The Drive to Electrification
Agenda

• Beneficial Electrification

• Statewide Transportation Electrification Plan
  – Benefits
  – Actions

• TEP 5-year Strategic Roadmap
  – Mission, Vision, Guiding Principles
  – Project Highlights
Beneficial Electrification
Our Approach

Reduce barriers to electrification
Reduce customer total operating costs
Empower customers to meet their sustainability goals

Provide enhanced health and safety benefits (improved air quality)
Provide benefits to the grid
The EV Journey

- Engagement with key organizations: ATE, EEI
- Presentation to key customers
- Identification & promotion of pilot projects
- Local, state, and federal policy engagement
- Roadmap development
- Residential & commercial program launch
- Statewide TE Plan
Statewide Transportation Electrification Plan
All-in Approach

• Goal of 1.076 million electric light duty vehicles (LDV) in AZ by 2030

• Economic and environmental benefits (2020-2040):
  – Lower cost of vehicle ownership
  – Downward pressure on electricity rates through greater system utilization
  – Benefits to Arizonan’s through reduction in greenhouse gas emissions, local air pollutants, and gasoline consumption

• Diverse stakeholder process
  – 5 working groups, 27 meetings
  – Recommendations by stakeholder
## Actions and Priorities

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Priority</th>
<th>Actions and Priorities</th>
</tr>
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<tbody>
<tr>
<td>Electric Utilities</td>
<td>Near</td>
<td>Continue stakeholder coordination meetings; prioritize inclusion of diverse voices&lt;br&gt;Assist communities in identifying charging station locations based on expected growth in a way that adequately addresses the needs for: Infrastructure Development, Programs &amp; Partnerships Requirements, Equity, Goods Movement &amp; Transit, and Vehicle Grid Integration.&lt;br&gt;Develop new and expand existing education &amp; outreach programs&lt;br&gt;Establish dedicated electrification teams</td>
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<td></td>
<td>Medium</td>
<td>Develop incentive programs for EVs and/or EV charging infrastructure&lt;br&gt;Develop EV rates&lt;br&gt;Implement pilot charging programs and begin to deploy additional charging infrastructure; emphasize deployment in underserved communities&lt;br&gt;Electrify fleet vehicles and develop opportunities for their non-residential customers to electrify their own fleets.</td>
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<tr>
<td>State and/or Local Government</td>
<td>Near</td>
<td>Support and participate in TE Collaborative process; focus on inclusive planning model and diversity of voices</td>
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<td>Medium</td>
<td>Enact Zero Emissions Vehicle (ZEV) legislation&lt;br&gt;Develop and/or support Group Purchase programs and EV funding mechanisms such as loan-loss reserves&lt;br&gt;Develop purchase incentive programs for EV and/or charging infrastructure (state)&lt;br&gt;Implement EV Ready building codes (local)&lt;br&gt;Develop rideshare programs for underserved communities</td>
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## Actions and Priorities

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<th>Stakeholders</th>
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<tr>
<td>Representatives of Underserved Communities</td>
<td>Near</td>
<td>Engage in collaborative TE planning processes</td>
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<td></td>
<td>Medium</td>
<td>Partner with utilities and public agencies on education &amp; outreach, micromobility, and training programs</td>
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<td></td>
<td>Partner with utilities and public agencies to develop programs for low-income and rural ridesharing electric customers</td>
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<tr>
<td>Transit Agencies and/or Fleet Operators</td>
<td>Medium</td>
<td>Initiate and scale existing pilot electrification programs</td>
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<td>Purchase diverse model types to explore capabilities and limitations; share knowledge</td>
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<tr>
<td>Third-Party EV Service Providers (EVSPs)</td>
<td>Near</td>
<td>Engage in collaborative TE planning processes</td>
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<td>Collaborate with utilities on improving interconnection processes</td>
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<td></td>
<td>Medium</td>
<td>Develop additional public and workplace charging infrastructure; prioritize service coverage in underserved communities</td>
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TEP 5-Year Roadmap
5-Year EV Roadmap

Vision

Be a leader in Southern Arizona’s effort to electrify transportation, for a cleaner and more sustainable community.

Mission

Accelerate electric vehicle adoption in Southern Arizona through collaboration, promotion and education, guided by the following principles:

- lead by example
- empower customers
- balance economic impacts
- support environmental and health benefits
EV Opportunity Areas

1. **Driving Partnerships and Collaboration**
   Foster collaboration across utilities, third parties, and partner organizations to align electrification efforts.

2. **Driving Supportive Policies and Incentives**
   Promote policies supporting EV adoption, e.g., high-occupancy vehicle lane access, building codes, rate design, incentives.

3. **Driving Consumer Awareness and Education**
   Empower customers in their EV purchasing decisions through targeted education, actionable tools and increased awareness.

