

Tuya Inc.塗鴉智能 Stock Code NYSE: TUYA; HKEX: 2391

## Contents

About this Report	12
Chairman's Statement 0	)4
• About Tuya 0	6
	)6
Annual Honors C ESG Performance Highlights	08



Corporate Governance ----- 14

ESG Governance 19



Empower with Intelligence and Co-Create the Industry

Responsible Supply Chain ------ 56

Indusvtry Co-Creation ----- 68

Digital Intelligence Leadership and Quality Innovation

Appendix I \_\_\_\_\_\_92
 HKEX ESG Contents Index

Appendix II 95
 ESG Performance

Security and Compliance 26 Products and Services 38 Service and Responsibility 49 04

Green Development and Low-Carbon Operations

Green Practices 74

Climate Action ----- 76

# )5

#### Gather Talent for Team Success

Talent Attrac	tion	·····	 	8	32
Talent Devel	opm	ent	 	8	35
Talent Care			 	8	39

Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## **About this Report**

## Overview

This report is the third environmental, social and governance report (hereinafter referred to as the "ESG" report) issued by Tuya Inc. and its subsidiaries (hereinafter referred to as the "Company", "Tuya" or "we"), which is aimed at all stakeholders of the Company, and focuses on disclosing Tuya's management, practices and performance in terms of environmental, social and governance aspects.

## Reporting Timeframe

Unless otherwise stated, the period covered by this report is from January 1, 2024 to December 31, 2024 (the "reporting period") while certain information and activities are prior to that.

## Reporting Scope and Boundaries

This report defines the scope of organization based on the principle of materiality. Since the proportion of revenue from overseas companies is not material, the environmental data disclosed in this report does not include those of overseas companies. Unless otherwise specified, all substantive contents involved in this report are consistent with the disclosure scope of the Company's annual report.

## Basis of Preparation of the Report

This report has been mainly prepared in accordance with the Environmental, Social and Governance Reporting Guide contained in Appendix C2 of the Listing Rules of Hong Kong Exchanges and Clearing Limited (hereinafter referred to as the "HKEX"), and relevant provisions based on principles of materiality, quantitative, balance and consistency.

## Source of Information and Assurance of Reliability

The information and data disclosed in this report are derived from the Company's statistical data, relevant documents and internal communication files, as well as system records. The Company assures that this report does not contain any false records. or misleading statements, and is responsible for the authenticity, accuracy and completeness of the contents.

## Confirmation and Approval

Upon confirmation by the management, this report was approved by the Board of Directors on February 26, 2025.

## Acquisition of the Report

This report has been written in traditional Chinese and English. The electronic version is published on the "Investor Relations" section of the Company's official website (https://ir.tuya.com/) and the website of HKEX (www.hkexnews.hk). In case of any inconsistency between the Chinese and English versions of this report, the English version shall prevail.

## Contact Information

We attach great importance to the opinions of stakeholders and welcome readers to email us at ir@tuya.com. Your comments will help us further improve this report and enhance our ESG performance.

About Tuya

**Chairman's Statement** 

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## **Chairman's Statement**

Build an AloT Developer Ecosystem, Enable Everything to Be Smart

> As an innovation-driven leader in the AloT sector, in 2024, Tuya leverages generative Al and cloud computing as its core to continue to deliver exceptional services to global developers, brands, and industry partners. This year, we officially joined the United Nations Global Compact, reaffirming our commitment to sustainable development. Guided by our vision of being "a global leading AI cloud platform service provider," we continue to deepen green technology applications, collaborate with value chain partners, and contribute technological solutions to global sustainability, striving for a future of interconnected and intelligent coexistence.

> We continuously refine our ESG governance system, establishing a three-tier governance structure comprising the Board of Directors, the ESG Management Committee, and the ESG Work Implementation Group to ensure efficient and compliant corporate governance. By integrating ESG principles into our corporate strategy and updating materiality topics to align with business objectives, we have built a robust risk management framework covering identification, assessment, mitigation, and monitoring, enhancing overall governance effectiveness. Additionally, our internal audit department rigorously oversees anti-corruption measures, embedding compliance into our culture and fostering stable growth.

