June 12, 2025

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007

RE: In the Matter of the Commission's Inquiry and Review of the Existing Rate Classifications and other Potential Issues relating to Data Centers
Docket No. E-00000A-25-0069

The Data Center Coalition ("DCC") respectfully submits these comments in response to the Arizona Corporation Commission's ("ACC" or "Commission") docket to review rate classifications, infrastructure planning, and cost allocation methodologies pertaining to data center customers.[1] DCC commends the Commission for initiating this proceeding to ensure Arizona's regulatory framework thoughtfully balances affordability, reliability, and continued economic growth.

I. ABOUT DCC

DCC is the membership association for the U.S. data center industry, representing leading data center owners and operators, as well as companies that lease large amounts of data center capacity.[2] DCC's member companies provide the digital infrastructure that enables the applications, capabilities, and services that support the modern economy, including cloud computing and artificial intelligence (AI). A majority of DCC's member companies have infrastructure, teams, and operations in Arizona.

II. BACKGROUND

There is unprecedented demand for the digital services that have become increasingly central to Americans' daily routines and modern economy. The way we work, learn, buy groceries, bank,

[1] Correspondence from Chair Thompson, Docket No. E-00000A-25-0069, Bar Code E000042869, April 3, 2025.
[2] The Data Center Coalition is a membership organization of leading data center owners, operators, and large end users. Public testimony and written comments submitted by DCC do not necessarily reflect the views of each individual DCC member. A list of current DCC members is accessible at https://www.datacentercoalition.org/members.

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and access medical care now occurs online. Data centers make this possible by enabling the apps, platforms, and essential services that we increasingly rely on every day to keep us connected in our modern digital lives. Data centers are physical locations that hold a large collection of computer servers and other hardware components. These servers store, manage, and deliver data through a vast network of underground cables, allowing them to exchange information with other data centers and users worldwide. These dynamic and essential hubs power the cloud-based services and applications that have revolutionized the way we live and work, driving innovation and connecting people across the globe.

Arizona is a critically important data center market, and DCC members are proud to own and operate facilities that support Arizona's other key growth industries—including advanced manufacturing, semiconductor production, and autonomous transportation. The industry also delivers significant jobs, tax revenue, and other economic benefits to local and statewide economies in The Grand Canyon State. After nearly two decades of flat electricity demand growth across the country, DCC recognizes there are important questions to be answered in a period of rapid load growth. DCC is committed to collaborating with the Commission, utilities, and other key stakeholders to advance evidence-based solutions that maintain grid reliability, uphold equitable cost allocation, and address Arizona's distinct resource challenges, while enabling data centers to continue to deliver innovation and economic opportunities into the state.

III. DATA CENTERS ARE ESSENTIAL TO ARIZONA'S ECONOMIC AND INDUSTRIAL GROWTH

Arizona's economy is undergoing a transformative shift, driven by strategic investments in high-tech industries that rely on advanced computing infrastructure. Data centers serve as the backbone for many of these high-growth sectors, enabling operational efficiency, scalability, and global competitiveness. Data centers bring an array of economic benefits and opportunities into the state—the data center industry is a cornerstone of Arizona's economy, driving job creation, tax revenue generation, and cross-sector growth. As outlined in a 2025 PwC study, Arizona's data center market has emerged as a critical contributor to the state's overall economic outlook and prosperity, supporting both local communities and strategic industries.

Data centers contributed $11 billion to Arizona's GDP in 2023, a 58 percent increase from 2017,[3] reflecting the industry's role as a catalyst for Arizona's digital transformation. The industry generated $863 million in state and local tax revenues in 2023, funding essential services such as education, public safety, and infrastructure. To contextualize these significant fiscal impacts, the industry's 2022 tax contributions ($829 million) alone could cover the entire annual budget for Arizona's parks and recreational facilities and activities.

[3] PwC, "Economic Contributions of Data Centers in the United States," February 2025.

Arizona's rapid growth mirrors national trends, where the U.S. data center industry supported 4.7 million total jobs and contributed $727 billion to U.S. GDP in 2023. Arizona is home to one of the largest data center markets in the country,[4] and remains positioned to attract further investment due to its proximity to semiconductor fabricators, electric vehicle ("EV") plants, and autonomous vehicle ("AV") testing hubs that create synergies that amplify economic returns. In 2023, Arizona's data center industry directly employed 14,430 workers in high-wage roles, including engineering, cybersecurity, and facilities management. When accounting for indirect and induced effects, the industry supported 81,730 total jobs statewide, including 1 in 12 jobs specifically in the technology sector. The industry generated $6.2 billion in total labor income in 2023, including direct wages and spillover benefits for suppliers, contractors, and service providers. Every direct data center job in Arizona supports five jobs elsewhere in Arizona's economy, including roles in construction, logistics, and professional services. The industry also enables growth across other key sectors like advanced manufacturing, healthcare, education, cybersecurity, and financial services. For example, Arizona's $2.3 billion cybersecurity sector relies on data centers to protect sensitive data and enable secure transactions.

