



2026 Energy Action Plan



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UTA

Energy Action Plan Executive Summary



About this Plan

In 2020, Utah Transit Authority (UTA) and Rocky Mountain Power (RMP) signed the Interagency Partnership Vision and developed their first Energy Action Plan. In 2025, UTA chose to check progress on that plan and set new targets for the next five years. This plan develops an implementation guide for collaboration between RMP and UTA to support UTA's existing plans and efforts to support forward momentum.

Strategic Vision

This plan aligns with UTA's overall strategic vision from the organization's [2022-2030 Strategic Goals and Objective](#): *"The Utah Transit Authority moves Utah to a stronger economy, a cleaner environment, increased mobility, greater access to opportunity, and a better quality of life—all driven by safe, reliable transportation."*

Goal

The plan and its strategies will support the 2025 Sustainability Plan's overarching greenhouse gas emissions reduction goal for a 25% reduction by 2030 from the 2023 baseline and a 40% reduction by 2050.

Sustainability Energy Index

The Sustainable Energy Index was developed to reflect progress made on multiple energy-related fronts. The index combines multiple metrics into one score that reflects overall performance. Compared to the 2018 baseline, all metrics improved except building efficiency, leading to an overall improvement in the index highlighting the agency's culture of continuous improvement.

2023 Index Score



Air Pollutants Avoided

Ratio of transit air pollutants emitted to avoided personal vehicle emissions



Building Efficiency

kbtu/ sq. ft.



Greenhouse Gas Emissions Avoided

Ratio of transit GHG emissions to avoided personal vehicle emissions



Vehicle Efficiency

MMBtu/revenue miles



Strategy Summary

There are four focus areas, each with a set of strategies intended to work toward the overarching plan, vision and goal. The following table lists the strategies, their relative level of effort, and a preliminary implementation timeline.

Strategy	Level of Effort	2026	2027	2028	2029	2030
Energy Efficiency						
Strategy 1-1: High-Efficiency New Buildings	Low					
Strategy 1-2: High-Efficiency New Equipment	Medium					
Strategy 1-3: Continuous Improvement of Existing Buildings	Medium					
Electric Vehicles						
Strategy 2-1: Revise Bus Replacement Plan	Low					
Strategy 2-2: Complete Trax Fleet Replacement	Low					
Strategy 2-3: Promote EV Bus Benefits	High					
Electrical Infrastructure						
Strategy 3-1: Install public and private charging	High					
Strategy 3-2: Optimize Bus Charging Procedures	High					
Strategy 3-3: Revise Long-Term Charging Infrastructure Plans	Low					
Grid Resilience						
Strategy 4-1: Utah Renewable Communities Program	Low					
Strategy 4-2: Work with RMP to Identify an Opportunity for Collaboration	Medium					



Energy Action Plan Background and Planning Process

Wattsmart Communities expands Rocky Mountain Power’s energy efficiency and renewable energy programs to serve entire communities or organizations—such as UTA—with tailored support to help achieve their sustainability goals. In 2020, Rocky Mountain Power (RMP) and UTA signed the interagency partnership vision and developed an Energy Action Plan to advance shared goals in reliable and sustainable electricity use (Figure 1)

During the development of this plan UTA committed to the plan-do-check-act cycle to help ensure that the agency stayed on track to meet their long-term energy vision. Five years after the development of the Energy Action Plan, UTA has engaged RMP’s Wattsmart Communities offering to check the progress since the 2020 Energy Action Plan and help set new targets for the next five years.

Since the development of the 2020 Energy Action Plan, UTA has developed a Sustainability Plan for the organization, which was adopted by the board in December 2025. This planning effort is designed to leverage RMP resources to help UTA meet the energy goals set forth in the Sustainability Plan.

Plan Development Process

As part of the Wattsmart Communities energy planning process, key UTA and RMP stakeholders were invited to join an Energy Planning Team and participate in two planning workshops and three technical focus groups. The feedback gathered during these workshops was used to identify the strategies in this plan to support goals outlined in the Sustainability Plan leveraging programs offered by RMP.

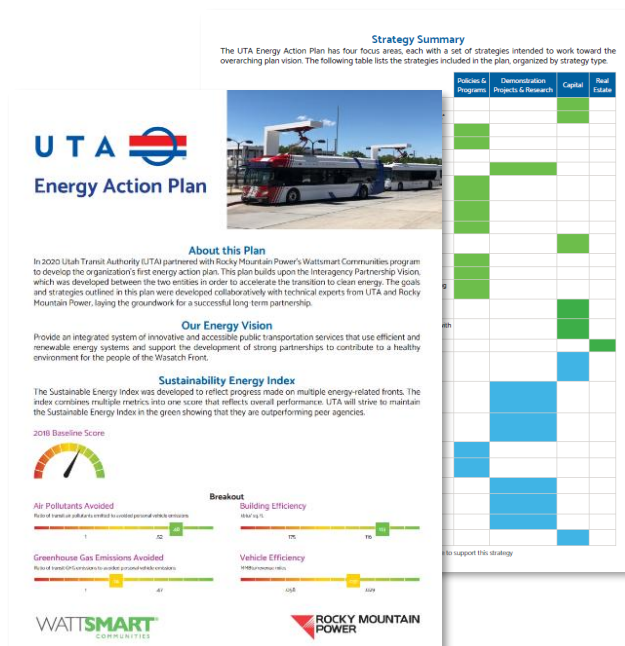


Figure 1: 2020 UTA Energy Action Plan

Overview of Current Initiatives

Since adoption of the 2020 Energy Action Plan, UTA has made considerable progress advancing energy action and sustainability across the organization. The 2026 Energy Action Plan builds on this momentum and is informed by several existing organizational plans and policy commitments. The following plans and goals guided the development of the Energy Action Plan and ensure alignment with UTA's broader strategic, sustainability, and emissions-reduction objectives. This plan is intended to translate these high-level commitments into detailed, actionable implementation strategies, with a particular focus on collaboration between UTA and RMP.



2022–2030 Strategic Goals And Objectives

UTA's 2022–2030 Strategic Goals and Objectives establish five priority areas: moving Utahns to a better quality of life, exceeding customer expectations, achieving organizational excellence, building community support, and generating critical economic return. This Energy Action Plan most directly supports the goal of moving Utahns to a better quality of life, which includes a specific objective to reduce the carbon footprint of UTA vehicles and facilities by 25% by 2030. The emissions reduction target aligns energy planning with UTA's broader mission to improve environmental outcomes while enhancing mobility and quality of life across the region.

UTA Sustainability Plan

Adopted December 2025

The Sustainability Plan was developed to promote sustainability by cutting greenhouse gas (GHG) emissions, boosting energy efficiency, conserving water, minimizing waste, and broadening access to cleaner, more resilient transit options. This energy action plan supports strategies that cut GHG emissions and boost energy efficiency through collaboration with RMP programs and incentives.



Carbon Emissions Baseline

Analysis conducted during development of the 2025 UTA Sustainability Plan identified fuel consumption for mobile sources, gasoline, diesel, and compressed natural gas (CNG), as the largest contributor to UTA's GHG emissions as shown in Figure 2.

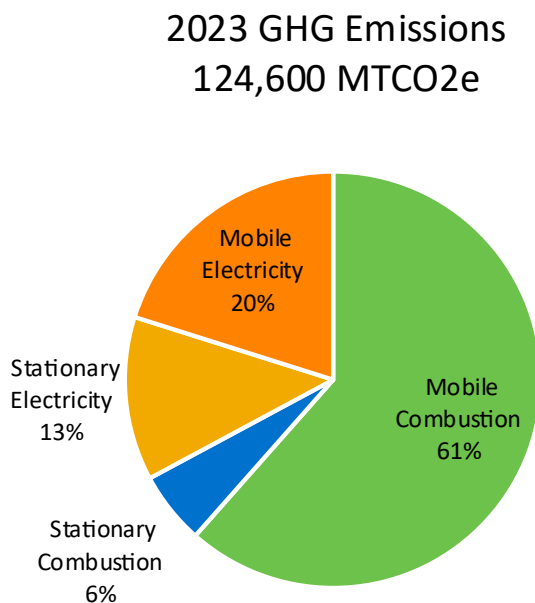


Figure 2: UTA 2023 Baseline Scope 1 & 2 GHG Emissions Sources

The next largest source of emissions is electricity use for TRAX propulsion (mobile electricity) and electricity use in buildings. This baseline data shows that the top two most impactful carbon reduction strategies will be shifting mobile energy use to lower carbon fuels such as electricity or CNG and increasing the portion of electricity use that is generated by renewable energy sources such as wind or solar. These findings directly inform the priorities and actions identified in the Energy Action Plan.

2023 Zero-Emission Bus Transition Plan

The Zero-Emission Bus Transition Plan outlines UTA's long-term strategy to transition its bus fleet toward zero- and low-emission technologies in support of improved air quality, environmental equity, and system sustainability. The plan establishes a pathway to achieve a fleet that is 50% alternatively fueled by 2040, with significant near-term investments in battery electric buses, charging infrastructure, utility partnerships, and workforce development. Through phased fleet replacement, targeted deployment in communities disproportionately affected by air pollution, and close coordination with RMP, the plan directly advances UTA's energy and emissions reduction goals while ensuring reliable service and operational resilience. This plan is central to addressing emissions from mobile combustion sources, though implementation timelines may be adjusted in response to changes in available federal funding. This plan is undergoing revisions in 2026 to account for these changes.



Where do we want to go?

To ensure this plan's alignment with other UTA sustainability initiatives, the planning process aligned on the following vision and goals previously set by UTA.

Vision

This plan aligns with UTA's overall strategic vision from the organization's [2022-2030 Strategic Goals and Objective](#) shown below by directly supporting the cleaner environment and reliable transportation components.

The Utah Transit Authority moves Utah to a stronger economy, a cleaner environment, increased mobility, greater access to opportunity, and a better quality of life—all driven by safe, reliable transportation.

Goals

This plan is designed to be an implementation guide showing how collaboration between RMP and UTA can support existing plans and efforts underway at UTA. The strategies outlined in this plan will support UTA's efforts to meet the overarching GHG emissions reduction goals outlined in the 2025 Sustainability Plan as shown in Figure 3.

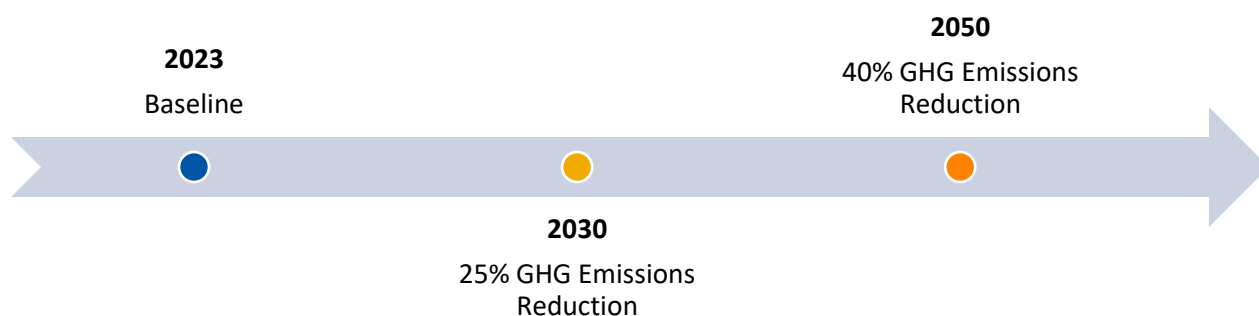


Figure 3: 2025 Sustainability Plan Goals

Sustainable Energy Index

To reflect progress being made on multiple fronts, while still providing a clear metric to share with UTA's stakeholders, the Energy Planning Team developed a Sustainable Energy Index during the original planning effort. This approach combines multiple metrics into one score that reflects overall performance and can be easily communicated. The four metrics included are:

1. **Air Pollutants Avoided:** This is a ratio that shows the transit air pollutants emitted as compared to the air pollutants that would have been emitted if the passengers chose to drive personal vehicles. Strategies in the electric vehicle focus area will improve this metric.