> Amid rapid industry growth and intensifying market competition, Tuya remains innovationdriven, delivering cutting-edge intelligent products and services. We advance technological innovation with a focus on low-carbon solutions, launching energy-efficient software, hardware, and application scenarios that integrate PaaS and SaaS capabilities to empower clients in energy management. Customer-centricity guides our optimized quality assurance system and the synergistic collaboration among sales, product, and customer service teams, ensuring professional support for clients.

Tuya places green development at the heart of its strategy, strengthening environmental stewardship and corporate social responsibility. Aligned with the Paris Agreement, we explore carbon reduction pathways and systematically address climate risks in accordance with the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations. Innovations like our proprietary smart commercial lighting control systems enhance energy efficiency, while comprehensive green management practices embed sustainability into daily operations.

Upholding an employee-centric philosophy, we enhance human resource systems to support professional growth. In 2024, we upgraded the Tuya Academy, digitizing 85% of offline training content, with total annual employee learning hours reaching 2,091.8. We prioritize employee rights through improved benefits, transparent communication, and team-building activities, fostering cohesion and belonging. Tuya was again honored as "Best Employer Brand for Global Companies" at the 2024 China Human Resource Sirius Awards.

Looking ahead, Tuya will continue to champion innovation and sustainability, strengthening competitiveness in compliance, green innovation, social responsibility, employee well-being, and product accountability. By intensifying R&D and integrating ESG into business strategies, we will drive global digital and intelligent transformation, advancing societal and environmental sustainability.

05 >

Chairman of Tuya Inc.

Xueji Wang

About this Report

Chairman's Statement About Tuya

The Company's Development Milestones

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## **About Tuya**

Tuya Inc. (NYSE: TUYA; HKEX: 2391) is a global leading AI cloud platform service provider with a mission to build an AIoT developer ecosystem and enable everything to be smart. Tuya has pioneered a purpose-built AI cloud platform with cloud and generative AI capabilities that delivers a full suite of offerings, including Platformas-a-Service, or PaaS, Software-as-a-Service, or SaaS, and smart solutions for developers of smart devices, commercial applications, and industries. Through its AIoT developer platform, Tuya has activated a vibrant global developer community of brands. OEMs. Al agents, system integrators and independent software vendors to collectively strive for smart solutions ecosystem embodying the principles of green and low-carbon, security, high efficiency, agility, and openness. As of the reporting period, Tuya AloT developer platform had over 1,316,000 registered developers from more than 200 countries and regions.

#### **Our vision**

The Global Leading AI Cloud Platform Service Provider

Our mission

Build an AloT Developer Ecosystem

Enable Everything to Be Smart

### **Our values**

**Customer Success, Purity** and Dedicated, Win-win **Cooperation**. Backward from Goal, Self-driven Growth, Results First







Chairman's Statement

About Tuya

Governance Enhancement for Endured Advancement Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## **Annual Honors**



09 >

Environmental



**Best Case for** Localization Development



The First Sino-European **Corporate ESG Best Practice Conference in Frankfurt 2024** 



Guruclub





Moka & HRflag

Chairman's Statement

About Tuya

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## **ESG Performance Highlights**



## Digital Intelligence Leadership and Quality Innovation

Security review reports were completed

258

673

Conducted information security training sessions, with a total of

1,459 attendances

achieving a

100training coverage rate

Authorized trademarks

Accumulated valid patents

1,357

- Successfully passed the annual audit of ISO 9001 certification with the audit result of "zero non-conformity"
- Customer satisfaction rate of the project services reached



**Empower with Intelligence and Co-Create the Industry** Developer Summits Assessed supplier in times 1,017 4 Charitable donations worth Attended the 29th Conference of the Parties (COP29) approximately Published the "2024 Global Pathway for Low-Carbon RMB **730,000** and Energy-Efficient Homes Report'

Green Development and	d Low-Carbon
<ul> <li>Environmental violation incidents</li> </ul>	Conduct

Gather Talent for Team Success	5
<ul> <li>Employee training coverage rate</li> <li>94.3%</li> </ul>	<ul><li>Recruite</li><li>39</li></ul>
Established the <i>Code of Human Rights and Labor Protection</i>	Attained
Annual learning hours on Tuya Academy online	alatform

2,091.8 hours

## **Operations**

ed

ergy-saving training sessions

employees from minority ethnic groups

the "Best Employer Brand for Global Companies Award"

Chairman's Statement

About Tuya

Enhancement for Endured Advancement

Create the Industry

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## Governance Enhancement for Endured **Advancement**

Sound corporate governance and a robust ESG governance system are the cornerstone of our sustainable development. Tuya adheres to business ethics and is committed to implementing strong governance practices, optimizing management structures, and enhancing risk management capabilities. Furthermore, we integrate ESG principles into the company's top-level strategic planning to ensure the rights and interests of stakeholders are fully protected, laying a solid foundation for the company's long-term growth.

