

# **EUC Resource Planning Working Group Recommendations for the *“Austin Energy Resource, Generation and Climate Protection Plan to 2035”***

Clean and Carbon-Free Energy for an Affordable and Livable  
Austin

Presentation to the Resource Management Commission  
March 19, 2024

Alison Silverstein & Paul Robbins, RMC members

# AE initial resource generation plan update process

---

- Technology readiness assessment (readiness, affordability, local use to reduce congestion, high availability, dispatchability)
- Scenario modeling (including risks re extreme weather, local congestion and regulatory changes)
- Balance goals of environmental sustainability, reliability, affordability & cost stability, with carbon-free mix by 2035
- Initial recommendations

Looked at a variety of supply and demand technologies plus new and upgraded transmission

- Local Solar **LSOL**
- Distributed Storage **DST**
- Carbon Free Generation **HCCC**
- Direct Air Capture **DAC**
- Long Duration Storage **LDST**
- Local Long Duration Storage **LLDST**
- Demand Side Management **DSM**

# AE resource generation plan “key take-aways”

---

- Only one technology satisfies all criteria – hydrogen-capable natural gas-fired generation
- No one technology can solve all our resource needs
- All technologies that meet the readiness criteria (in green) were included in the scenario modeling
- Only portfolios w/o high %s of solar or storage overcome extreme weather risk
- Only portfolios incl hydrogen-capable combined cycle meet affordability goal and enable more renewables
- Only portfolios w/ local supply overcome local congestion problems
- Do more demand response, EE, DER (mostly Evs?), transmission
- Move away from MW to GHG reduction to improve overall impact and effectiveness.

# EUC-RMC Working Group recommends AE meet demand w/ renewables, demand response, energy efficiency, existing nuclear & batteries

Year	Energy Efficiency	Demand Response	Renewable Energy	Local Solar	Storage	Coal & Nuclear	Gas Generation	Greenhouse Gas Reduction
2027	10% Winter & 18% Summer Peak Reduction	75 MW	65%	350 MW, with at least 150 MW behind-the-meter	150 MW, with at least 100 MW located in the Austin Energy load zone	Retire Fayette ASAP & use REACH to limit use as much as allowed; No additional Nuclear	Reduce emissions by 33% using REACH. No new gas generation	between 7.6 and 84.5% reduction, depending on if Fayette is retired
2030	15% Winter & 23% Summer Peak Reduction	200 MW	76%	500 MW, with at least 200 MW behind-the-mete	400 MW, with at least 200 MW located in the Austin Energy load zone	No additional Nuclear	Reduce emissions by 66% using REACH. No new gas generation	92.1% reduction, assuming Fayette is retired
2035	20% Winter & 28% Summer Peak Reduction	300 MW	80%	700 MW, with at least 250 MW behind-the-meter	500 MW, with at least 300 MW located in the AE load zone - at least 100 MW of long-duration storage	No additional Nuclear	Gas plants retire. No new gas generation	100% reduction

# WG Recommendation: Prioritize Energy Efficiency & Demand Response

---

- Proposed EE goals will reduce future AE energy use and peak and net-peak demand and increase flexibility.
- Slightly expand AE summer programs and greatly expand winter programs
- Prioritize low-income customer access
- Continue to make sure new buildings are efficient and specifically move toward heat pump water heaters and heat pump HVAC in all-electric buildings
- Demand response (DR) allows customers to manually or automatically adjust their electricity usage, shifting electricity use from times when demand or prices are high to times when demand or prices are lower.
- DR = flexible response to manage peak summer and winter demand and solar ramping and grid emergency periods
- Offer DR compensation & tools including smart thermostats, pool pump & appliance controls, time-managed electric vehicle charging and customer-sited batteries
- Limit use of distributed natural gas generators in the Resilience as a Service (RAAS) program to high price periods

# WG Recommendations:

## Close Fayette coal plant & gas plants

- Close Fayette plant asap
- Run plant at the lowest level allowable by contract with LCRA using REACH (150 MW) until plant closure
- Stop investing in capital improvements to the plant.
- Spread cost of Fayette closure over 25 years.
- Use Fayette and other AE sites to host batteries & replacement power
- AE's Decker and Sandhill gas plants generate energy & revenue, air pollution and GHG emissions
- Reduce use of the plants and GHG emissions over time, with total phase-out by 2035
- Study how to replace gas plant role in grid reliability (dispatchable response, reactive power and voltage support) with clean technologies

