

Austin Energy Operations Report 4th Quarter FY2018

Austin Energy Utility Oversight Committee

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Austin Energy Operational Update

Discussion Topics



Safety
Performance



Carbon Footprint



On-Site Energy
Resources
Future State



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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



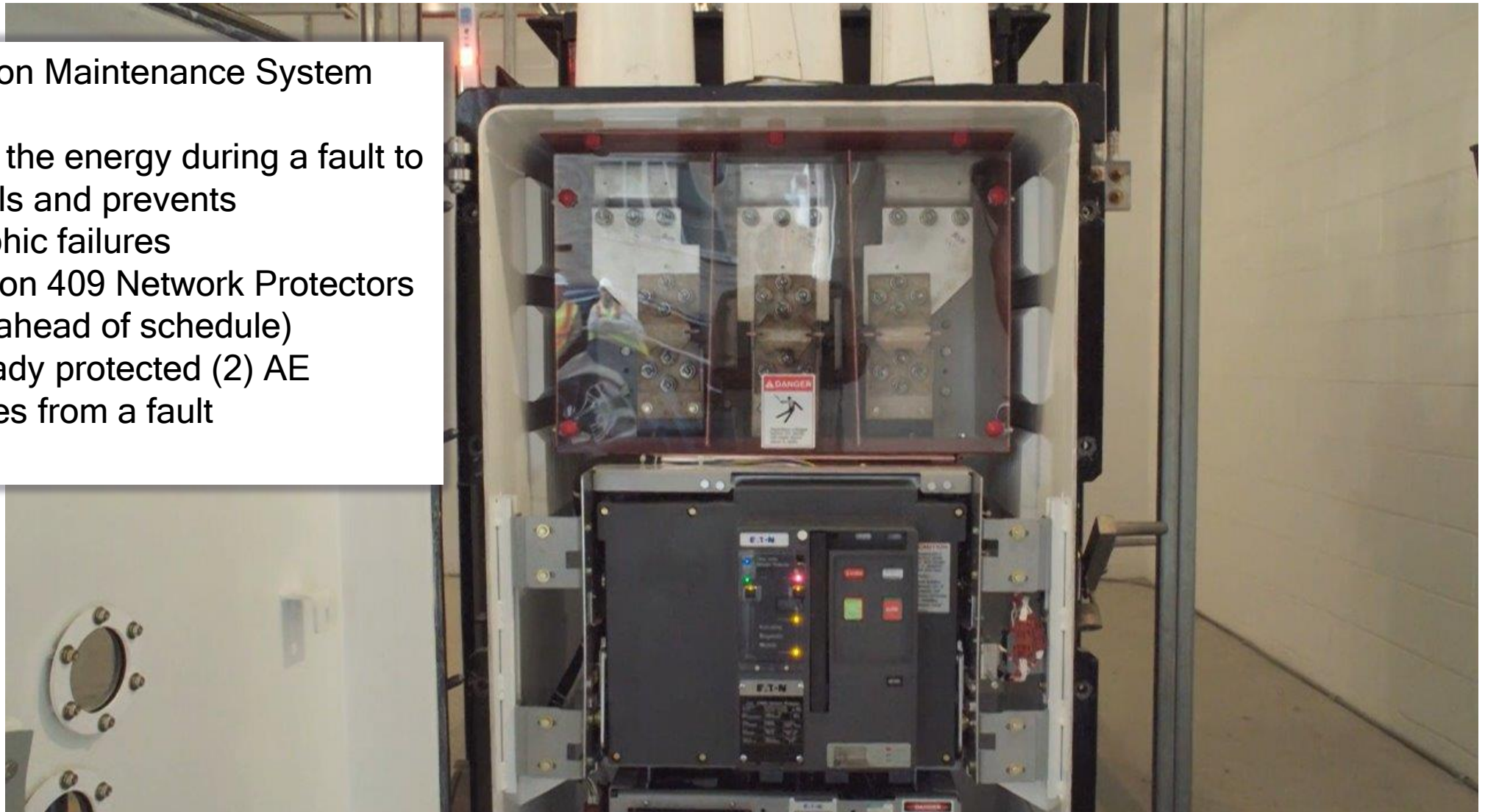
An Electrical Vault After A Fault



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



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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