2. **GHG Emissions Avoided:** This is a similar ratio to the first metric but looks at GHG emissions rather than local air pollutants. Strategies in the electric vehicle and grid resiliency focus areas will improve this metric.
3. **Building Energy Efficiency:** This metric is the average energy use per square foot of all the Agency's buildings. Strategies in the building energy efficiency focus area will improve this metric.
4. **Vehicle Fuel Efficiency:** This is the average fuel use per revenue-mile for the Agency's vehicle fleet. Strategies in the electric vehicle focus area will improve this metric.

The organizational dashboard for the 2018 baseline is shown in Figure 4.

2018 Baseline Score

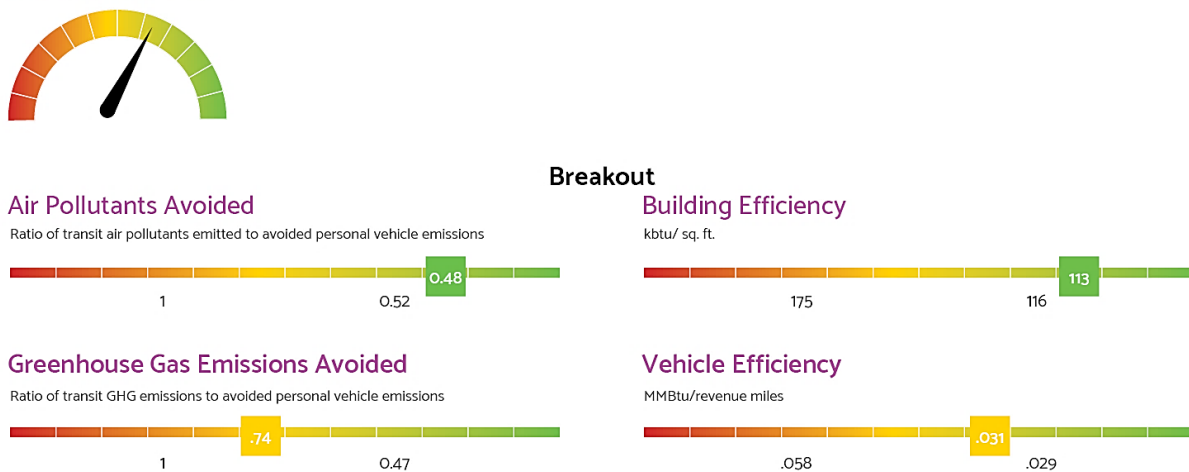


Figure 4.2018 UTA Baseline Score

In 2018, UTA committed to strive to maintain the Sustainable Energy Index in the green showing that they are outperforming peer agencies. To measure success of this effort, the metrics were updated with 2023 data. Figure 5 shows all metrics

2023 Index Score

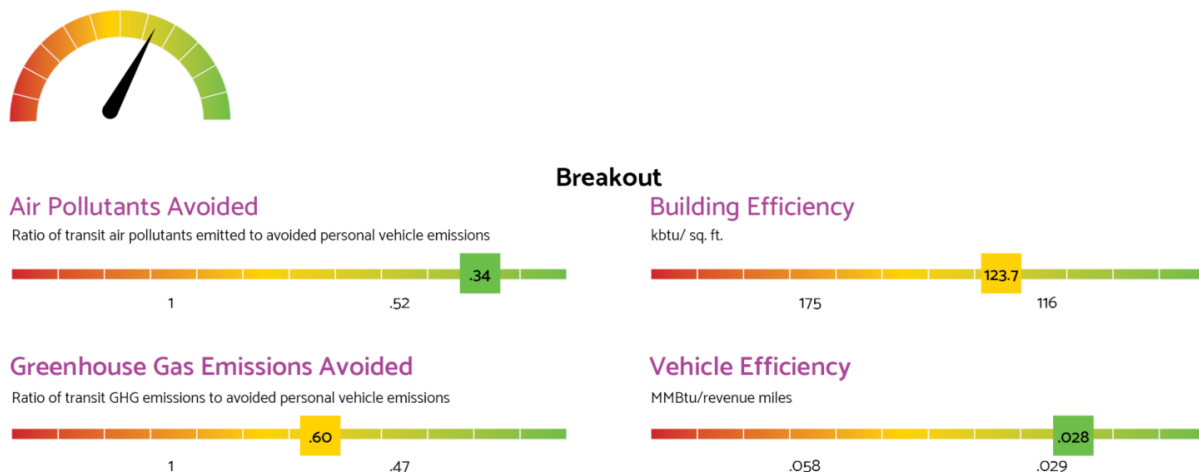


Figure 5. 2023 UTA Baseline Score

improved except building efficiency, leading to an overall improvement in the index highlighting the agency’s culture of continuous improvement.

More information about drivers for each metric can be found in the following sections and see [Appendix A](#) for additional details about the index.

Focus Areas

Focus areas in this plan continue to align with the Interagency Agreement and the previous Wattsmart Communities Energy Action Plan to allow for more direct comparison to baseline and tracking of progress (Figure 6). Evaluation of progress in each focus area and identified opportunities can be found in the following sections.

Each focus area includes an evaluation of the progress towards the target set in the 2020 Energy Action Plan, examples of success stories implementing the 2020 plan, and proposed new strategies. Instead of setting new targets, the 2026 targets align with current adopted or proposed goals across other agency plans to illustrate that this plan is an implementation arm of plans already developed rather than an additional effort.

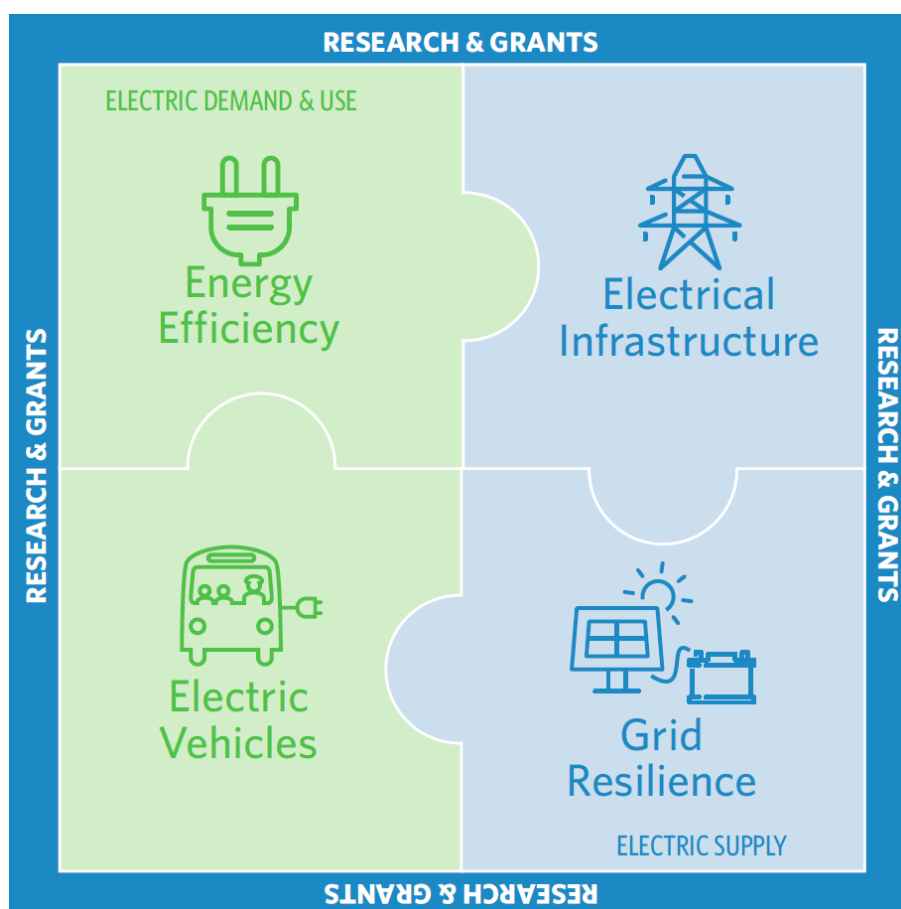


Figure 6: Focus Areas

How are we going to get there?

Based on the vision and goals already established, the Energy Planning Team worked to leverage successes and lessons learned over the last five years to create an actionable plan for the next five years. For each of the four focus areas established in the Interagency Partnership agreement, the planning team:

1. Reviewed whether UTA met the target set in the 2020 Energy Action Plan.
2. Identified areas where UTA had successes.
3. Calculated new targets based on existing UTA goals.
4. Identified priority strategies over the next five years.

Target Evaluation	
Look for these icons in the target evaluation section of each focus area	
	Indicates a target that was not met
	Indicates a target that was met.

The results and detailed action plans for priority strategies can be found by focus area in the sections below. Table 1 provides an overview of plan strategies by focus area, their relative level of effort, and a preliminary implementation timeline.

Table 1: Strategy implementation timeline

Strategy	Level of Effort	2026	2027	2028	2029	2030
Energy Efficiency						
Strategy 1-1: High-Efficiency New Buildings	Low					
Strategy 1-2: High-Efficiency New Equipment	Medium					
Strategy 1-3: Continuous Improvement of Existing Buildings	Medium					
Electric Vehicles						
Strategy 2-1: Revise Bus Replacement Plan	Low					
Strategy 2-2: Complete Trax Fleet Replacement	Low					
Strategy 2-3: Promote EV Bus Benefits	High					
Electrical Infrastructure						
Strategy 3-1: Install public and private charging	High					
Strategy 3-2: Optimize Bus Charging Procedures	High					
Strategy 3-3: Revise Long-Term Charging Infrastructure Plans	Low					

Strategy	Level of Effort	2026	2027	2028	2029	2030
Grid Resilience						
Strategy 4-1: Utah Renewable Communities Program	Low					
Strategy 4-2: Work with RMP to Identify an Opportunity for Collaboration	Medium					

Focus Area 1: Stationary Energy Efficiency

The Stationary Energy Efficiency focus area addresses energy use from buildings and other stationary sources such as transit stops.

✗ 2020 Target: Continue the trend of decreasing stationary energy use by 4% per year over the next two years.

Evaluation of Progress

Since the 2018 baseline, total stationary energy use has increased by 9% due to significant increases in natural gas use bringing it back above 2016 levels (Figure 7). This may be at least partially influenced by weather as heating degree days (a measure of the amount of heat needed in a year) increased by 13% from 2018 to 2023.

