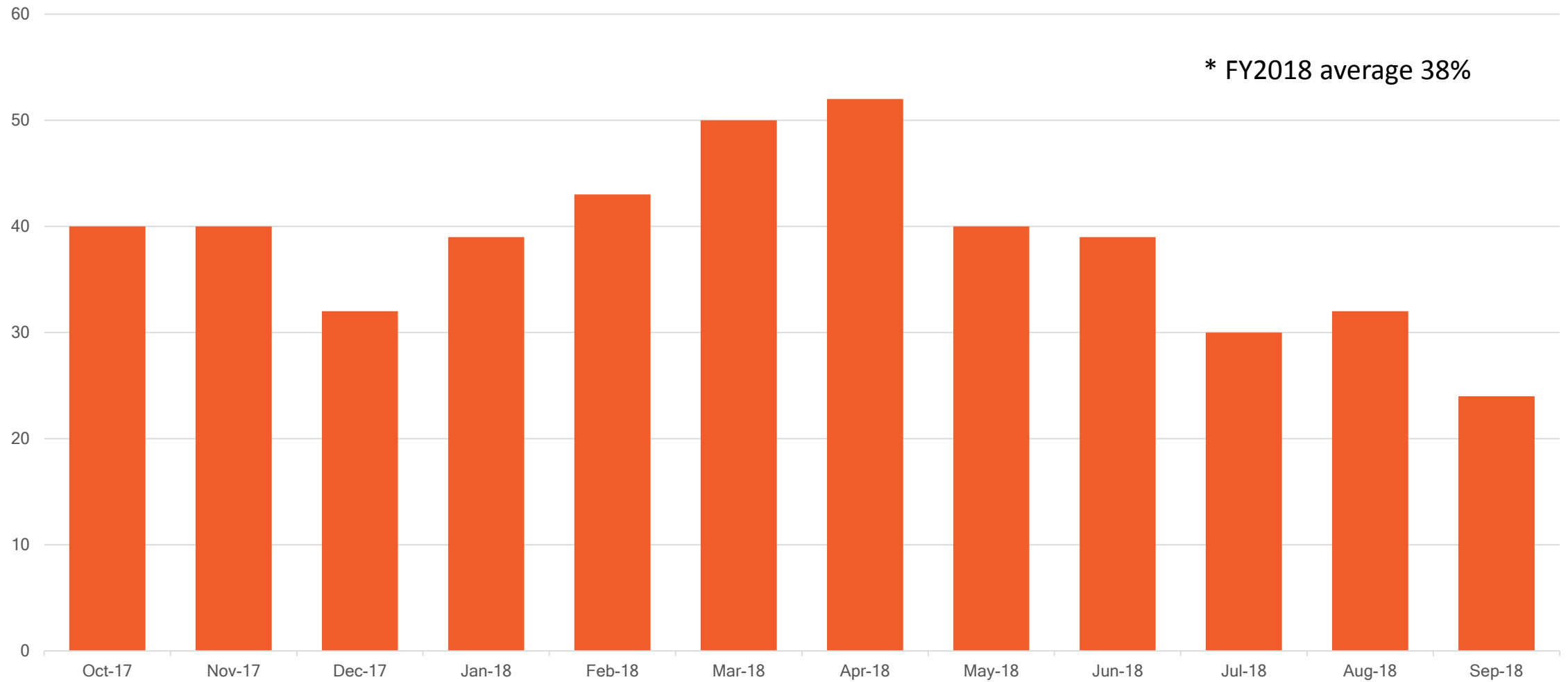
*East Blackland 1 is projected to be commercially operational in December 2020.