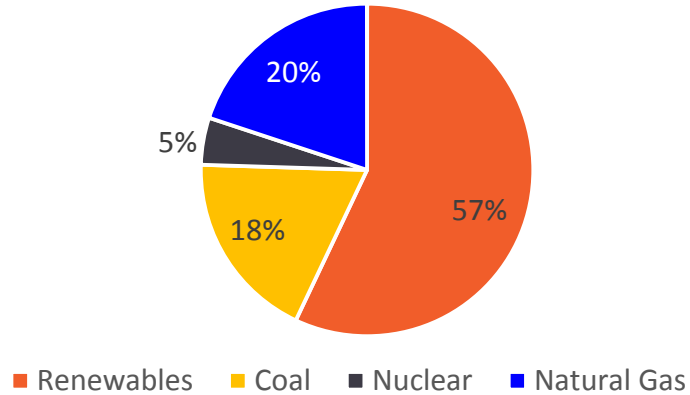
Generation Resource	FY 2018 Start Success (%)	FY 2018 Target
Decker Simple Cycle Start Success	100	99
Sand Hill Simple Cycle Start Success	99	99



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

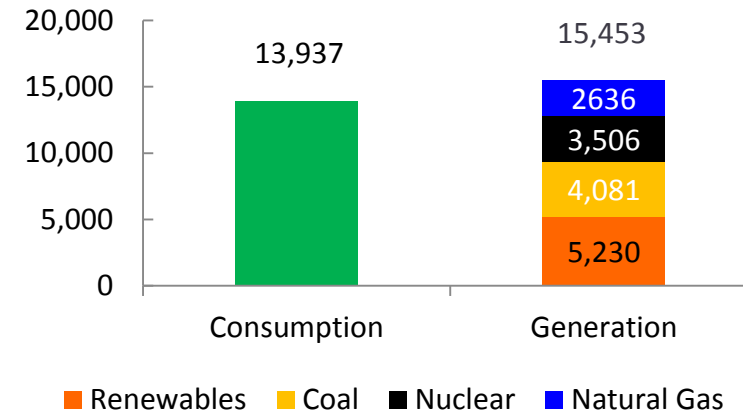
Net Generation and Load Analysis FY 2018

Power Generation Cost by Fuel Type

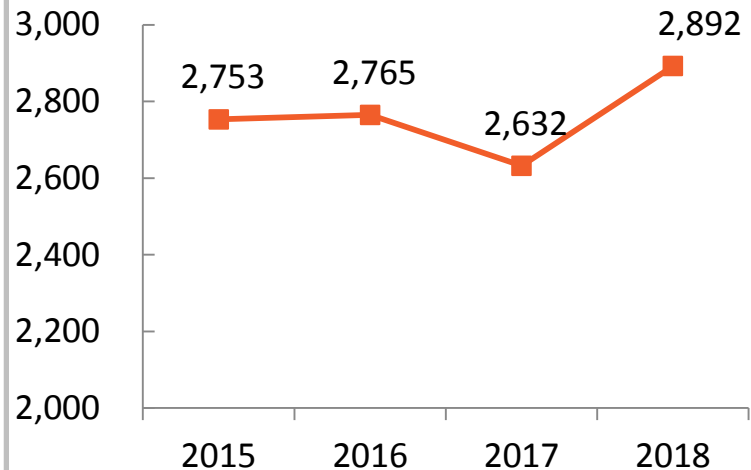


**Costs include fuel for generation, fuel transportation, renewable Power purchases agreements*

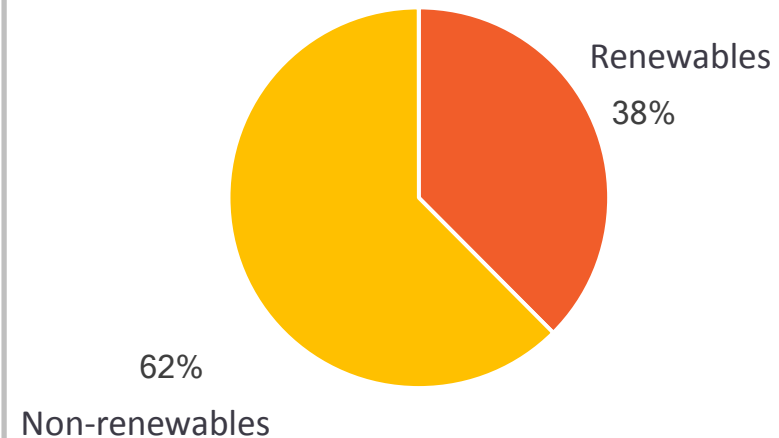
Consumption vs. Generation (GWh)



