

# 2019 – 2020 Resource Planning Process Update

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# Alignment with City of Austin Strategic Direction

## City of Austin Strategic Direction (SD23)

- Economic Opportunity & Affordability
- Mobility
- Safety
- Health and Environment
- Culture & Lifelong Learning
- Government that works for all

## Austin Energy Strategic Plan

- Financial Health
- Business Excellence
- Environment
- Employee Engagement
- Grid Modernization
- Customer Collaboration

## Resource Planning

- Power Generation
- Demand side management and solar customer programs
- EV charging infrastructure, management of EV system impacts
- Utility and distributed generation capacity and goals
- Utility scale storage



# Resource Planning at Austin Energy

- The result of a multifaceted process that includes a measured system of choices and milestones over time

City Council sets policy and provides direction with advice from stakeholders and Austin Energy

Guiding principles and milestones established through Resource Plan

Staff pursues and implements goals within budget, capital improvement plans, and financial strategies

Request for Council actions sought post competitive purchasing processes

Robust Resource Plan time horizons allow for improving goal paths when markets, technology and regulations change

*City Council requires various approval steps to realize community goals*



# Resource Plan to 2027 - Progress to date

GOAL	Status (6/19)	
55% renewable by 2025 and 65% renewable by 2027	41%	61.7% by 2024
<i>Installed solar capacity of at least 950 MW by 2025 including 200 MW local solar</i>	715 MW	574 MW contracted
Cease operations and begin retirement Decker steam units, assuming ERCOT approval		
<i>Steam Unit 1 after summer peak 2020</i>	On Target	
<i>Steam Unit 2 after summer peak 2021</i>	On Target	
Cease operations of AE's portion of Fayette Power Project, beginning in 2022	On Target	
<i>Create cash reserve fund to support retirement</i>	On Target	
110 MW Local Solar by 2020 and 200 MW by 2025	103 MW	144 MW contracted
<i>Of this, 70 MW customer sited by 2020 and 100 MWs customer sited by 2025</i>	74 MW	On target 2025 goal
<i>Local solar budget</i>	On Target	
Storage		
<i>30 MW of local thermal storage by 2027</i>	19.2 MW	
<i>10 MW of electric storage by 2025</i>	3.45 MW (6 MWh)	<i>inc. grid, comm, resi, V2G</i>