In certain key sectors, data centers are enabling strides in innovation, leading to a wider array of beneficial economic impacts for Arizona.

A. Advanced Manufacturing

Arizona's semiconductor industry is anchored by global leaders and represents a cornerstone of the state's advanced manufacturing ecosystem. Modern fabrication plants ("fabs") deploy machine learning and real-time analytics to optimize yields, reduce defects, and manage supply chains. For instance, one company's plant in Chandler relies on data center-hosted platforms to monitor its 24/7 manufacturing operations, ensuring precision at nanoscale levels. Data centers are integral to this sector's success:

- Data Centers Drive the Chip Sector: Graphics processing units and AI processors used in data center servers and accelerator cards were the key driver for the chip sector in 2024, and buildouts tied to AI and generative AI demand made data centers the second-largest market for semiconductors after smartphones—data center semiconductor revenue totaled $112 billion in 2024, up from $64.8 billion in 2023.[5]
- Chip Design and Simulation: The development of cutting-edge semiconductor technology requires immense computational power for design simulation, testing, and validation. These processes generate vast amounts of data, necessitating low-latency processing in proximate data centers to meet production timelines.
- Economic Multiplier Effect: The $60 billion in planned semiconductor investments in Arizona will generate thousands of high-wage jobs and ancillary economic activity. Data

[4] Cushman and Wakefield, "2025 Global Data Center Market Comparison," May 2025.
[5] Gartner, "Market Share Analysis: Semiconductors, Worldwide, 2024 (Preliminary)," February 2025.

centers amplify this impact by providing the digital infrastructure necessary to sustain these facilities and attract further investment. Absent robust data center infrastructure, Arizona's semiconductor industry would lack the computational capacity to compete globally, jeopardizing its position as a leader in advanced manufacturing.

B. Electric Vehicle Production

Arizona's EV sector depends on data centers to power next-generation automotive technologies:

- ➢ Battery Management and Optimization: EV batteries generate terabytes of operational data, which is processed in data centers to optimize charging cycles, predict failures, and extend battery life. An EV manufacturing facility in Casa Grande, for example, utilizes cloud-based analytics to refine its proprietary battery systems, a process reliant on low-latency data transmission.
- ➢ Smart Charging Infrastructure: Managed EV charging networks, essential for grid stability, leverage data center platforms to balance demand, integrate distributed energy resources, and avoid peak load stress. For example, one company's Arizona charging stations rely on real-time data processing to dynamically adjust charging rates based on grid conditions.
- ➢ Over-the-Air (OTA) Updates: Continuous software improvements for EVs—from autonomous driving features to energy efficiency algorithms—are deployed via data center-hosted systems. These updates ensure compliance with evolving safety standards and enhance consumer adoption.

C. Autonomous Transportation

As a hub for innovation, Phoenix has a front row seat to the symbiotic relationship between autonomous vehicles (AVs) and data centers:

- ➢ Real-Time Decision-Making: Autonomous vehicles generate up to 20 terabytes of data per hour, requiring instantaneous processing to navigate safely. This data is transmitted to regional data centers for analysis, enabling split-second decisions in dynamic environments. The growth of Arizona's AV industry hinges on continued investments in low-latency data center infrastructure to meet the computational demands of autonomous systems.
- ➢ Machine Learning Training: The AI models powering AVs are trained in data centers using petabytes of driving data collected across Arizona's urban and suburban landscapes. One company's Phoenix-based fleet, for example, relies on continuous model refinement to improve safety and efficiency.
- ➢ Fleet Management and Scalability: Centralized control systems hosted in data centers optimize AV fleet operations, balancing energy consumption, route efficiency, and

passenger demand. These systems are critical to scaling AV deployments across metropolitan regions.

The data center industry's economic contributions are integral to Arizona's present and future success. By generating high-wage jobs, funding public services, and enabling strategic industries, data centers strengthen the state's competitiveness while adhering to equitable cost allocation principles. As the Commission undergoes its ongoing review of rate structures and infrastructure planning, it has the opportunity to sustain Arizona's leadership in the digital economy and enable robust economic development by recognizing this balance.