Austin Energy Operational Update

Carbon Footprint

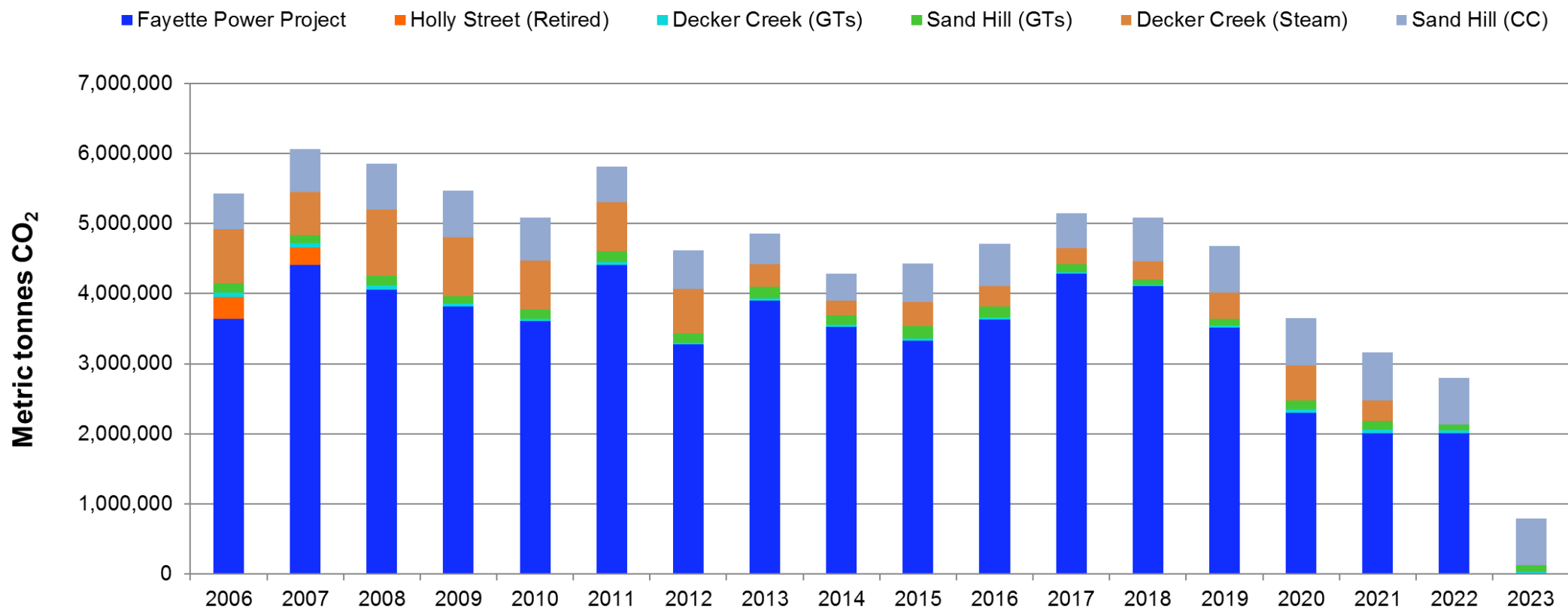


Renewable Generation as a Percentage of Load



CO₂ Emissions History and Forecast

Austin Energy Annual Power Plant CO₂ Emissions



Plant CO₂ Emissions will decrease from about 5M tons per year to .8M tons after Decker & FPP retirements slated for 2020-21 and 2023 respectively



Austin Energy Operational Update

OSER Projects



On-site Energy Resources Key Projects

District Cooling Plant #3 (Downtown, Crescent Tract)

Adding 10,000 tons of chiller capacity in the Downtown System

- Site clearing underway
- Preparing for foundations (drilled piers)
- On-target for mid-2020 completion

Downtown Chiller Capacity Addition (Design/Build)

Adding 3,000 tons of chiller capacity in the Downtown System

- Negotiating the first work package release for schematic design and procurement of long-lead equipment
- On-target for early-2020 completion



Austin Energy Operational Update

Future State



Our Focus

Our Customers (improving reliability and connectivity)

- AMI Upgrades (Residential & Commercial Meters)
- Small Cell Deployment
- Customer Reliability Assessments

Our Community (ensuring the resiliency of the system)

- Repowering Downtown
- Bluff Springs Substation
- 69 to 138kV Conversion

Environmental (reducing our carbon footprint)

- Reducing our fossil fuel
- Expanding Renewable Portfolio

Grid Modernization (innovating to a smart future)

- SHINES Deployment
(Sustainable and Holistic INtegration of Energy Storage and Solar PV)
- Advanced Metering Infrastructure
- Grid Automation
- Distributed Energy Resource Integration
- Asset Management





**Customer Driven.
Community Focused.SM**



Confidential & Proprietary ©2018 Austin Energy. All rights reserved. Austin Energy and the Austin Energy logo and combinations thereof are trademarks of Austin Energy, the electric department of the City of Austin, Texas. Other names are for informational purposes only and may be trademarks of their respective owners.