Historical Q4 System Peak Demand (MW)



Renewable Power as Percent of Consumption



System Reliability

CAIDI = Customer Average Interruption Duration Index

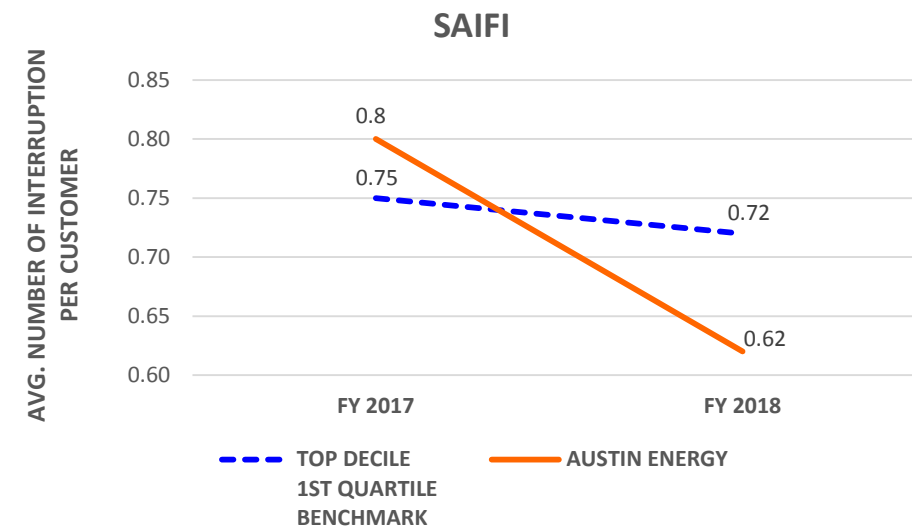
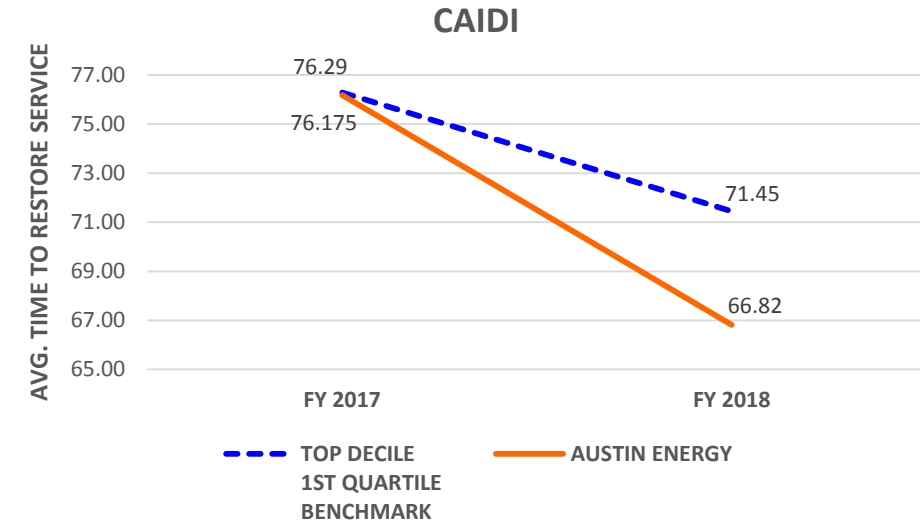
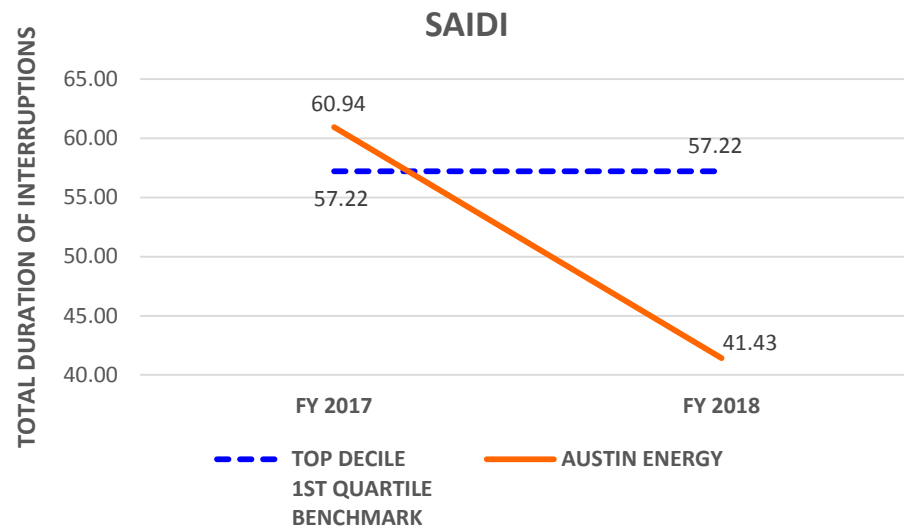
Average time to restore service.

