

# Austin Energy Response to Questions and Data Requests from the EUC Resource Planning Working Group

September 14, 2023

1. Detailed list of Austin Energy resource portfolio.

See chart below. This information is from page 3 of the FY22 Austin Energy Annual Report available at the following link: [2022 annual report.pdf \(austinenergy.com\)](https://www.austinenergy.com/2022-annual-report.pdf)

	Name	Type	Installed Capacity (MW)
1	Jumbo Road	Wind	299.7
2	Whirlwind Energy Center	Wind	59.8
3	Hackberry Wind Project	Wind	165.6
4	Karankawa	Wind	206.6
5	Whitetail	Wind	92.3
6	Gulf Wind	Wind	170.0
7	Los Vientos 2	Wind	201.6
8	Los Vientos 3	Wind	200.0
9	Los Vientos 4	Wind	200.0
10	Raymond	Wind	200.0
11	SE Aragon	Solar	180.0
12	Roserock	Solar	157.5
13	Waymark	Solar	178.5
14	East Pecos	Solar	118.5
15	Upton	Solar	157.5
16	East Blackland	Solar	144.0
17	Webberville Solar Project	Solar	30.0
18	Decker Creek Power Station	Natural Gas	200.0
19	Mueller Energy Center	Natural Gas	5.0
20	Sand Hill Energy Center	Natural Gas	595.0
21	Fayette Power Project	Coal	600.0
22	South Texas	Nuclear	430.0
23	Nacogdoches	Biomass	105.0

- a) What resource types does the City of Austin own versus procure?  
All wind and solar resources are contracted, all other sources are owned.

2. Energy demand & resource availability projections through 2035, including:  
Energy demand and resource availability projections are not public information.

- a) Summary of assumptions or variables included in the model that produced the projections.

- b) Resource availability, including energy efficiency and demand response potential, as well as projected DER integration.

Past resource availability is presented quarterly to the EUC and is available at <https://www.austintexas.gov/content/electric-utility-commission>. While projected information is not available, a potential proxy that the working group could use would be to begin with current numbers found on page 20 of the Annual Report linked in response to question 1 above.

- c) Population growth projections.

Austin Energy does not specifically track population projections, but rather system growth.

- 3. Cost or financial constraints that may influence our recommendations.

Austin Energy is unclear as to what the working group means by the general reference in this question. One source of information is Austin Energy's affordability goals as referenced in footnote 6 of the Austin Energy Resource, Generation and Climate Protection plan to 2030.

- 4. Status of further research goals from page 6 of current Resource Plan

- a) Study the technical and economic feasibility of investing in emerging technologies, including dispatchable renewable energy, distribution-level energy storage, transmission-level storage as a non-wire alternative to transmission facilities, aggregated demand response, and Vehicle-to -Grid.

This work is ongoing. Austin Energy utilizes a number of mechanisms to monitor and investigate the technical and economic feasibility of emerging technologies. These include new and ongoing pilots, commissioned studies, membership in industry trade organizations such as the Electric Power Research Institute (EPRI), ESource, TxETRA and Pecan Street and attending trade shows such as Distributech, information exchanges with other utilities and hosting vendors for demonstrations. In addition, Austin Energy consistently surveys the market for technology viability and affordability through RFPs for energy and energy services and technologies.

- b) Continue to study the costs, benefits, risks and potential rate impacts of achieving 100 -200 MW of electric storage.

Work is ongoing including issuance of RFPs and investigation into IRA (Inflation Reduction Act) funding opportunities. In addition, Austin Energy continues to work with the utility scale assets fielded under SHINES to understand current O&M best practices and value for energy storage.

- c) Assess opportunities to accelerate Plug-In Electric Vehicle (PEV)-based demand-response capabilities, including limitation of the Electric Vehicle Supply Equipment (EVSE) rebate program to smart devices that have Wi-Fi or other acceptable communication capabilities, to encourage the deployment of equipment that enables peak shaving for PEV's.

Austin Energy changed its rebate program to provide a greater incentive to Wi-Fi enabled EVSE with OCPP (Open ChargePoint Protocol) for residential and exclusively for OCPP compatible stations for commercial, and continues to examine opportunities for charge management at scale.

- d) Upon completion of its automated meter infrastructure rollout, Austin Energy will assess how to monitor the demand response achieved by smaller consumers and reward responsive consumers.