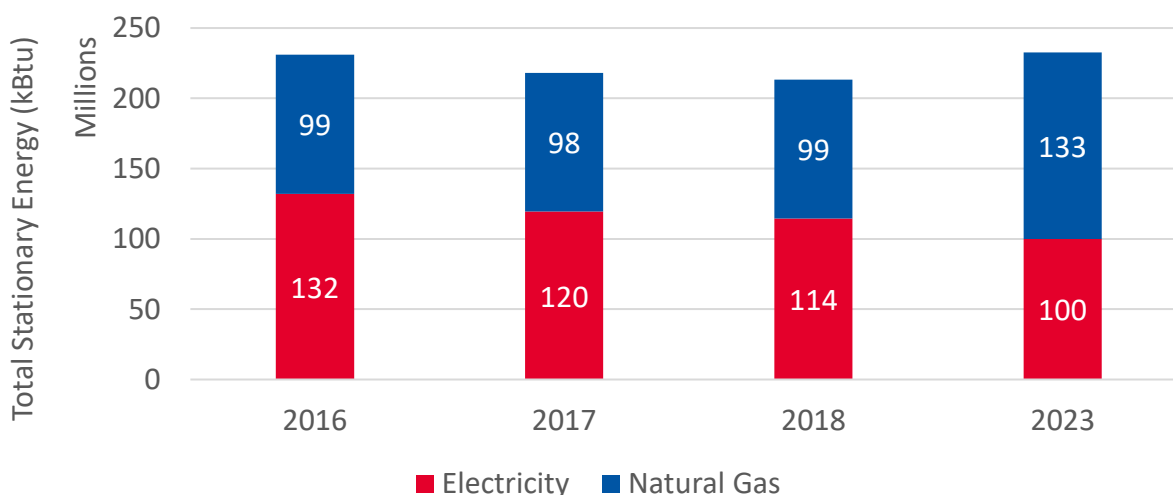


Figure 7: Trends in Stationary Energy Use

Despite this overall increase in energy consumption, electricity use continues to decrease, down about 12% total since the 2018 baseline which equates to about 3% per year. To help support the continued improvement in electricity energy efficiency, UTA and RMP have been collaborating on projects to continue converting

facility and station lighting to light-emitting diode bulbs (LEDs) as well as high-efficiency new construction at the Depot District Clean Fuels Technology Center. Figure 8 illustrates the continued collaboration over the years with the estimated electricity savings from efficiency projects on the left and the associated RMP incentives received on the right.

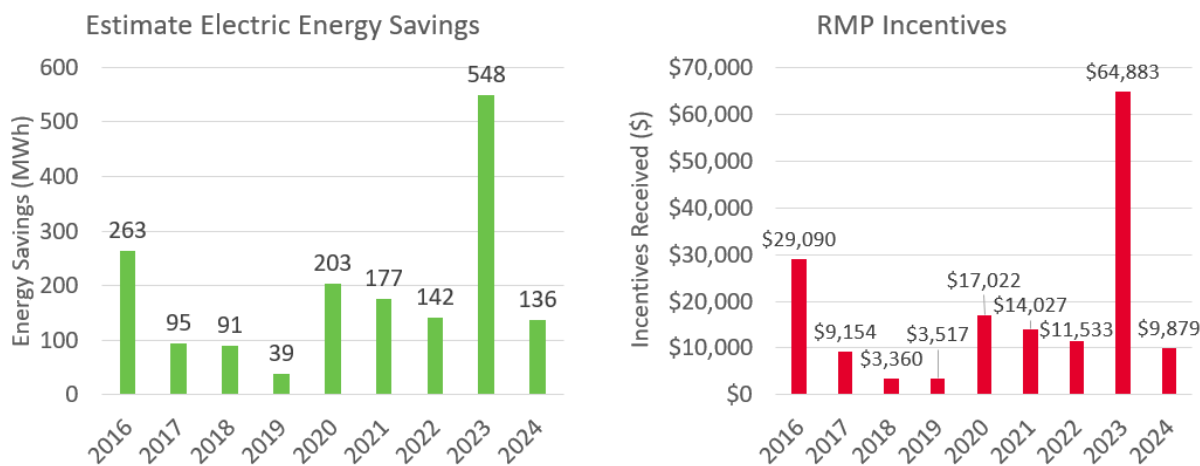


Figure 8: Utility Program Electricity Savings and Incentives

Success Story: UTA's 2023 Clean Fuels Technology Center

The largest energy efficiency collaboration to date was the building of the Depot District Clean Fuels Technology Center in 2023. In this collaboration, UTA participated in RMP's Whole Building New Construction Program to identify and install above-code equipment to improve overall building energy efficiency and lifelong performance.

The new facility is over 132,000 sq. ft. and includes bus bays, office spaces, fitness rooms, and locker rooms. During design and construction, UTA chose to install a cool roof, high efficiency cooling equipment, improved windows and insulation, as well as high-efficiency LED lighting. These upgrades were estimated to cost UTA about \$186,000 and calculated to reduce electricity bills by over \$36,000 per year compared to a code-baseline building. Key stats from this project are shown in Figure 9.

Receive a total incentive of

 **\$59,638**

Lower your annual electric costs by

 **\$36,530**

Cost of upgrade

 **\$185,895**

Simple Payback

 **3.5 years**

Figure 9: Depot District Clean Fuels Technology Center Upgrade

Target Setting

Strategies in this focus area support the Sustainability Plan’s target to reduce overall facility energy consumption by 75% by 2050 from the 2023 baseline. The new five year target for this focus area shown below is designed to keep UTA on track to hit the overall energy consumption goal.

2026 Target: Reduce overall annual energy use by 19% (45 million kBtu) by 2030.

This is an aggressive target and outpaces energy efficiency efforts to date.

Energy Efficiency Strategies

Based on feedback from stakeholders, the following strategies were identified as priorities for improving energy efficiency over the next five years. Table 2 shows the overall timeline for these strategies with detailed implementation plans for each in the following sections.

Table 2: Energy Efficiency Strategy Timeline

Strategy	Level of Effort	2026	2027	2028	2029	2030
Strategy 1-1: High-Efficiency New Buildings	Low					
Strategy 1-2: High-Efficiency New Equipment	Medium					
Strategy 1-3: Continuous Improvement of Existing Buildings	Medium					

Strategy 1.1: High-efficiency New Buildings

For all new construction and major renovation projects, leverage RMP’s new construction program to incorporate high-efficiency opportunities and design buildings with the lowest total cost of ownership.

Action Planning

1. **Capital Services**, including **Facilities Development**, to develop a standard operating procedure (SOP) outlining when construction projects should engage RMP for utility planning and a whole building design program.
 - a. Coordinate development with transit-oriented communities.
 - b. Plan to engage RMP Whole Building Program during concept design work.
 - c. **RMP Regional Business Manager** to provide a guide for the timing of utility supply conversations.
 - d. Approval by the SOP committee.
2. **Facility Development** to take the approved SOP and apply to Facilities Development Plan.

- a. Engage RMP as directed as new projects are defined.
 - b. Contact information for RMP programs can be found in [Appendix E](#).
 - c. Leverage RMP Whole Building program to complete cost benefit analysis of design decisions. This analysis could include the feasibility of installing cold climate heat pumps for heating and cooling.
 - d. Ensure new meters have AMI capability for data tracking.
3. **Project Manager** to continue engagement in the RMP Whole Building program through construction.
 4. **Environmental Compliance and Sustainability** to record overall impact of design decisions and incentives received by participation in the RMP Whole Building program.
 5. **Workforce Technical Training** to ensure **Facilities Maintenance** staff receive the necessary training to maintain and repair all equipment installed in the new facilities.

Approval Requirements

- SOP approval required by the Policy SOP Committee (may need to go to the board).

Data Needs

- Utility data at a building level.
- Earned utility incentives.

Available Resources

- **RMP:**
 - [Wattsmart® Whole Building incentive](#).
 - [Wattsmart® Business equipment incentives](#).
- **Other:**
 - [ThermWise Business Rebates](#).



Strategy 1.2: High-Efficiency New Equipment

Establish procurement sustainability standards to purchase high-efficiency equipment when planning for scheduled maintenance equipment replacement whenever feasible.



Sustainability Plan Connection

This icon indicates strategies identified in the Sustainability Plan implemented through this Energy Action Plan.

Action Planning

1. **Facilities Maintenance, State of Good Repair Team, and Environmental Compliance and Sustainability** to develop a SOP for specifying replacement equipment that meets or exceeds utility rebate standards.
 - a. SOP will consider Buy America requirements.
 - b. Potential applications for cold climate heat pumps will be included.
 - c. Final judgement calls on purchased equipment will be determined by Facilities Maintenance to leave flexibility based on the specific application.
2. **Operations & Maintenance** to apply standards to maintenance planning budgets.
3. **Facilities Maintenance** to implement purchase and installation of equipment including coordinating with RMP to receive equipment incentives.
4. **Workforce Technical Training** to ensure **Facilities Maintenance** staff receive the necessary training to maintain and repair all equipment installed.
5. **Environmental Compliance and Sustainability** to record incentives received and provide awards/recognition for high performing projects.

Approval Requirements

- SOP approval required by the Policy SOP Committee (may need to go to the board).

Data Needs

- Earned utility incentives.

Available Resources

- **RMP:**
 - [Wattsmart® Whole Building incentive.](#)
 - [Wattsmart® Business equipment incentives.](#)
- **Other:**
 - [ThermWise Business Rebates.](#)



Strategy 1.3: Continuous Improvement of Existing Buildings

Conduct comprehensive energy audits across all facilities to identify opportunities for improved energy efficiency by leveraging Wattsmart Business programs and implement priority strategies.

Action Planning

1. **Environmental Compliance and Sustainability** to prioritize buildings for energy audits using the following:
 - a. Utility bill analysis completed by Environmental Compliance and Sustainability.
 - b. Building system needs assessment completed by Facilities. Development especially when efficiency upgrades can be tied to necessary safety and infrastructure upgrades.
 - c. Planned building replacements.
2. **Facilities Maintenance and Environmental Compliance and Sustainability** to arrange energy audits through RMP Energy Management program. Some opportunities to explore through the audits include:
 - a. Removing unused block heaters.
 - b. Depot district meter consolidation.
3. **Facilities Maintenance and Facilities Development** to implement any findings.

Approval Requirements

- Environmental & Sustainability to work with Facilities to identify audits.

Data Needs

- Facility level utility data.

Available Resources

- **RMP:**
 - [Wattsmart® Whole Building incentive.](#)
 - [Wattsmart® Large Business incentives.](#)
- **Other:**
 - [ThermWise Business Rebates.](#)

Focus Area 2: Electric Vehicles

The Electric Vehicle (EV) focus area addresses electrification of UTA buses, white fleet vehicles, and rail trains.

- ✓ **2020 Target:** Pilot 35 electric buses on a variety of routes over the next five years to better understand the vehicle performance, maintenance requirements, and charging strategies to inform long-term planning for electric buses across the agency.

Evaluation of Progress

As of April 2025, there are 38 electric buses in the UTA fleet up from the three buses in service in 2019. To support the increased bus fleet, 28 charging stations (most with three charging ports) were installed to support both depot and in-route charging. More information about charging infrastructure can be found in the electrical infrastructure focus area.