Response to SDGs





Gather Talent fo eam Success

Appendix

13 >

About Tuya

Governance Enhancement for **Endured Advancement**  **Digital Intelligence** Leadership and **Ouality Innovation** 

Empower with Intelligence and Co-Create the Industry

## **Corporate Governance**

Tuya believes that a robust corporate governance system is a critical foundation for achieving sustainable development. We have established a governance framework characterized by clear division of responsibilities and collaborative mechanisms, continuously enhancing transparency and management efficiency to ensure directors and senior management fulfill their duties and uphold the Company's stable operations.

## **Operational Compliance**

The Board of Tuya has established four committees: the Audit Committee, the Compensation Committee, the Nomination Committee, and the Corporate Governance Committee. As the core governance body, the Board of Tuya is responsible for formulating and overseeing corporate management strategies, monitoring the Company's operational and financial performance, and ensuring the robustness of internal control and risk management systems. Leveraging their specialized functions, these committees supervise Tuya's operational and governance activities.

We recognize that diversity and professionalism within the Board of Tuya are essential to ensuring informed decisionmaking and driving sustainable business growth. In appointing Board members, we incorporate diversity considerationsincluding but not limited to gender, age, cultural background. and nationality—while comprehensively evaluating candidates' educational qualifications, professional expertise, as well as finance and risk management experience.

The current Board members have extensive industry experience, and professional capabilities in information and technology science, cloud computing and computer application technology, international business and economics, business administration, law, finance, accounting, investment, engineering, physics, history, and chemistry, etc. As of the end of the reporting period, the Board of Tuya is composed of 8 directors, including 4 independent directors, accounting for 50%, and 1 female director.





#### **Skill Matrix of Directors**

To steadily enhance the level of compliance-driven operations, Tuya has established a comprehensive director training mechanism, regularly organizing directors to participate in professional skill enhancement programs. At the same time, we encourage all directors to engage in a series of specialized training sessions, including legal and regulatory training, exchange rules and standards education, and climate change awareness initiatives. These efforts help directors continuously update their knowledge systems, strengthen their compliance awareness, and better fulfill their responsibilities, thereby driving the Company's compliant operations and sustainable growth.

## **Risk Management**

A robust internal control and risk management system is the foundation for the Company's stable operations. Tuya has established a comprehensive risk governance framework, effectively integrating risk management into every aspect of the Company's operations. This ensures the smooth and orderly execution of all business activities, enabling the Company to navigate complex markets with stability and confidence.

With reference to the Corporate Governance Code of HKEX, the Internal Control - Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission, we have formulated management policies such as the Tuya Risk Management Policy and the Tuya Internal Audit Policy, and built a well-organized risk management structure.



Tuya's Risk Management Structure

## **Board of Directors** Ensure that the Company Continuously supervise the design, establishes and maintains implementation and monitoring of the Company's management effective risk management and internal control syson risk manage-ment and internal control systems Audit Committee Report to the Board of Directors and supervise the effectiveness of management's design, implementation and monitoring of risk management and internal control systems Risk management teams Internal audit teams Financial, legal, information security, Internal audit teams conduct conrisk management, compliance and tinuous monitoring and evaluation other teams provide support and sufrom a perspective independent of pervision for risk-related affairs management, and implement regular internal audits Third line of defense Second line of defense

About this Report

About Tuya

Chairman's Statement

Governance Enhancement for Endured Advancement Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## **Business Ethics**

Tuya adheres to the highest standards of business ethics, laying a solid foundation for the Company's long-term sustainable development. In our operations, we strictly comply with relevant laws and regulations, including the *Company Law of the People's Republic of China*, the *Anti-Unfair Competition Law of the People's Republic of China*, and others, actively building and continuously improving our business ethics system to ensure that our operations align closely with ethical standards and legal requirements.

