2019 – 2020 Resource Planning Process Update

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Item 10

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

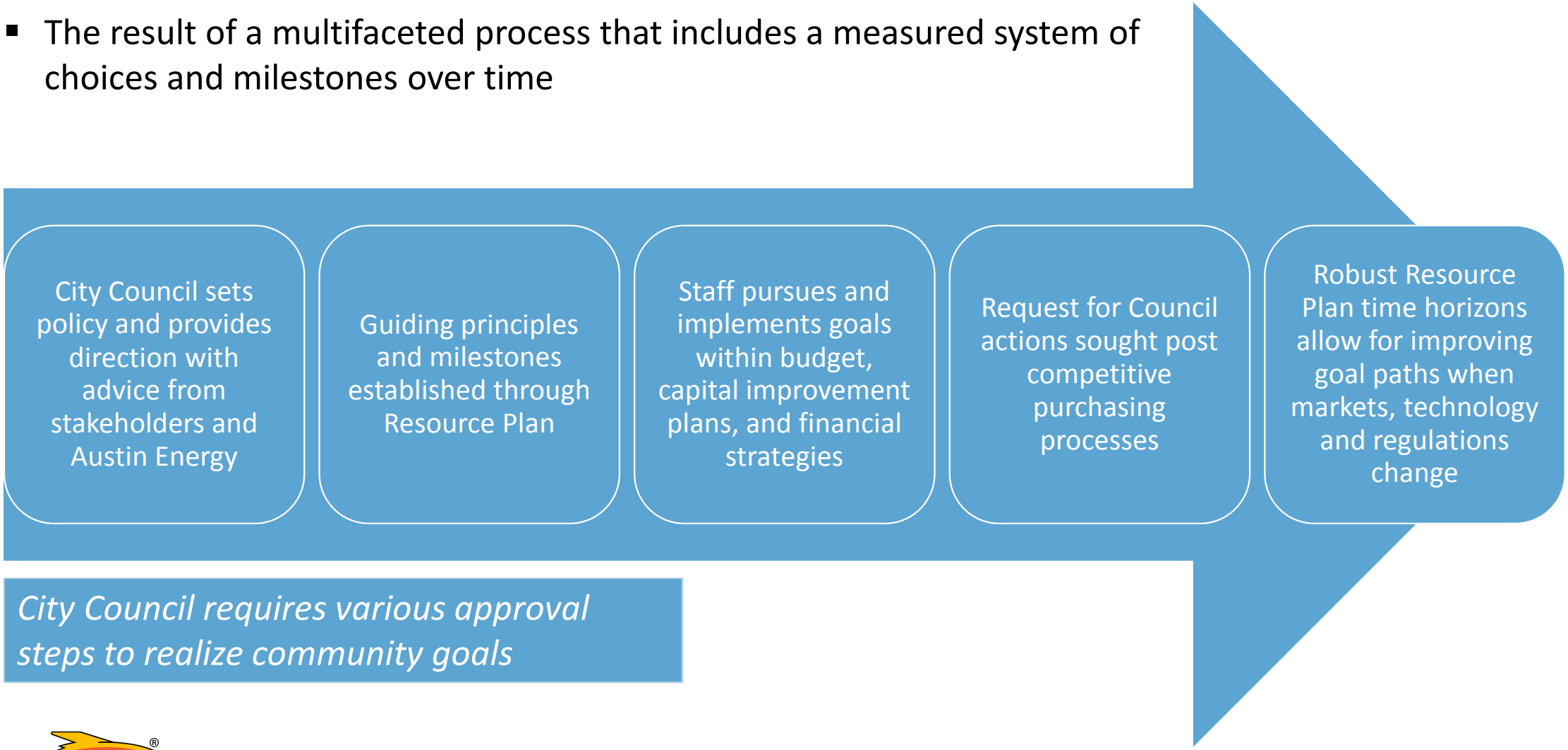
- Financial Health
- Business Excellence
- Environment
- Employee Engagement
- Grid Modernization
- Customer Collaboration

