



RESEARCH GROUP

Arizona 25-Year Energy Strategy:

Ensuring a Resilient, Sustainable, and Prosperous Future

ADDITIONAL WRITE-UPS

Biotechnology

How Canadian companies and investors are involved in Arizona’s biotechnology, medical, and life-sciences industry. Click [here](#) to read.

Semiconductor

The Canada-Arizona collaboration on the semiconductor industry. Click [here](#) to learn more.

North America

North America stands at a historic inflection point. Read the entire report [here](#).



Energy is the foundation of Arizona’s economic growth, quality of life, and long-term competitiveness. Rapid population growth, expansion of advanced manufacturing, mining, artificial intelligence, data centers, transportation electrification, and water infrastructure are driving unprecedented electricity demand. Energy is no longer simply a utility—it is a strategic economic asset. Without decisive action, Arizona risks limiting investment, slowing industrial growth, and facing reliability challenges. With a coordinated, forward-looking strategy, the state has the opportunity to lead nationally in modern, resilient, and sustainable energy infrastructure. Canada and Canadian technologies can help support this activity like they have water.

Arizona’s current energy mix is diverse but increasingly strained. Natural gas and nuclear power dominate, with coal, solar, hydroelectric, and wind contributing to varying degrees. The Palo Verde Nuclear Generating Station, with its innovative use of

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reclaimed wastewater for cooling, remains a critical asset, demonstrating the potential for large-scale nuclear generation in desert environments. Rising peak demand during summer heat, however, has exposed vulnerabilities across the grid. Transmission and distribution infrastructure is a significant bottleneck due to aging assets, slow permitting, land-use conflicts, and fragmented planning. Even when new generation is available, limited transmission capacity can prevent power from reaching areas of need, threatening economic and population growth.

To meet these challenges, Arizona requires a phased, multi-pronged approach. In the near term, stability can be reinforced through expanded natural gas supply, selective life extension of existing assets, deployment of grid-scale battery storage, and advanced pricing mechanisms for large users. In the medium term, advanced nuclear technologies—particularly **Small Modular Reactors (SMRs)**—offer a transformative opportunity. SMRs provide reliable, scalable, and flexible baseload power with a smaller footprint and enhanced safety features compared to traditional nuclear reactors. They can be deployed closer to industrial hubs, data centers, or regional grids, reducing transmission constraints and providing a stable complement to intermittent renewable resources. Long-term strategies should build a hybrid energy system integrating centralized generation, distributed resources, AI-enabled grid management, and regional energy exchange, ensuring flexibility and resilience amid evolving technologies and demand.

The Canada Arizona Business Council (CABC) believes a comprehensive 25-year framework should help to guide this transition. The framework focuses on diversifying energy sources, scaling clean and advanced technologies—including SMRs and hydrogen—modernizing the grid, supporting clean transportation, integrating water-energy planning, ensuring equitable access to power, fostering collaboration between government, industry, and academia, and developing a skilled energy workforce. This integrated strategy recognizes that no single technology or policy will suffice and that sustained economic growth depends on coordinated action across all sectors.

Implementation of this vision requires transparency, coordination, and speed. Utilities, regulators, state agencies, and private investors must align around shared demand forecasts, accelerated permitting pathways, and clear cost-recovery rules. Public-private partnerships and entrepreneurial innovation are essential for mobilizing the capital required for generation, transmission, storage, and advanced technologies. A transparent, data-driven planning process will build public trust and ensure decisions serve the long-term interests of residents, businesses, and communities across Arizona. Workforce development is equally critical. Tens of thousands of skilled workers will be needed across engineering, construction, operations, cybersecurity, and advanced manufacturing. By aligning universities, technical schools, and retraining programs with future energy needs, Arizona can create high-quality jobs while equipping its workforce to support a modern energy economy.

Regulatory and permitting reform is another central pillar of success. Lengthy approval processes for generation, transmission, and storage projects currently slow infrastructure delivery and discourage private investment. Streamlining permitting while maintaining environmental protections is essential to enable rapid deployment of critical energy assets. Additionally, regional and international collaboration enhances resilience and innovation. Strengthening interconnections with neighboring states allows participation in

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regional energy markets, while partnerships with international allies—particularly Canada—offer opportunities for shared investment, nuclear expertise, and clean energy supply chains.

Arizona’s energy future is at a pivotal juncture. Its ability to provide abundant, reliable, and affordable power will determine whether the state thrives economically or faces structural limits to growth. By executing a unified 25-year energy strategy that includes SMRs as a key component of its medium- and long-term energy mix, Arizona can secure a resilient energy supply, attract global investment, support technological innovation, and sustain economic expansion for decades. The time for research and discussion has passed; decisive leadership and immediate action are now required.

Arizona Future Energy Mix – 2045 (Enhanced Text Diagram)

 Intermittent / Renewable

Solar PV (15–20%)
 Wind (5%)
 Hydrogen & Emerging Tech (2–3%)



↻ Flexible Generation / Grid Support

Natural Gas (15–20%)
 Battery Storage & Grid-Scale Storage (10–15%)
 Hydroelectric / Pumped Storage (5%)



 Reliable Baseload (24/7 Power)

Small Modular Reactors (SMRs) (20–25%)
 Existing Nuclear – Palo Verde (25%)