We continuously strengthen our regulatory framework,

## **Business Ethics Management System**

As the highest oversight body for business ethics, the Board of Directors is responsible for receiving updates on the progress of the business ethics management system and making decisions on verified corruption cases, as well as monitoring the handling progress of such cases. We have established the Internal Audit and Internal Control Department to ensure the effectiveness of the Company's anti-corruption policies and management systems, and to oversee the implementation of the anti-corruption framework through internal audits. In daily operations, the heads of each business department, as the firstline responsible persons for business ethics management, are tasked with identifying potential corruption risks in business activities.

Upholding compliant operations, we steadily advance our efforts under an effective and transparent corporate governance framework, committed to collaborating with stakeholders to fulfill our commitments to business ethics. For employees, we base our guidance on the *Employee Business Code of Conduct*,

## **Business Ethics Culture Development**

Tuya is committed to fostering a culture of integrity and compliance, continuously advancing anti-corruption and integrity promotion efforts to create a company-wide atmosphere of ethical business practices.

To ensure all employees, including part-time and contract workers, fully understand the Company's compliance and ethical standards, we have implemented mandatory training programs such as anti-corruption compliance training and anti-

Tuya places great emphasis on risk management, continuously optimizing rigorous and efficient management processes to effectively mitigate risks and strengthen the foundation for the Company's stable operations and sustainable growth. Our risk management process consists of five critical steps: identification, prevention, assessment, response, monitoring and rectification of risks. In addition, we have engaged third-party advisors to assist us in continuously improving our risk management, internal control and operational systems to maintain a suitable and effective risk management system.

#### Formulate annual risk management plans

Apart from formulating annual business objectives, the management team formulates annual risk management plans, which serve as an important basis for guiding the Company's annual risk management and internal monitoring work.

Improve standardization of the risk management process

Starting from the stages of risk identification, assessment, response, and monitoring, we refine operational steps, clarify responsibility allocation, and gradually optimize the process.

#### Strengthen risk management team building

A cross-departmental collaborative risk management team is established to provide professional expertise, ensuring the effective implementation of risk response measures.

Improve risk management awareness among Employees

Regular risk-related training is provided to relevant personnel, covering business codes of conduct, business-related laws and regulations, and data security management, to enhance the efficiency of risk management responses.

#### 2024's Matrix of Risk Management Practices

Under the stable risk management system, Tuya comprehensively identifies, assesses, and analyzes internal and external risks in the areas of strategy, operations, finance, information technology, and compliance. We also ensure the comprehensiveness of risk assessments by conducting internal audits and third-party external audits. At the same time, we regularly identify and evaluate emerging risks related to social and environmental factors that may impact the Company's development. We promptly study relevant regulations and policies and engage external experts to provide further interpretation, ensuring the timeliness of our risk management efforts.



17 >

formulating and publicly disclosing the *Business Ethics Code* of *Conduct*, which outlines our commitments in areas such as corporate governance, anti-money laundering, related-party transactions, and compliance disclosures. Additionally, we have established a series of internal business ethics policies, including the *Employee Business Code of Conduct*, the *Integrity Management Standards*, and the *Anti-Bribery and Anti-Corruption Compliance Policy*, to clarify management standards for matters related to anti-corruption, anti-monopoly, antimoney laundering, and other business ethics issues.

combined with the *Basic Human Resources Policy*, to provide behavioral guidance on business ethics for employees at all levels in their daily work. Additionally, we hold our partners to high standards, requiring all suppliers to sign the Integrity Commitments, which now cover 100% of our core suppliers.

To ensure the robust operation of our business ethics management system, we regularly review the effectiveness and compliance of our internal control systems, providing critical insights for bribery and corruption risk assessments. At the same time, we prioritize supply chain integrity, requiring suppliers to sign the Integrity Agreements and conducting integrity questionnaires every three years to assess corruption risks in procurement and supplier management. During the reporting period, we conducted on-site visits and inspections to perform integrity checks on personnel from suppliers involved in the construction of our new office building, thoroughly investigating potential corruption risks in the new project.

money laundering training, strengthening their awareness of business ethics. Additionally, Tuya provides anti-corruption and compliance operation training for all directors to enhance their professional skills and integrity awareness, embedding a culture of integrity and compliance. During the reporting period, there were no litigation cases of corruption, bribery, money laundering, monopoly and other violations of business ethics against the Company or its employees.