In addition to the BEB adoption, the FrontRunner hybrid diesel engines were all upgraded from Tier 0 to Tier 2. UTA determined the economic and environmental benefits of jumping to tier 2 engines were in the agency's best interest and invested in upgrades across the board. This is one of the key driving factors in reduced air pollution from the transit service.



Buses: 509 Buses

- 38 Electric
- 25 Hybrid
- 84 Compressed natural gas (CNG)



White Fleet: 673 vehicles

- 96 Hybrid
- 2 Electric



Train

- TRAX electric
- FrontRunner diesel

Success Story: Tooele Microtransit & Vehicle Electrification

The Tooele Microtransit service provides low-cost ADA-accessible coverage to rural service areas in Tooele County. This service replaced the Flex Route and Dial-a-Ride offering. Starting in July 2023, 10 Ford E-Transit electric, ADA-accessible, 6-passenger vans were put into service. In the first 12 months, the service increased ridership from about 70 riders to 220 riders daily. This pilot project provides an example of how other service areas can leverage EV technology to decrease their environmental footprint while improving service.



Figure 10: Launch of Microtransit service

Target Setting

This focus area supports the goal set in the zero-emissions bus plan to reach 50% alternatively fueled vehicles by 2040 with 36% of those being electric. With changes in federal funding, the zero-emissions bus plan is being revisited and goals revised.

2026 Target: The bus procurement will align with the revised bus procurement plan informed by the zero-emission vehicle plan in development at the time of writing this plan.

Electric Vehicle Strategies

Three key strategies were identified for implementation over the next five years to promote electric vehicles. Table 3 shows the overall timeline for these strategies with detailed implementation plans for each in the following sections.

Table 3: Electric Vehicle strategy timeline

Strategy	Level of Effort	2026	2027	2028	2029	2030
Strategy 2-1: Revise Bus Replacement Plan	Low					
Strategy 2-2: Complete Trax Fleet Replacement	Low					
Strategy 2-3: Promote EV Bus Benefits	High					

Strategy 2-1: Revise Bus Replacement Plan

Develop an updated fuel propulsion mix plan for the transit fleet considering the changes in federal priorities, programs, and incentives.

Action Planning

1. UTA is working with a third-party, **Mott MacDonald**, to update and revise the zero-emission vehicle plan with stakeholder feedback. The plan will include a well-to-wheels analysis focused on the direction to head. The plan will inform readers about the quantities of buses purchased by fuel type.
2. **Capital Vehicles** will use the updated zero-emission vehicle plan to revise the fleet management strategy. The fleet management strategy will inform the bus replacement plan.
3. Apply the updated bus replacement plan and coordinate any needed revisions with charging infrastructure planning and needs ([Strategy 3-3](#)).

Approval Requirements

- Executive review of the zero-emission vehicle plan with possible board approval.

Data Needs

- Data source for tracking percent of fleet by propulsion type.

Available Resources

- **Other:**
 - Federal Transit Administration (FTA) [Low or No Emission Grant Program](#).
 - FTA [Grants for Buses and Bus Facilities Program](#).
 - [Statewide Beehive Emission Reduction Plan](#) and associated Division of Air Quality funding.

Strategy 2-2: Complete Trax Fleet Replacement

Improve efficiency of TRAX vehicles by replacing less efficient older vehicles with high-efficiency new models.

Action Planning

1. **Capital Vehicles** and **Environmental Compliance and Sustainability** to evaluate if new vehicles planned are beyond standard efficiency of current technology. If so, explore potential rebates through Rocky Mountain Power WattSmart Business program.
2. Continue the plan for the replacement with 40 new vehicles in 2028-2029.
3. **Capital Vehicles** to explore options for the disposal of the replaced vehicles (i.e., sell, recycle, etc.).
4. New light rail vehicles to be in place before studying on demand management at traction substations ([strategy 4.2](#)).

Approval Requirements

- None – Project has already been approved by the board.

Data Needs

- Comparative energy before and after using monthly utility bills by meter.

Available Resources

- **RMP:**
 - [Wattsmart® Business Custom Analysis](#).



Strategy 2-3: Promote EV bus benefits

Develop diverse and effective internal and external communication strategies to educate and inform UTA staff, including operators, and the public about UTA's electric bus fleet.

Action Planning

1. **Environmental Compliance and Sustainability** to convene internal training staff to design an internally focused educational campaign about electric buses. Ensure coordination with the fleet staff and fleet strategy.
 - a. **Environmental Compliance and Sustainability** with support from **Innovative Mobility Solutions** and **Workforce Technical Training** to determine needs of each audience (mechanics, technicians, operators, and general staff). Content may include:
 - i. Workforce development needs identified in the Zero-Emissions Bus Plan update.
 - ii. Manufacturer high voltage training for mechanics including arc-flash and thermal runaway events.
 - iii. Awareness of performance specifics for electric and other alternative-fueled buses.
 - iv. Addressing old ideas on bus technology within UTA and the broader transit industry.
 - b. **Environmental Compliance and Sustainability** to lead data and content collection for training efforts, with support from **Innovative Mobility Solutions**. Data collected may include:
 - i. Bus performance data including fuel efficiency and costs between the different types of fuels.
 - ii. Agreed upon data source(s) for financial analyses.
 - c. **Innovative Mobility Solutions** to share the dashboard about buses to business units and to frontline employees (maintenance and facilities staff and operators) providing more information.
 - i. How to access the dashboard.
 - ii. What it is showing.
 - iii. What the information means and why is it important.
 - d. **Environmental Compliance and Sustainability** to determine outreach methods with support from **Innovative Mobility Solutions**.
 - i. **Director of Workforce Technical Training** to lead technical staff training (operators).
 - ii. **Bus Operations Training Supervisor** to lead new employees and ongoing training opportunities.
2. **Environmental Compliance and Sustainability** to convene with **Marketing and Communications** staff to design an external-facing educational campaign about electric buses for the public.
 - a. Determine key messaging:

- i. **Environmental Compliance and Sustainability** to lead data and content collection, with support from **Innovative Mobility Solutions** and **Marketing and Communications** team.
- ii. **Marketing and Communications** team to determine outreach channels. Examples could include social media posts, video, etc.
- iii. **Marketing and Communications** to develop outreach plan to share information.

Approval Requirements

- Instructional design team – do they have capacity and development time?
- Chief Operations Director.
- Chief People Director.
- Director of Workforce Technical Training.

Data Needs

- Metrics for tracking campaign dissemination efforts.

Available Resources

- **Other:**
 - Department of Transportation [Benefits and Implementation Challenges of Bus Electrification](#).



Focus Area 3: Electrical Infrastructure

The Electrical Infrastructure focus area addresses safely and efficiently powering UTA's existing electric rail (TRAX) and increasing its electric bus fleet charging infrastructure.

- ✓ **2020 Target:** New charging infrastructure installation will consider electric fleet procurement plans over the next five years while incorporating strategies to future-proof infrastructure installations.

Evaluation of Progress

In parallel with the adoption of new all-electric buses, 28 charging stations have been installed. These stations typically include up to three charging ports. Due to the increased use of electric buses, the electricity used for charging has increased 2044% from 2022 to 2025 as total battery electric bus (BEB) miles have increased to almost 1 million miles in 2025 (Figure 2).

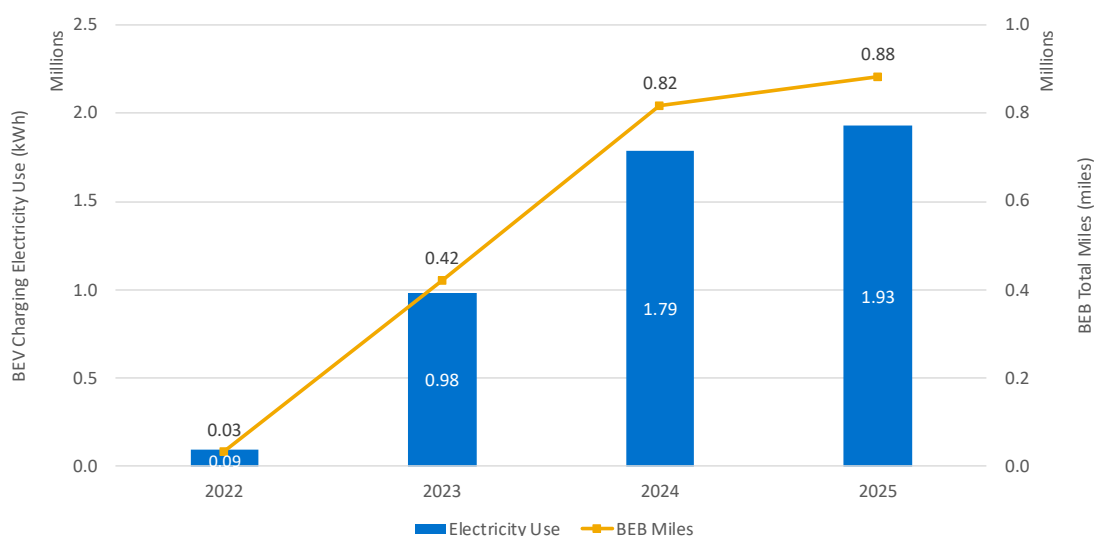


Figure 11: Bus charging electricity use trends

This trend highlights the need to manage when and how buses are charged as this can significantly impact fuel costs and charging infrastructure needs. To help inform these efforts, UTA is working to develop a charging dashboard to allow more accurate tracking of charging trends with the goal of managing peak demand.

Additionally, the agency has collaborated with University of Utah to develop the Electric Bus On-Route Charging Implementation plan to help inform long-term BEB planning. This plan is based on early learnings and is expected to evolve as understanding of bus operation, charging, and maintenance needs improve.

Success Story: S.B. 125 Transportation Infrastructure Amendments

UTA is part of a multi-agency effort through ASPIRE at Utah State University to develop an action plan for an electrified and intelligent transportation system in

Utah. ASPIRE recently received \$2.1 million from the state legislature to fund this multiyear planning effort. By participating in this larger planning effort, UTA can continue to refine electrical infrastructure plans to optimize agency charging and service.

Target Setting

This focus area also supports the goal set in the zero-emissions bus plan to reach 50% alternatively fueled vehicles by 2040 with 36% of those being electric. The following target was set to be sure the charging infrastructure supports the bus conversion plan.

2026 Target: Bus charging infrastructure and protocols will keep pace to support BEV adoption as described in the electric vehicle focus area.

Electrical Infrastructure Strategies

Based on feedback from stakeholders the following strategies were identified as priorities for this focus area over the next 5 years. Table 4 shows the overall timeline for these strategies with detailed implementation plans for each in the following sections.

Table 4: Electrical Infrastructure strategy timeline

Strategy	Level of Effort	2026	2027	2028	2029	2030
Strategy 3-1: Install public and private charging	High					
Strategy 3-2: Optimize Bus Charging Procedures	High					
Strategy 3-3: Revise Long-Term Charging Infrastructure Plans	Low					

Strategy 3-1: Install public and private charging

Install public charging at park and rides as outlined in the 2023 MOU Amendment No.1 in collaboration with RMP.

Action Planning

- Innovative Mobility Solutions** to reconfirm goal of shared infrastructure for bus fleet and public use and locations with UTA staff.
 - Check in with Rocky Mountain Power on locations (Jeff Howcroft and include Sierra Gentry).
 - Communicate benefits to UTA and the broader community of shared charging infrastructure. This may include a case study of savings and impact of current installations.
- Innovative Mobility Solutions** to continue completing UTA approval process for UTA locations.

