



Tuya Smart's AI Large Model Provides the Optimal Solution Globally for Smart Energy Management

March 11, 2025

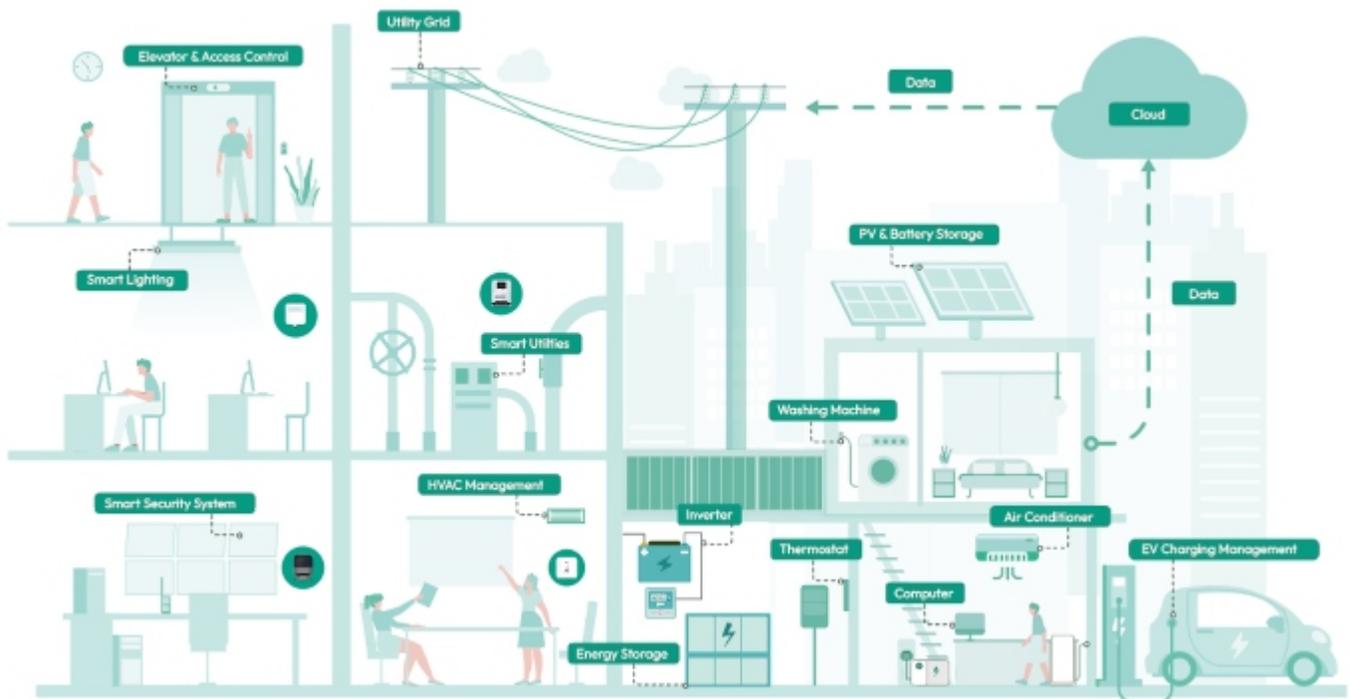
NEW YORK, March 11, 2025 /PRNewswire/ -- Tuya Smart (NYSE: [TUYA](#), HKEX: 2391), a global AI cloud platform service provider, is redefining the possibilities of smart energy with its unique perspective and forward-thinking strategies. Leveraging years of dedicated research and development, Tuya is seamlessly integrating technological advancements with social value creation, pushing the boundaries of innovation in the energy sector.

Under the dual pressures of the global energy crisis and climate change, humanity is facing an unprecedented challenge. According to the International Energy Agency's projections, in order to achieve carbon neutrality by 2050, clean energy will need to contribute more than 90% of the global electricity mix. This energy revolution needed for the future of humanity not only requires technological innovation, but also corporate pioneers grounded in social responsibility to lead the energy sector towards a greener, smarter, and more sustainable path.