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.

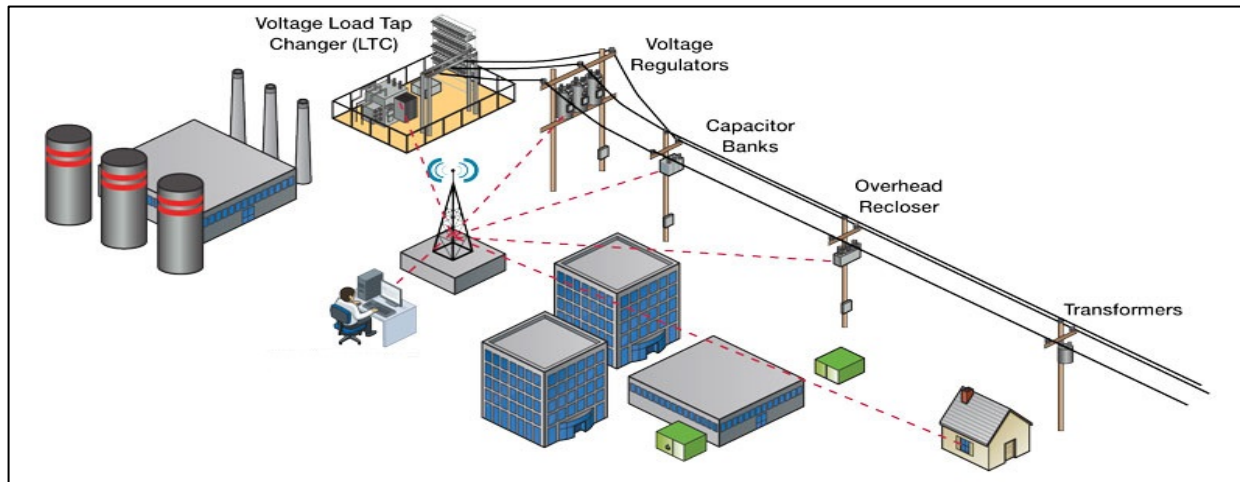


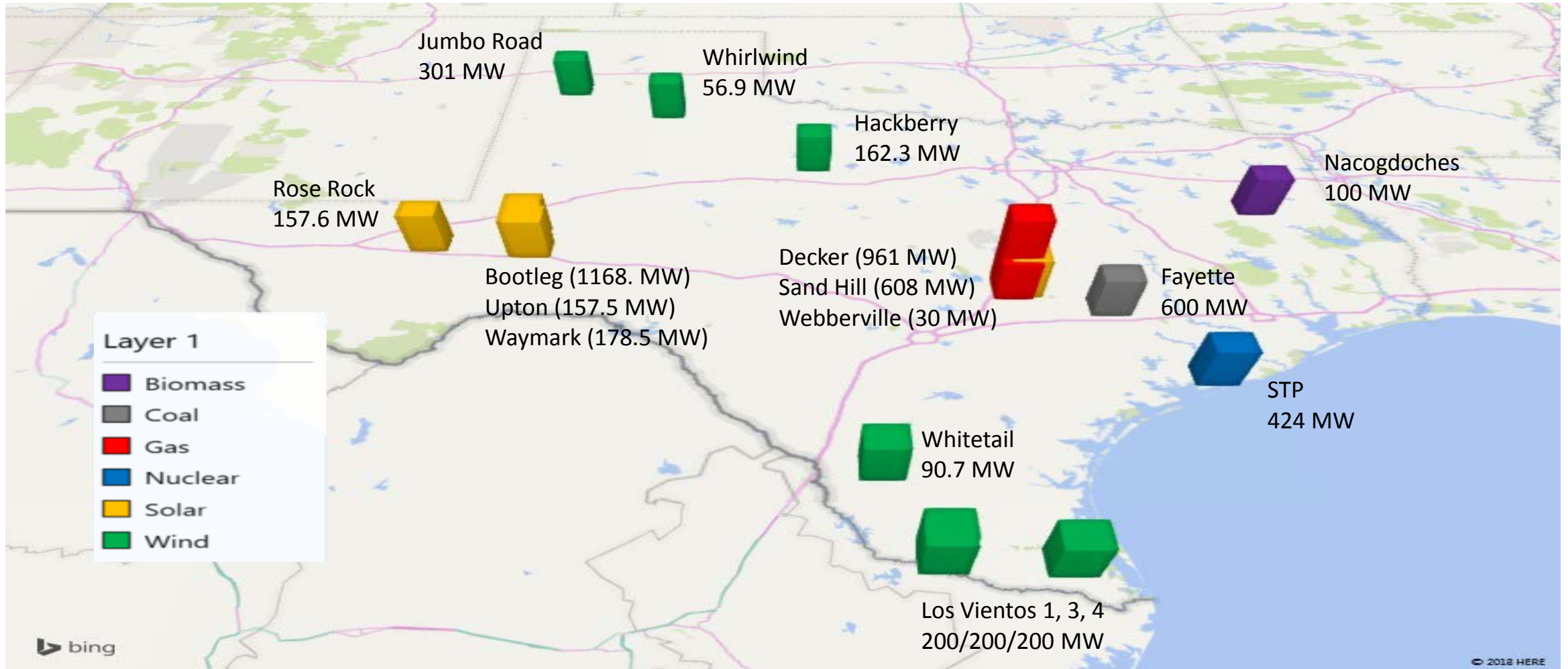