3. **RMP** to install EV charging at identified sites.
4. Monitor charging use; refine process for future locations.

Approval Requirements

- Maintenance of Change with Safety and Security Committee (Approved March 5, 2026, but site-specific updates required to be shared with this committee as designs progress).
- Individual Licensing Agreements with Property leasing team.

Data Needs

- Number of public chargers installed.
- Estimated cost savings from shared infrastructure.

Available Resources

- **Other:**
 - U.S. Department of Transportation's 2024 report - [State of the Practice and Emerging Practices in Public-Private Partnerships for Electric Vehicle Charging Infrastructure](#).
 - MIT Climate & Sustainability Consortium - [Shared Electric Vehicle Charging Networks: A Flexible Approach to Support Deployment of Electric Fleets](#).
 - Calstart's 2024 report - [Shared Charging Sites: Accelerating the ZEV Market and Delivering Public Benefits](#).
 - Atlas Public Policy's [Deploying Charging Infrastructure for Electric Transit Buses](#).





Strategy 3-2: Optimize bus charging procedures

Implement optimized charging strategies for electric fleet systems to reduce peak energy demand, lower operational costs, and extend battery life.

Action Planning

1. **Innovative Mobility Solutions** to secure a charging infrastructure maintenance contract.
2. **Innovative Mobility Solutions** to continue developing and improving dashboard with **ASPIRE** in collaboration with **Utah State University** to better understand bus and charging energy use.
3. **Innovative Mobility Solutions** to train appropriate staff (Facilities, Maintenance) on what the dashboard displays and how to use it.
4. From insights from data, **Innovative Mobility Solutions** to deploy updated policy and controls to optimize charging behaviors.
 - a. Assess what changes will optimize cost-effective charging.
 - b. Develop policies and procedures.
5. **Innovative Mobility Solutions** to work with **Maintenance Support** to identify opportunities to enroll bus charging in [RMP Demand Response](#) program to receive payments for pausing charging during grid events.
6. **Maintenance Training** to coordinate training for operators and maintenance staff on best practices.
 - a. Work with **Innovative Mobility Solutions** and **Environmental Compliance and Sustainability** to develop a training module.
 - b. Develop and conduct training courses in coordination with [Strategy 2-3](#) for internal staff.

Approval Requirements

- Refer to [Strategy 2-3](#) for internal training.

Data Needs

- Record all service on chargers.
- Document training efforts.
- Assess energy cost savings from charge management efforts.

Available Resources

- **Other:**
 - Atlas Public Policy's [Deploying Charging Infrastructure for Electric Transit Buses](#).

Strategy 3-3: Revise long-term charging infrastructure plans

Use the revised fleet strategy to inform and revise the charging infrastructure needs of the fleet.

Action Planning

1. **Innovative Mobility Solutions** to convene a group to revise the long-term charging infrastructure plan.
 - a. Review the current infrastructure plan and the revised bus replacement plan in Strategy 2-1.
 - b. Identify the charging infrastructure needed based on the new bus replacement plan.
 - c. Develop a revised charging infrastructure plan accounting for grant funding UTA has for infrastructure needs.
 - i. Reference timing for contacting RMP for supply.
2. **Innovative Mobility Solutions** to work with **Facilities Maintenance** to develop Standard Operating Procedures (SOPs) on charging infrastructure maintenance guidance.

Approval Requirements

- Executive team approval of charging infrastructure plan.
- SOP approval required by the Policy SOP Committee (may need to go to the board).

Data Needs

- Better recording and communicating about awarded grants and funding and the status of them for projects especially charging infrastructure.

Available Resources

- **Other:** Atlas Public Policy's [Deploying Charging Infrastructure for Electric Transit Buses](#)

Focus Area 4: Grid Resilience

The Grid Resilience focus area addresses reliability, cybersecurity, microgrids, and innovative technologies. There were two targets identified in this focus area, one to increase the amount of renewable electricity and the other on innovative grid strategies to improve grid resilience. Each target is evaluated separately below.

Part 1: Renewable Electricity

-  **2020 Target:** Increase the percentage of total electricity use from renewable energy sources to 25% by 2022.

Evaluation of Progress

- Renewable Energy from Grid mix in 2024: 17.2%.
- Sustainability funds purchased Blue Sky subscriptions: 4,858,000 kWh (6%).
- Additional Blue Sky Subscriptions: 217,200 kWh (<1%).
- Overall Renewable Energy: 23%.

Target Setting

Since electricity emissions made up about a third of the 2023 GHG emissions baseline, renewable energy continues to be a significant opportunity for carbon emissions reduction. Utah Renewable Communities is a coalition of cities, counties, and other municipalities that are working to launch a default net-100% renewable electricity option for customers of RMP in their respective communities. The details of this program are still underway and pending approval from the Public Service Commission in Winter 2025-2026. If passed and adopted by participating communities, UTA would automatically be served by 100% renewable electricity unless they choose to opt out of the program. While the details are not final, it is expected that there will be an additional fee to participate in the program. This presents an opportunity to meet the agency's 2030 carbon reduction goals and buy time to work on more capital-intensive projects that will take more time to implement.

2026 Target: Do not opt out of the Utah Renewable Communities program and transfer existing Blue Sky Subscriptions to any non-participating areas transitioning all electricity to 100% renewable energy by 2030.

This target also bolsters the impact of vehicle electrification efforts by ensuring all electric vehicles run on carbon-free fuel.

Part 2: Grid Reliability

-  **2020 Target:** At least two collaborative grid innovation (smart-grid, battery storage, backup generation) projects will be in progress each year—with the goal of improving service reliability as fleet is electrified.

Evaluation of Progress

Over the past five years UTA has worked to strengthen ties with innovation in transportation electrification. Some key grid innovation projects that have been completed or are currently underway include:

1. Intermodal Hub Smart Charging Research with USU (complete).
2. Solar microgrid opportunities at Depot District Clean Fuels Technology Center.

These research projects compliment work done in innovative electrical infrastructure collaborations through the ASPIRE collaboration and research with Utah State University and University of Utah.

Success Story: Intermodal Hub Project

UTA collaborated with RMP and Utah State University on a study to understand opportunities in demand management at the intermodal hub. The study looked at the feasibility and impact of a system that would automatically turn off bus fast chargers as the TRAX vehicles depart to mitigate peak energy use impacts along with other demand management strategies. The findings of this report helped UTA staff to frame ongoing efforts to monitor and manage bus charging.

Target Setting

The Sustainability Plan has a goal of developing a resiliency plan for the agency by 2050. The target below has been set to help set the stage for this planning effort.

2026 Target: Identify a pilot project to demonstrate key resiliency strategies that can be used as a basis for developing the resiliency plan.

Resilience Strategies

Based on feedback from stakeholders the following strategies were identified as priorities for this focus area over the next five years. Table 5 shows the overall timeline for these strategies with detailed implementation plans for each in the following sections.

Table 5: Grid Resiliency strategy timeline

Strategy	Level of Effort	2026	2027	2028	2029	2030
Strategy 4-1: Utah Renewable Communities Program	Low					
Strategy 4-2: Work with RMP to Identify an Opportunity for Collaboration	Medium					



Strategy 4.1: Utah Renewable Communities Program

Join the Utah Renewable Communities program and transition to net-100% renewable electricity in partnership with Rocky Mountain Power and local municipalities where feasible in UTA's service area and shift Blue Sky subscriptions to non-participating communities.

Action Planning

1. **Environmental Compliance and Sustainability** to follow the program to make sure it is approved.
2. **Environmental Compliance and Sustainability** to determine if UTA can opt in as its own entity.
3. Within 90 days of approval prepare cost/benefit analysis for participating in Renewable Communities Program.
 - a. **Environmental Compliance and Sustainability**: Calculate anticipated incremental cost (as it becomes available) compared to expected carbon emissions reduction.
4. **Environmental Compliance and Sustainability** to prepare the board packet detailing the cost benefit analysis and recommendations.
 - a. **Facilities** and **Finance** to support development of board packets.

Approval Requirements

- Board approval of incremental budget.

Data Needs

- Energy consumption in areas served by Renewable Communities to calculate incremental budget requirements. **RMP Regional Business Manager** to work with accounting to get monthly usage by meter.



Strategy 4.2: Work with RMP to Identify an Opportunity for Collaboration

Determine the feasibility of storage devices at traction power stations to manage peak demand when trains leave the station and implement a pilot project if viable. Other opportunities that could be considered for future study include solar energy and battery storage opportunities for building resiliency.

Action Planning

1. **Innovative Mobility Services** to determine the peak demand at the traction power substations and associated cost.
 - a. **Dan Locke** to pull the meter numbers at the substations.
 - b. **Finance** to determine if they track demand data.
 - c. **RMP Regional Business Manager** to determine if AMI data are available for the selected meters.
2. **Innovative Mobility Services** to lead Utah State team or other consultants in a feasibility study including technologies available, reliability, and a high-level cost benefit analysis to determine feasibility. Based on the findings, the study should also include a recommendation on the technology solution, pilot location, and priority substations for deployment.
 - a. **Environmental Compliance and Sustainability** and **Facilities** to support.
 - b. Cost benefit analysis should include RMP Wattsmart Battery program incentives as applicable.
3. **Innovative Mobility Services** to present the findings of the study to the board along with a recommendation.
 - a. Recommendation to be developed based on study findings and feedback from **Environmental Compliance and Sustainability**.

Approval Requirements

- Study over \$250,000 to be approved by the board.
- Any recommended project to be approved by the board.

Data Needs

- Demand spikes at substations.
- Assessment of any energy savings from implemented projects.

Available Resources

- **RMP:** [RMP Wattsmart Battery program](#)

Implementation Roles and Tracking Progress

This plan is just the first step in a series of activities that will be executed over the next two years (and beyond) in support of UTA’s energy and sustainability goals. This section includes a description of who is responsible for the implementation of this plan and how UTA will track progress toward plan goals. The key to successful implementation of the strategies outlined in this plan will be continued coordination and partnership between UTA and RMP. To facilitate this cooperation, regular check-ins between the two agencies will be scheduled.

Estimated Impact

If UTA meets the targets set out in this plan it will exceed its 2030 carbon reduction goal of 25% by 2030, reducing carbon emissions by 37%, as shown in Figure 12.

