AGENDA

Date: September 12, 2019
Time: 4:00 pm – 6:00 pm
Location: Town Lake Center, Room 100

Safety Moment

Introductions (15 minutes) Chair
  Member List

Resource Planning Introduction (45 minutes) VP, Resource Planning
  • Aligning Strategic Plans
  • 2017 Resolution Goal Update, Resource Plan to 2027
  • Resource Planning to 2030
  • Concurrent City Planning: Community Climate Plan, Strategic Mobility Plan, City Fleet Electrification
  • Resolution Schedule

Electric Utility Commission Resource Planning Working Group Charter (45 minutes) Chair

Closing Remarks (15 minutes) Chair
Members

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cary Ferchill, Chair</td>
<td>EUC Chair</td>
</tr>
<tr>
<td>Bob Batlan</td>
<td>Austin Interfaith</td>
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<td>Leo Dielmann</td>
<td>Resource Management Commission (RMC), Chair</td>
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<td>Karen Hadden</td>
<td>EUC Commissioner</td>
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<td>Tam Hawkins</td>
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</tbody>
</table>

Meeting Dates & Locations

All meeting times are 4:00-6:00pm

<table>
<thead>
<tr>
<th>Date(s)</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>September 12 &amp; 26</td>
<td>Town Lake Center Conference Room 100</td>
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<tr>
<td>October 10</td>
<td>Town Lake Center Conference Room 100</td>
</tr>
<tr>
<td>October 24</td>
<td>Town Lake Center Conference Room 126</td>
</tr>
<tr>
<td>November 7 &amp; 21</td>
<td>Town Lake Center Conference Room 100</td>
</tr>
<tr>
<td>December 5 &amp; 19</td>
<td>Town Lake Center Conference Room 100</td>
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<tr>
<td>January 9 &amp; 23 (tentative dates should meetings be required)</td>
<td>Town Lake Center Conference Room 100</td>
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Contact

Erika Bierschbach, Vice President, Energy Market Operations & Resource Planning
Office: 512-322-6476 | Email: Erika.Bierschbach@austinenergy.com

Cary Ferchill
Office: 512-423-9800 | Email: cary@ferchill.com

Erika Bierschbach
Vice President, Energy Market Operations & Resource Planning
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
<table>
<thead>
<tr>
<th>GOAL</th>
<th>Status (6/19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>55% renewable by 2025 and 65% renewable by 2027</td>
<td>41%</td>
</tr>
<tr>
<td><strong>Installed solar capacity of at least 950 MW by 2025 including 200 MW local solar</strong></td>
<td>61.7% by 2024</td>
</tr>
<tr>
<td>715 MW</td>
<td>574 MW contracted</td>
</tr>
<tr>
<td>Cease operations and begin retirement Decker steam units, assuming ERCOT approval</td>
<td>On Target</td>
</tr>
<tr>
<td>Steam Unit 1 after summer peak 2020</td>
<td>On Target</td>
</tr>
<tr>
<td>Steam Unit 2 after summer peak 2021</td>
<td>On Target</td>
</tr>
<tr>
<td>Cease operations of AE’s portion of Fayette Power Project, beginning in 2022</td>
<td>On Target</td>
</tr>
<tr>
<td>Create cash reserve fund to support retirement</td>
<td>On Target</td>
</tr>
<tr>
<td>110 MW Local Solar by 2020 and 200 MW by 2025</td>
<td>103 MW</td>
</tr>
<tr>
<td><strong>Of this, 70 MW customer sited by 2020 and 100 MWs customer sited by 2025</strong></td>
<td>144 MW contracted</td>
</tr>
<tr>
<td>74 MW</td>
<td>On target 2025 goal</td>
</tr>
<tr>
<td>Local solar budget</td>
<td>On Target</td>
</tr>
<tr>
<td>Storage</td>
<td></td>
</tr>
<tr>
<td>30 MW of local thermal storage by 2027</td>
<td>19.2 MW</td>
</tr>
<tr>
<td>10 MW of electric storage by 2025</td>
<td>3.45 MW (6 MWh)</td>
</tr>
<tr>
<td><strong>inc. grid, comm, resi, V2G</strong></td>
<td></td>
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</tbody>
</table>
## Resource Plan to 2027 Progress (Resolution No. 20170817-061)