IV. DATA CENTERS PRIORITIZE EFFICIENT WATER PRACTICES

Data center companies prioritize efficient water practices in operations and development, especially in states like Arizona with water-constrained regions. Through water efficient operations and supporting local water restoration projects, the data center industry remains committed to minimizing its water footprint while supporting the state's economic priorities through advanced technologies and proactive investments. Data center companies are also leading efforts to maximize efficiencies and minimize water usage across the industry through responsible management and water efficiency practices.

Data centers continue to prioritize water efficiency in the communities in which they operate. For example, in Virginia—the world's largest data center market—83 percent of data centers use the same or less water per square foot than an average commercial office building.[6] DCC members are deploying these water efficiency practices in Arizona through air-cooled systems, closed-loop water recycling, and dry cooling technologies. A number of DCC members are utilizing 100 percent air-cooled system designs, minimizing water use for cooling and setting a benchmark for sustainable operations. Arizona's low humidity and temperature differentials are conducive to dry cooling, which reduces water consumption by up to 90 percent compared to traditional evaporative methods.

The data center industry also is accelerating investments in efficient water innovations. High-tech sectors, including data centers, are forecasted to increase water management spending at a 9.3% compound annual growth rate (CAGR) through 2030.[7] DCC member companies are piloting advanced solutions, including AI-driven cooling optimization and on-site water recycling systems, to further reduce consumption and maximize water efficiency.

It is important to note that there is a tradeoff between using water or energy for cooling practices; a reduction of one may require an increase in the other. In all contexts, the industry remains

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[6] Virginia Joint Legislative Audit & Review Commission, "Data Centers in Virginia," November 2024.
[7] Bluefield Research, "Powered by High Tech and Energy Growth in the U.S. and Canada, Industrial Water Spend Set to Climb 28% by 2030," November 2024.

committed to thoughtfully balancing operational needs with environmental stewardship. In addition to designing facilities to reduce water consumption, DCC members are adopting water-positive commitments and making significant investments in water restoration initiatives and efforts.

Finally, data centers also actively engage in water and watershed conservation and restoration projects at the community and global level. One member company, for example, has invested in more than 25 water restoration projects in eight watersheds, and together, these projects, once fully operational, will restore 1.9 billion gallons of water annually. Another works with nonprofits and public partners to support water availability, for example, providing up to 96% of its cooling water from data centers to local farmers, or using recycled waste water. Another member company collaborates with organizations and initiatives like the UN CEO Water Mandate and the Water Resilience Coalition for a Sustainable Water Future, and has invested more than $7 million in water replenishment projects around the world since 2019 and aim to return more water than they consume in 40 high-stressed basins where they operate. Other members have made commitments to restore 200% of consumption in high water stress regions, and 100% of consumption in medium water stress regions, at the watershed level—and a number of members have, or are in the process of, developing water-positive goals.

V. DATA CENTERS ARE HIGHLY EFFICIENT FACILITIES AND SUPPORT ENERGY INNOVATIONS

Data centers aggregate our collective computing demands efficiently and securely. Previously, these types of computing resources were dispersed across businesses, which was far less efficient and secure. In 2010, nearly 80 percent of data center computing was conducted in smaller traditional computer centers, largely owned and operated by non-technology companies. By 2018, approximately 89 percent of data center computing took place in larger cloud data centers.[8]

By centralizing computing resources, data centers leverage innovations in design, equipment, and technology to maximize energy efficiency. While electricity consumption at data centers rose 6 percent from 2010 to 2018, computing output jumped 550 percent, marking significant gains in efficiency and productivity.[9]

As we discuss resource adequacy, it is important to recognize data centers are not simply large consumers of electricity; they also facilitate efficiency gains for homes, businesses, industrial consumers, and utilities across the economy. Many technologies and strategies deployed across Arizona—including smart thermostats, smart meters, managed electric vehicle charging, smart lighting, and grid enhancement technologies—require the digital infrastructure provided by data

[8] New York Times, "Cloud Computing is Not the Energy Hog that Has Been Feared," February 2020.
[9] Lawrence Berkeley National Laboratory, "Recalibrating global data center energy-use estimates," Science Magazine, February 2020.

centers. The U.S. Department of Energy recently released a report identifying the ways in which AI applications supported by data centers will increasingly and significantly enhance the way in which our electricity grid is operated, particularly by enabling better grid planning and forecasting, streamlining siting and permitting processes, and improving grid reliability and system reliance.[10]

Leading data center owners and operators have not stopped at energy efficiency. As the Commission considers Arizona's future generation needs and emerging and innovative generation sources, it cannot be overlooked that the data center industry is also actively supporting next-generation technologies from utility-scale hydrothermal power and long-duration storage to the development of small modular reactors (SMRs) and nuclear fusion efforts.