Exploring the Goodness of Technology: Tuya's HEMS Captures the Next Green Opportunity

The energy sector stands at the intersection of a trillion-dollar market and immense social value, particularly in the electricity industry, where green transformation presents vast business opportunities. However, this transformation is fraught with complexity: aging electrical infrastructure, challenges in monitoring electricity consumption in detail, fluctuations from new energy sources, and weak energy-saving awareness among consumers all pose significant barriers.

Recognizing these challenges, Tuya identified a critical need for new technologies to drive comprehensive intelligence in energy management. This realization led to a breakthrough—leveraging the four key steps of insight, execution, optimization, and prediction, Tuya extended energy consumption management to individual electrical devices, successfully developing a Home Energy Management System (HEMS) that integrates power generation, storage, charging, and usage.



Behind Tuya's continuous exploration and innovation in cutting-edge AIoT technologies lies a deeply ingrained philosophy—technology for good. By strategically positioning itself in the energy sector and championing the concept of "generating electricity for care," Tuya has created a powerful ecosystem that attracts top global talent. Industry elites from diverse backgrounds, yet united by a shared vision, have joined forces to embed carbon reduction into every link of the energy chain

through intelligent technology, collectively working toward a zero-carbon future.

This mission-driven talent ecosystem has propelled Tuya to remarkable achievements in the energy field, leading to multiple industry breakthroughs. These include publishing the world's first comprehensive report with an in-depth focus on household energy-saving, organizing a series of "Energy Says" seminars, fostering collaboration across industry, academia, and research, and being recognized in the United Nations Global Compact's (UNGC) report on 20 Cases for 20 Years of Private Sector's Sustainable Development in China.

Tuya Inc.

Facilitating Smart Energy Use Through Green Cloud Platform Development

Tuya has emerged as a leading global smart solutions platform since 2014, specializing in the integration of the Artificial Intelligence (AI) and cloud computing technologies. As the world's first global cloud platform service provider, Tuya has enabled brands, original equipment manufacturers (OEMs), developers, and retail chains to develop smart products and solutions across various industries, including smart energy, real estate and commercial services. By leveraging smart Platform as a Service (PaaS) and Software as a Service

(SaaS) solutions, Tuya built interconnected ecosystems to support various smart living and business globally. As of June 30, 2024, Tuya had over 1,192,000 million registered developers from more than 200 countries and regions, supporting over 138K smart product categories and providing tailored solutions for over 6,000 brand customers. Tuya has gone public on the New York Stock Exchange (NYSE) under "TUYA" in 2021, followed by a dual listing on the Hong Kong Stock Exchange (HKEX) under "2021".

Speaker Information and Contact Information
TUYA (NYSE)
Global Headquarters: 2024
Nasdaq: TUYA
Forward Facing Investor Committee: HQ
US: 1-800-858-1234
EU: +31-20-488-1234
Tel: +86-755-2666-1234

Intuitive Solutions for Smarter Energy Use
Tuya has offered solutions that transformed the way industries monitor energy and resources, one of the company's biggest products was the Home Energy Platform, an intelligent service that integrated smart and AI technologies to help industries optimize energy use and minimize their environmental impact. The platform leveraged data from energy-consuming devices such as smart systems and lighting, analyzed it with big data algorithms, and generated strategies to improve energy efficiency. This platform provided real-time energy monitoring and AI-powered insights, allowing businesses to dynamically adjust operations, reduce unnecessary energy consumption by up to 30%, and achieve their carbon reduction goals. (888 773, 800 773)

For residential consumers, Tuya's Home Energy Management System (HEMS) needs (revised) household energy management, with households accounting for over 30% of global electricity use. HEMS met end consumers to reduce their energy usage by providing detailed insights and real-time control options, supporting smart energy consumption decisions. In Singapore, where energy costs are high, Tuya's HEMS was widely adopted, enabling 1.8 million households to save up to 54% an energy bill, aligning with the country's Smart Nation goals. In addition, by partnering with local air conditioner manufacturers, Tuya released air conditioning control sensors, leading to an average energy saving of 20% in households. (888 773, 800 773)