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



Resource Plan to 2027 - Progress to date

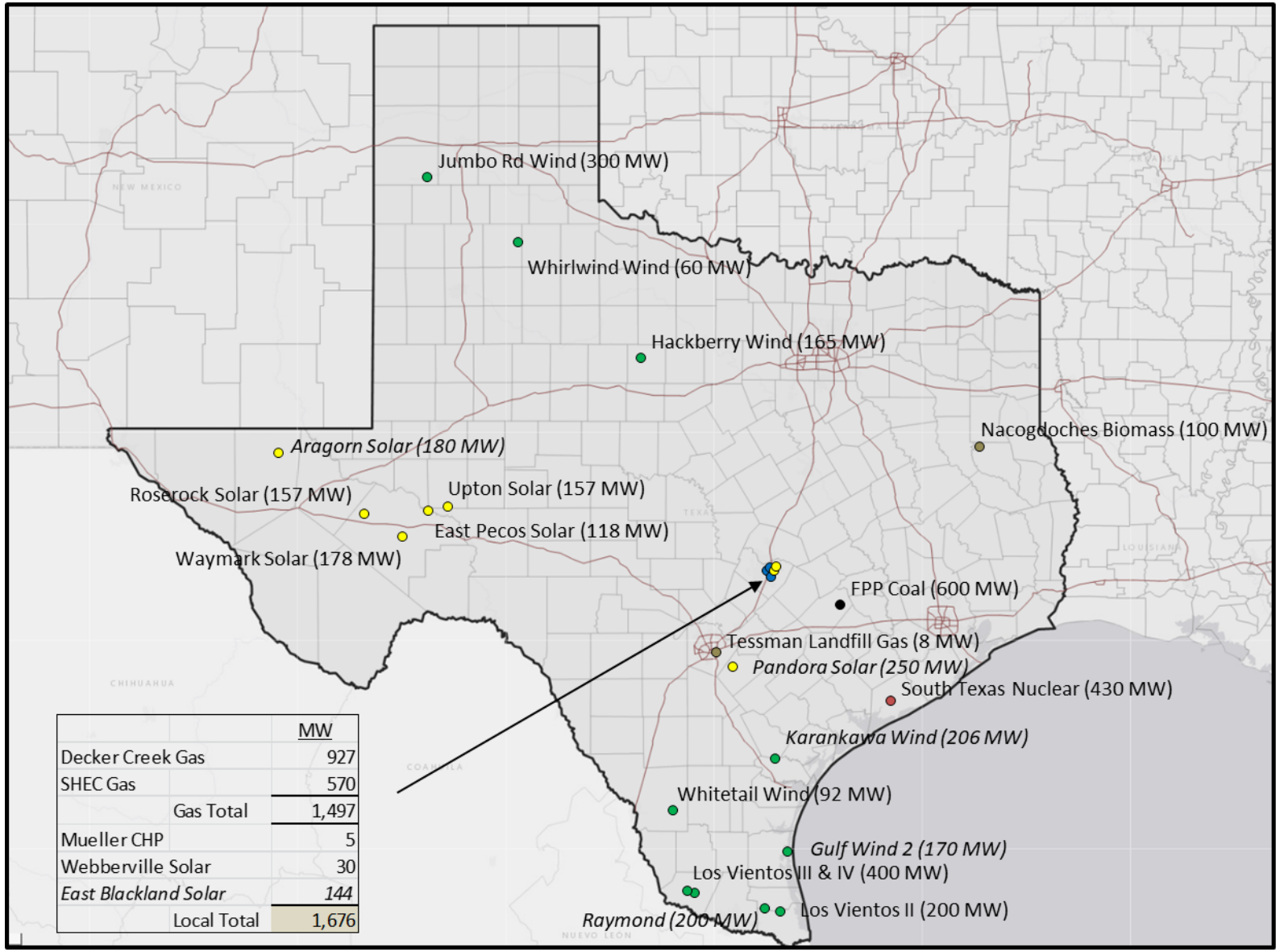
GOAL	Status (6/19)	
55% renewable by 2025 and 65% renewable by 2027	**41%**	61.7% by 2027
Installed solar capacity of at least 950 MW by 2025 including 200 MW local solar	**715 MW**	574 MW contracted
Cease operations and begin retirement Decker steam units, assuming ERCOT approval		
Steam Unit 1 after summer peak 2020	**On Target**	
Steam Unit 2 after summer peak 2021	**On Target**	
Cease operations of AE's portion of Fayette Power Project, beginning in 2022	**On Target**	
Create cash reserve fund to support retirement	**On Target**	
110 MW Local Solar by 2020 and 200 MW by 2025	**103 MW**	144 MW contracted
Of this, 70 MW customer sited by 2020 and 100 MWs customer sited by 2025	**74 MW**	On target 2025 goal
Local solar budget	**On Target**	
Storage		
30 MW of local thermal storage by 2027	**19.2 MW**	
10 MW of electric storage by2025	**3.2 MW (6 MWh)**	*inc. grid, comm, resi, V2G*

