Vietnam Factory Rooftop PV + VPP Integration with EVN

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As Vietnam’s manufacturing sector is growing fast, factory owners are now turning to rooftop photovoltaic (PV) systems combined with Virtual Power Plant (VPP) technology in a bid to cut down on energy expenses as well as ensure a secure power supply. This new solution is especially beneficial for factories and commercial buildings seeking reliable and uninterrupted energy supply. HighJoule is focused on integrating rooftop solar solutions with VPP technology for industrial applications in Vietnam, including working with Vietnam Electricity (EVN) – Vietnam’s state-owned electricity utility.

The Soaring Demand for Rooftop PV in Vietnamese Factories

Vietnam is now a solar power champion in Southeast Asia, having installed over 103,000 rooftop solar systems with a total capacity of 9.5GW as of 2024. Vietnam is also set to achieve 50% of commercial and residential buildings, such as offices and homes, being fitted with rooftop solar panels by 2030, and factory owners have plenty of opportunities.

Rooftop PV has three key benefits for manufacturing factories:

- **Savings:** In case of fluctuating electricity prices, solar gives constant power costs
- **Energy Independence:** Saves national grids during peak times
- **Sustainability:** Helps fulfill corporate ESG targets and minimizes carbon footprint

Our industrial energy storage solutions are designed to deliver these benefits for the Vietnamese manufacturing sector.

Virtual Power Plants: The Future of Energy Management

Virtual Power Plant (VPP) is a cloud solution which aggregates distributed energy resources (e.g., solar panels on rooftops) to behave as one controllable source of power. VPP technology is gaining popularity in Vietnam through collaborations with EVN, especially for industrial and commercial facilities that demand high reliability and stable power supply.

Key advantages of adopting VPP:

- **Demand response:** Manages energy use automatically during peak times
- **Energy trading:** Sells excess solar generation back into the grid
- **Grid stability:** Helps stabilize supply and demand on the network

Current policy changes have further enhanced the feasibility of VPPs in Vietnam. In July 2024, the government greenlit a Direct Power Purchase Agreement (DPPA) mechanism by which renewable energy generators can supply large consumers directly without the intermediacy of EVN. This provides new opportunities for factory rooftop PV system owners to participate in energy markets.

EVN’s Role in Vietnam’s Energy Transformation

Vietnam Electricity (EVN) has been promoting the use of renewable energy proactively through various initiatives:

- **Solar rooftop incentives:** EVN purchases excess solar power from households and companies at

671 VND/kWh ($0.0264 approximately)
- **Grid modernization:** Investment in infrastructure for receiving distributed energy resources
- **Policy advocacy:** Lobbying for legislation that makes it easy to bring renewable energy onto the grid

For factories and commercial facilities, which are critical for continuous operations, EVN has deployed Battery Energy Storage Systems (BESS) to ensure reliable power supply. These systems complement rooftop PV installations by storing excess solar energy for use during outages or peak demand periods.

HighJoule's Turnkey Solutions for Vietnamese Factories

At HighJoule, we offer turnkey energy solutions tailored to Vietnam's industrial base:

1. Rooftop PV systems: Solar arrays designed to maximize factory roof space
2. Energy storage: Our BESS solutions ensure power supply even when the sun isn't shining
3. VPP integration: Connects your energy assets to participate in grid services and energy markets
4. EVN coordination: We take care of all regulatory obstacles and grid interconnection procedures

Our systems are specially optimized for powering factories and commercial operations, which require:

- High reliability (99.999% uptime)
- Clean energy to reduce operating costs
- Scalability to support network expansion

Case Study: Successful Factory Implementation

One of our factory customers in Ho Chi Minh City ordered a 1.2MW rooftop solar PV system with a 500kWh battery storage system and VPP software. The results after one year:

- 35% saving on energy costs
- Avoided 28 tons of CO2 emissions per month
- Additional revenue earned from taking part in EVN's demand response program
- Smooth power supply for mission-critical production equipment

The system paid for itself in 3.8 years, far within the 15-20 year lifespan of the solar panels.

Introduction to Rooftop PV and VPP

Installing a solar-plus-storage system with VPP capability involves a series of significant steps:

1. Energy audit: We analyze your building's energy consumption patterns
2. System design: Custom solution set up for your roof size and energy need
3. Regulatory approval: All permits and EVN interconnection needs taken care of
4. Installation: Minimal disruption professional installation
5. Commissioning: Staff training and system testing
6. Ongoing optimization: Monitoring and performance optimization on an ongoing basis

For industrial and commercial facilities, we also provide advanced power conditioning and energy management components to ensure clean, stable power delivery for critical production equipment and high-demand operational systems.

The Future of Factory Energy in Vietnam

As Vietnam itself industrializes fast, energy solutions that combine rooftop PV with VPP technology will increasingly take on a vital role. Trends to watch:

- DPPA expansion: Expanded room for direct sale of renewable energy
- Grid upgrade by EVN: Upgraded infrastructure for distributed energy integration
- Technological advancements: More efficient solar panels and smart energy management systems

Factory owners adopting these solutions now will enjoy lower energy costs, improved sustainability profile, and added energy resilience.

Next Steps for Your Factory

Ready to see how rooftop PV and VPP technology can upgrade your Vietnamese manufacturing facility? Contact HighJoule today for a free consultation. Our specialists will:

- Carry out an energy requirement and roof capacity survey
- Design a custom solution
- Provide a complete financial appraisal
- Take you through the EVN approval process

Visit our energy solutions page to learn more about our custom-designed products for Vietnam’s industrial and commercial energy needs.

Thanks to Vietnam’s forward-thinking policies, EVN’s evolving grid infrastructure, and HighJoule’s technical expertise, there’s never been a better time to invest in rooftop solar and VPP technology for your factory.

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