Photo courtesy of nema currents



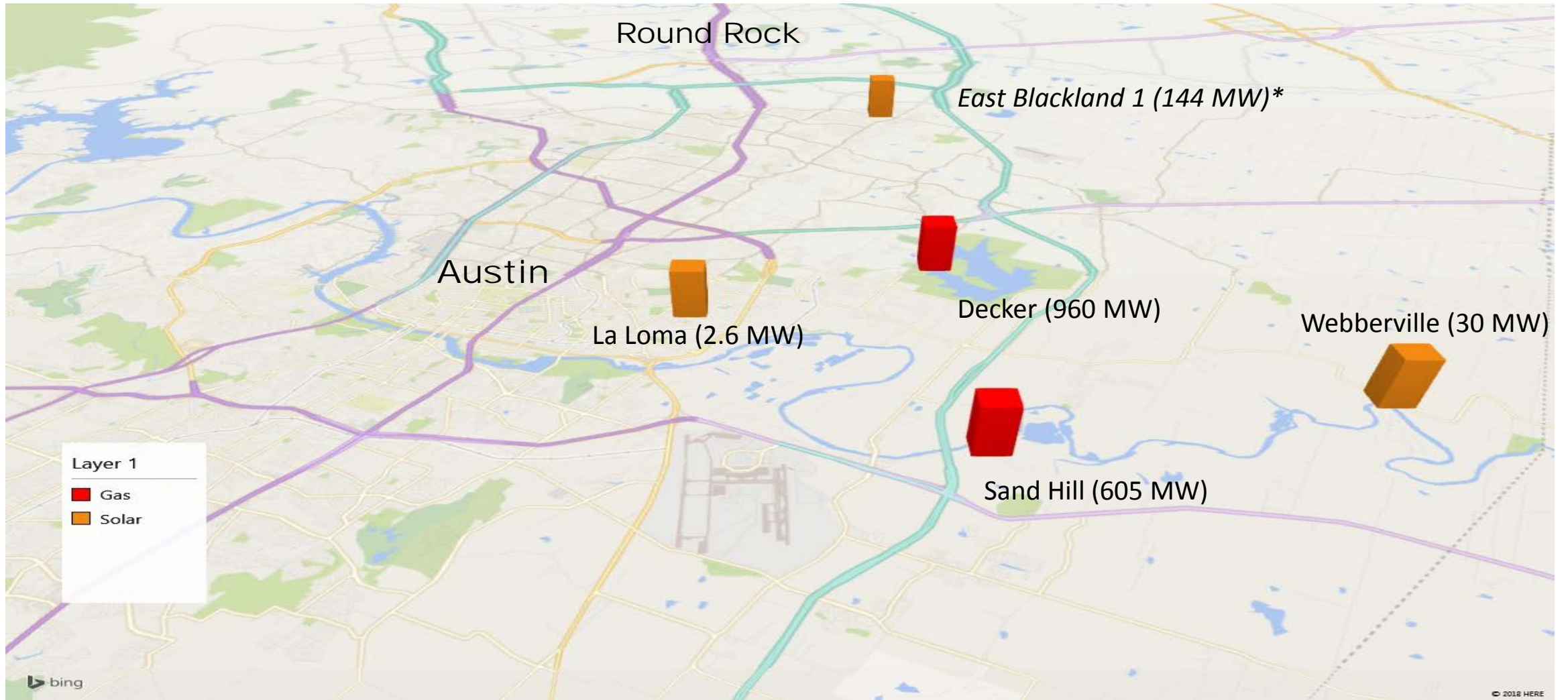
Distribution Maintenance Program

- 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