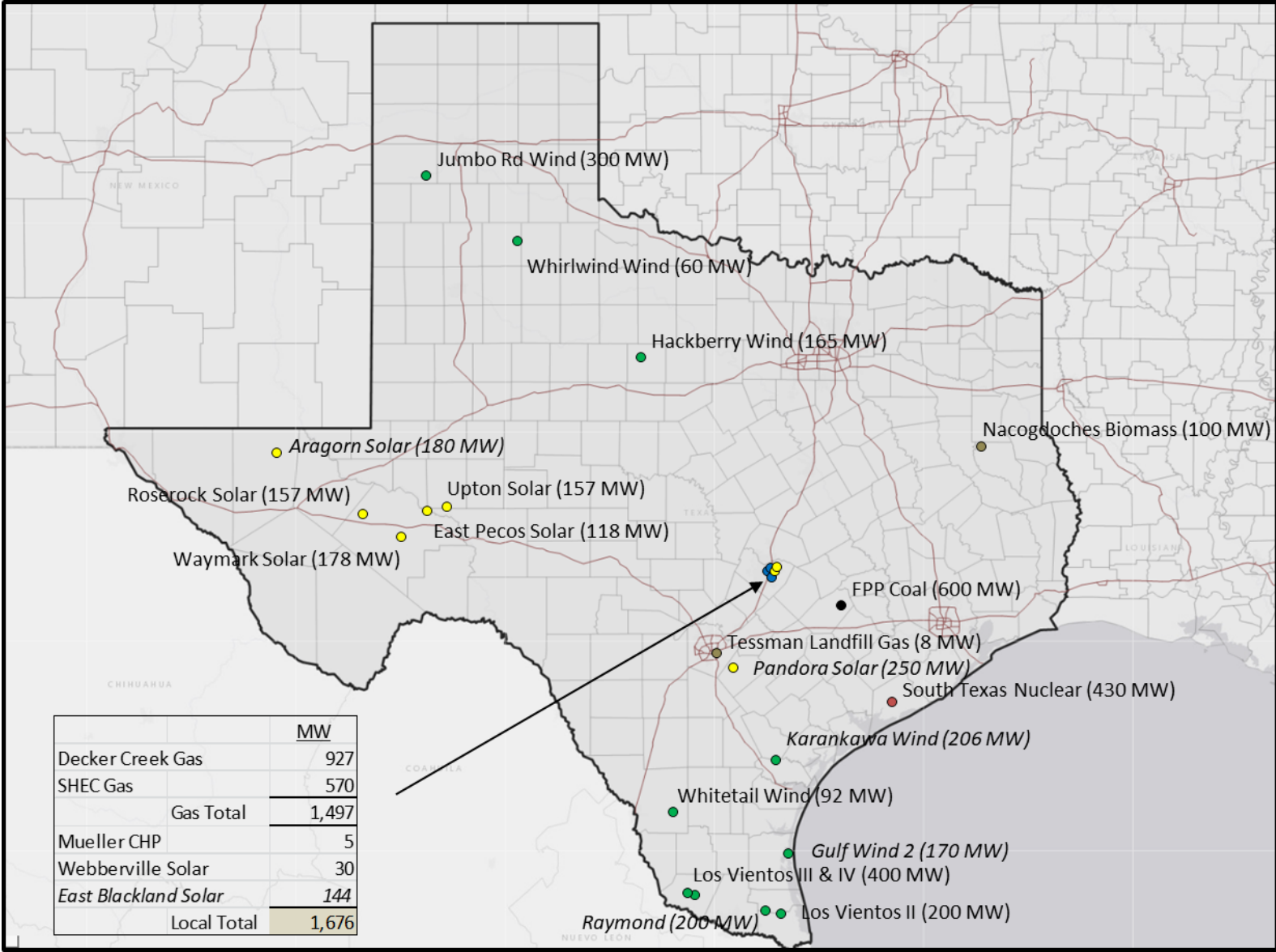
# Resource Plan to 2027 - Progress to date

GOAL	Status (as of 6/19)	
<b>Demand Side Management</b>		
<i>800 MW energy efficiency and demand response by 2020, 900 MW by 2025</i>	<b>812 MW</b>	
<i>Budget 2.5% gross revenue</i>	<b>On Target</b>	
<i>Achieve 1% of energy savings annually</i>	<b>On Target</b>	
<i>20% of DSM budget directed to low income and hard to reach markets</i>	<b>On Target</b>	
<i>5% of the 20% directed to weatherization</i>	<b>On Target</b>	
<b>EV</b>		
<i>8-10 AE owned and operated DC Fast stations by FY18</i>	<b>1 pilot DC Fast</b>	32 DC Fast - TCEQ grant, FY19/20
<i>Enabling electrification of City Fleet's 330 EV's with charging stations by 2020</i>	<b>11 locations (40 ports)</b>	5 phases, 55 locations, 282 ports
<i>Transition 65 AE retired internal combustion engine vehicles to new EVs by 2020</i>	<b>14 AE vehicles</b>	Part of City 330 by 2020 EV Plan
<i>Plug-In Electric Vehicle – modify rebate program encouraging deployment</i>	<b>Completed 6/2018</b>	