<table>
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<tr>
<th><strong>G O A L</strong></th>
<th><strong>Status (as of 6/19)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demand Side Management</strong></td>
<td></td>
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<tr>
<td>800 MW energy efficiency and demand response by 2020, 900 MW by 2025</td>
<td>812 MW</td>
</tr>
<tr>
<td><strong>Budget 2.5% gross revenue</strong></td>
<td>On Target</td>
</tr>
<tr>
<td><strong>Achieve 1% of energy savings annually</strong></td>
<td>On Target</td>
</tr>
<tr>
<td>20% of DSM budget directed to low income and hard to reach markets</td>
<td>On Target</td>
</tr>
<tr>
<td>5% of the 20% directed to weatherization</td>
<td>On Target</td>
</tr>
<tr>
<td><strong>EV</strong></td>
<td></td>
</tr>
<tr>
<td>8-10 AE owned and operated DC Fast stations by FY18</td>
<td>1 pilot DC Fast</td>
</tr>
<tr>
<td><strong>Enabling electrification of City Fleet’s 330 EV’s with charging stations by 2020</strong></td>
<td>11 locations (40 ports)</td>
</tr>
<tr>
<td><strong>Transition 65 AE retired internal combustion engine vehicles to new EVs by 2020</strong></td>
<td>14 AE vehicles</td>
</tr>
<tr>
<td><strong>Plug-In Electric Vehicle – modify rebate program encouraging deployment</strong></td>
<td>Completed 6/2018</td>
</tr>
</tbody>
</table>
85% Carbon Free by 2023

2018 Generation By Fuel Type
- Coal: 37%
- Gas: 27%
- Nuclear: 12%
- Renewable: 24%

2023 Generation By Fuel Type (Projected)
- Gas: 15%
- Nuclear: 25%
- Renewable: 60%
A Plan Amongst Plans

- Buildings and Electrification
- Transportation Electrification
- Transportation and Land Use
- Natural Systems
- Consumption

- Zero Waste Master Plan
- Austin Energy Resource Plan
- 5 New Climate Plan Sections
- Cap Metro - Project Connect
- Land Use Code Revision
- Austin Strategic Mobility Plan & Smart Mobility Roadmap
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
2019 - 2020 Resource Planning Refresh Timeline

- Working group kicks off and establishes charter
- Studies directed from 2017 Resource Plan provided

**Sep 2019**

**Oct 2019**
- Scope, input assumptions and scenarios prioritized with Working Group

**Nov 2019**
- Modeling and scenario analysis performed

**Dec 2019**
- Preliminary recommendations presented to Working Group

**Feb 2020**
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 Refresh

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

• **Working Group members**
  - Cary Ferchill – EUC Chair
  - Bob Batlan – Austin Interfaith
  - Al Braden – 350 Austin
  - Janee Briesemeister – Low Income / Senior advocate
  - Todd Davey – Industrial, PIAC
  - Leo Dielmann – RMC Chair
  - Karen Hadden – EUC commissioner
  - Tam Hawkins – Greater Black Chamber of Commerce
  - Marty Hopkins – EUC Vice Chair
  - Ed Latson – Austin Regional Manufacturers Association
  - Cyrus Reed – EUC, Sierra Club
  - Luis Rodriguez - Hispanic Community
  - Kaiba White – RMC Vice Chair, Solar Austin

• Collaborative effort with Austin Energy – scenario analysis, modeling, facilitating
• Charter with defined objectives and goals
• Dedicated webpage for Resource Planning
Customer Driven. Community Focused.
# 2017 Resource Plan Resolution Studies

## Study Category

### Renewable Energy
- 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
- 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
- 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

### Emerging Technology & Energy Storage
- 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
- Study achieving 1,000 /1,100 MW energy efficiency by 2027

### Electric Vehicles
- SHINES to provide value of distributed energy storage, applicability to EV batteries, value streams
- Lessons learned and best practice from EV TOU rate pilot
Mission Statement:
The Resource Planning Working Group will provide leadership and guidance on technical and market issues to meet environmental, efficiency and affordability goals established by the Austin City Council.

Working Group is committed to:
- An open and transparent process that represents interests of the Austin community;
- Developing a plan that is realistic, embraces a leadership position for our city and remains affordable for our customers;
- Recommending a Resource, Generation and Climate Protection Plan to 2030 to City Council; and
- Ensuring the plan can be successful in its implementation by Austin Energy through communication and collaboration with utility staff.

Goals and Rules of Working Group:
- Focus on overarching guiding principles of Affordable renewable energy to achieve net zero carbon by 2050 or sooner.
- Everyone has a voice and are open to other’s ideas.
- Committed to moving forward on consensus and resort to voting only when required or desired.
- Citizen’s Communication held during the first 15 minutes of the second scheduled meeting each month.
- Agree to utility staff using scenario analysis and risk assessment to screen goal development.
- Resource Plan goals, new and updated, will be developed through a collaborative process between Working Group members and Austin Energy staff.
- Recommend sunset and/or roll-up of conflicting and/or overlapping resolutions or resolutions that do not conform to updated plan.