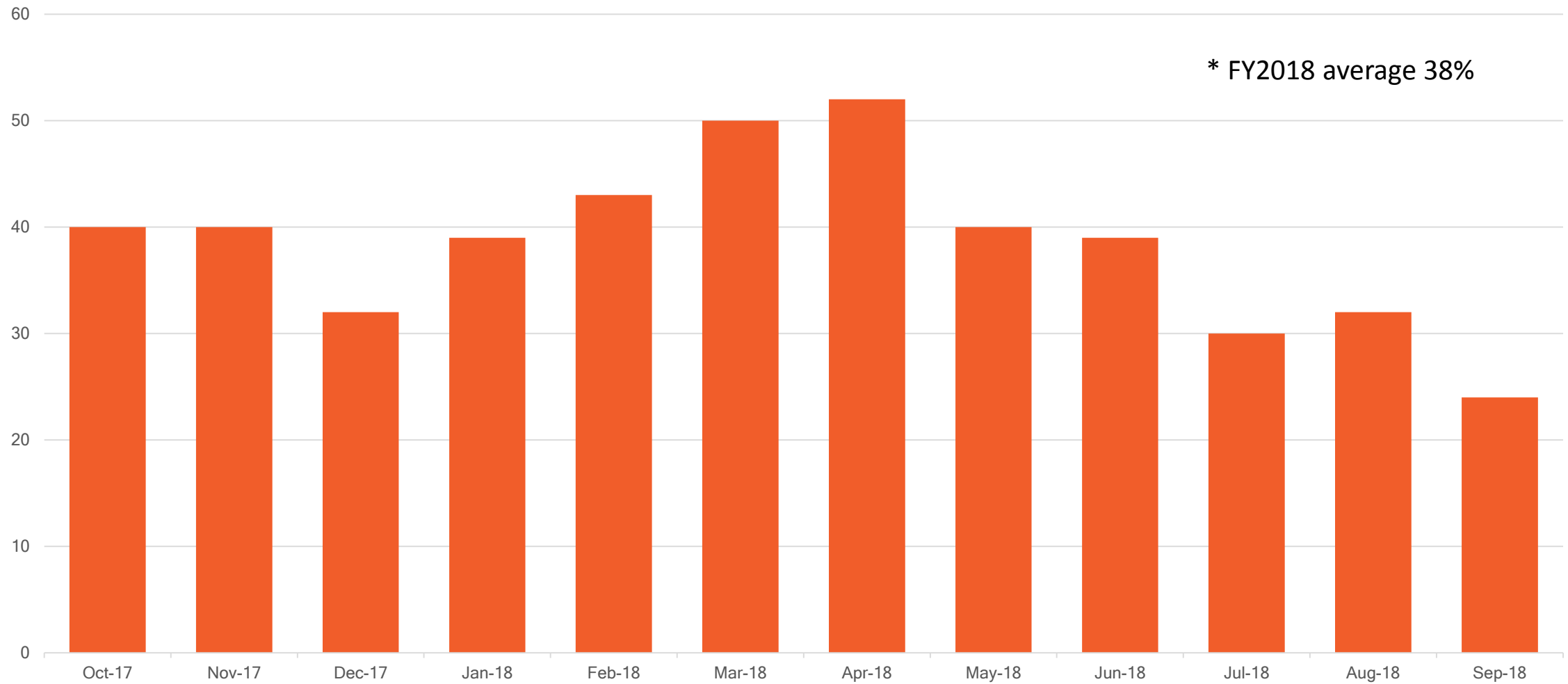
*East Blackland 1 is projected to be commercially operational in December 2020.