# Austin Energy – Asset Map (Contracted & Owned)

- Wind ●
- Solar ●
- Natural Gas ●
- Coal ●
- Nuclear ●
- Biomass ●

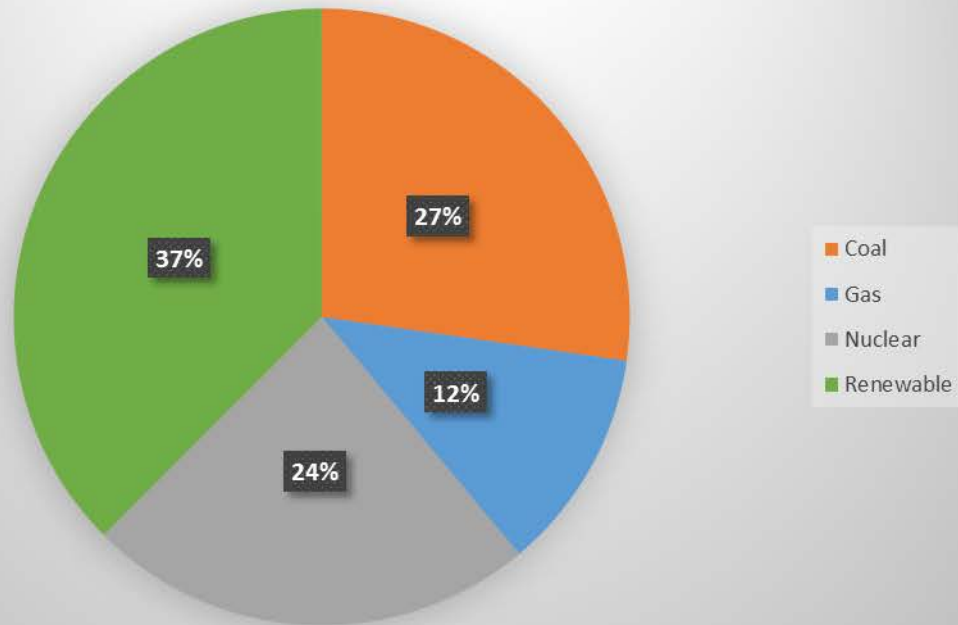


	MW
Decker Creek Gas	927
SHEC Gas	570
<b>Gas Total</b>	<b>1,497</b>
Mueller CHP	5
Webberville Solar	30
East Blackland Solar	144
<b>Local Total</b>	<b>1,676</b>