Resource Plan to 2027 - Progress to date

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

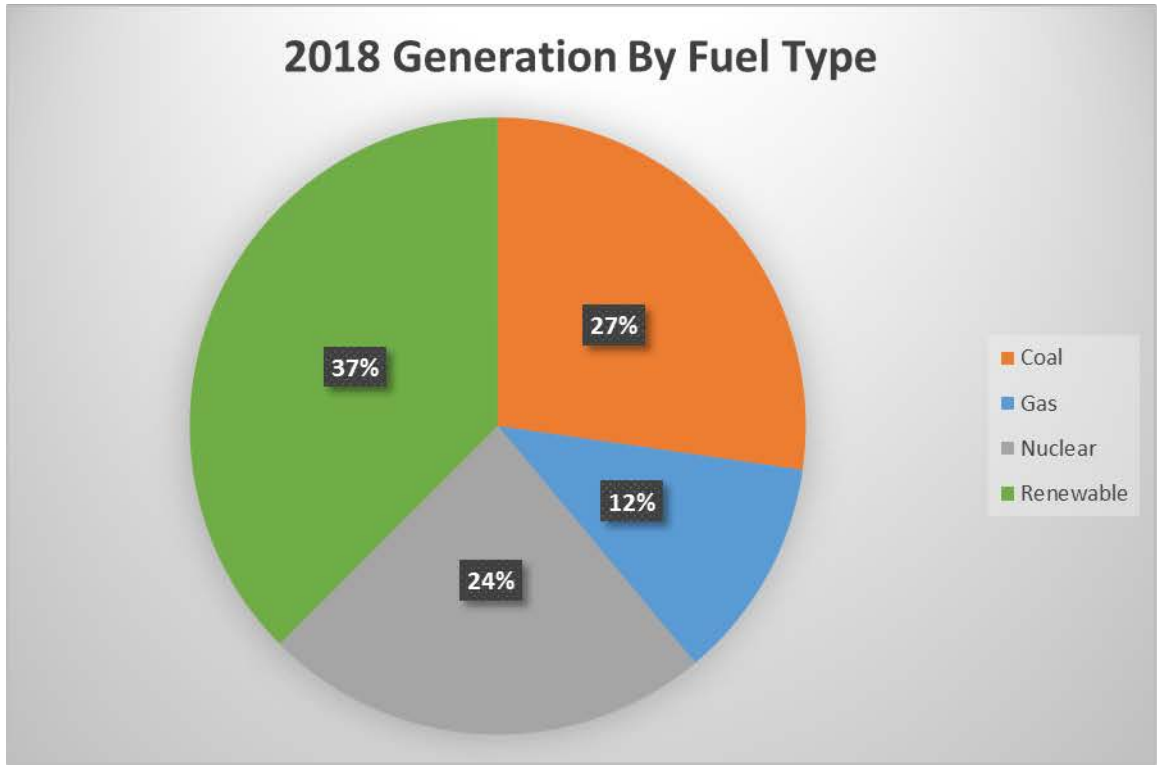
Austin Energy – Asset Map (Contracted & Owned)

