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The Energy Transformation in Logistics Real Estate



Key takeaways

Demand for electricity is expected to rise steeply. New clean energy technologies must be deployed at an unprecedented scale and rate to meet demand with 100% clean electricity. In addition, the U.S. needs to double its existing transmission capacity to support all the clean energy required to reach a carbon pollution-free grid by 2035.

Clean energy commitments, mandates and regulations are helping drive the transition to clean energy. The federal government set a goal for the U.S. power sector to reach 100% carbon pollution-free electricity by 2035. Many states have enacted their own clean energy commitments.

The cost of electricity from renewable energy technologies, such as solar, has significantly declined in the last decade, making them cost competitive with fossil fuels and a commercially viable option to meet growing energy demand *while* supporting climate goals.

Customers and communities are interested in industrial properties that are future-proof. As customers work to make progress on sustainability goals and communities look to minimize the impacts of new industrial properties, clean energy offerings make buildings easier to entitle and lease.



Introduction

Fossil fuels—like coal, oil and natural gas—have long been the primary source of energy for powering homes and businesses around the world. However, clean power sources, such as wind and solar, are gaining a share in the mix as they become cost competitive and various stakeholders look to expand access to renewable fuels.

At the same time, demand for electricity is growing due to several factors, including the adoption of electric vehicles, electrification of heating and cooling loads in buildings, and the expansion of data centers. In fact, electricity demand at U.S. data centers could triple by 2030, amounting to the power use of approximately 40 million homes, according to [Boston Consulting Group](#). Separately, investment in U.S. manufacturing is further contributing to rapid growth in electricity demand. For example, dozens of EV companies and suppliers have begun, or are planning to begin, manufacturing operations in Georgia. As a result of this data center load and manufacturing load growth, the state's largest utility, [Georgia Power](#), forecasts approximately 17 times higher growth in electricity demand this decade than it did two years ago.

Today's energy infrastructure is not designed to support the growing demand. According to [a study from the U.S. Department of Energy](#), the U.S. needs to double its existing transmission capacity to cost-effectively support all the clean energy required to reach a carbon-free grid by 2035. Without significant transmission upgrades, grid instability may increase, resulting in more frequent and prolonged power outages and, in many markets, volatile electricity prices. Unexpected downtime is costly for businesses. According to a [U.S. Department of Energy report](#), power outages today cost American businesses around \$150 billion annually.

Faced with concerns about potential power outages and pressure to decrease emissions, businesses benefit from energy efficiency and reliability, as well as clean energy solutions.

Public and private drivers for the energy transition

Federal, state and local energy initiatives

Clean energy commitments, mandates and regulations have become commonplace across all levels of government. On the federal level, the U.S. [set a goal](#) for the power sector to reach 100% clean electricity by 2035. Many states have enacted their own clean energy commitments, such as [California](#), which will require utilities to switch to 100% clean energy by 2045. Other states with similar clean energy goals include Colorado, Hawaii, Illinois and Maine, among others. The growth of clean energy is also being initiated at the municipal level. Using California again as an example, [San Francisco](#) became the first major city to require solar panels on new buildings.

Private sector pressures

In the private sector, many investors, customers and employees are interested in working with companies that embrace clean energy solutions. To provide the investor community with consistent data about the environmental impact of the businesses in which they invest, the SEC recently adopted new rules mandating climate-related disclosures in public companies' annual reports, including disclosing the greenhouse gas emissions from the generation of purchased energy, such as electricity.

The path to a zero-emissions power system

Increasing the generation of clean energy will help decarbonize the power sector and support organizations' ability to reduce emissions.

The cost of electricity from renewable energy technologies, such as solar and wind, has declined significantly over the last decade, which makes clean energy technologies commercially viable to meet growing energy demand and support climate goals. According to [research from RMI](#), between 2012 and 2022 the cost of solar and onshore wind power fell by 80% and 57%, respectively. The levelized cost of energy from solar and wind in the first half of 2023 was just over \$40 per megawatt-hour (MWh), about half that of coal and gas.

As these costs fall, there is a growing opportunity to scale up clean energy projects for both homeowners and businesses. Solar is a particularly popular clean energy solution: In 2023, the U.S. installed 32.4 gigawatts (GW) of solar capacity, up 51% from 2022, per the [Solar Energy Industry Association](#). Solar constituted 53% of all new electricity-generating capacity added to the U.S. grid in 2023. This number includes distributed energy resources (DERs), such as solar and energy storage installed on individual homes and businesses. DERs improve grid resilience and unlock new revenue streams for system owners and operators.

Scaling solar across states

When it comes to solar energy, not all regions are created equal. Weather, land and workforce availability can impact the growth of renewable energy. For example, Texas produces more renewable energy than any other state because of its large solar and wind farms. According to the [Business Council for Sustainable Energy](#), Texas ranked highest in newly built renewable energy capacity at 6,552 MW in 2022. Similarly, California has long been a leader in solar-generated electricity, with hundreds of sunny days a year and strong investments in the renewable energy space.