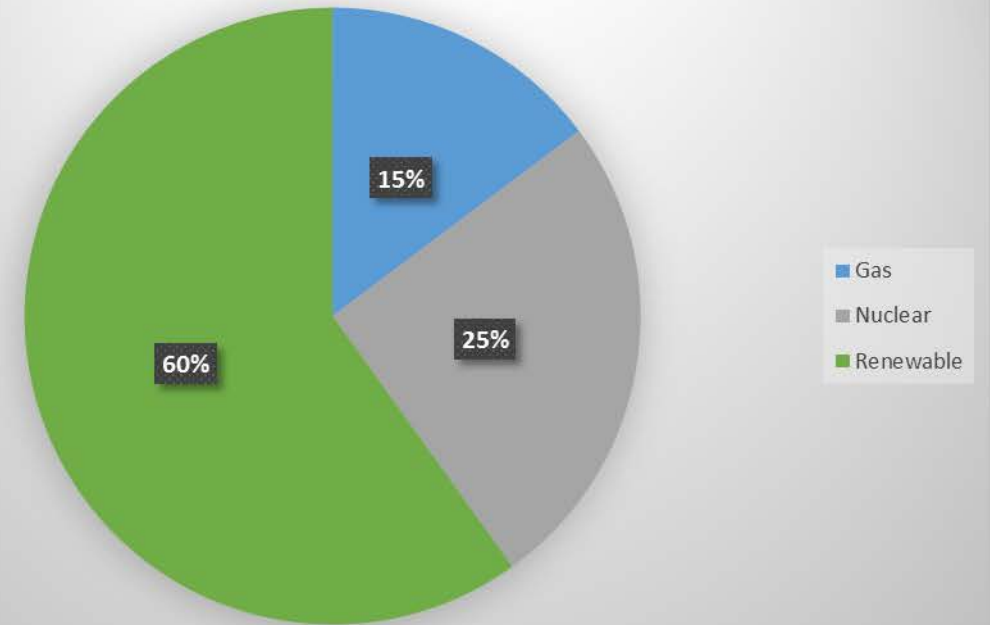


# 85% Carbon Free by 2023

2018 Generation By Fuel Type



2023 Generation By Fuel Type (Projected)



# Resource Plan Resolution Study Directives

Study Category	How many
<b>Renewable Energy</b>	3
<i>Construct a model achieving 75% and 80% renewable energy by 2027</i>	
<i>Construct a model achieving 100% carbon free by 2030</i>	
<i>Assess feasibility of achieving 100% renewable energy by 2035</i>	
<b>Conventional Generation</b>	3
<i>Study methane emissions associated with gas production / delivery best practice</i>	
<i>Conduct analysis of community economic development impact of AE gen / potential replacements</i>	
<i>Conduct analysis of water use by AE generation and its community impact</i>	
<b>Local Solar</b>	2
<i>Study utility managed rooftop solar requiring no investment from customer participants</i>	
<i>Study cost / benefit of local solar goal of 250 MW by 2025 and 300 MW by 2027</i>	