About this Report

About Tuya

Governance Enhancement for Endured Advancement Digital Intelligence Empower with Leadership and Intelligence and Quality Innovation Co-Create the Industry

ESG Governance

A well-developed and robust ESG governance system is the key for the Company to fulfill its social responsibilities and achieve sustainable development. Tuya places sustainable development as a top priority in its strategic planning and integrates it comprehensively into all aspects of daily operations. We actively build and continuously improve the ESG governance framework, maintain close communication with stakeholders such as customers, partners, and employees, and strive to promote synergetic development across the upstream and downstream value chain to fulfill our social responsibility.

## Statement from the Board

The Board of Tuya places great emphasis on integrating ESG management principles into the Company's development strategy, closely monitoring ESG risks and opportunities, regularly overseeing and reviewing the implementation of ESG management strategies, and continuously improving the ESG management mechanism based on the Company's operational conditions to enhance overall ESG performance.

## Board Responsibilities and ESG Management Policies

The Board of Tuya assumes overall oversight, guidance, and review responsibilities for ESG-related work, authorizing the ESG Management Committee to formulate ESG management strategies, develop ESG policies, and manage the overall implementation of ESG-related matters. The Board regularly optimizes and adjusts ESG management policies and strategies in alignment with the Company's development strategic plan.

## **ESG Risk Management**

To effectively prevent and manage sustainability-related risks, the Board regularly oversees the identification, assessment, and management of ESG risks and opportunities, conducting in-depth discussions on issues with significant risks. When formulating the Company's business strategy, the Board fully considers ESG-related risks to ensure decisions align with the Company's long-term development goals.



**Company-Wide Business Ethics Training** 

We have systematically advanced business ethics training to ensure all employees, including part-time and contract workers, develop a strong sense of responsibility. We have developed a series of mandatory business ethics courses and created training materials to ensure all personnel complete at least one training session annually. The training content integrates the Company's commitments and requirements for business ethics, tailored to the specific roles and compliance needs of different positions, enhancing the practicality and relevance of the training. This helps employees better integrate business ethics standards into their daily work. As of the end of the reporting period, a total of 4,371 participants have completed the anti-corruption compliance training courses.

#### As of the end of the reporting period

A total of

4,371

participants have completed the anti-corruption compliance training courses

Chairman's Statement

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Whistle-blowing and Investigation

To effectively advance integrity development, Tuya has established a normalized whistle-blowing and complaint management mechanism, further detailing whistle-blowing regulations in the *Employee Business Code of Conduct* and the *Tuya Basic Human Resources Policy*. We have built a comprehensive and clear whistle-blowing mechanism, defining reporting channels, procedures, investigation steps, and whistle-blower protection measures, encouraging all stakeholders to actively participate in the Company's oversight efforts and jointly strengthen the business ethics.

For Tuya's employees, we have opened multiple reporting channels, including a whistle-blowing hotline, reporting email, and intranet platform. For external stakeholders, we have set up a dedicated email (integrity@tuya. com) and make it available to the public, to create a transparent and open oversight mechanism.

We are committed to promptly investigating and gathering evidence for reported incidents, while strictly maintaining the confidentiality of the whistleblower's personal information throughout the process to fully protect all relevant individuals. Upon completion of the investigation, we will conduct a thorough review to continuously optimize our management measures, prevent the recurrence of similar incidents, and minimize business ethics risks.



#### Receive Reports

The Human Resources Department and the Internal Audit and Internal Control Department are responsible for managing the Tuya whistle-blowing mailbox and responding to the reported matters timely

#### Investigate

The Internal Audit and Internal Control Department works with the Human Resources Department, the Legal Department, and the Finance Department, to conduct investigation on the reported matter, and handle the matter according to the investigation result

#### Handle Reports

If the reported violations are verified, appropriate corrective actions are taken as necessary **Review and Optimize** 

The Internal Audit and Internal Control Department is responsible for recording and tracking the investigation results and subsequent handling plans of all reported matters, and reporting investigation results and handling plans to the management and the Board of the Company timely

## **Goal Setting and Progress Review**

To effectively advance ESG management, Tuya has established a series of ESG goals aligned with its business. The Board regularly conducts comprehensive reviews of goal progress, analyzes challenges encountered, and adjusts strategies and action plans based on actual progress to ensure the steady achievement of ESG goals.