Many other states are trending in a positive direction when it comes to using and supporting solar energy. For example, Arizona is the sunniest state in the country and has nearly 1 million homes powered by solar. Even states with less frequent sunshine are adopting clean energy technologies, such as solar. Larger-scale projects, however, aren't common in some states due to lower electricity costs, higher land and labor costs, and limited sun exposure.

Community solar projects are growing nationwide. These commercial-scale projects allow the system owner and operator to sell the clean energy generated to other businesses and homes enrolled in the community solar program. According to [EnergySage](#), New York, Minnesota and Massachusetts are the current community solar leaders in the U.S.

How the energy transition impacts industrial real estate

As industrial real estate increasingly looks to incorporate automation, electrification and artificial intelligence to improve efficiency, significantly more power is needed to support operations and ensure reliability. Efficient electrification paired with clean onsite electricity generation can effectively decarbonize large segments of industrial real estate. In particular, warehouse operators look to cut energy costs, reduce emissions and make money from unused rooftop space by installing solar panels.

The energy transition is also linked to industrial real estate in another way: Growth in clean energy requires expanded supply chains for clean energy technologies, such as solar panels and EV batteries. This drives another source of demand for industrial real estate that's suitable for manufacturing, storing and distributing these products.



Prologis Energy + Sustainability: the go-to decarbonization partner

If your company struggles to reduce emissions and find a way to decarbonize logistics, Prologis Energy + Sustainability offers a comprehensive suite of scalable, turnkey solutions to solve complex energy challenges and help reduce carbon emissions easily. Energy offerings include:

Solar energy: Prologis installs solar and energy storage at its warehouses without upfront costs for the customer. Rooftop solar arrays covering warehouse roofs can generate more electricity than needed to power the building today. For eligible community solar projects, excess solar energy can provide clean electricity to other consumers in the neighborhood benefiting communities around Prologis buildings.. As of July 2024, Prologis has 523 MW of solar capacity in operation worldwide, including in the U.S., Mexico, Europe and Asia.

Fleet electrification: Growth in the EV market is driving necessary investment in charging infrastructure. Still, utility companies often require a significant amount of time—sometimes years—to complete essential grid upgrades and reinforce low- and medium-voltage transformers and lines to support EV charging infrastructure. Prologis bridges this gap with OnDemand Charging solutions to enable faster deployment of EV chargers to keep vehicles charged and road ready.

Energy storage: Prologis offers energy storage products to customers and utilities for on-demand power. Energy storage systems make use of excess solar power and draw electricity from the grid when costs are lower. With energy storage, a warehouse can improve electric reliability and contribute to better resilience for the local grid by discharging energy from batteries when there's a shortage on the grid.

Energy efficiency: Retrofits to existing buildings and new builds include LED lighting, energy-efficiency solutions and smart-building technologies to help lower energy consumption. In turn, customers can maintain warehouse operations with low emissions.

Meter management: Prologis makes it easy for customers to have access to onsite clean energy, participate in utility grid services, and power purchase agreements by assuming management of meters and provides energy solutions expertise.



Empowering customers with power solutions

Prologis simplifies decarbonization, including reducing the time and resources required to transform its customers' energy consumption through four key strategies:

1

Leverage an unparalleled real estate portfolio:

Solar and energy storage projects require space, and Prologis has approximately 1.2 billion square feet of prime real estate to tap into. As the company's portfolio grows and evolves, Prologis continues to work to ensure buildings have solar-ready roofs, EV-ready wiring and microgrid-ready electrical switchgear, primed for the new era of energy.

3

Provide talent and expertise to demystify decarbonization: An in-house team of energy experts understand the complexities and intricate aspects of utility, grid and building operations. Chief Energy and Sustainability Officer Susan Uthayakumar spearheads the process, bringing global energy and business experience to Prologis, including a 16-year tenure at Schneider Electric's Sustainability Business division. In addition, Vibhu Kaushik, senior vice president of energy, utilities and storage, also brings over 16 years of experience working in the electric utility sector.

2

Cultivate key relationships with utilities:

Buildings in the U.S. span hundreds of utility territories, each with its own unique energy market constructs and regulations that govern emissions reductions and clean energy projects. The Prologis team has close working relationships with these utilities and regulators to collaborate and plan for new projects that meet energy customers' needs.

4

Deliver data-driven insights: Smart-building technologies—including sensors, smart thermostats and automated lighting—collect robust data about a building's energy use, which is used to refine and customize energy solutions that enable the company and its customers to meet energy and emissions reduction goals.



Conclusion

The energy transition means significant change, investment and opportunities for businesses. For some companies, the energy transformation is in the beginning stages; others are further along. Regardless of where they are in the energy transition, businesses have an opportunity to decarbonize the supply chain as well as engage investors, employees and other key audiences with a sustainable and future-forward element of the company brand.

A reliable partner helps ensure an energy transformation is strategic and meets the unique needs of each business. An experienced partner, like Prologis, can help a company overcome challenges—economic, operational and educational—while supporting new services and solutions that deliver both financial and reputational value.

