

U.S. Installed 63 GW of New Power Generation This Year, Photovoltaic Accounted for 60 Percent

According to the U.S. Energy Information Administration, the U.S. will add 62.8 gigawatts (GW) of installed utility-scale generation in 2024.

DUBAI, UAE, February 26, 2024 /EINPresswire.com/ -- According to the U.S. Energy Information Administration's latest forecast, in 2024, the U.S. will add 62.8 gigawatts of new utility-scale power generation.

This new capacity compared to 40.4 GW in 2023, an increase of 55%.

Of this, solar will account for the largest share of new installations at 58%, followed by battery storage at 23%.

In solar, if the planned 36.4 GW is connected to the grid, 2024 will be a record year for utility-scale solar in the United States. That number is almost double the 18.4 GW in 2023.

Texas, California, and Florida are the top three contributing states, with 35 percent, 10 percent, and 6 percent, respectively.

In addition, the Twin Solar Facility in Nevada is scheduled to begin operations in 2024 and is expected to be the largest solar PV project in the United States.

U.S. PV installed capacity in 2023 accounted for 42.1% of installed PV capacity in the U.S. by



Common photovoltaic project base, photovoltaic panel installation.



A common installation of PV panels on a PV project.

The U.S. Bureau of Land Management (BLM) has approved the construction of a second large-scale battery storage system at Desert Sun.

Pending Growth

In comparison, the rest of the installed capacity of energy sources is slightly less impressive - natural gas power generation accounts for 37.7%, wind power generation for 14.4%, hydropower generation for 228MW, nuclear power generation for only 1,100MW, fuel oil power generation and geothermal power generation for only 54MW and 44MW respectively, and biomass power generation and waste heat power generation for only 54MW and 44MW respectively, while biomass power generation and waste heat power generation accounted for only 1.4% of the total. As for biomass power generation and waste heat power generation, the proportion is only 32MW and 31MW.

However, it is worth noting that although the overall share of renewable energy generation in the U.S. is already close to one-third of all energy generation, there is still room for growth.

Especially for PV systems, since January to October this year, its power generation has increased by 14.7%, more than expected. Not only that, according to the latest data released by the U.S. Energy Information Administration, the agency found that in the past 12 months, the U.S. photovoltaic system has grown by 7.3%, which means that although there is huge room for progress, we have seen the dawn of hope.

In contrast, if we take the inherent standard reference of windless power generation facilities (11.6%) and hydroelectric facilities (7.9%), although we can see that in recent times, the U.S. PV system power share has been very close to the traditional hydroelectric industry, however, we believe that they have yet to be further developed.

As of October 2023, PV systems and wind power accounted for 15.6% of the nation's electricity generation, exceeding coal-fired generation

In terms of battery storage, the U.S. battery storage capacity will double from the current 15.5 GW to 30.8 GW in 2024.

Texas and California are projected to add 6.4 GW and 5.2 GW of new battery storage capacity, respectively, which together account for 82% of new U.S. battery storage capacity.

Growth in U.S. solar and wind power generation is driving the growth in battery storage demand. In addition, the Inflation Reduction Act (IRA) has further fueled the growth of energy storage technology by introducing an investment tax credit (ITC) for independent energy storage.

Benefits and Prospects of Photovoltaic Power Generation

Market Demand Continues to Grow

With the [popularization of solar power](#) and the rise of electric vehicles, the market demand for

photovoltaic cables is continuing to grow. In the future, with the further promotion of renewable energy policies and the further expansion of the new energy vehicle market, the PV cable industry will usher in a broader space for development.

High efficiency and environmental protection, reduce energy costs

Photovoltaic cable has the advantages of high efficiency, environmental protection, and energy saving. Through photovoltaic conversion, solar energy can be converted into electricity, providing a clean and renewable source of electricity for families and enterprises. In addition, the use of photovoltaic cables can also reduce energy costs and improve the efficiency of energy utilization.

Technological innovation to promote the development of the industry

In recent years, the photovoltaic cable industry has made breakthroughs in technological innovation. The application of new materials and manufacturing processes makes the performance of PV cables continue to improve, and the cost continues to decrease, providing strong support for the development of the industry.