# WG Recommendation: Expand renewable energy & local solar

---

- Austin Energy now meeting 50% of its load through contracted renewable energy, mainly wind and solar PPAs
- Goals (reaching 65% by 2027, 76% by 2030 and 80% by 2035) will require 1,300+ additional solar (local or utility-scale), wind or other resources
- Pair new renewable energy resources with batteries to improve value and dispatchability.
- Study & pilot dispatchable geothermal energy to meet part of the long-term goal
- Local solar helps lower summer peak use without air pollution or carbon emissions
- Expand local solar deployment, including behind-the-meter installations – need 700 MW (at least 250 MW BTM) by 2035
- Quickly implement new solar programs incl Standard Offer for Distributed Solar (now under development) w/o capacity cap.
- Expand Community Solar program and solar options for commercial customers

# WG Recommendation: Use storage as preferred flexible resource

---

- There is already more than 5,000 MW of battery storage operating in ERCOT and more than 11,000 MWs expected by end of 2024
- Electric storage goals -- 500 MW by 2035, incl at least 100 MW of long-duration storage and 50 MW of thermal storage
- Install long-duration storage sooner rather than later
- At least half the storage should be located in the AE load zone



Eolian LP's Madero & Ignacio 200 MW energy storage project



# WG Recommendations: Electric Vehicles & DERMS

---

- Allow customer and third-party distributed resources (PV, batteries, demand response) to be aggregated and provide energy and ancillary services for compensation.
- Invest in Distributed Energy Resource Management Systems as needed.
- Use EV programs to create flexible loads with intelligent EV charging (aka “V1G”), one-way flexible vehicle charging, backup power to homes (V2H) & businesses (V2B), and distributed storage for grid (V2G).
- Expedite development of EV infrastructure for the local school districts and CapMetro electric bus fleets for future backup power.



# WG Recommendation: No Hydrogen combustion

---

AE proposes to build new gas plants that can use drop-in hydrogen fuel, BUT:

- Central TX has no hydrogen infrastructure
- All credible information indicates green hydrogen will remain expensive because of the amount of energy it takes to create H. (70% loss)
- Combustion of hydrogen or gas + hydrogen would exacerbate local NO<sub>x</sub> and ozone problems
- Save hydrogen for industrial processes.

Austin Energy models with hydrogen INCREASE carbon dioxide and NO<sub>x</sub> emissions over scenarios without hydrogen.

Austin Energy should investigate other uses of hydrogen such as fuel cells (which don't pollute) as an emergency storage component, not as a baseload resource and not using combustion.

# WG Recommendations: More Studies

---

- **Clean, Renewable, Flexible Energy:** assess new technologies that are carbon-free and flexible, including fuel cells, medium-duration and long-duration electric storage, and geothermal energy.
- **Winter Peak Load Reduction:** identify ways reduce winter peak demand using energy efficiency, peak shifting & demand response.
- **Electrification:** study different electrification scenarios out to 2050 and evaluate needed transmission and distribution system reinforcements.
- **Transmission:** additional study of transmission and renewable energy imports, including a deep analysis of how demand-side measures can modify future Austin Energy load and energy import needs and how grid-enhancing technologies can be used to make Austin's transmission and local assets more capacity-efficient.
- **Reactive Power:** study current and anticipated voltage challenges and reactive power requirements and develop a plan to address and resolve those challenges using: a) demand-side measures; b) distributed solar and storage with advanced inverters; c) transmission options; and d) generation solutions.
- **Affordability Goal:** -- too restrictive, modify it.

# WG Recommendation: Future Updates

---

- Updates to this plan should occur at least every 3 years to keep pace with technological and electric market changes.
- Austin Energy should commit to transparently soliciting and integrating feedback from robust community engagement throughout the entire update process.
- The next update should be informed by WG-recommended studies.
- In addition to the 10-year operational plan, Austin Energy should include a longer 25-year outlook.