Austin Energy continues to look at options for how to best manage DR for smaller customers and is looking at approaches that use AMI data sources as well as other data sources such as on-site data monitors. We currently have a Behavioral Demand Response Pilot program through Oracle OPower that uses meter/billing data to measure the energy savings impact of the messaging program. Once we have closed out the season, we will discuss leveraging that same analysis tool for other programs. We have also discussed the possibility of moving some of our regular DR programs to include a performance-based incentive rather than a flat or annual incentive, but our current vendor list does not offer that service. It is something we can/will explore in the next round of contracts. Something to be aware of is that many utilities that do have these types of incentives expose their customers to the downside of wholesale market fluctuations.

- e) Explore how to utilize new technologies, including energy storage systems and connected appliances, to increase the amount of Demand Response that can be used to control peak demand.

Both the Customer Energy Solutions and Energy Market Operations groups continue to look into and leverage new technology options in this space. Specific areas reviewed to date include pool pumps, water heaters, thermostats, batteries, and other emerging tech. Looking into the future, AE is looking into a more integrated approach to resource management such as a DERMS (Distributed Energy Resource Management System) – which is a system wide aggregator software solution that can provide sophisticated monitoring and control of a more diverse portfolio of distributed energy resources. With our current systems, we are limited in the number of new types of technology we can integrate due to the lack of ability to aggregate.

- f) Continue active participation in the development and deployment of smart-grid technologies, and continue with an active and leadership role in the Pecan Street Project and other partnerships.

Austin Energy continues to engage with Pecan Street in the pursuit of new projects and invest in its membership with EPRI. AE also regularly hosts visits and calls from companies with smart grid product offerings to explore the state of the market and look for new opportunities.

- g) Take the lead with other city departments, especially Austin Water, to maximize DSM and load shifting opportunities within City of Austin operations.

Austin Energy has worked with Austin Water by helping to pilot new approaches to water management for customers through the Green Building program as well as looking to reduce load through measures such as variable frequency drives for pump motors and resiliency measures for critical infrastructure. Austin Energy has worked extensively with AISD on demand and energy savings measures as well. Austin Water, PARD, Building Services, COA PDC and Austin Bergstrom International Airport all are participants in Austin Energy's DR program. New construction that can be served by Austin Energy's District Energy plants realize the benefits of load shifting of their air conditioning load.

- h) Austin Energy will continue to support utility industry organizations working to develop best practices to prevent methane and hydrocarbon leaks in natural gas fields and in pipelines.

From 2017-2022 Austin Energy participated in the Natural Gas Supply Collaborative (NGSC), a voluntary collaborative of power sector purchasers of natural gas. The focus of the NGSC was to promote environmentally responsible practices in the natural gas supply chain, working directly with natural gas suppliers and industry groups. Key activities and achievements of the collaborative included 1) researching and promoting new approaches to measurement and quantification of greenhouse gas emissions from the natural gas supply chain, as well as mechanisms for tracking natural gas attributes; 2) evaluating and benchmarking the voluntary disclosures of natural gas producers relative to environmental and social performance indicators, and 3) assembling key stakeholders and amplifying the perspectives of large natural gas purchasers to influence market development for environmentally preferred natural gas products.

Austin Energy ended participation in NGSC after 2022, finding that the collaborative had been successful in demonstrating the interest of large natural gas purchasers in creating a market for environmentally responsible gas. Austin Energy will continue to look for ways to advocate

for more responsible natural gas supply chain practices as long as we continue to purchase and use natural gas for operations.

5. How often does AE run Fayette (capacity factor)? Does AE expect Fayette to run more in the future during high price periods due to rising temperature extremes?

Below is the capacity factor for Fayette since Austin Energy implemented REACH. Projections are not public information.

Capacity Factor		
	FPP 1	FPP 2
2022	40%	57%
2023 (Jan-Aug)	31%	32%

6. Who tracks progress on the AE Resource, Generation, and Climate Protection plan? (GM, VPs, project managers, program managers, etc.)

Goals laid out in the Resource, Generation and Climate Protection Plan are tracked across the utility. Austin Energy Strategic Objectives and the Austin Energy Strategic Plan align with these goals with personnel from all levels of the utility including the General Manager, Executive Team, managers and individual contributors vested in meeting those objectives and tracking progress through metrics and performance reviews. Progress is reported out annually through the Austin Energy Annual Report.

