

# THE FUTURE OF Climate Tech

Photo Credit: Source Water

## Overview

Climate technology is revolutionizing industries and reshaping our world, and Greater Phoenix is at the forefront of fostering the development and implementation of sustainable solutions.

With its commitment to enabling programs and forward-thinking policies, Arizona has become a leading destination for climate technology research, development, electrification, technology implementation and testing. Local cities and counties have proactively developed climate action plans, and business leaders have taken the initiative to integrate environmental principles into their operations, aligning with stakeholder expectations and promoting sustainable growth.

These efforts have cultivated an environment where clean energy investments and entrepreneurs can thrive. A growing venture capital ecosystem, alongside research institutions like Arizona State University (ASU) and its Global Institute of Sustainability and Innovation, has played a pivotal role in driving technological innovation and sustainability solutions through strategic partnerships and collaborative initiatives. This collective momentum has propelled Greater Phoenix into the spotlight as a destination for climate and clean technology.



**83K+**

Arizona Clean  
Energy Jobs<sup>1</sup>



**\$800M+**

Greater Phoenix  
Climate/Clean Tech VC  
Funding 2020 - 2024<sup>2</sup>



**4th**

Arizona Ranking for  
Total Installed Solar  
Capacity in 2025<sup>3</sup>

## Past to Present

In the mid-2000s, Arizona positioned itself at the forefront of climate policy. The Arizona Corporation Commission adopted the Renewable Energy Standard and Tariff (REST) in 2006, which required regulated electric utilities to generate 15% of their energy from renewable resources by 2025. By 2020 REST had led to approximately \$2 billion in gross benefits for the public and customers of Arizona Public Service (APS) and Tucson Electric Power (TEP), the region's primary electric utilities, \$11.6 billion in solar investments, and a savings of more than 7,000 acre-feet of water annually.<sup>4</sup>

1. Includes traditional transmission and distribution. U.S. Department of Energy, Energy and Employment Report, 2024

2. Funding rounds include Accelerator/Incubator, Angel, Seed, Early Stage VC, and Late Stage VC. PitchBook, 2025 Q1

3. Solar Energy Industries Association, March 2025

4. Arizona Renewable Energy Standard and Tariff: 2020 Progress Report ([Ceres](#))



Within the past year, the Arizona Corporation Commission voted to repeal REST, acknowledging that Arizona's utilities had already met or exceeded its requirements with 17% of all Arizona energy generated from renewable sources and 45% carbon-free. Today, these utilities remain steadfast in achieving their clean and renewable energy goals: APS is aiming for 45% renewable energy by 2030 and 100% clean, carbon-free energy by 2050, while Salt River Project (SRP) plans to reduce carbon dioxide emissions by 82% (from 2005 levels) by 2035 and achieve net-zero carbon by 2050.

*“ This underscores the importance of continuing to build a robust capital ecosystem in Greater Phoenix to sustain the momentum in climate technology development, attract industry innovations and support long-term growth.*

With the creation of the Governor's Office of Resiliency in 2023, Arizona gained a pathway to access and distribute federal funding, particularly from the Inflation Reduction Act (IRA). The IRA provides crucial federal incentives to drive clean energy and climate technology adoption. However, with the new administration potentially reversing or limiting key provisions, there is uncertainty about its future impact. This underscores the importance of continuing to build a robust capital ecosystem in Greater Phoenix to sustain the momentum in climate technology development, attract industry innovations and support long-term growth.



# Infrastructure Needs

## Grid Modernization

Rising energy demands due to population growth, electrification, AI, advanced manufacturing and mission critical data centers drive the need for grid modernization. Greater Phoenix’s population grew by 4.4% between 2018 and 2023, compared to the nationwide rate of 2.4% in the same period.<sup>5</sup> Alongside this growth, the state is also experiencing a rise in transportation electrification, as evidenced by a 36% increase in electric vehicle registrations from 2022 to 2023.<sup>6</sup>