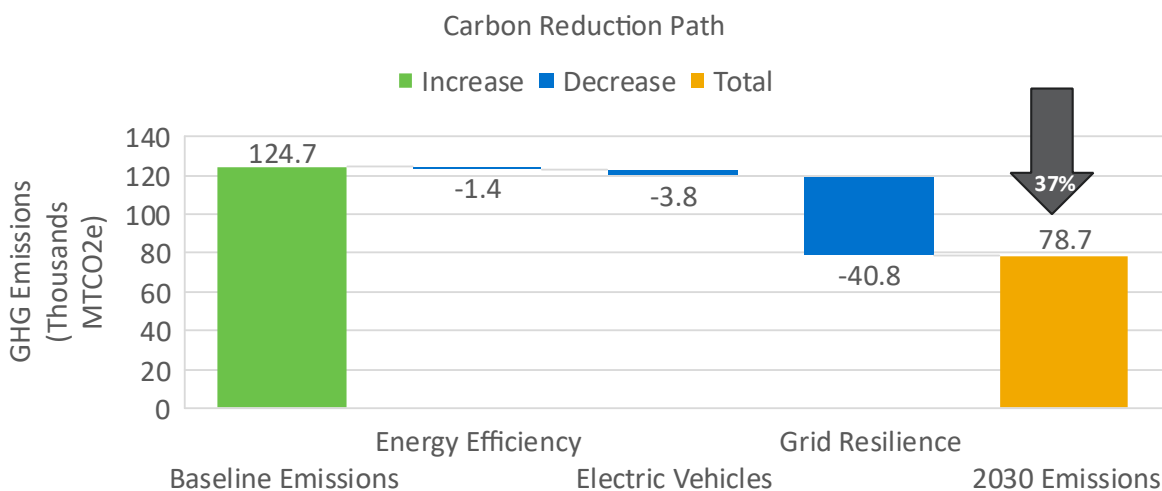


Figure 12: Cumulative Target Impact Towards 2030 Goal of 25% Reduction in Agency Carbon Footprint

Implementation Strategy

To help ensure implementation of strategies outlined in this plan, the following implementation strategies were identified.

Kick-off Open House

Hold an open house to celebrate the adoption of the Sustainability Plan and the start of the Energy Action Plan implementation. This is a good opportunity to highlight successes and provide a preview of what to expect over the next five years.

Quarterly Energy Action Team Meetings

Sustainability and Innovative Mobility Solutions will host quarterly energy action team meetings with key stakeholders identified in this plan, which may include representatives from:

- Facilities development.
- Capital services.
- Facilities maintenance.
- State of good repair.
- Operations and maintenance.
- Capital vehicles.
- Workforce technical training.
- Marketing and communications.
- Finance.

The team will meet to share status updates on implementation of current strategies, discuss barriers and opportunities, and track success.

Quarterly Interagency Partnership Meetings

To continue to further the interagency partnership, representatives from RMP and UTA will meet quarterly to discuss opportunities for collaboration. Topics for discussion may include:

- Data availability and tracking.
- Available incentives.
- UTA capital project plans.
- Opportunities for collaboration on capital projects.

Budget Coordination Meetings

Innovative Mobility and Sustainability staff will meet with finance to ensure the projects listed in Table 6 are included in the 10-year capital budget. Many of the strategies could have operating budget needs. When kicking off, UTA could review each strategy and identify the operating cost needs to align resource needs.

Table 6: Capital Projects Identified

Strategy	Capital Project
Strategy 1.1: High-efficiency New Buildings	Incremental budget for high-efficiency buildings for any planned projects
Strategy 1.2: High-efficiency New Equipment	Incremental budget for high-efficiency planned replacements
Strategy 2-2: Complete Trax Upgrades	Already included
Strategy 3-3: Revise long-term charging infrastructure plans	Adjust budget to match revised plan

Roles and Responsibilities

Through this planning process, the Energy Planning Team identified key UTA departments and partners who will work together to implement the plan strategies.

UTA staff will serve as the lead implementers of this plan, coordinating with internal and external partners as described in the strategy plans above.

Rocky Mountain Power (RMP) will serve as a resource and partner, coordinating regularly with UTA staff to ensure a successful long-term partnership. RMP will bring all available offerings to UTA and coordinate available incentives for applicable strategies. A summary of key contacts can be found in [Appendix E](#).

Responsible parties by strategy are detailed in Table 7.

Table 7: Responsible departments

Strategy	UTA Staff	RMP Staff
Energy Efficiency		
Strategy 1-1: High-Efficiency New Buildings	- Capital Services - Facilities Development - Project manager - Environmental Compliance and Sustainability - Workforce Technical Training - Facilities Maintenance	AJ Lowry
Strategy 1-2: High-Efficiency New Equipment	- Facilities Maintenance - State of Good Repair team - Environmental Compliance and Sustainability - Operations & Maintenance - Workforce Technical Training	AJ Lowry for resulting incentives
Strategy 1-3: Continuous Improvement of Existing Buildings	- Facilities Development - Environmental Compliance and Sustainability - Facilities Maintenance	AJ Lowry
Electric Vehicles		
Strategy 2-1: Revise Bus Replacement Plan	- Mott MacDonald (contractor) - Capital Vehicles	None
Strategy 2-2: Complete Trax Fleet Replacement	- Capital Vehicles - Environmental Compliance and Sustainability	AJ Lowry

Strategy	UTA Staff	RMP Staff
Strategy 2-3: Promote EV Bus Benefits	- Environmental Compliance and Sustainability - Innovative Mobility Solutions - Workforce Technical Training - Bus Operations Training Supervisor - Marketing and Communications	None
Electrical Infrastructure		
Strategy 3-1: Install Public and Private Charging	Innovative Mobility Solutions	Sierra Gentry
Strategy 3-2: Optimize Bus Charging Procedures	- Innovative Mobility Solutions - Maintenance Support - Maintenance Training - Environmental Compliance and Sustainability	Tracy Bell
Strategy 3-3: Revise Long-Term Charging Infrastructure Plans	- Innovative Mobility Solutions - Facilities Maintenance	None
Grid Resilience		
Strategy 4-1: Utah Renewable Communities Program	- Environmental Compliance and Sustainability - Finance - Facilities	Tracy Bell
Strategy 4-2: Work with RMP to Identify an Opportunity for Collaboration	- Innovative Mobility Solutions - Finance - Environmental Compliance and Sustainability - Facilities	Shawn Grant

Tracking Progress

As this Energy Action Plan is implemented, it will be imperative to continue to monitor progress toward the focus area targets and Sustainability Energy Index goal. Measuring success over time will enable UTA to refine strategies and inform future planning processes. This iterative implementation process is illustrated in Figure 13.

The implementation cycle is meant to accommodate lessons learned and to continue making progress beyond initial activities. The RMP team has been excited to participate in the development of this Energy Action Plan and looks forward to supporting its implementation.

The data needed to support strategy implementation and tracking are identified by strategy. Details of who is responsible for each metric are provided in Table 8.

Table 8: Data collection and tracking

Data Needs	Who is responsible?	Opportunities for Improvement
Utility data by meter	Tracy Bell (RMP) has set up automatic monthly data pull to be sent via email	Leverage AMI meters to automate and keep accurate.
Earned Utility Incentives	AJ Lowry (RMP) can pull a report annually as requested	None identified
Percent of fleet by propulsion type	Stu Beckworth (UTA)	None identified
Internal education campaign metrics	UTA staff to track activities	None identified
External educational campaign metrics	Marketing and communications team	None identified
Number of public EV chargers installed	Tracy Bell (RMP) to pull count and energy use and share on request	None identified



Figure 13: Action Planning Cycle

Data Needs	Who is responsible?	Opportunities for Improvement
Cost savings from shared EV infrastructure	UTA capital project managers for UTA only projects RMP project managers for joint installations	None identified
Service on BEB chargers	ASPIRE dashboard tracks and is tracked in maintenance software	Improve connection between maintenance software and ASPIRE
Cost savings from charge management efforts	ASPIRE dashboard	None identified
Tracking grant funding	Tracked on a per project basis by project managers	Opportunity to add incentive and grant money for a project to the finance dashboard

Appendix A: Sustainable Energy Index

The Sustainable Energy Index is a compilation of four separate energy metrics. Each metric is detailed below to show the reason the metric was chosen, how the score was calculated, and examples of the type of actions that will improve performance. Note that all metrics are currently being tracked by UTA.

Overall Score

To combine all four metrics into one overarching value, the yellow and green ranges defined by metric below are split into quadrants and a score is assigned based on the quadrant in which each metric falls as shown in the range below. A green score means that UTA is performing better than average when compared to peer agencies across the country. A yellow score means the agency is performing below average and should review the efforts in this area and adjust. A red score means that the agency does not meet basic performance benchmarks and the issues should be reviewed and addressed. The scored metrics are then averaged to create the final index score. Table 9 shows the values for 2018 shown in the 2018 Sustainable Energy Index dashboard.

0	1	2	3	4	5	6	7	8	9	10	11
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To establish the range for each metric the following values were identified and then each quadrant was interpolated or extrapolated from these values

- High (11): This was defined as best-in-class performance.
- Average (7): This value was defined as average performance across peer agencies.
- Low (3): This value was used to define what would be considered poor performance.

Table 9: 2018 Sustainable Energy Index

Metric	Value	Score
Air Pollutants Avoided	0.48	8
Greenhouse Gas Emissions Avoided	0.7	6
Building Energy Efficiency	113 kBtu/sq. ft.	8
Transit Fuel Economy	0.031 MMBtu/revenue mile	7
Sustainable Energy Index		7

Air Pollutants Avoided

This metric looks at the ratio of air pollutants (CO, NO_x, PM_{2.5}, SO_x) from transit vehicle emissions, compared to emissions if the transit riders chose to drive single-occupancy vehicles instead. This metric was chosen because air pollutants are of

special concern in the Salt Lake Valley because the area has been a non-attainment zone for several air quality factors over the last three years (Environmental Protection Agency, 2020). This is also an understood metric for transit agencies with existing tracking systems in place at UTA. The calculation for the 2018 baseline is shown below and is based on air pollutant data provided by UTA.

$$\frac{\text{Transit Air Pollutants}}{\text{Avoided Air Pollutants}} = \frac{920 \text{ tons criteria air pollutants}}{1,936 \text{ tons criteria air pollutants}} = 0.48$$

This ratio shows that the emissions from transit vehicles are less than half of what would have been emitted if the riders had driven alone.

The ranges used to score this metric are outlined below:

0	1	2	3	4	5	6	7	8	9	10	11
1.39	1.26	1.14	1.00	0.88	0.76	0.64	0.52	0.39	0.26	0.13	0.00

1. **Low:** A score >1 for criteria air pollutants means that emissions from transit are equal to or greater than single-occupancy vehicles, meaning there is no benefit from riding transit, due to some combination of low ridership and high transit emissions.
2. **Average:** Based on a study of potential air pollutant impact from transit use, the average ratio of transit air pollutants to avoided air pollutants is expected to be 0.52 (Shapiro, Hassett, & Arnold, 2002).
3. **High:** The maximum score would be achieved if all transit vehicles have zero direct emissions vehicles (electric or fuel cell vehicles). This does not account for indirect emissions from electricity generation.

UTA can influence this metric by increasing the number of riders or distance traveled or decreasing the emissions from transit vehicles through electrification of transit vehicles or other cleaner fuel options. It should also be noted that the methodology for determining avoided air pollutants considers that personal vehicles are continually improving emissions, for example, through increased market share of EVs. Therefore, the transit ridership and vehicle emissions reductions will need to outpace improvements in light vehicle emissions to prevent this score from falling.

