Transportation Electrification

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pilots · expansion projects · initiatives

Proposal for a Strategic Planning and Infrastructure Development Initiative

ASPIRE

Who We Are

ASPIRE is a 4th generation National Science Foundation Engineering Research Center (ERC) that conducts vital research to pave the way for real-world deployment of electrified transportation systems. ASPIRE is headquartered at Utah State University and includes partnerships with the University of Utah, Brigham Young University, and eight additional universities across the nation. It has **more than 200 students involved** and is supported by NSF, its industry partners, and numerous research grants from the US Departments of Energy and Transportation.

A Trusted Guide

ASPIRE is partnered with **more than 55 industry and innovation members** including car, bus, train, and truck manufacturers, utilities, infrastructure firms, charging technology providers, state departments of transportation and tollways operators, transit agencies, national laboratories, and leaders in aviation, agriculture, mining and construction. ASPIRE's vast domain expertise and viable networks are key resources to leverage in this proposed statewide Strategic Planning and Infrastructure Development Initiative.

Our Proven Track Record

Utah committed $3M in a one-time fund in 2019 to support the start-up of ASPIRE and to convince NSF to headquarter the ERC in Utah. Since that time, ASPIRE has raised $58.9M in federal and industry research support, with **an additional $24.6M expected from NSF in 2025** at the 5-year renewal of ASPIRE.

The Race is On

The federal government and industry are now investing billions in transportation electrification. The market is shifting as we speak—going electric. The recent federal spending bills offer matching funds to states that advance these initiatives. **Michigan already invested $130 million in a statewide EV research center and intends to be the "first in the nation" with roads that charge vehicles while driving.** There will be state winners and losers.

We Need a Guide

Transportation electrification is a complex, emerging ecosystem that spans the gamut from energy generation and resources, to battery & hydrogen energy storage, to electric infrastructure for battery electric vehicles (EVs) and hydrogen generation. It requires advanced networking and coordinated management to balance generation with transportation and building loads, and new technology solutions to create large flexible resources on the grid in the face of reducing power from coal plants. We need to invest in infrastructure, and without a synergistic, coordinated cross-agency, cross-industry approach, **investments may be disjointed, redundant or obsolete** before operational.

Gaps in Workforce will Slow Growth

The transformation of the automotive, transportation, and electric utility industries in the US brings with it tremendous opportunity for economic growth and workforce development in Utah. New and expanded businesses are needed in manufacturing, construction, engineering design, systems assembly, maintenance and repair, operations and control, aftermarket solutions, grid and site management, and a wide range of support services. However, **gaps in a trained workforce to support electrification are increasing** and will slow growth and opportunity.

How We Win

By providing ongoing funding to ASPIRE to serve as an expert guide for state legislators, agencies, and industry, Utah will be positioned to lead the nation in innovation and economic impact from transportation electrification. ASPIRE will help define the "Utah way" of strategically and economically building out infrastructure and workforce in close partnership with industry, and will lead pursuit of federal dollars. ASPIRE is **currently pursuing a $160M NSF grant** for innovation and economic impact in Utah that **relies on this ongoing state Initiative request to be competitive** and will continue to pursue leveraging of state dollars. If we're late or uncoordinated, the profusion of investment dollars and the emerging markets will go to other states. **ASPIRE will help Utah win.**

What We Propose

This policy proposal is to facilitate the launching of a strategic planning and development initiative that will guide the transition to an electrified and intelligent transportation system in the State of Utah that results in improved air quality, reduced cost of moving people and goods, new jobs and economic growth.

Administration and Oversight

ASPIRE will oversee and lead the strategic planning and development initiative, and will create a permanent, full-time director-level position who will be responsible for implementation of the policy and deliverables. A steering committee will be chaired by the Utah Department of Transportation and include representation from the state Department of Environmental Quality, Office of Energy Development, and Office of Economic Opportunity, and representation from the Utah Transit Authority, an electric utility, and an industry representative. An industry advisory board will also be formed with at least nine representatives from across the key industries impacted. The **steering committee will provide direction** to the project director and **approve annual reports and budgets.**

Deliverables

First Year
Annual report and legislative committee briefing that detail the vision for electrified transportation systems in Utah in 10, 20, and 30 years, strategic objectives in each element of the vision, and an analysis of how each of the sectors across the ecosystem must change to realize the vision.

Annually Thereafter
Annual report and associated legislative committee briefings that detail on an annual basis how to operationalize the vision with identification of key gaps and priorities for innovation and investment. The reports will include actionable goals that should be set and a prioritized list of program-level activities necessary to accomplish the goals with clearly defined metrics that will show the extent to which activities are successful.

Funding Request and Accountability

- **First Five Years**
  A budget of **$2.1M per year for the first five years** is requested for critical staff positions and approved contract services and operating expenses appropriate for leading the proposed initiative. Each year, the steering committee will review expenses from the past year and approve the next year's budget. The budget breakdown includes: **Staff positions ($1.2M)** for a program director, business manager, two data analysts, an education specialist, and administrative support. **Contract services ($700k)** include data analysis from USU, UoU, and BYU, regional planning agencies, and consulting firms to support the annual ecosystem gap and priority evaluation. **Operating expenses ($200k)** include general support and IT, graphic design, report development, print media, and travel. Expenses will vary with annual priorities.
- **Legislative Review and Action**
  ASPIRE will submit annual reports to the Infrastructure and General Government Appropriations Subcommittee (IGG). The IGG will consider any legislation as recommended in the report and refer any policy recommendations to the Transportation Interim Committee.
- **Five Year Sunset Review for Continuation**
  Prior to the 2028 General Session, the IGG or appropriate interim committee will review the status of the Strategic Planning and Development Initiative for Electrifying Transportation Infrastructure and consider continuation for another five years.

Supporters

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