Strengthening Governance for a Better Future

Tuya recognized that building a greater future requires strong partnerships and engagement with stakeholders, including governments, universities, and users, and experts. To foster collaboration, Tuya developed a robust ESG management framework comprising a Board of Directors, an ESG Management Committee, and an ESG Risk Assessment Office. This top-down structure enabled decision-making at the board level, strategic oversight at the management level, and operational implementation at the working group level, ensuring that ESG priorities were embedded into the company's long-term business strategy. (888 1736, 800 1736)
In 2023, Tuya enhanced its corporate governance by eliminating business ethics codes that covered 100% of its employees, customers, workers, and partners. Anti-corruption and compliance training has also been mandated for all employees, leading to zero reported cases of corruption or ethical violations. Tuya's robust security compliance governance structure, led by the Compliance Committee, which includes senior executives, such as the CEO and CISO, ensures that security and privacy standards are consistently met. The committee had formal meetings every six months to assess compliance risks, further reinforcing Tuya's governance system. In 2023, Tuya successfully passed its ISO 9001, ISO 14001, and ISO 27001 certifications. (888 113, 800 113, 800 113, 800 113)

Global Collaborations Driving Green Smart Solutions

Tuya's success in driving green transformation was amplified by its commitment to global collaborations. Tuya worked closely with partners, developers, and governments to create ESG concepts and provided the tools and support necessary for them to create personalized smart solutions that addressed specific energy management challenges. Tuya's collaboration with Borealis in Europe led to innovative smart home energy-saving solutions, promoting green living in households across the region. Additionally, Tuya formed partnerships

with global entities such as Mahab New Energy Technology by Insear Group and E&A, ANPC's leading real asset management group working to expand the adoption of smart home energy management solutions globally. Tuya's Net-zero Platform positively impacted industries such as hospitals and smart cities by providing intelligent energy management for key resources including water, electricity, and gas, helping urban centers optimize energy use and improve operational efficiency in commercial lighting. Tuya's smart lighting systems increased energy saving efficiency by over 80% in a 40,000 m² workshop and achieved a CO₂ reduction of 124.75 tons per year. Tuya's parking lot lighting solution, which has incorporated digital remote management, reduced energy consumption in underground parking lot systems by over 94%. (888 773, 800 773, 888 1736, 800 1736)

The Way Forward

Tuya is committed to leveraging its technological expertise in AI and cloud computing to extend the reach of its Home Energy Platform and Home Energy Management System (HEMS). These solutions will provide comprehensive energy management for residential, commercial, and industrial sectors, contributing to energy conservation. Tuya's human resource management system is continuously improving, featuring a workplace that promotes talent development and innovation. The company conducts annual employee training on carbon accounting, and reduction, ensuring its workforce maintains a green mindset on a regular basis. By collaborating its stakeholders with global developers, enterprises, and governments, Tuya strives to build a robust smart ecosystem. This ecosystem will advance its ESG capabilities across key areas such as operations, compliance, ethical innovation, work safety, and public welfare. Tuya's long-term vision is to support sustainable business growth while maintaining its role as a leader in environmental stewardship and employee innovation and safety in the digital and intelligent transformation.

The Second Half of the Energy Revolution: Reshaping Energy Management Systems with Large Models like DeepSeek

With the rapid advancement and widespread adoption of generative AI and large language models, a new wave of technological transformation is sweeping the globe, bringing unprecedented possibilities to the energy sector. As computing power and electricity become increasingly integrated, the question arises: How many untapped opportunities still exist within the realm of "AI + energy"? Why has energy management become an ideal testing ground for the deployment of large-scale AI models?

Eva Na, Vice President of Marketing and Strategic Cooperation, and CMO of Tuya Smart, addresses this shift: "We are now in the 2.0 era of large AI models. Innovations in architectures like DeepSeek enable the processing of extremely long texts at low cost while demonstrating exceptional reasoning and data capabilities. These advancements bring AI decision-making closer to human cognition, allowing models to be highly sensitive to device states, physical changes, and energy consumption patterns—making them particularly well-suited for energy management."

In vertical applications, the strong generalization capabilities of large models in language comprehension and generation can be transferred to specialized smaller models, enhancing their data-processing abilities and decision-making chains while further enriching knowledge bases. This integration of large and small models will accelerate AI's end-to-end penetration into industries and everyday life. Tuya Smart is at the forefront of this transformation, continuously exploring new applications for end-to-end AI. By integrating global mainstream AI models—including ChatGPT, Tongyi Qianwen, DeepSeek, Gemini, and Amazon Nova—Tuya empowers developers to create AI-driven smart devices and scenario-based applications that are more competitive in the market.