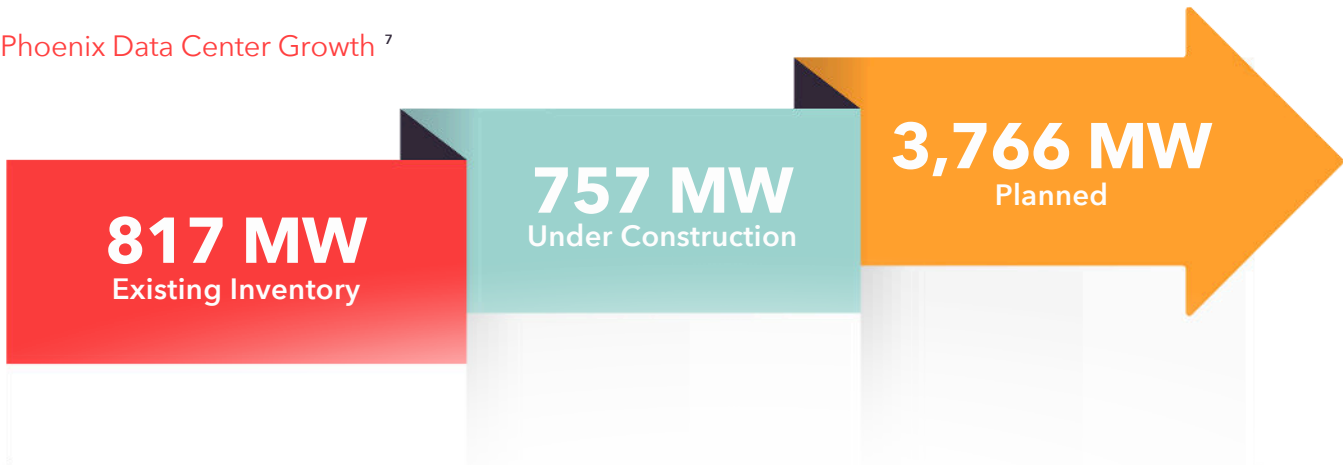
## Greater Phoenix Population Growth



Source: US Census Bureau, Arizona Office of Economic Opportunity

Ensuring reliability remains paramount during this transition, requiring investments in resilient infrastructure, advanced energy storage and enhanced grid management technologies. Additionally, while renewables are a critical component of Arizona's energy future, questions persist about whether they alone can meet the region's growing energy needs or if a diversified energy portfolio will be necessary to sustain reliability and support economic growth.

## Phoenix Data Center Growth <sup>7</sup>



5. Census ACS 1-Year Estimates, 2018 and 2023

6. U.S. Department of Energy, Alternative Fuels Data Center

7. JLL, U.S. Data Center Report - Midyear 2024





Photo Credit: SRP

## Energy Storage

As population and temperatures continue to rise, peak energy demand is expected to reach new records, intensifying the need for energy storage, specifically long-duration energy storage (LDES), solutions. These systems are critical for addressing the hours when renewable energy generation is insufficient to meet demand, ensuring a stable and reliable energy supply.

According to the Solar Energy Industries Association, Arizona ranks 4th in the nation for solar energy production and has 9,465 MW installed.<sup>8</sup> With over 300 days of sunshine annually, Greater Phoenix has ideal conditions for further expanding solar energy production. However, to maximize the potential of solar energy, storage plays a key role in aligning production with peak demand, absorbing excess energy during off-peak hours, and evening out the variability inherent in renewable energy generation.

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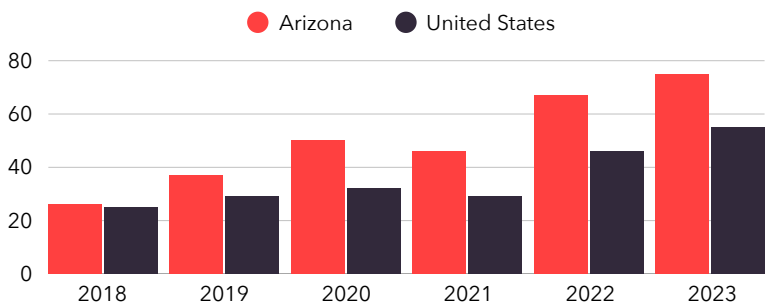
Both APS and SRP are making significant strides in bolstering the region's renewable energy capacity and energy storage capabilities. APS plans to add 2,650 MW of solar energy and 3,610 MW of battery storage by 2026, while SRP is working towards adding 7,000 MW of new renewable energy and substantial long-duration energy storage, including 1,000 MW of pumped hydro and 1,500 MW of battery storage by 2035. These investments highlight the critical role energy storage will play in supporting Arizona's growing solar capacity and addressing the challenges of intermittency and peak demand. With the state's abundant solar resources, the future of energy storage in the region will rely heavily on advanced storage solutions that can align energy generation with demand. As such, the development and integration of LDES technologies are crucial for ensuring grid stability and supporting the state's energy transition goals.

8. Solar Energy Industries Association, 2025 Q1

## Electric Vehicle Charging Stations

According to the U.S. Department of Energy (DOE) Alternative Fuels Data Center (AFDC), the number of electric vehicle registrations in Arizona more than doubled between 2021 and 2023 to approximately 89,800. However, electric vehicle sales have outpaced the installation of charging stations; there are currently 1,396 publicly accessible charging stations.

**Number of Electric Vehicle Registrations per Public Charging Station**



Continued investment in electric vehicle charging infrastructure is essential to support the growing adoption of electric vehicles and to ensure a seamless transition to cleaner transportation. Moreover, integrating charging infrastructure with renewable energy sources and grid modernization efforts can enhance system efficiency and resilience, positioning the region as a leader in sustainable mobility.