VI. IMPROVED FORECASTING AND TRANSPARENT, EVIDENCE-BASED RATE DESIGN ARE ESSENTIAL TO RIGHTSIZE GRID IMPROVEMENTS AND ENSURE RELIABLE AND AFFORDABLE POWER FOR ALL ARIZONA RATEPAYERS

After nearly two decades of relatively flat electricity consumption, the U.S. is experiencing a significant increase in power demand driven by several economic growth trends, including the onshoring of new manufacturing, hydrogen fuel production, growth in demand for data center services, and widespread electrification of buildings, industry, and vehicles. As noted by Lawrence Berkeley National Laboratory in the 2024 U.S. Data Center Energy Usage Report, "This surge in data center electricity demand…should be understood in the context of the much larger electricity demand that is expected to occur over the next few decades from a combination of electric vehicle adoption, onshoring of manufacturing, hydrogen utilization, and the electrification of industry and buildings."[11]

Supporting the nation's and Arizona's growing electricity demand through timely and prudent investments in new generation, transmission, and distribution infrastructure—along with investments in energy efficiency, grid enhancing technologies, and other innovative strategies—is essential to the nation's economic growth, global competitiveness, and national security.

As a leading data center market, Arizona is uniquely positioned to create a model that prioritizes energy reliability, supports continued economic development, and, importantly, protects customers from unnecessary costs. DCC and its member companies fully recognize there are challenges associated with demand growth and are committed to working collaboratively with

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[10] U.S. Department of Energy, AI for Energy, April 2024.
[11] Lawrence Berkeley National Laboratory, "2024 U.S. Data Center Energy Usage Report, December 2024," December 2024.

the Commission, utilities, and other key stakeholders to develop solutions that ensure a reliable and resilient electricity grid for all Arizonans.

A. Improved load forecasting is needed at state, regional, and utility levels.

Accurate load forecasting and equitable rate structures are essential to align infrastructure investments with Arizona's growth, while protecting ratepayers from undue cost shifts. Improvements to forecasting are essential to rightsizing grid investments and improvements and minimizing stranded asset risks. This period of load growth requires greater communication, collaboration, and transparency with load forecasting among utilities, regulators, customers, and other stakeholders to ensure forecasts are based on robust data and informed by best practices. It is important to verify there is no disconnect between the utility's reported load increases from data centers and the longer-term load forecasts that drive planning decisions. It is essential to bridge this gap by working with all stakeholders to improve transparency and understanding of how new loads are anticipated and incorporated into planning processes.

Data centers, like other similar large loads, require proactive planning to avoid grid congestion and ensure resource adequacy. Additionally, data center load growth is impacted by interdependencies with other strategic industries. Semiconductor fabs, EV plants, and AV deployments generate their own load growth, which is amplified by data center demand. For example, a company's Phoenix fab requires dedicated data centers to support its operations, creating a "load cluster" effect that must be holistically addressed in utility planning.

DCC encourages open forums where utilities, data center operators, and manufacturers share timelines, efficiency plans, and growth projections. These groups should prioritize transparency to ensure forecasts reflect real-world development schedules. Enhanced transparency in forecasting, interconnection processes, and scenario planning can help right-size infrastructure investments and protect customers from any inefficiencies and unnecessary costs. By refining forecasting tools and approaches, we can build a more resilient, reliable, and efficient grid that best meets Arizona's needs.

B. Arizona should continue to leverage equitable and sound rate design principles.

It is critical to ensure equitable electricity rates for all customers. That outcome is best achieved through the application of and adherence to sound ratemaking principles that have served Arizona and our nation well, in both periods of load growth and flat electricity demand. A well-designed rate structure includes, but is not limited to, the following characteristics:

I. Non-discrimination: No customer, industry, or class should be singled out for differential rate treatment unless such distinctions are backed by verifiable cost-based reasoning.
II. Cost causation: Customer rates should reflect the actual costs of service. The ratemaking process should ensure that incremental costs are fairly attributed to the loads or customer classes they impact. Cost allocation methods should establish a clear link to usage and be accurate, transparent, and reproducible by others outside the utility.
III. Limit cross-subsidization: Rates should avoid creating unfair subsidies between customer groups or loads, ensuring that costs are distributed equitably among those who incur them.
IV. Transparency: The ratemaking process should be open and accessible, providing customers with the necessary information and a clear understanding of how rates are determined.[12]

The Commission should continue to routinely examine cost allocations and corresponding rate designs to ensure that they are fair and reasonable. Any determinations related to tariff structures or cost allocation are best suited for such proceedings where costs and the allocation of costs can be thoroughly reviewed by the Commission and other stakeholders.