7. Currently, how does Austin Energy meet its ERCOT ancillary service obligations, including regulation up and down, responsive reserves, including both “regular” frequency response and fast frequency response, blackstart services, emergency response services, non-spin, and ECRS?

Austin Energy strives to meet its ancillary service obligations in an optimal way either through purchasing through the market or self -provide if the resources are available to provide those services. ERCOT secures black start services through an auction not an obligation mechanism. Austin Energy participates in the black start auction by bidding in its gas turbines that are black start capable. Austin Energy relies heavily on the market for ERS services for its share.

- a) Specifically please provide a breakdown of which resources – both generation and demand-side resources - are qualified by ERCOT to provide those services and at what capacity. (An average of that capacity is fine).

FPP and Sand Hill Combined Cycle unit are qualified to provide Regulation, Responsive and Non-Spin Services. They are also capable of providing a new ancillary service, ERCOT Contingency Reserve Service (ECRS) and we are currently working through the qualification process. Sand Hill Gas turbines (1-4) are qualified to provide Responsive and Non-Spin services.

Sand Hill GTs 6 & 7 are qualified to provide Responsive, Non-Spin and ECRS.

Decker GTs are currently qualified to provide Non-Spin and are working to qualify Decker GT2 for ECRS.

At this time, Austin Energy does not have any demand side resources that are capable of providing any of the ancillary services.

- b) In addition, please indicate whether Austin Energy has the capacity to provide other ancillary services with resources it is not currently using for that purpose, what those resources are and how much capacity they could provide.

Austin Energy uses owned assets for the ancillary services that they are capable and qualified to provide.

- c) While the details are still being worked out, ERCOT is expected to begin a new ancillary service in late 2024 known as DRRS. Assuming that the service is similar to what has been proposed by ERCOT, which resources owned or contracted by Austin Energy could provide this service?

ERCOT is still working on the details and should provide final recommendation to PUCT in Jan 2024. As it stands now, it appears that Austin Energy resources that are capable of providing off-line Non-Spin will be eligible to provide this service.

8. Please provide any estimates or reports available that describe the costs, economic benefits, reliability benefits, and safety benefits of insulating transmission and distribution lines.

Austin Energy doesn't have this information.

9. Please provide any statistics or estimates available of the number of outages and safety incidents per year that could be prevented by this strategy used on the Austin Energy system over the past 5 years.

Austin Energy doesn't have this information.

10. Links to ERCOT data showing hourly production for each AE owned generator or contracted off take

<https://www.ercot.com/mp/data-products/data-product-details?id=NP3-965-ER>

11. For renewable projects - The 8760 expected production level at P90 and P50.

We're not entirely what this question is asking for, but Austin Energy does not forecast production of renewable projects. We use ERCOT forecasts.

12. Projected capacity factors for each generation unit (% of time it can run in a 12 month period).

Projections are not public information.

13. A 10 year history of AE system max demand, average demand and average load factor by month.  
Austin Energy doesn't track this information in the manner requested.
14. Most recent infrastructure assessment (with details on congestion and/or curtailment if available)  
Please refer to the EUC presentation on the Transmission Study for the publicly available information on this topic.
15. Please provide all studies and cost estimates for improved transmission lines in the Austin Energy service area in the last 5 years.  
This information is not public.
16. Which transmission lines are creating the bottlenecks, and what actions are being taken to upgrade these lines and what are the timelines for that work.  
This information is not public. For publicly available information, please refer to the presentation to EUC on the Transmission Study. Note, congestion is a dynamic aspect of the grid and market. It is highly dependent on how the system is configured and what assets (generation and transmission) are in service (that is, not under planned or unplanned outage). Congestion is often temporary in nature. Many transmission lines that experience congestion and create bottlenecks for Austin Energy are not owned by AE.
17. Is energy storage being deployed at the AE generation plants that are behind transmission constraints to reduce the impacts? If so, where and how much?  
AE has not deployed any storage for this purpose to date. Note the characteristics of congestion highlighted in question 16.
18. For the transmission upgrades recommended in the recent transmission study, please provide the approximate time needed to complete each of those upgrades, including procurement, any ERCOT authorizations, and construction.  
This information is not public. Please refer to the EUC presentation on the Transmission Study.