## Key Industries & Opportunities

### Battery & Electric Vehicle Landscape

Greater Phoenix's battery and electric vehicle landscape is rapidly evolving, reflecting the volatility of the sector globally. However, a robust existing ecosystem, including companies such as Lucid Motors, Exro Technologies, Urbix Resources, as well as American Battery Factory, and Sion Power in Tucson, continues to drive innovation in the market. Additionally, LG Energy Solution's \$5.5 billion battery manufacturing complex in Queen Creek has served as an anchor, attracting interest from the industry supply chain.

To sustain its momentum, Greater Phoenix must continue leveraging its established industry base, fostering strategic partnerships, and investing in workforce development to meet evolving industry demands. By aligning business attraction efforts with long-term industry needs the region can continue to grow as a center for battery manufacturing and electric vehicle production.

## Decarbonization & The Circular Economy

Greater Phoenix is well-positioned for industrial decarbonization and circular economy implementation. Given the region's legacy and continued growth in advanced manufacturing industries, there are significant opportunities to transition to low- or zero-carbon technologies. Logistical advantages, including proximity to the California and Texas markets, enable localized supply chains and help streamline operations for certain industries.

There are several initiatives and resources currently underway in the region aimed at advancing these efforts:

- In January 2025, ASU and a team of its collaborators received \$11.2 million in funding from the U.S. DOE to develop a regional Direct Air Capture (DAC) Hub.
- The ASU led initiative Electrified Processes for Industry Without Carbon (EPIXC) aims to reduce carbon dioxide emissions by up to 60 million metric tons over the next 15 years. Its projects are part of a \$43 million investment from the U.S. DOE.
- ASU, the City of Phoenix, Goodwill of Central and Northern Arizona, and Hustle PHX opened the first-of-its-kind plastic recycling and remanufacturing facility in February 2024, called the Circular Plastics Microfactory.
- The Resource Innovation Campus (RIC), spanning approximately 40 acres of land in southern Phoenix, is dedicated to the creation and growth of a circular economy that will divert waste from the landfill.

Complementing these regional efforts, several companies in Greater Phoenix are working toward sustainable solutions that address carbon reduction, resource recovery, and the circular management of end-of-life products. CarbonCapture, a leading U.S. DAC company building modular systems that can be mass produced, signed a lease for its first manufacturing plant in Mesa. At full capacity, the facility is projected to manufacture 4,000 modules per year, which is equivalent to 2 megatons of removal capacity. There are also companies focused on end-of-life solutions for batteries, including Li-Cycle, Ecobat and Cirba Solutions. They provide sustainable solutions by minimizing waste and promoting resource recovery, and there is ample opportunity for similar businesses to establish themselves in the region to further strengthen the circular economy.



Photo Credit: Carbon Capture



Photo Credit: Li-Cycle



Photo Credit: ecobat



Photo Credit: Cirba Solutions

## Looking to the Future

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To capture climate technology momentum, Greater Phoenix must strengthen its capital ecosystem, align talent development with industry needs, and foster an environment that supports both research and development, as well as deployment, through programs like incubators, accelerators and proving grounds.

Climate technology companies often require significant upfront costs and long development cycles, making funding from supportive government policies or the private sector essential. A greater infusion of capital is essential for sustaining the growth of these companies in the market. Greater Phoenix has seen a surge in venture capital investment in recent years, surpassing \$1 billion annually for seven consecutive years, a milestone it had never achieved before 2018. Continuing to strengthen the startup and entrepreneurial ecosystem through partnerships, talent development, a strong local network, corporate investment or involvement, and a record of successful exits, can help attract additional funding.

The region has seen a notable increase in sustainability startup support, with organizations like Plug and Play opening an office and groups such as AZ CleanTech fostering connections among stakeholders across sectors. ASU, ranked No. 1 in sustainability in North America and No. 2 in the world, provides research and a skilled workforce for clean and renewable energy through a variety of innovative lab spaces and learning centers.<sup>9</sup> Furthermore, the Southwest Sustainability Innovation Engine (SWSIE), a regional innovation initiative led by ASU and supported by the U.S. National Science Foundation, plays a pivotal role in accelerating the region's climate technology sector. By fostering collaboration among startups, researchers, and industry leaders, SWSIE provides resources such as funding opportunities, workforce development programs and access to cutting-edge research, which help emerging companies scale and bring their solutions to market.

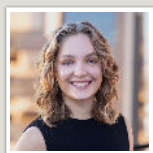


NSF Engines:  
**Southwest Sustainability  
Innovation Engine**

With its growing entrepreneurial ecosystem, support from research institutions, and favorable climate, Greater Phoenix is well-positioned to host pilot projects, incubate emerging technologies, and advance solutions from concept to commercialization. By continuing to invest in infrastructure, strategic partnerships and talent, the region can solidify its role as a leader in the climate technology sector, driving sustainable growth and innovation in the years ahead.

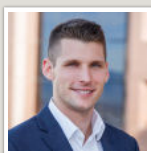
9. Association for the Advancement of Sustainability in Higher Education, 2023-24

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