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**MARKET
LEADER**

Building Customer Loyalty and Retention

*RECOGNIZED FOR BEST PRACTICES IN THE
THAILAND EV CHARGING STATION INDUSTRY*

F R O S T & S U L L I V A N

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Best Practices Criteria for World-class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each recognition category before determining the final recognition recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. PTTOR excels in many of the criteria in the EV charging station space.

RECOGNITION CRITERIA	
Growth Strategy Excellence	Technology Leverage
Implementation Excellence	Price/Performance Value
Brand Strength	Customer Ownership Experience
Product Quality	Customer Purchase Experience
Product Differentiation	Customer Service Experience

The Transformation of the Thailand EV Charging Station Industry

Thailand’s electric vehicle (EV) market is entering a transitional phase, driven by expanding infrastructure, continued production investment, and evolving consumer behavior. The country has emerged as a regional EV manufacturing hub, attracting substantial foreign investment in vehicle assembly, battery production, and supply chain operations. This industrial momentum solidifies Thailand’s strategic role in Southeast Asia’s clean mobility transformation.

Despite this upstream progress, domestic EV sales declined by 8.1% year-on-year in 2024 to 70,137 units.¹ This regression was driven by tighter auto loan criteria and increased household debt. In response, government authorities introduced revisions under the EV 3.5 policy framework, which broadens eligibility for incentives and extends local production requirements. These adjustments underscore Thailand’s long-term commitment to transport electrification.

EV charging stations remain an essential aspect of Thailand’s electrification strategy. As of 2024, the country hosts over 8,000 charging ports, nearly half of which are direct current (DC) fast chargers.² This makes Thailand one of the most developed EV charging markets in Asia-Pacific by location-to-connector ratio. However, infrastructure gaps persist in less urbanized areas. These coverage gaps limit charging convenience and cause range anxiety among potential EV users.

To overcome these challenges, the Thai government set national targets for vehicle adoption and charger rollout. Thailand aims for 30% of total vehicle production to consist of zero-emission vehicles (ZEV) by

¹ ASEAN Automotive Growth Outlook, 2025 (Frost & Sullivan, June 2025)
² Global Electric Vehicle Charging Station Infrastructure Growth Opportunities and Outlook, 2024 (Frost & Sullivan, June 2024)

2030, and full ZEV production by 2035.³ The EV 3.5 incentive package includes purchase subsidies, excise tax reductions, and import duty exemptions for EVs, battery components, and charging equipment. These policy tools narrow the cost differential between EVs and internal combustion engine vehicles, accelerating nationwide charging station deployment.

As the market evolves, industry players anticipate new growth opportunities in charging access, network integration, and consumer enablement. Demand-led infrastructure planning, ecosystem-based service models, and strategic public-private collaboration are likely to shape the next phase of development. Thailand's maturing EV ecosystem offers a favorable landscape for forward-looking operators to advance the country's sustainability goals while addressing key adoption barriers.

"As Thailand's EV ecosystem is in the early stages of adoption, the company prioritizes reliability, location suitability, and user convenience to build user trust and support future growth. By emphasizing user experience, PTTOR positions its network as the preferred charging option as EV adoption accelerates, strengthening customer confidence and encouraging consistent station usage over time."

**- Phuhariphat Tunnipat,
Senior Consultant, Mobility**

Expanding EV Charging Nationwide through Scalable Deployment Strategy

Established in 2018, PTT Oil and Retail Business Public Company Limited (PTTOR) leverages its legacy in Thailand's energy distribution network to expand its EV charging infrastructure nationwide. Instead of establishing a standalone EV charging network, the company introduced EV Station PluZ, its proprietary EV charging infrastructure, by using its existing gas station footprint to enhance coverage efficiency, optimize rollout costs, and improve accessibility for users. PTTOR prioritizes high traffic service locations during the initial deployment phase, capitalizing on

brand familiarity and consumer usage patterns. This approach minimizes investment risk while ensuring visibility and accessibility for early EV adopters.