# **BACKGROUND SLIDES**

# EUC Resource Planning Working Group Members

---

EUC WG consisted of 16 Members: 5 from EUC, 4 from RMC and 7 additional

Cyrus Reed, Chair	Electric Utility Commission
Kaiba White, Vice chair	Electric Utility Commission
Dave Tuttle	Electric Utility Commission
Randy Chapman	Electric Utility Commission
Mick Long	Electric Utility Commission
Alison Silverstein	Resource Management Commission
Paul Robbins	Resource Management Commission
GeNell Gary	Resource Management Commission
Melissa Caragati	Resource Management Commission

Christian Fogerty	Sunrise Austin
Micalah Spennath	residential customer
Autumn Gallardo	Foundation Communities
Al Braden	residential customer
Rodrigo Leal	Joint Sustainability Committee
Jim Stanway	Samsung
Marian Sanchez	PODER

# Electric Utility Commission (EUC) Work Group process

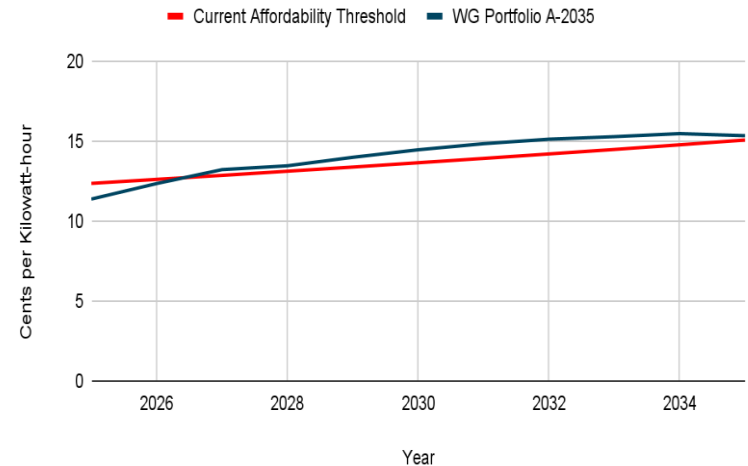
---

- 16-member EUC work group incl 4 members of RMC (Robbins, Caragati, GeNell, Silverstein)
- WG analyzed 11 Austin Energy scenarios, 4 additional scenarios, separate presentations from associations and vendors, and made many requests for information from Austin Energy
- Presentations, resources, meeting notes and final recommendations and individual statements are posted here:  
<https://austineucresourceplanningwg.org/>
- WG met 14 times between September 2023 to January 2024 and released report & recommendations on February 1st
- [Final product](#) released on Feb 1, 2024, endorsed by 14 of 16 members.

# WG Recommendation: Adjust Affordability Goal

- Affordability goal was applied on a rigid annual basis (contrary to AE approach in rate cases) to modeled portfolios
- Current affordability requirement, first adopted by Austin City Council over a decade ago, is too restrictive because it is based on rates instead of bills, and doesn't account for the cost-saving benefits of energy efficiency.
- Because customers pay bills, not rates, and Austin Energy's average residential consumption is significantly lower than the state average, the Austin Energy affordability goal should reflect the bill-reduction benefits of energy efficiency investments.
- The WG recommends this goal: "a) control all-in (base, fuel, riders, etc.) bill average increases to residential, commercial and industrial customers to 2% or less per year; and b) maintain AE's current all-in competitive bills for the residential class, and to the extent measurable, the commercial and industrial classes, in the lower 50% of all Texas' all-in electric bills."

Example: Working Group's Scenario A-2035 Was Coded "Unaffordable" Based on 2% Annual Rate Increase Criteria





# Austin Climate Goals

---

- The 2030 Resource Plan committed AE to being a zero-carbon utility by 2035 at the latest.
- The goal adopted by the Austin City Council in the Austin Climate Equity Plan (ACEP) is to achieve net-zero community-wide greenhouse gas emissions by 2040, with approximately 75% of those reductions to be achieved by 2030 with minimal use of carbon offsets only for the most difficult to decarbonize sectors – assumed shutting down Fayette coal plant in 2022.
- City of Austin cannot meet its 2040 goal or interim goals without eliminating carbon emissions from coal and gas plants.
- **The WG recommended 2035 AE Resource Plan builds on the past AE climate goal and aligns with the goals in the Climate Equity Plan.**

# Austin Energy Goals

---

## **MISSION**

To safely deliver clean, affordable, reliable energy and excellent customer service.

## **VISION**

Powering a cleaner, brighter future with customer-driven, community-focused solutions.