In the field of wind energy, an additional 8.2 GW of wind power capacity is planned for 2024. Compared to the record growth of over 14.0 GW of wind power capacity in 2020 and 2021, the growth rate has slowed down in the past two years. The two large offshore wind farms scheduled to come online this year are the 800-MW Vineyard wind¹ off the coast of Massachusetts and the 130-MW South Fork wind off the coast of New York.

On the natural gas side, 2.5 GW of newly installed natural gas-fired generation is planned for 2024, the smallest amount of new natural gas capacity in the U.S. in 25 years. Notably, 79% of the new natural gas capacity will come from simple cycle natural gas turbine (SCGT) plants. This year will mark the first time since 2001 that combined cycle generating capacity is not the dominant natural gas technology.

Finally, in the nuclear energy sector, the startup of the fourth unit (1.1 GW) at the George Asia Vogtle nuclear plant, originally scheduled for 2023, has been pushed back to March 2024. Vogtle's third unit began commercial operations at the end of July last year.

Existing [PV Project Development](#) in the United States

The US currently has a total of 855 PV projects in reserve with a capacity of 84.6 GW.

California in the US added 1.9 GW of installed PV in the third quarter of 2023. Texas was in second place, realizing 949 MW of new PV installations. Arizona, on the other hand, ranked third in the quarter, adding 516 MW of new installations. In the third quarter of the year, California surpassed Texas to become the No. 1 state in the U.S. for clean energy installations with a

cumulative total of 3GW, compared to 2.38GW in Texas and 1.58GW in Florida.

NextEra's 325MW/1300MWh Desert Peak Energy Storage project was the largest stand-alone battery storage project to come online during the quarter. The largest photovoltaic storage project of the quarter was Intersect Power's Oberon solar and storage project, comprising 250MW of PV and 125MW of battery storage. In terms of project reserves, wind, PV, and electrochemical energy storage projects in the U.S. all saw faster growth in the third quarter. As of the end of the third quarter of 2023, 103 projects totaling 22GW were planned for onshore wind in the U.S., of which 13GW were under construction and 9.2GW were in the early stages.

The U.S. Bureau of Land Management (BLM) has approved the construction of a second large-scale battery storage system at Desert Sunshine (Desert Sunshine is a solar PV plant in the California desert).

The project consists of a battery energy storage system (BESS) with an output of up to 300 MW. While no specific MWh figure was provided, it is likely to be as much as 1.2 GWh of four-hour charging and discharging capacity. This would also meet California's large-scale BESS standards for connecting to the grid and would be one of the largest projects in the large-scale BESS industry in the U.S. to date.

"The Desert Sun ground-mounted solar PV plant came online in California in 2015 and has a generating capacity of 550 MW, making it one of the largest projects of its kind in the US to date.

ZMS's Perspective

The current state of development of the U.S. PV industry presents several major trends:

1. Scale and Concentration: The U.S. PV industry is experiencing large-scale concentration and scale, with both large-scale PV power plants and distributed PV power generation systems developing rapidly. This has made PV power generation an important part of the U.S. energy mix, while also improving the reliability and stability of power supply.
2. Technological innovation: The U.S. photovoltaic industry has been at the forefront of technological innovation, especially in improving the conversion efficiency of photovoltaic cells and reducing costs. U.S. photovoltaic companies continue to invest in research and development to promote the progress of photovoltaic technology, thereby improving the competitiveness of photovoltaic power generation.
3. Policy support: the U.S. government's support for renewable energy has been increasing, especially in tax incentives and subsidies. This policy support for the development of the U.S. PV industry provides an important driving force.
4. Diversified development: The U.S. PV industry is shifting from large-scale rooftop installation to distributed solar power generation and PV power plants, while also exploring the integration and development of other renewable energy technologies. This diversified development model helps to improve the stability and reliability of solar power generation, while also providing a

broader space for the development of the U.S. PV industry.

5. International cooperation: The U.S. PV industry is strengthening cooperation with other countries and regions to jointly promote the development of the global PV market. This international cooperation helps share technical resources and market opportunities, thus further promoting the development of the U.S. PV industry.

In general, the development status of the U.S. PV industry presents trends such as scale, technological innovation, policy support, diversified development, and international cooperation, which provide important support and impetus for the development of the U.S. PV industry.

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