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Carbon Footprint

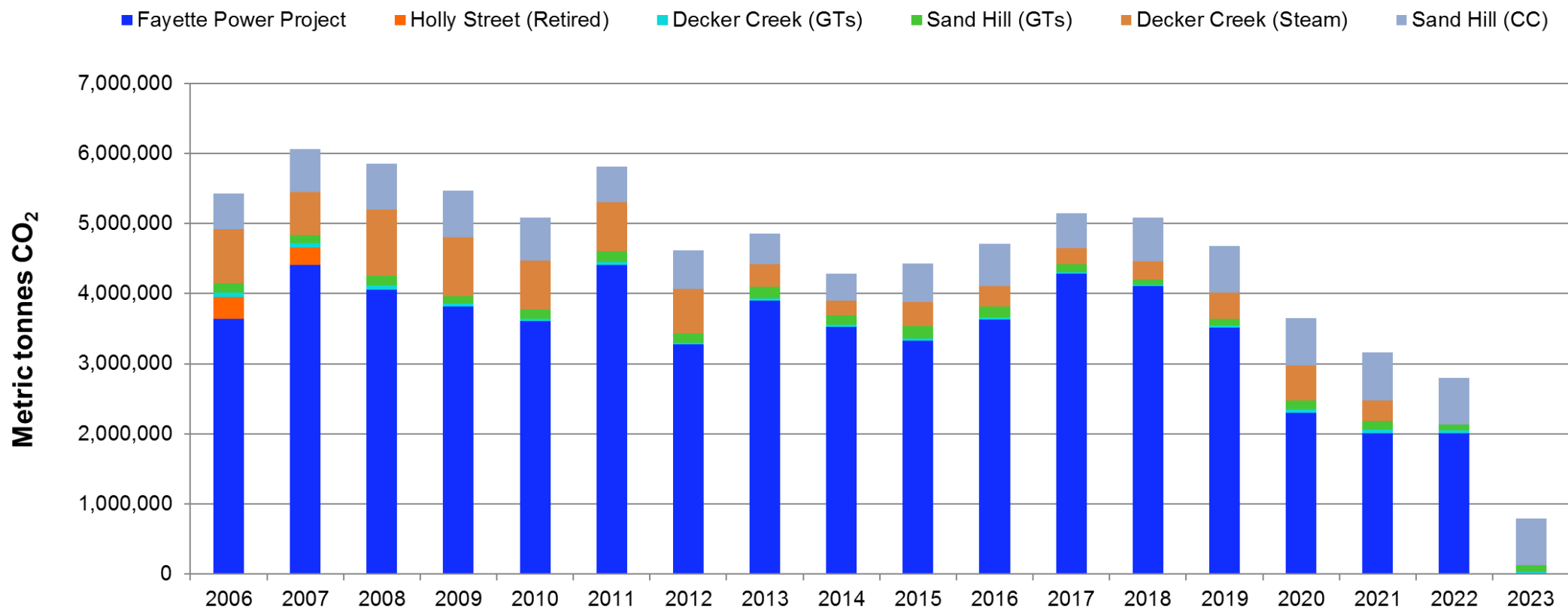


Renewable Generation as a Percentage of Load



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**



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