PTTOR continues to broaden its EV charging network by deploying chargers at high demand locations such as shopping malls, hospitals, and hotels. The company advances this strategy through partnerships with real estate owners and commercial landlords, securing site access without incurring land acquisition or site development costs. These collaborations allow EV Station PluZ chargers to be placed where customer dwell time aligns with charging needs. With approximately over 1,000 charging locations across the country, PTTOR selects sites based on observed usage patterns and EV adoption trends. The company aims to install charging stations at 100-kilometer intervals, enabling seamless EV travel across major routes nationwide.

In 2024, PTTOR introduced EV HUB Stations equipped with eight 180-kilowatt DC chargers at highway locations across 10 major provinces, including Saraburi, Prachuap Khiri Khan, Nakhon Ratchasima, Kamphaeng Phet, Chumphon, Buriram, Khon Kaen, Phichit, Surat Thani, and Chonburi. These high-capacity hubs enhance charging speed for long-distance travelers and reflect the company's readiness to support fast-growing energy demands. Additionally, PTTOR plans to add around 200 to 400 charging units

³ ASEAN Automotive Growth Outlook, 2025 (Frost & Sullivan, June 2025)

per year, adjusting the pace in response to market growth.⁴ The company's long-term infrastructure roadmap includes the installation of 7,000 EV charging stations nationwide by 2030, underscoring its commitment to nationwide access and strategic network scaling.⁵

PTTOR's structured deployment model and targeted network design underscore its role as a national EV charging provider. Frost & Sullivan observes that this approach delivers scalability and location relevance, helping the company respond to evolving user demand while supporting infrastructure resilience. By aligning physical network with user behavior and national goals, PTTOR establishes a foundation for long-term EV readiness and supports Thailand's transition toward cleaner mobility.

Strengthening EV Market Leadership through Capital-efficient Infrastructure Model

Thailand's EV charging market presents capital deployment challenges due to fragmented infrastructure and uneven utilization. PTTOR addresses these constraints through a dual-asset model that combines owned sites with third-party locations secured through partnerships. This model enables scalable growth, reduces payback friction, and lowers financial exposure in less trafficked areas while maintaining nationwide accessibility.

PTTOR's ecosystem-based approach provides a scalability advantage that most players lack. While centralized ownership models often struggle to scale efficiently due to high capital intensity, the company's distributed model enables more agile expansion aligned with market conditions. This approach strengthens stakeholder relationships, fostering long-term loyalty and collaboration with site partners.

Furthermore, PTTOR builds its EV infrastructure investment strategy around long-term value creation. As Thailand's EV ecosystem is in the early stages of adoption, the company prioritizes reliability, location suitability, and user convenience to build user trust and support future growth. By emphasizing user experience, PTTOR positions its network as the preferred charging option as EV adoption accelerates, strengthening customer confidence and encouraging consistent station usage over time.

Each EV Station PluZ deployment considers factors such as projected usage, energy availability, regulatory support, and local urban development before installation. This approach reduces the risk of stranded assets and ensures network coherence. PTTOR's network development also aligns with Thailand's national sustainability priorities. Instead of focusing on volume-based expansion, the company uses demand-led planning to contribute to lower-emission transportation. Through this approach, the EV Station PluZ plays a role in advancing Thailand's 2050 carbon neutrality target.

The company's integrated infrastructure model and long-term investment mindset position it to lead Thailand's EV transition. As the market matures, competitors face increasing pressure to retrofit networks or address quality gaps. Frost & Sullivan finds that PTTOR's early investments in network coherence, reliability, and stakeholder alignment provide a foundation for scalable growth that ensures operational efficiency and consumer trust. This alignment with market needs and national policy priorities enhances the company's strategic advantage in an increasingly competitive mobility industry.