Greenhouse Gas Emissions Avoided

This metric is like the Air Pollutants Avoided metric, but focuses on GHG emissions (CO₂, N₂O, CH₄) rather than criteria air pollutants. The metric was chosen, in addition to the air pollutants metric, because it includes electricity emissions based on the fuel generation mix, as well as direct emissions from vehicles. This will reflect advances both UTA and RMP make in increasing the renewable energy percentage of their electricity. Like the air pollutants avoided metric, this metric looks at the ratio of transit vehicle emissions, compared to emissions if the transit riders chose to drive single-occupancy vehicles instead. The calculation for the 2018 baseline is shown below and is based on GHG emissions data provided by UTA.

$$\frac{\text{Transit GHG Emissions}}{\text{Avoided GHG Emissions}} = \frac{90,121 \text{ MT CO}_2\text{e}}{121,552 \text{ MT CO}_2\text{e}} = 0.7$$

From this calculation, we can see that transit GHG emissions are about 2/3 of those that would be expected if the riders drove instead.

The ranges used to score this metric are outlined below:

0	1	2	3	4	5	6	7	8	9	10	11
1.36	1.24	1.11	1.00	0.87	0.73	0.60	0.47	0.35	0.23	0.12	0.00

1. **Low:** A red score shows that there is no benefit from riding transit or there are more emissions from transit vehicles than there would be if everyone drove their own cars.
2. **Average:** Based on a Federal Transit Administration study, average GHG emissions from a private single occupancy vehicle is about 0.96 lbs. CO₂ per passenger mile and average transit GHG emissions are 0.45 lbs. CO₂ per passenger mile for an average ratio of 0.47 (Federal Transit Authority, 2010).
3. **High:** The maximum score would be achieved if all transit vehicles have zero emissions vehicles, fuel cell vehicles or electric vehicles powered by renewable electricity. These emissions do account for any indirect emissions from electricity generation.

To improve this score UTA can transition more transit vehicles from diesel to CNG or electricity, and/or improve the renewable energy percentage of its electricity through onsite installations or utility renewable energy subscription programs. RMP has pledged to increase the renewable energy percentage in its electricity generation mix to at least 20% by 2025 this, in conjunction with UTA's renewable energy efforts, will reduce the transit related GHG emissions from Trax and other electric vehicles. Again, to keep improving this score, UTA will need to work to outpace improvements being made to reduce emissions from passenger vehicles.

Building Energy Efficiency

This metric looks at energy efficiency of UTA buildings, using a weighted average of energy use per square foot or Energy Use Index (EUI). This is calculated by taking the annual energy use for natural gas and electricity, both converted to kBtu, and divided by the building area to get an EUI for each facility. This EUI is then multiplied by its respective building area and divided by the area of all buildings combined. Using the weighted average helps prevent small, high-energy use facilities from skewing the average. EUI is a widely understood and standard metric for benchmarking energy performance for individual buildings. UTA is tracking the data necessary to calculate EUI for its portfolio of buildings.

Facility Name	Area (sq. ft.)	EUI (kBtu/sq. ft.)
Central Facility	38,800	150
CNG Fueling Building	10,847	358
Meadowbrook	225,265	107
Mt. Ogden	43,805	173
Timpanogos	32,000	279
Riverside	35,038	203
Midvale Rail Service Center	103,800	139
Public Safety	7,884	53
Clearfield Auto Transfer Facility	10,800	35
UP Diesel Shop (Warm Springs)	280,000	124
Frontline Headquarters	46,594	144
SLC Intermodal Hub	23,889	161
Jordan River Service Center	318,298	75
Mobility Center	26,976	40
Fire Station	4,135	106
Ogden Intermodal Hub Bldg.	8,069	204
Police Station	10,988	49
The Factory	60,879	7
Weighted Average EUI		113

The ranges used to score this metric are outlined below—all values are kBtu/sq. ft.:

0	1	2	3	4	5	6	7	8	9	10	11
239.0	220.1	201.2	175.0	160.3	145.5	130.8	116.0	93.0	70.0	47.0	24.0

1. **Low:** The low end of the range was set to the bottom 10% of office buildings in the Denver market (Denver Public Health & Environment, 2020). City-wide benchmarking data was used to set the lower limit because nationwide data sets only included average efficiency. Denver was chosen because Salt Lake City benchmarking data are not currently publicly available, and Denver offers the closest proximity data set for market size and climate zone.
2. **Average:** Average energy efficiency was based on median energy efficiency of office buildings nationwide based on Energy Star data (Energy Star, 2018). The Energy Star data was chosen because it represents a larger dataset than city-wide benchmarking data.
3. **High:** The high value was set equal to the energy target for Net Zero energy offices from a study by the New Buildings Institute (Carbonnier, 2019).

NOTE: Many of UTA's buildings are not offices and might be expected to use more or less energy than a typical office building. Data for office buildings were used to establish this metric, due to data availability.

This metric can be improved by installing more efficient equipment, improving building controls, and encouraging energy smart behavior from UTA employees.

Transit Fuel Economy

This metric tracks fuel efficiency of UTA transit vehicles by dividing total transit fuel use (diesel, CNG, gasoline, and electricity combined) by the total number of revenue miles for the year. The calculation for 2018, shown below, is based on data provided by UTA.

$$\frac{\text{Transit Fuel Use}}{\text{Revenue Vehicle Miles}} = \frac{1,224,535 \text{ MMBtu}}{39.15 \text{ million miles}} = 0.031 \text{ MMBtu/mile}$$

The ranges used to score this metric are outlined below—all values are MMBtu/mile:

0	1	2	3	4	5	6	7	8	9	10	11
0.074	0.068	0.062	0.058	0.051	0.044	0.036	0.029	0.024	0.019	0.015	0.010

1. **Low:** Based on a study of fleet replacement optimization, the low end of diesel bus efficiency is expected to be 2.4 MPG (Figliozi & Boudart, 2013). The fuel efficiency was converted to MMBtu per mile using typical energy content on diesel. This value is used as a low-end for overall transit efficiency performance because bus efficiency is most likely to change, due to driving conditions or vehicle replacement, over the short term. The score indicates that the overall transit fleet is performing worse than the oldest diesel buses.
2. **Average:** The average fuel efficiency for all reporting transit agencies was calculated using 2018 Federal Transit Authority energy use and revenue mile data (Federal Transit Administration, 2020).
3. **High:** The high score for this range was set to the typical fuel efficiency of new electric buses of 2.84 kWh/mile, which was converted to MMBtu per mile.

This metric can be improved by driving vehicles more efficiently or replacing vehicles with more efficient models.

Appendix B: Strategy Evaluation & Brainstorming

During the planning process, we asked workshop participants to evaluate the strategies in the 2018 plan using the following criteria:

- **Celebrate** – Strategy is complete.
- **Continue** – Strategy is still in progress. Also indicate if this strategy needs to be revised or if a pivot needs to be made.
- **Stop** – Strategy is no longer needed, a priority, or it was evaluated and is not a fit to continue.
- **Start** – Strategy has not begun, but it is still a strategy of interest to do.

Results are shown in Tables 6-9 below along with new strategies identified during brainstorming. Evaluation highlights are that while there has been work across most of the identified strategies since 2018 there are still opportunities for improvement. All strategies where workshop participants felt there were still opportunities for improvement were included with new strategies brainstormed during the work session. This list of strategies was then prioritized through targeted conversations to develop the following list of strategies for the next five years of collaboration.

Table 10: 2018 Energy Efficiency Strategy Evaluation

Strategy	Evaluation	Notes
1-1: Continue LED lighting upgrades*	Continue	Collaboration with RMP More effort to celebrate progress More funding needed
1-2: Continue installation of building automation systems*	Continue	Funding or grants needed
1-3: Share best practices in energy efficiency	Continue	Employee education
1-4: Refresh employee energy efficiency program	Continue	Connect with 1-3
1-5: Optimize building use	Continue	
1-6: Improve efficiency of snowmelt systems	Start	Snowmelt systems have been disabled.
1-7: Incorporate energy efficiency into grant funded electrification projects	Continue	
1-8: Establish energy efficiency standards for new equipment	Start	Identified as a priority in the Sustainability Plan

*RMP incentives are available

Table 11: Electric Vehicle Strategy Evaluation

Strategy	Evaluation	Notes
2-1: Develop vehicle charging schedules	Continue	Move to electrical infrastructure
2-2: Partner with other organizations to acquire electric buses	Continue	
2-3: Promote benefits of electric buses to the public	Start	Wait until financial impacts are well understood
2-4: Optimize the size of the white fleet	Continue	
2-5: Evaluate total cost of ownership when purchasing new vehicles		
2-6: Pursue grant funding to replace white fleet vehicles with EVs and install employee EV charging stations	Start	There is a lot of employee support for employee EV charging
2-7: Convert direct current (DC) drives in TRAX vehicles with alternating current (AC) drives*	Continue	
2-8: Identify a location for a multiuse charging hub*	Start/ Continue/ Celebrate	
UTA training about EVs	New Strategy	
Share EV fleet success with the public	New Strategy	Priority in the sustainability plan; wait until there is better information on costs/benefits

Table 12: Electrical Infrastructure Strategy Evaluation

Strategy	Evaluation	Notes
3-1: Implement substation upgrades	Celebrate	
3-2: Explore wayside storage systems at TRAX stations	Start	Data tracking is needed to understand potential benefits
3-3: Utilize a portable substation to improve system resiliency	Start	
Meter consolidation	New strategy	In billing rather than physically changing meters
Training for operators to optimize charging	New Strategy	Connect to 2-1
Develop a bus charging algorithm	Continue	Improve on current efforts ¹

¹ Moved from the Grid infrastructure section.

Table 13: Grid Resilience Strategy Evaluation

Strategy	Evaluation	Notes
4-1: Increase participation in RMP Blue Sky program*	Celebrate and Continue	Understand how Utah Renewable Communities impacts this strategy
4-2: Organize tours of Intermodal Hub and Electric Vehicle & Roadway (EVR) Research Facility	Continue	Consider virtual tours for broader engagement
4-3: Develop a bus charging algorithm	Continue	Improve on current efforts ²
4-4: Research the intelligent integration of vehicles, the electric grid, and solar	Continue	
4-5: Integrate on-site solar and microgrid technologies	Start	Funding/grants needed; tie to resilience plan
4-6: Investigate rooftop solar opportunities*	Continue	Start implementing opportunities
Study TRAX system to better understand opportunities for demand management	New strategy	
Use fly wheel batteries for demand management (TRAX or bus charging)	New strategy	Potential insurance concerns
Driver and maintenance training on grid demand and management options	New strategy	In development

² Moved to electrical infrastructure section.

Appendix C: Implementation Ready Strategy Assessment

In workshop 2, stakeholders were asked to review the draft energy action plan with a focus on implementation. Through this effort each strategy was evaluated for level of effort, barriers and opportunities to keep an eye on during implementation, and well as any clarifications or changes in responsibilities that needed to be adjusted in the plan document. Compiled results from this exercise are shown by strategy below.

Focus Area: Energy Efficiency

Overall barriers to implementation for energy efficiency strategies include budget, staff familiarity with new systems, and capability with existing equipment.