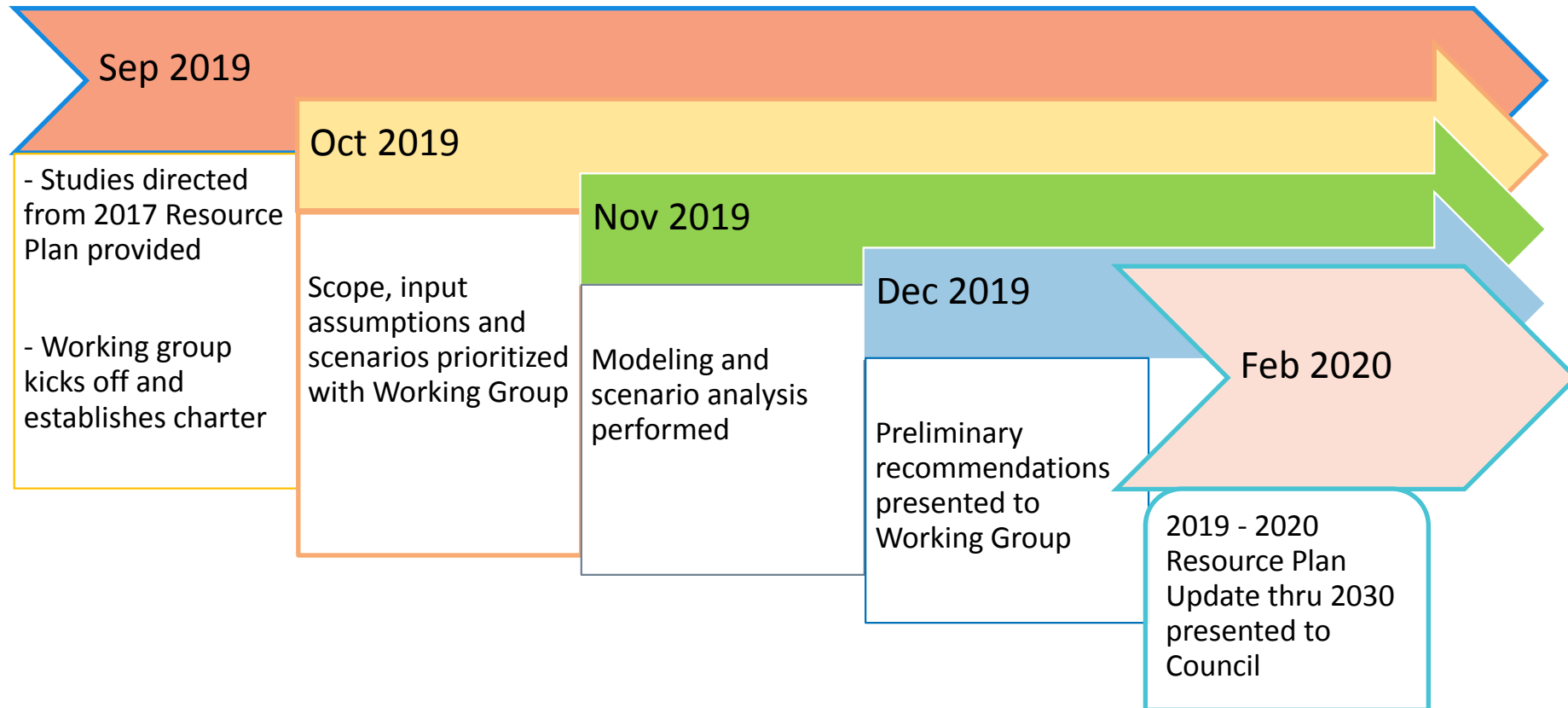


# Resource Plan Resolution Study Directives

Study Category	How many
<b>Emerging Technology &amp; Energy Storage</b>	2
<i>Study electric storage goal: 50 MW by 2027 and 100 MW by 2027</i>	
<i>Study dispatchable renewable, battery storage, CAES, aggregated demand response and V2G</i>	
<b>Energy Efficiency &amp; Demand Response</b>	1
<i>Study achieving 1,000 /1,100 MW energy efficiency by 2027</i>	
<b>Electric Vehicles</b>	2
<i>SHINES to provide value of distributed energy storage, applicability to EV batteries, value streams</i>	
<i>Lessons learned and best practice from EV TOU rate pilot</i>	



# 2019 - 2020 Resource Planning Timeline



# 2019 - 2020 Resource Planning Working Group – Structural Representation

- **Working Group proposed members**

- Cary Ferchill – EUC Chair
  - Marty Hopkins – EUC Vice Chair
  - Cyrus Reed – EUC, Sierra Club
  - Leo Dielmann – RMC Chair
  - Kaiba White – RMC Vice Chair, Solar Austin
  - Al Braden – 350 Austin
  - Bob Batlan – Austin Interfaith
  - Ed Latson – Austin Regional Manufacturers Association
  - Janee Briesemeister – Low Income / Senior advocate
  - Todd Davey – Industrial, PIAC
  - Representative of African American Community
  - Representative Hispanic Community
  - Karen Hadden – EUC commissioner
- Collaborative effort with Austin Energy – scenario analysis, modeling, facilitating
  - Charter with defined objectives and goals
  - Dedicated webpage for Resource Planning



# 2019 / 2020 City Plans Revision Boundaries

## Community Climate Plan

- **Buildings and Electrification**
  - Building Electrification switching from natural gas (heating and water heating)
  - Energy code, net zero emission buildings
- **Transportation Electrification**
  - Community E-VMT goals and EV adoption trends (commercial, residential, transit)
  - Dealer engagement and customer experience
  - Privately managed EV charging stations
  - EV ready building codes
  - Charging station access
  - Shared, Electric, Autonomous Mobility as a service
  - Micro e-mobility
  - EV Parking and station host

## Austin Energy Resource, Generation and Climate Plan

- Power Generation and Utility Scale Storage
- Demand side management and customer programs
- Utility managed EV charging infrastructure
- Distributed generation programs
- Electric Metering and use of meter data
- Distributed energy resource integration (EV, solar, demand response, storage)
- Grid modernization



# Resource Planning Paradigm shift

Six key factors driving major changes in electricity industry and Resource Planning



## 2019 – 2020 Resource Planning Considerations

- Planning Horizon : 2020 – 2030
- Finance Structure: PPA or Ownership
- Incorporating distributed generation in RP
- Uncertainty and Risk Management
- Demand Side Management and impact on RP
- Distributed Energy Resources and impact on RP

# Resource Planning Methodology

- AE uses integrated modeling tools to simulate market data, load, generation assets and financial data to assess resource plans
  - Uses UPLAN simulation modeling well suited to ERCOT's market design, risk analysis using Monte Carlo techniques as well as one-off scenarios
  - Inputs include: cost of gas, coal, nuclear, cost of new build of various technologies, fixed and variable O&M for ERCOT generation, ERCOT transmission network
  - Calculate cost and revenues of ERCOT assets and pricing at 6,600 node points
  - Results modeled for rate impact and financial metrics
  - Approach is in line with industry best practice





**Customer Driven.  
Community Focused.<sup>SM</sup>**