⁴ Frost & Sullivan's Interview with PTTOR (July 2025)

⁵ <https://www.bangkokpost.com/business/motoring/2850688/ptt-to-put-stress-on-ev-charging-services>

Providing Reliable EV Charging through Integrated Safety and Operational Systems

PTTOR draws on its extensive experience in petroleum distribution to embed engineering-grade safety protocols and operational discipline into its EV charging business. The company applies the same rigor and control used in hazardous fuel management to the design, installation, and management of EV Station PluZ sites. Recognizing that electrical current requires careful handling, PTTOR leverages its fuel business expertise to maintain high operational standards across its EV charging systems. This safety-first culture protects users and ensures consistency across a growing network.

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**- Ain Sarah Aishah,
Best Practices Research Analyst**

These safeguards include electrical fault controls and standardized procedures governed under ISO-certified frameworks that guide operations and incident resolution. Standardized operational protocols support technician response and issue tracking to ensure consistent service quality across EV Station PluZ locations. PTTOR also invests in user education through online communications such as its mobile application (app) and social media. These initiatives promote safer consumer behavior, improve charging literacy and reduce service-related friction.

PTTOR’s proprietary digital operations platform monitors all EV Station PluZ chargers nationwide. This platform provides live dashboards that display the operational state of each charging gun (whether idle, engaged, faulted, or offline), allowing immediate issue identification and rapid technician dispatch. The system supports operational consistency and enables engineering teams to detect recurring issues and mitigate potential service disruptions. Reported incidents trigger root cause analysis based on data captured through the centralized monitoring platform. The company enforces a traceable response process under ISO-compliant procedures, ensuring timely handling and resolution of service issues. Standardized operational protocols guide technician response and issue tracking, supporting consistent service quality across the EV Station PluZ network.

Frost & Sullivan acknowledges that the company’s integrated operating model delivers consistent high-quality service across its EV charging network. While some operators often face fragmented systems and delayed fault resolution, PTTOR ensures high uptime, rapid incident response, and uniform service standards. This embedded reliability enhances consumer trust, positioning the company for scalable, long-term growth in a market where safety, visibility, and performance drive adoption.

Delivering Seamless EV Charging Experience through Unified Platform and Real-time Feedback

PTTOR prioritizes customer experience in its EV market approach. The company ensures that every aspect of user interaction, from charger discovery to service recovery, reflects clarity, responsiveness, and ease of use. Real-time feedback mechanisms, including post-call ratings at contact centers and incident follow-ups via hotline or mobile app, help track and improve service quality. Its contact center consistently

receives average satisfaction ratings above 4.5 out of 5,⁶ demonstrating the accessibility and responsiveness of frontline support. These insights inform continuous improvements to user support materials, platform navigation, and guidance touchpoints.

PTTOR's mobile app serves as a central interface for EV Station PluZ users. It provides real-time charger availability, usage guidance, issue reporting, and payment integration, helping to streamline the charging experience. The app's accessible functions reduce user dependency on external assistance, ensuring a positive user experience.

Feedback submitted through digital channels flows into a broader service refinement process. PTTOR uses this input to optimize platform responsiveness and identify recurring experience gaps. Internal teams review these insights to ensure timely responses and continuous refinement of service quality and system reliability. In a market where switching costs are low, the company's ability to combine reliability, responsiveness, and transparency helps build long-term customer loyalty. By focusing on clarity and minimizing service friction, PTTOR drives consistent user engagement and repeat usage.

Sustainability further supports PTTOR's customer engagement approach. The company promotes public understanding of EV charging through its app and social media platforms, helping to improve user confidence and encourage EV adoption. By expanding access to reliable charging and aligning with Thailand's 2050 carbon neutrality goals, PTTOR enables consumers to participate easily in the national shift toward cleaner transportation.

By integrating operational excellence and customer-focused functionalities into a unified digital platform, PTTOR strengthens its position as a future-oriented energy provider. The strategy connects organization excellence with accountability, fostering loyalty in a market where usage growth and consumer readiness remain as crucial as technical availability. Frost & Sullivan recognizes the company's comprehensive approach to delivering value across operation and experience.