Taking energy management as an example, Tuya's Energy Management System, enhanced by large models such as DeepSeek, leverages multimodal perception capabilities to embed energy-saving intelligence into various application scenarios, redefining the boundaries of smart energy. The following sections explore how Tuya is revolutionizing smart energy management—from home devices to cloud-based management systems to large industrial and commercial energy solutions—ushering in a disruptive transformation in the energy sector.

I. Home Appliances as "Energy-Saving Smart Assistants"

- Smart Air Conditioning: The "Temperature Prophet"

With DeepSeek-powered AI, smart air conditioners can make intuitive adjustments based on real-time contextual cues. If a child kicks off their blanket while sleeping, the AC automatically raises the room temperature. When the system detects blue light reflections from a phone when the user is working late at night, it lowers the air volume to prevent the user from catching a cold.

Additionally, by analyzing the sound frequency of yawning, fresh air circulation can be preemptively adjusted by 0.5°C before the temperature rises.

- Smart Lighting: The "Light Energy Butler"

Tuya's smart lighting system dynamically adapts to family members' daily routines. For instance, when children are doing homework, the lighting shifts to cool white tones to enhance focus, while during TV time for the elderly, it transitions to warm yellow hues to reduce eye strain. When it detects that the entire family has left home, it switches to "Home Guard Mode" within 0.1 seconds, maintaining minimal illumination to conserve energy. This demand-driven lighting strategy significantly reduces household electricity consumption.



- Electric Vehicles: The "Energy-Saving Strategist"

By integrating DeepSeek, the AI assistant in electric vehicles can track real-time electricity price fluctuations and optimize charging locations accordingly. For example, it may suggest traveling to a shopping district where photovoltaic electricity costs only 0.18 RMB/kWh during lunchtime. The AI also continuously monitors nearby charging stations for discounts and promotional activities, automatically adjusting routes to optimize cost savings on electricity bills.

II. Cloud-Based Energy Optimization: AI-Powered Efficiency

On the cloud level, Tuya's AI-integrated energy management system generates real-time energy consumption maps based on data from smart devices and specific usage scenarios. This enables the system to develop optimal energy-saving and emissions-reduction strategies.

For instance, commercial buildings can integrate rooftop solar panels, underground EV charging stations, and central air conditioning into a unified energy network. When a thunderstorm disrupts photovoltaic power generation, the system can allocate stored energy within 0.5 seconds, ensuring an uninterrupted power supply to essential equipment. By analyzing office heat maps, the AI also identifies underutilized areas and preemptively reduces air conditioning in those zones—maximizing efficiency and minimizing waste.

III. AI-Powered Energy Dispatch in Large Industrial Parks

In large industrial and commercial parks, AI-driven energy management is undergoing a radical transformation. Beyond making energy consumption more transparent, AI models enhance forecasting for both power generation and consumption, significantly reducing overall energy costs.



For example, in the underground pipeline system of a major technology park, AI acts as a highly sensitive "underwater detective," capable of identifying leaks through voiceprint recognition. Even the smallest leaks, undetectable to the human ear, are pinpointed, helping the facility save up to 1,500 tons of water annually. Additionally, AI optimizes the charging and discharging strategies of energy storage systems in real time, ensuring economic efficiency by adjusting energy usage based on fluctuating demand.

Through the deployment of AI models, Tuya Smart is spearheading a transformative shift in energy management, ensuring that every kilowatt-hour finds its optimal usage path—maximizing efficiency across diverse scenarios. This may very well be the most innovative and romantic redefinition of energy management by AIoT technology.

In this vision-driven energy revolution, Tuya is crafting a compelling answer: social value and commercial success are not contradictions, but complementary forces. The true pioneers of this field will ultimately reap extraordinary returns. Looking toward the future, Tuya invites like-minded innovators—those who dream and "generate electricity for care"—to join in building a sustainable future where AI-driven energy solutions create tangible social benefits for generations to come.