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Power Infrastructure: The New Driver of Industrial Site Selection

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For decades, the availability and cost of labor dominated industrial site selection decisions in the United States. Today, however, a new factor has emerged as equally crucial: power infrastructure. The rise of energy-intensive industries like data centers and advanced manufacturing has transformed how companies choose locations for new facilities, making reliable and abundant electricity a prerequisite for development.

The Evolution of Site Selection Priorities

Traditionally, companies selecting sites for industrial facilities focused primarily on labor availability, transportation logistics, and access to raw materials. While these factors remain important, the increasing automation and digitalization of the U.S. economy has dramatically shifted this calculus. This shift is most visible in two rapidly growing sectors: advanced manufacturing and data centers.

Advanced manufacturing still requires a skilled workforce, as demonstrated by Intel's recent semiconductor project in Central Ohio. The company has committed \$50 million to Ohio higher education over ten years to build a pipeline of trained technicians and engineers. However, these facilities also demand unprecedented amounts of electricity. Taiwan Semiconductor Manufacturing Company's new Arizona facility will require 200 megawatts of power in its first phase, scaling to 1,200 megawatts at full buildout.

Data centers represent an even more dramatic departure from traditional site selection patterns. A typical hyperscale data center demands between 100 to 300 megawatts of electricity while employing only a few dozen people, compared to the hundreds or thousands employed at manufacturing facilities with similar power needs. This disparity highlights how power infrastructure has become a primary

driver of location decisions.

The Power Infrastructure Challenge

The challenge facing many regions isn't necessarily generating enough power – at least not yet. The challenge right now is transmitting the power to where it's needed. This bottleneck has already impacted major development corridors. In Virginia, Dominion Energy had to temporarily pause new data center connections due to insufficient transmission infrastructure. Similarly, AEP Ohio implemented a pause on new power contracts for data centers to prevent grid overload.

Communities and utilities are responding with various approaches. AEP Ohio has continued to pursue a new rate category requiring data centers to commit to paying for at least 85% of their stated electricity needs over twelve years. Loudoun County, Virginia is considering zoning restrictions on new data center projects. At the regional level, Arizona and New Mexico are pursuing partnerships to expand transmission infrastructure, while federal initiatives like FERC Order No. 1920 aim to streamline national transmission planning.

Adapting Site Selection Strategies

These power constraints are reshaping how companies approach site selection. Data center developers, with their flexibility regarding workforce location, are increasingly considering rural sites where power capacity remains available. This trend can benefit rural communities by bringing substantial investment and tax base expansion without straining local services.

Some companies are exploring alternative solutions like initiatives to harness on-site geothermal energy, while others are investigating small modular nuclear reactor technology to bypass grid constraints. These innovations suggest a potential return to an earlier industrial paradigm where facilities located near natural energy sources.

Planning for Success

Successfully navigating these new challenges requires early engagement with local stakeholders. Communities may welcome large electricity users if their presence can help finance needed infrastructure improvements. Comprehensive development agreements can help secure long-term power access, while participation in industry advocacy organizations can help shape policy solutions.

The rise of power infrastructure as a primary site selection factor represents a fundamental shift in industrial development. Success now requires balancing traditional factors like workforce availability with power needs while remaining open to creative solutions. As the economy continues to evolve toward more energy-intensive industries, this balance will only become more crucial for future development.