Relatedly, all additional requirements for large customers should be non-discriminatory, evidence-based, transparent, and include corresponding requirements for utilities. Any additional requirements for large customers enacted by utilities outside of rate design (*e.g.*, security and collateral requirements, deposits, minimum bill amounts, service contract length requirements, exit fees, service terms during emergencies, or other provisions) should be non-discriminatory, evidence-based, transparent, and carefully reviewed and considered by the Commission in a public proceeding that allows customers the opportunity to participate. These types of requirements can have a significant impact on data center development and the Commission should ensure that any such provisions are fair and reasonable. Proposals to impose arbitrary surcharges on data centers, absent cost-based justification, would undermine Arizona's competitiveness and disincentivize investments in efficiency.

Furthermore, additional requirements for customers should have corresponding obligations for utilities. Over the past several years in other key data center markets (*e.g.*, Virginia, Santa Clara), power delivery timelines for large loads have become prolonged, resulting in significant delays for connecting data centers to the grid. Ensuring system reliability should always be paramount, and utilities must work to plan accordingly and ensure reliability, which may cause some delays. However, it is DCC's understanding that delays to power delivery timelines can often be for reasons unrelated to reliability, such as limited resources for engineering studies, supply chain

[12] Bonbright, "Principles of Public Utilities Rates," 1961.

challenges, and under-forecasting of demand growth. These types of delays not only impact data center companies, but also negatively impact jurisdictional economies and localities, and forestall digital innovations and advancements. If additional requirements are placed on large customers in order to receive access to power, utility companies should have corresponding obligations, including meeting power delivery timelines.

Rates must reflect the actual costs imposed by customer classes. DCC member companies are—and remain committed to—paying their full share of generation, distribution, and transmission costs. Data centers routinely pay utilities for infrastructure directly associated with serving data center facilities, which can include breakers, transformers, entire substations, and other supporting infrastructure. In some markets, data centers also pay certain pre-connection costs, connection costs, and additional facility costs to provide appropriate assurances to the utility and protect other customers from the risk of stranded infrastructure.

As acknowledged by the Commission's inquiry, there has been recent discussion over whether current cost allocation practices are sufficient in Arizona. Recent analysis in other markets has affirmed that existing rate designs are presently appropriately allocating service costs to data centers, ensuring no cross-subsidization. In Virginia, for example, the Joint Legislative Audit and Review Commission (JLARC) found that Virginia's current rate structures appropriately allocate costs across customers. As the report states, "JLARC staff commissioned an independent study of electric utility cost recoveries under current rate structures to see if the data center industry is paying its share of current costs. The study found that current rates appropriately allocate costs to the customers responsible for incurring them, including data center customers." While the report emphasizes a need to continue reviewing current practices and consider alternative approaches as system growth continues, it is important to note that existing cost allocation and rate review practices have worked to date.[13]

As with all forecasting and ratemaking concepts, robust stakeholder engagement is key to delivering outcomes that serve all ratepayer classes and industries–Commission-initiated or other public workshops, granular cost allocation reports, and open-data initiatives can build trust in rate-setting processes and ensure accountability. DCC remains committed to being a collaborative partner, an active participant in these dialogues, and a solution-oriented stakeholder in this proceeding.

CONCLUSION

DCC applauds the ACC's proactive approach to addressing Arizona's energy and infrastructure challenges. DCC members are committed to:

[13] Joint Legislative Audit & Review Commission, "Data Centers in Virginia," November 2024.

1. Supporting Arizona's economy and other strategic industries through reliable, scalable digital infrastructure;
2. Collaborating on load forecasting, rate design, and infrastructure solutions that encourage continued investment in Arizona, while protecting all ratepayer classes; and
3. Utilizing water-efficient strategies and technologies that align with the state's conservation goals.

We thank the Commission for its leadership in opening this important inquiry. This is a pivotal moment that requires greater communication, collaboration, and transparency among all stakeholders. DCC is committed to being a collaborative partner and looks forward to continuing to work with the Commission, utilities, and other stakeholders to ensure that the growing demand for digital services is met with innovative, reliable, and sustainable energy solutions in Arizona.

We respectfully recommend that the Commission continue its focus on cost-causation principles, transparency, and innovation as it evaluates policies to ensure Arizona remains a national leader in digital technologies and data center-enabled economic activities.

Respectfully submitted,

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