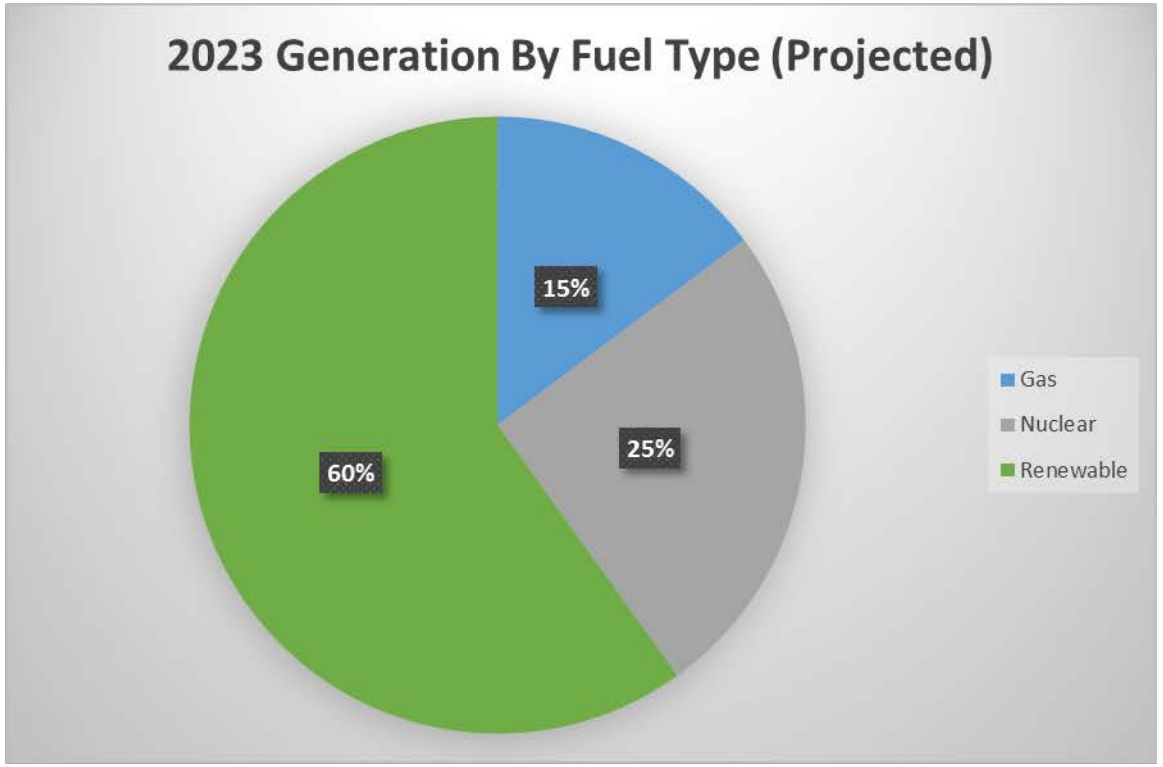
- Wind
- Solar
- Natural Gas
- Coal
- Nuclear
- Biomass



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

85% Carbon Free by 2023





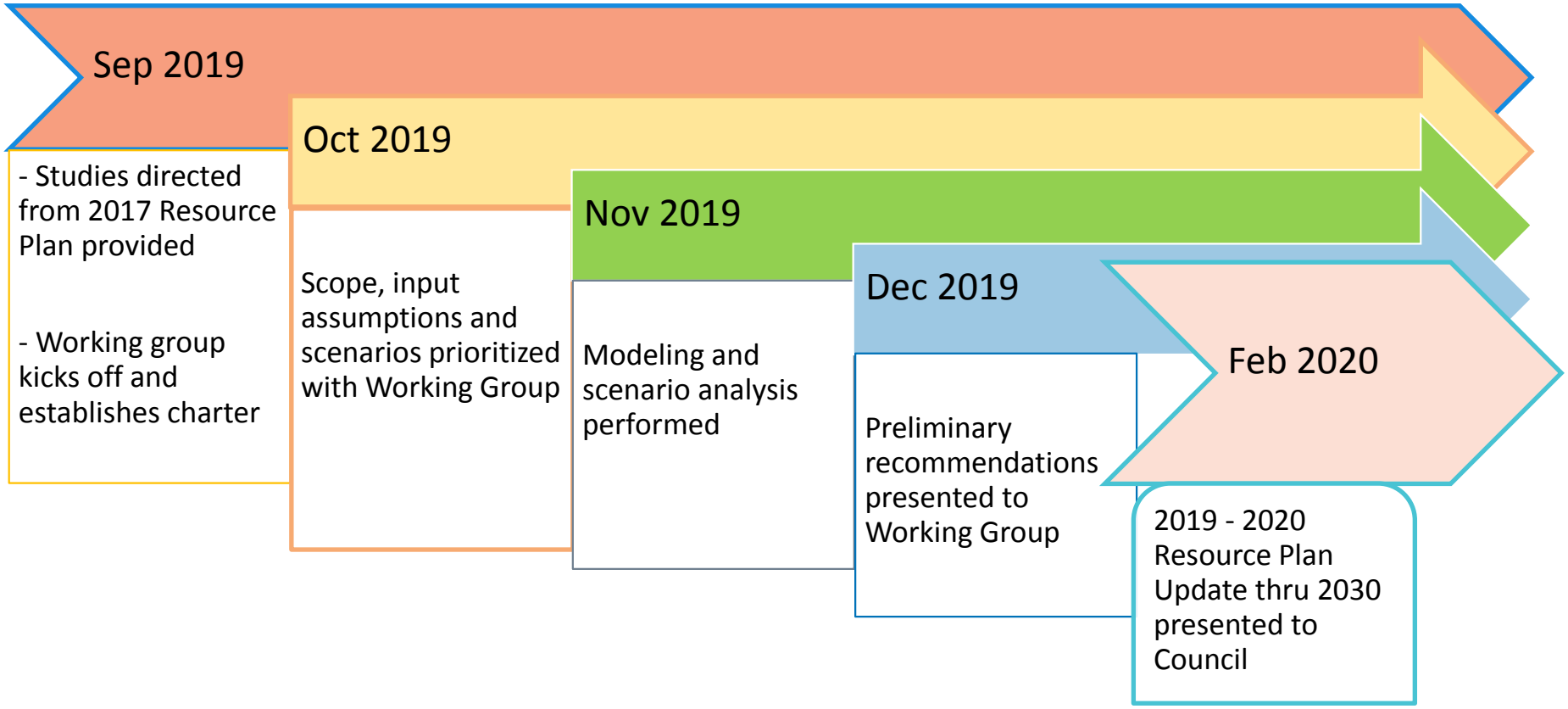
Resource Plan Resolution Study Directives