⁶ Frost & Sullivan's Interview with PTTOR (July 2025)

Conclusion

PTT Oil and Retail Business Public Company Limited's (PTTOR) leadership in Thailand's electric vehicle (EV) charging sector demonstrates strategic foresight, operational discipline, and a customer-centric approach. The company accelerates network growth through a scalable, partnership-driven model that optimizes cost efficiency and site accessibility. Its long-term investment strategy emphasizes reliability and relevance over pure volume, ensuring each station supports national mobility priorities. By embedding safety protocols, performance monitoring, and ISO-aligned procedures into daily operations, PTTOR delivers consistent high-quality service. The company's focus on technical reliability, rapid responsiveness, and feedback-driven improvements enhances consumer trust. These strengths position PTTOR as a leading force in advancing the EV charging sector within Thailand's evolving energy landscape. As the market matures, the company's structured yet adaptable model ensures continued alignment with shifting demand and national environmental goals.

With its strong overall performance, PTTOR earns Frost & Sullivan's 2025 Thailand Market Leadership Recognition in the EV charging station industry.

What You Need to Know about the Market Leadership Recognition

Frost & Sullivan's Market Leadership Recognition is its top honor and recognizes the market participant that exemplifies visionary innovation, market-leading performance, and unmatched customer care.

Best Practices Recognition Analysis

For the Market Leadership Recognition, Frost & Sullivan analysts independently evaluated the criteria listed below.

Growth Strategy Excellence: Company demonstrates an ability to consistently identify, prioritize, and pursue emerging growth opportunities

Implementation Excellence: Company processes support efficient and consistent implementation of tactics designed to support the strategy

Brand Strength: Company is respected, recognized, and remembered

Product Quality: Products or services receive high marks for performance, functionality, and reliability at every stage of the life cycle

Product Differentiation: Products or services address a market niche through a combination of price, quality, or uniqueness that other companies cannot easily replicate

Technology Leverage: Company is committed to incorporating leading-edge technologies into product offerings to enhance product performance and value

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Purchase experience quality assures customers that they are buying the optimal solution for their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

Customer Service Experience: Customer service is accessible, fast, stress-free, and high quality

Best Practices Recognition Analytics Methodology

Inspire the World to Support True Leaders

This long-term process spans 12 months, beginning with the prioritization of the sector. It involves a rigorous approach that includes comprehensive scanning and analytics to identify key best practice trends. A dedicated team of analysts, advisors, coaches, and experts collaborates closely, ensuring thorough review and input. The goal is to maximize the company's long-term value by leveraging unique perspectives to support each Best Practice Recognition and identify meaningful transformation and impact.

VALUE IMPACT			
STEP		WHAT	WHY
1	Opportunity Universe	Identify Sectors with the Greatest Impact on the Global Economy	Value to Economic Development
2	Transformational Model	Analyze Strategic Imperatives That Drive Transformation	Understand and Create a Winning Strategy
3	Ecosystem	Map Critical Value Chains	Comprehensive Community that Shapes the Sector
4	Growth Generator	Data Foundation That Provides Decision Support System	Spark Opportunities and Accelerate Decision-making
5	Growth Opportunities	Identify Opportunities Generated by Companies	Drive the Transformation of the Industry
6	Frost Radar	Benchmark Companies on Future Growth Potential	Identify Most Powerful Companies to Action
7	Best Practices	Identify Companies Achieving Best Practices in All Critical Perspectives	Inspire the World
8	Companies to Action	Tell Your Story to the World (BICEP*)	Ecosystem Community Supporting Future Success

*Board of Directors, Investors, Customers, Employees, Partners

<http://www.frost.com>.

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Key Impacts:

- **Growth Pipeline:** Continuous Flow of Growth Opportunities
- **Growth Strategies:** Proven Best Practices
- **Innovation Culture:** Optimized Customer Experience
- **ROI & Margin:** Implementation Excellence
- **Transformational Growth:** Industry Leadership



broadest range of innovative growth opportunities
of which occur at the points of these perspectives.

Analytical Perspectives:

- Megatrend (MT)
- Business Model (BM)
- Technology (TE)
- Industries (IN)
- Customer (CU)
- Geographies (GE)

