

Vietnam Photovoltaics Market Assessment, By Type [Monocrystalline Silicon, Polycrystalline Silicon, Thin Film Cells and Organic PV], By Grid Type (On grid, Off grid, and Hybrid), By Installation [Ground Mounted (Foundation mount, Roof Mounted, Building Integrated Photovoltaics (BIPV) and Floating PV], By Application [Solar Farms, Electronic Devices, Healthcare Facilities, Public Infrastructure, Aerospace, Construction, Military, and Defence, Transportation, and Others], By End-user [Residential, Commercial & Industrial, and Utility], and By Region, Opportunities, and Forecast, 2016-2030F

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# **Abstracts**

Vietnam had been witnessing significant developments in its Photovoltaics (PV) market. The country has been actively promoting the adoption of renewable energy, including solar power, to meet its growing electricity demand and reduce reliance on fossil fuels. The Vietnam Photovoltaics market is projected to reach USD 2.86 billion by 2030 from USD 1.51 billion in 2022 growing at a CAGR of 8.30% for the forecast period between 2023 and 2030 driven by a continuously growing demand for electricity, a steep rise in investments towards the manufacturing of solar panels by the Vietnamese government, strict environmental protection regulations and reduced cost of conventional PV modules.

Continuous growth in demand for electricity is due to a rapid rate of urbanization in



Vietnam, which in turn has led to a higher concentration of people in cities. Urban areas typically have higher electricity demands due to the presence of residential, commercial, and industrial buildings, as well as the increased use of electrical appliances and services. This, in turn, has led to the rise of solar PV in Vietnam. The International Trade Administration has stated that Vietnam possesses significant potential for large-scale solar power development, with an estimated capacity of around 386 GW nationwide. Over the past two years, Vietnam has emerged as a frontrunner in solar power advancement within the ASEAN region. The country's solar power sector has experienced robust growth, adding approximately 17.6 GW of new capacity in 2021. To further demonstrate support for solar power, the government has introduced and extended the current Feed-in-tariff (FIT) for solar projects until 2023. Under this tariff, solar projects that achieve commercial operation before the FIT period concludes will receive a rate of 9.35 US cents/kWh. The specific rate varies between 6.67 US cents/kWh and 10.87 US cents/kWh, depending on the location and type of solar technology employed.

Bilateral power purchases by MOIT (Vietnam's Ministry of Industry and Trade)

By engaging in bilateral power purchases, MOIT can negotiate and secure power supply agreements directly with power generators or other entities involved in electricity production. This approach allows for more flexibility in meeting Vietnam's energy demands and can be particularly useful in situations where the traditional electricity market may face limitations or challenges. Since 2020, the Vietnamese government has been developing a program to enable bilateral power purchase agreements (PPAs). However, the launch of the pilot scheme has faced delays and is now anticipated to take place in the first quarter of 2023. The official program would launch in 2025. Vietnam's Ministry of Industry and Trade (MIOT) aims to open up Vietnam's electricity market to bilateral power purchase agreements (PPAs) through the pilot scheme that would, for the first time, enable renewable energy generators to directly sell electricity to private off-takers under virtual or synthetic deals. Hence, it can be stated that the Bilateral power purchases by MIOT are driving market growth at an extensive rate.

Frequent Usage of Highly Advanced Rooftop Solar Panels

Vietnam has been experiencing a significant increase in the frequent usage of highly advanced rooftop solar panels. This is because the declining cost of solar technology has made rooftop solar panels more affordable and accessible to a wider range of consumers in Vietnam. As a result, more individuals and businesses are opting to install these panels on their rooftops, which in turn requires more generation of solar power.



Vietnam achieved a significant milestone in its rooftop solar sector, with a remarkable increase in capacity. For example: - By the end of December 2020, the country's rooftop solar capacity reached a record high, doubling to 378 megawatts (MW) compared to 189 MW in 2019. The growth in the rooftop solar segment contributed to the overall expansion of Vietnam's solar photovoltaic (PV) capacity. In 2020, the installed solar PV capacity in Vietnam was estimated at 16,504 MW, a substantial rise from 4,898 MW in 2019, as reported by the IRENA Renewable Energy Statistics 2021. Hence, it can be deciphered that the frequent usage of highly advanced rooftop solar panels is accelerating market growth at an extensive rate.

## Government's Emphasis on Renewable Energy Transition

The Vietnamese government is placing significant emphasis on advancing solar photovoltaic (PV) technology and has allocated substantial investments for this purpose. Additionally, the government has implemented numerous policies aimed at enhancing and developing the solar PV market in the coming years. The government has given its approval to a comprehensive strategy for the advancement of renewable energy sources to generate electricity. This strategy includes the installation of rooftop solar panels on both residential and commercial buildings. The primary objective of this plan is to safeguard the nation's energy security and ensure a reliable supply of electricity throughout Vietnam. As outlined in the plan, it is projected that by 2030, 50% of office buildings and residential homes will incorporate rooftop solar systems to produce their own electricity for on-site consumption. However, the surplus electricity generated will not be sold back to the national power grid.

#### Impact of COVID-19

The pandemic caused economic uncertainties, making it more challenging for developers to secure financing for solar PV projects. Banks and financial institutions became more cautious about lending, leading to a potential slowdown in project development. Moreover, in response to the pandemic's impact, the Vietnamese government made certain policy adjustments to support the renewable energy sector. This included the extension of project completion deadlines, relaxation of project implementation requirements, and providing financial relief measures. Furthermore, the Vietnamese government introduced stimulus packages to revive the Vietnamese economy, and these included provisions for renewable energy projects including solar energy. Such initiatives could provide financial support and incentives for the solar PV market.



Key Players Landscape and Outlook

The competitive landscape in the PV market in Vietnam is expected to remain competitive in the coming years. The key players are expected to continue to invest in research and development to improve the efficiency of PV modules and reduce their costs. They are also expected to expand their distribution networks to reach a wider range of customers. Moreover, the Vietnamese government is also investing in agrovoltaics to improve the efficiency of PV modules and reduce their cost.

In Nov 2022, Boviet Solar Technology Co. Ltd., a renowned international company in the field of solar energy technology, achieved a significant milestone. The company specializes in producing PERC photovoltaic cells, as well as the Gamma Series Monofacial and Vega Series Bifacial PV Modules. Boviet Solar has proudly announced the successful completion of a recent evaluation conducted by Black & Veatch, an independent entity. This assessment specifically focused on Boviet Solar's crystalline silicon PV module series, which are manufactured at their facility in Vietnam .

In Oct 2021, Irex, a solar panel manufacturer based in Vietnam, has introduced a cutting-edge glass-glass solar panel boasting impressive specifications. The newly unveiled solar panel offers a power output of 265 W and achieves a remarkable power conversion efficiency of 18.1%. At present, Irex possesses and runs a manufacturing facility in the Ba Ria-Vung Tau province of Vietnam, with a production capacity of 350 MW.



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\*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work

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