



Eliminate the Use of Gas-Powered Landscaping Equipment

SUSTAINABILITY COMMITMENT(S) THIS INITIATIVE SUPPORTS

- **1 - Decarbonization**
- **6 - Responsible Sourcing**

INITIATIVE ALIGNMENT WITH THE CHARGE

- **Eliminate Emissions:** By switching away from gas-powered landscaping tools, the university will be decreasing carbon-based emissions.
- **Build Community:** This initiative will work to protect air quality, not only for the university but for our surrounding community, making the university a more community-centered and inviting location.
- **Be Actionable:** By enforcing this policy across the university, we will be able to create change and progress toward our climate action goals.
- **Inspire Adaptive Management:** This initiative will be a continual one focused on bettering our landscaping practices to protect our environment and air quality.

INITIATIVE DETAILS

Initiative Summary

This initiative proposes transitioning the University of Arizona's landscaping tools from gas-powered to battery-powered to reduce air and noise pollution and greenhouse gas emissions. The shift will enhance environmental preservation, improve community health, and establish the university as a leader in sustainability. The implementation plan includes phased replacement, staff training, pilot programs, and infrastructure development to support the new equipment. Actionable items include:

- Implement a phased approach to replace gas-powered tools with eco-friendly battery-powered alternatives, ensuring a smooth transition.
- Offer comprehensive training sessions in English and Spanish for staff on using, maintaining, and charging battery-powered tools, emphasizing the environmental benefits.
- Conduct pilot programs to assess the performance and durability of various battery-powered tools and brands.
- Install charging stations across operational sites and update maintenance facilities to support battery-powered tools.

Proposed Initiative & Background

The University of Arizona encompasses nearly 400 acres in midtown Tucson and includes acres of grass, trees, shrubs, bushes, and flowers that need to be maintained through landscaping. Currently, the university relies heavily on gas-powered landscaping tools that contribute to air and noise pollution and the university's greenhouse gas emissions. As a large part of the Tucson community, we recognize our responsibility to mitigate our impact and address these environmental concerns.

Organizations such as the [Environmental Protection Agency](#), have conducted research in the past on the impact of lawn and garden equipment on organizational carbon footprints. [One article](#) written on this research reports that "a single gas-powered lawn mower emits as much pollution in one hour as driving a car for 45 miles," and that engines that are used in lawnmowers are responsible for 4-5% of total greenhouse gas emissions in the US (News Center Main, 2023).

Transitioning gas-powered landscaping equipment to all-electric is important to:

- **Prioritize Environmental Preservation:** By transitioning to battery-powered tools, we significantly reduce emissions of harmful pollutants and minimize our carbon footprint, thereby contributing positively to local and global air quality improvement efforts.
- **Improve Employee and Community Health:** Minimizing or eliminating the use of gas-powered leaf blowers reduces noise pollution and diminishes exposure to hazardous fumes, benefiting the health and well-being of our workforce and the communities in which we operate.
- **Become Sustainability Leaders:** Embracing this transition demonstrates our commitment to sustainability and positions us as leaders in the industry, setting a precedent for environmentally responsible practices.

The university aims to proactively address environmental concerns and significantly reduce our carbon footprint by transitioning from gas-powered to battery-powered landscaping tools. Simultaneously, we seek to minimize or eliminate the use of leaf blowers to uphold air quality standards and foster a healthier environment.

Implementation of this initiative will include:

- **Transition Plan:** Implement a phased approach to replace existing gas-powered landscaping tools with high-quality, eco-friendly battery-powered alternatives. Establishing a realistic timeline to gradually phase out gas-powered tools, ensuring a smooth transition without disrupting ongoing operations.
- **Training and Education:** Conduct comprehensive training sessions (offered in English and Spanish) for all staff members on the proper use, maintenance, and charging procedures of battery-powered tools to ensure staff safety. Foster awareness regarding the environmental benefits of this transition.
- **Pilot Programs:** Initiate pilot programs as needed to evaluate the performance, efficiency, and durability of different battery-powered tools and brands compared to their gas-powered counterparts.
- **Infrastructure Development:** Install charging stations strategically across operational sites to facilitate seamless usage of battery-powered tools. Modify maintenance facilities to accommodate servicing and repairs of these tools.

Data Analyses to Support Initiative

Research conducted by the California Air Resources Board found that gas-powered landscape equipment contributes significantly to air pollution. Phasing out gas-powered tools in favor of battery-powered alternatives can notably reduce emissions of volatile organic compounds (VOCs), nitrogen oxides (NOx), and particulate matter, thereby improving air quality. This was highlighted in reports like "[The Commercial Lawn and Garden Equipment Regulatory Program](#)" by the California Air Resources Board.

The American Lung Association noted that gas-powered lawn equipment emits pollutants linked to asthma, cardiovascular diseases, and other health issues. Transitioning to battery-powered equipment minimizes exposure to harmful exhaust fumes, benefiting the health of workers and communities. Reports from health organizations often highlight these implications.

Gas-powered equipment tends to be louder than battery-powered alternatives. Studies conducted by organizations like the World Health Organization (WHO) emphasize the negative effects of noise pollution on health and quality of life. Battery-powered equipment offers quieter operation, reducing noise pollution in residential and public spaces.

Resource Requirements & Return on Investment

Resource Requirements

- The purchase of new battery-powered landscaping tools and related charging infrastructure across the university, as well as the cost of any related safety training needed for staff to use new tools. Increased staffing needs to effectively minimize or reduce the use of leaf blowers.
- Cost of creating new purchasing policies, and for implementing the training to the applicable purchasers.

Return on Investment

- The return on investment should be neutral, as this initiative proposes that existing equipment is replaced with zero emissions options as they age out of operational use.

Potential Funding Sources

- This initiative should utilize existing funds that UF already uses for equipment replacement.

Accountable Division(s) & Department(s)

- University Facility Services
- Grounds Management

Partners & Collaborators

- Procurement & Contracting Services
- Office of Sustainability

Implementation

Length of Time to Implement

- Less than one year
- One to five years
- More than five years

Difficulty of Implementation

- Low
- Medium
- High
- Extremely High

Relative Timing

- Begin within two years
- Begin in three to five years
- Begin in six years or later

Metrics for Success

- Emissions Reductions: Drastically decrease greenhouse gas emissions and air pollutants associated with gas-powered tools, which will contribute to improved air quality on campus.
- Healthier Work/Community Environment: Minimizing employees' exposure to gas fumes and noise pollution will enhance the health and well-being of staff. The decreased fumes will also make the university a healthier place for students and community members, especially those with underlying health conditions.