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

Resource Plan Resolution Study Directives

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

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
- Collaborative effort with Austin Energy – scenario analysis, modeling, facilitating
- Charter with defined objectives and goals
- Target meeting twice a month
- Dedicated webpage for Resource Planning

2019 / 2020 City Plans Revision Boundaries

Community Climate Plan

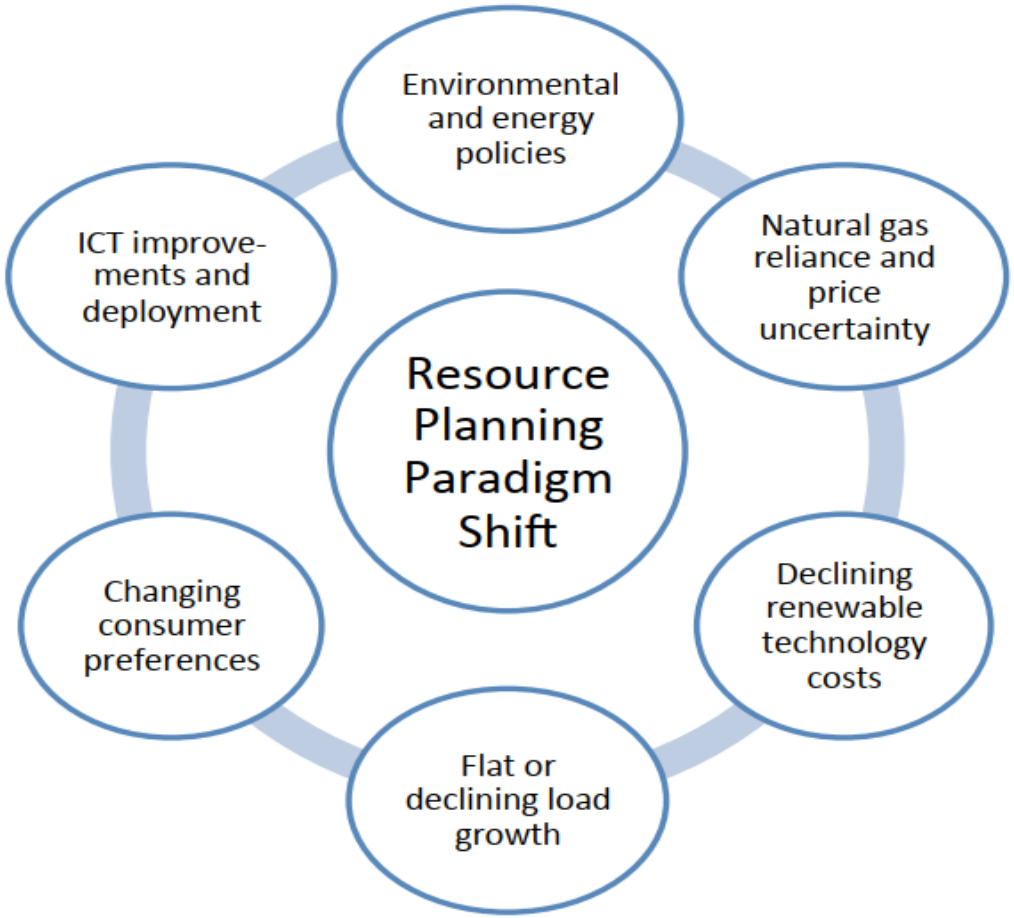
- Buildings and Electrification
  - Building Electrification switching from natural gas (heating and water heating)
  - Energy code, net zero emission buildings
- Transportation Electrification
  - Community E-VMT goals and EV adoption trends (commercial, residential, transit)
  - Dealer engagement and 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



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