4. **Driving Charging Infrastructure Deployment**
   Encourage coordinated EV infrastructure planning and accelerate deployment.
**EV Programs**

**Residential EV Calculator**
- Estimate savings from ICE to EV Switch
- Customers enter electricity usage

**Existing Homes**
- Rebate covering 75% of the cost of installing Electric Vehicle Supply Equipment
- $500/$250 Rebate

**New Homes**
- $100 rebate to homebuilders for pre-wiring for EVSE

**Program Objectives:**
- Engage early adopters
- Provide customers with trusted information
- Reduce barriers to adoption through technical and financial assistance

**Incentive Levels:**
- L2: $4,500/$6,000/$9,000
- DCFC: $24,000/ $40,000
Fleet Customers

- Customer specific inputs
- Clear, easy-to-understand outputs
- Prioritization for deployment
- Recommendations on types of chargers that will meet needs
- Understanding key drivers of customer savings
- Ease of deployment
- Charging as a service
Transit Electrification

**TEP and Sun Tran Partnership on low/no emission grants**
- 2 successful Federal Transportation Administration awards
- Secured $6 million in Federal Grants
- One pilot bus + 10 Electric buses

**How we partnered:**
- TEP local match: $800,000
- Secured support from congressional delegation
- Technical support and advising
- Contract development
- Data sharing
- Monitoring for grid impacts

**What’s next?**
- Round 3 of low/no emissions grant
  - 5 (40ft buses)
  - 8 (26 ft. buses)
- TEP participation: up to $950,000 match
Q&A – Ask us anything!

Visit our webpage:
TEP4EV.COM
Contact US

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Ray Martinez – Rmartinez1@tep.com
Ryan Anderson – Randerson1@tep.com
Cleaner, Greener Grid

TEP’s latest Integrated Resource Plan lays out the path we’ll follow over the next 15 years to serve our customers’ energy needs.

70% of our power will come from wind and solar resources by 2035.

448 Megawatts (MW) of new renewable resources will be coming online in 2021.

2020 2021 2035
776 MW 727 MW 1,777 MW

Community-Scale Clean Energy

80% lower carbon emissions by 2035.

Ramping down and retiring our coal-fired power plants will reduce greenhouse gas emissions.

Our carbon reduction goal, developed in partnership with the University of Arizona’s Institute of the Environment, represents our fair share of worldwide efforts to limit warming to well below 2 degrees Celsius under the 2015 Paris Agreement.

Water savings: Eliminate the use of surface water for power generation by 2031.

70% reduction of groundwater use by 2035.

Significant expansion of energy storage:

2019 – 21 MW of storage.

2035 – 1,450 MW of storage.

Retail energy mix:

2020:
- 30% – coal
- 35% – natural gas
- 14% – renewables
- 2% – market purchase

2025:
- 27% – coal
- 57% – natural gas
- 13% – renewables
- 3% – market purchase

2035:
- 26% – natural gas
- 30% – renewables
- 4% – market purchase
- 1% – market purchase
### TEP EV Action

Each opportunity area includes 10-16 initiatives

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<tbody>
<tr>
<td><strong>Driving Partnerships and Collaboration</strong></td>
<td><strong>Driving Supportive Policies and Incentives</strong></td>
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<td><strong>Driving Charging Infrastructure Deployment</strong></td>
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<tr>
<td>1.1 TEP EV Strategic Roadmap</td>
<td>2.1 Residential EV Charger Incentives</td>
<td>3.1 EV Marketing &amp; Education Plan</td>
<td>4.1 EV Penetration Baseline Study</td>
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<tr>
<td>1.2 Alliance for TE Membership</td>
<td>2.2 Commercial EV Charger Incentives</td>
<td>3.2 TEP Fleet Electrification Experience</td>
<td>4.2 TEP System Cost-Benefit Analysis Tool</td>
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<tr>
<td>1.3 EV Statewide Initiative</td>
<td>2.3 Residential EV Rates</td>
<td>3.3 Fleet Conversion Planning Tool</td>
<td>4.3 Infrastructure Cost Estimation Tool</td>
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<td>1.4 EV Commercial Program</td>
<td>2.4 Commercial EV Rates</td>
<td>3.4 School EV Pilot Program</td>
<td>4.4 Standardized Workplace Charging</td>
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<td>1.5 Cross-Marketing for Local Dealerships</td>
<td>2.5 Managed Charging</td>
<td>3.5 Fleet Case Study Report</td>
<td>4.5 Standardized Public Charging</td>
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<td>1.6 Consumer Focus Group &amp; Surveys</td>
<td>2.6 Workplace EV Policy Guide</td>
<td>3.6 Residential EV Calculator</td>
<td>4.6 Standardized MD/HD Fleet Charging</td>
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<td>1.7 TEP Fleet EV Roadmap Partnerships</td>
<td>2.7 Public Site Host &amp; Maintenance Guide</td>
<td>3.7 New EV Owner Welcome Kit</td>
<td>4.7 Standardized LD Fleet Charging</td>
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<td>1.8 EV Advocacy Group Coordination</td>
<td>2.8 Renewable EV Charging</td>
<td>3.8 Comprehensive Fleet Conversion Supp.</td>
<td>4.8 Charging Market Assessment</td>
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<td>1.9 Smart Cities EV Collaboration</td>
<td>2.9 Second Life Battery Research</td>
<td>3.9 Employee EV Program</td>
<td>4.9 Standardized Multi-Family Charging</td>
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<tr>
<td>1.10 Rideshare Company Collaboration</td>
<td>2.10 eFaaS Market Assessment</td>
<td>3.10 Public TEP Chargers HQ</td>
<td>4.10 Non-Road Elec. Opp. Assessment</td>
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<td>1.11 Secondary Dealer Collaboration</td>
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<td>3.11 Ride &amp; Drive Event Guide</td>
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<td>1.12 Car Rental Company Collaboration</td>
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<td>3.12 Electric Vehicle Catalogue</td>
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<td>3.13 EV Charging Station Signage</td>
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<td>3.14 Dealership Education</td>
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<td>3.15 Extended Test Drive Best Practices</td>
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<td><strong>3.16 EV Showcase</strong></td>
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**Source:** TEP, Guidehouse

**Key**

- **X.X** Initiative currently underway
- **X.X** New proposed initiative