Strategy: 1-1. High-Efficiency New Buildings

Level of Effort: Low

Implementation Ready Assessment

Barriers • Support and coordination • Money • Training in new technologies for PAC maintenance	Opportunities • Wattsmart plan core group can find opportunities in capital budget
Clarifications • Identify necessary players • Is this called out in facilities plan? ◦ It is currently addressed project by project ◦	Responsibilities • Facilities design and deliver high efficiency buildings • Read through budget and plan

Strategy: 1-2. High-Efficiency New Equipment

Level of Effort: Medium

Implementation Ready Assessment

Barriers • Evaluate equipment to see where it is feasible • Working with facilities to create an SOP • Money • New technology training for repair and maintenance	Opportunities • Looking at the facilities plan • Connect with project manager and state of good repairs team • Quantifying savings to drum up support for future projects • Awards/recognition for projects • Rebates
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Funding source restrictions (e.g., Buy American Act)	
Clarifications - Need language to tie opportunities to responsibilities - Identify responsibilities	Responsibilities - Spans multiple teams (state of good repair, facilities, fleet) - Develop SOP with facilities - Develop award and recognition - Prioritize building audits

Strategy: 1-3: Continuous Improvement of Existing Buildings

Level of Effort: Medium

Implementation Ready Assessment

Barriers Basic safety and infrastructure needs come first and significant improvements identified	Opportunities - Rebates - ID facilities that need to be replaced - Block heaters are no longer used and still in place
Clarifications Current system capability requirements	Responsibilities - Facilities plan - Green team audits

Focus Area: Electric Vehicles

In evaluation of electric vehicle strategies, strategies on fleet replacement plans are in process and have minimal barriers, significant barriers of existing UTA and industry sentiment existing for promoting EV Bus benefits.

Strategy 2-1: Revise Bus Replacement Plan

Level of Effort: Low

Implementation Ready Assessment: Under contract and in progress, so did not evaluate

Strategy 2-2: Complete Trax Fleet Replacement

Level of Effort: Low

Implementation Ready Assessment

Barriers - Minimal has been planned and budgeted - Verify efficiency of new units	Opportunities None identified
Clarifications None identified	Responsibilities None identified

Strategy 2-3: Promote EV Bus Benefits

Level of Effort: High

Implementation Ready Assessment

Barriers - Reliability (low competition) - Industry sentiment - UTA sentiment - Weather specification - Data - Identify who/where to share - Time crunch - Fiscal cliff - Data Cleaning	Opportunities Operations to reduce charging expenses
Clarifications None identified	Responsibilities - Maintenance SOPs - Data Cleaning

Focus Area: Electrical Infrastructure

Strategies to optimize electrical infrastructure installation and use in relation to EV buses face similar sentiment barriers as EV buses. Significant effort will be needed to communicate benefits and generate organizational buy-in.

Strategy 3-1: Install public and private charging

Level of Effort: High

Implementation Ready Assessment

Barriers • Cash • Education on RMP benefits • UTA • Park-and-ride development uncertainty/changes • Make sure to communicate UTA benefit	Opportunities • Only costs \$750k more to add charging for the public • Work to get work done quicker • Funding from RMP • Data on how many chargers are used
Clarifications • Figure out how to make work faster • Share story of the “why” and benefit to UTA • Why charge while on the bus? They take 10 minutes and you get charged afterward	Responsibilities None identified

Strategy 3-2: Optimize Bus Charging Procedures

Level of Effort: High

Implementation Ready Assessment

Barriers • Ownership and maintenance required • Service contract required • Add equipment for maintenance	Opportunities • Aspire dashboard saves the day
Clarifications • Identify needs for charging	Responsibilities • Create maintenance training on new tech and existing infrastructure

Strategy 3-3: Revise Long-Term Charging Infrastructure Plans

Level of Effort: Low

Implementation Ready Assessment

Barriers None identified	Opportunities None identified
Clarifications None identified	Responsibilities • Revise existing plan to match info to vehicles

Focus Area: Grid Resilience

Strategies to promote grids have a lower level of effort identified than EV bus and infrastructure strategies. This focus area could be a good opportunity to get a big win.

Strategy 4-1: Utah Renewable Communities Program

Level of Effort: Low

Implementation Ready Assessment

Barriers None identified	Opportunities None identified
Clarifications • What opportunities exist • Identifying locations	Responsibilities • Not opting out • Accounting for GHG reduction • Focus Blue Sky on Utah County

Strategy 4-2: Work with RMP to Identify an Opportunity for Collaboration

Level of Effort: Medium

Implementation Ready Assessment

Barriers • Need engineering study • Need to align studies	Opportunities • Flywheel type device at bus then rail
Clarifications • Bill is \$4M annually – how much could storage save UTA? • Is there a RMP rebate available for this? • Engineering study needed to identify needs	Responsibilities None identified

Appendix D: New Service Timeline

Engineering Services Study Agreement Activities and Timelines			
			
Activity	Owner	Time Needed	Notes
New Load Service Request			
Call in Load Service Request	Customer		Initiate work request by calling 888-221-7070 Estimator is assigned
Project details/Site Meeting	RMP		Customer provides load sheets, site plan, project specifics and meets estimator on site. Accommodation work should be identified and will be handled separate from engineering study
Engineering discussion	RMP		Estimator discusses request with engineer. If diversified load is > 1 MW an engineering study is required
Engineering Phase*		* Required if diversified load is > 1 MW	
Submit required study documents	Customer	As needed	* ESA Customer Information Sheet, Site plan with desired transformer locations clearly identified
Conduct ESA Kickoff Meeting	RMP	As Needed*	* Typically within 1 week of receiving all documents
Approve and Generate Engineering Services Agreement (ESA) Contract	RMP	7-10 business days	
Sign and return ESA Contract	Customer	As needed	
Engineering - System Impact Study (SIS)	RMP	30 business days*	* Minimum - Time could be longer depending on number of studies in queue. Time starts when contract is fully executed
System Impact Study Delivery*	RMP	SIS Delivery meeting within 1 week of emailing study	*SIS will be emailed within timeframe in ESA contract. A SIS delivery meeting will be scheduled to discuss results
Provide Notice to Proceed	Customer	As needed*	* within 45 calendar days of receiving study results
Detailed Design/Estimating Phase			
Provide detailed project site plan	Customer	As needed	
Detailed design and estimate work	RMP	45 calendar days	
Identify easements / ROW	RMP	During detailed design	
Procurement of materials*	RMP	During detailed design and estimate work	* Common long lead materials can be ordered when identified in the detailed design.
Design review and approval	RMP	7 business days	
Produce & deliver master electric service agreement (MESA)	RMP	3 business days	Includes the detailed design and estimate
Produce and deliver invoice for any required payments	RMP	5 business days	
Execute MESA	Customer	As needed*	* within 45 calendar days of receiving MESA
Pay invoice	Customer	As needed	Final procurement and scheduling is dependent on receipt of payment
Construction Phase			
Obtain easements / ROW	Customer	As needed	* Job will not be sent to scheduling without easements
Procurement of materials	RMP	As needed*	* Materials would be ordered within 7 business days. However, delivery of material is subject to market conditions.
Completion of civil work* and meter base installation	Customer	As needed	* Trenching/boring, conduit and vaults
Civil work inspection	RMP	1 day*	* Must notify RMP when ready for inspection. Up to 5 business days once notified and on the schedule
Scheduling of utility work	RMP	Dependent on inspection and receipt of materials	* Will not be put on schedule until RMP inspection is complete and accepted. Utility crews and contractors are typically scheduled out 6-8 weeks at any given time.
Completion of utility work	RMP	Dependent on scope of work	
AHJ Inspections*	Customer	As needed	* After successful inspection meter install request must be called in as indicated on project drawings
Meter installation*	RMP	5 business days	

System Impact Study Process and Expectations

According to federal regulations, a System Impact Study (SIS) must be completed on any load request exceeding 1,000 kW (1 MW). An SIS simply assesses whether the electrical system, as is, can handle the requested load and, if it can't, what network upgrades are required (along with the associated costs to the customer) to get the system to that point. The following list outlines the process and timing you should expect where an SIS is required:

1. To begin the process, you will receive a Customer Information Form (CIF). Please complete, sign and return the form as quickly as possible. Nothing can happen until it comes back.
2. Once the CIF is returned, a meeting will be held (typically a telephone call) to review the information and ensure that there is clear understanding regarding the information. Once any needed modifications are made to the CIF, it goes to our engineering group. They will open up a work order and notify our contracts group.
3. The contracts group drafts an Engineering Services Agreement (ESA) for your signature. The ESA simply establishes an agreement for us to conduct a System Impact Study (SIS) and outlines the anticipated costs of doing so. The costs of the study are paid by the customer and are currently a minimum of \$20,000. Those costs are required up-front. Costs may be higher according to the complexity and size of the project. All cryptocurrency/blockchain projects will be billed up front, and payment must be received prior to study initiation.
4. After you review and sign the ESA (and after any required payments are received), engineering and contracts are notified, and the project is placed in the queue. Once projects ahead of yours in the queue are complete, engineering will proceed with the SIS for your project. From the time you sign the ESA, it typically takes 30 business days to complete an SIS.
5. Once the SIS is complete, it will be reviewed with you, and you will have a chance to either proceed or stop.
6. If you choose to not proceed, you will be refunded any remaining amount not utilized to complete the SIS, and all work will stop. If you choose to proceed, RMP requires a completed notice to proceed form to move to the detailed design phase. After the detailed design is completed a Master Electric Service Agreement (MESA) will be drafted. The MESA is a formal contract that includes the final design and costs associated with the work required to serve the requested load. An invoice for the customer responsible costs will be included.
7. Once you sign the MESA, we will proceed to perform the work outlined in that document. In some cases, payment for the scope of work will be required up-front. In other cases, the costs will be billed to you once the work is completed and all allowances have been included.

8. Once the work is complete and you are invoiced or up-front costs have been paid, your new service will be energized.
9. For Cryptocurrency/blockchain projects, the following additional stipulations will apply:
 - a. Customers that do not intend to be permanent will be required to pay the full cost of a temporary extension. All other new load requests for service 1,000 kW or greater at a non-transmission voltage, the determination of whether to grant an allowance begins with a credit review. If the applicant has a favorable credit rating, provides required financial information, and passes the Company's credit worthiness assessment, they may be granted an allowance. If the applicant does not pass the Company's credit worthiness assessment, the customer will be served under temporary provisions and will pay all costs (no allowance will be extended) or will receive an allowance and provide a surety bond, in the amount of the allowance, in a form and surety from a financial institution acceptable to the Company. Under the line extension tariff, permanency is established after five years of service. For a customer who continues operating for more than five years and either a) paid all costs, or b) provided a surety bond, the Company will either a) refund their advance up to the amount of the allowance, or b) release the surety bond. If the customer load at the five-year mark is less than 10% of the design load, the customer will be deemed as having been of temporary permanency and no refund of the advance will be paid. Or, if there is surety bond, it will be collected, thus refunding the Company the allowance granted.
 - b. A deposit of three months of the customer's estimated power bill on the respective state's tariff is required prior to being energized/connected.

Appendix E: RMP Key Contacts

To help maintain strong lines of communication between RMP and UTA, Table 14 shows key points of contact for each focus area.

Table 14. Key RMP Points of Contact for Each Focus Area

Focus Area	RMP Contact
General Questions	Tracy Bell Regional Business Manager tracy.bell@pacificorp.com
Energy Efficiency	AJ Lowry Wattsmart Business Project Manager ajlowry@kw-engineering.com
Electric Vehicles	Sierra Gentry Transportation Electrification Sierra.Gentry@pacificorp.com
Electrical Infrastructure	Sierra Gentry Transportation Electrification Sierra.Gentry@pacificorp.com
Grid Resilience	Shawn Grant Wattsmart Battery Program Shawn.Grant@pacificorp.com