## **Communication with Stakeholders**

The Board of Tuya promptly identifies, assesses, and follows up on key ESG-related concerns raised by stakeholders. We have established stable and transparent communication channels and feedback mechanisms with stakeholders, developing effective management strategies for identified material sustainability risks and issues to better understand and address stakeholder expectations. About Tuya

Chairman's Statement

Governance Enhancement for **Endured Advancement** 

decision-making processes.

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## **ESG Management Framework**

Tuya continues to enhance its ESG governance framework to integrate sustainable development principles into its strategy and key business processes. The Board of Directors, as the highest decision-making body for ESG governance, oversees the Company's ESG efforts and is responsible for monitoring the implementation of ESG-related strategies and policy formulation. The ESG Management Committee is tasked with supervising the Company's ESG matters and performance, regularly reporting to the Board.



#### methods to actively address their concerns. Major stakeholders Issues of concern Compliant operations Business ethics Labor practices Intellectual property rights Regulatory and competent protection nnn authorities Environmental management Climate change and GHG emissions Waste management Compliant operations Product safety and quality <u>m̃ř</u>ḿ Investors Information security and privacy protection Business ethics Information security and privacy protection Customer services Customers Product safety and guality Environmental impact of products and services Responsible marketing Employment Diversity and inclusion Labor practices Employees Employee occupational health and safety Employee training and development Business ethics Suppliers Supply chain management Community investment and development Promotion of industry The community and development the public Product safety and quality Resource utilization

## **Communication with Stakeholders**

Tuya has always regarded maintaining strong relationships with stakeholders as a critical component of ESG management. The Company actively builds regular communication channels, conducts in-depth dialogues and diverse collaborations, and invites stakeholders to deeply engage in ESG matters, integrating their demands, suggestions, and feedback into daily operations and

Based on the Company's business characteristics and operational conditions, we have identified key stakeholders, including governments and regulators, investors, customers, employees, suppliers, and communities and the public, and established diverse communication

#### **Communication channels**

- Press releases/press announcements
- Regular communication
- Policy consultation
- Information disclosure
- Telephone, communication software, investor relations email
- Capital market rating questionnaires
- The Company's official website, new media platform
- Exchange network infrastructure platform
- Quarterly, semi-annual and annual results conference calls
- Shareholders' general meetings, roadshows, analyst meetings, on-site surveys and exchange seminars
- "Iron Triangle" model for customer service and support
- Customer service channels
- Site visit
- Daily communication by means of telephone, email and communication software
- Exhibitions and business events
- Mailbox and internal communication software
- Tuya culture column
- Employee communication meeting
- "One-to-one" communication between TL and employees, internal team meetings
- Team building activities
- Employee training and online courses
- On-site surveys and evaluation
- Supplier assessment
- Day to day communication and meetings
- Press releases/press announcements
- Charity events
- Cooperation with peers
- Market cooperation
- Information disclosure
- Social media
- The Company's official website, new media platform

About Tuya

Governance **Enhancement for Endured Advancement**  **Digital Intelligence** Leadership and Quality Innovation

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## **ESG Material Issues**

To fully address potential challenges arising from changes in internal and external factors, Tuya conducts an annual systematic assessment of materiality issues in accordance with HKEX's ESG Reporting Guide and the dual-materiality principle. At the same time, we comprehensively consider the focus areas of internal and external stakeholders to evaluate the significance of each issue. The results of the materiality matrix assessment are reviewed and managed by the Board of Directors.

#### Identify potentially material issues

Identify potential ESG materiality issues based on changes in internal and external environments, regulatory requirements, industry standards, and other relevant information

#### Materiality prioritization

Prioritize the identified issues based on capital market focus, peer benchmarking results, and employee feedback

#### Form a matrix of material issues

Understand the priority issues of concern to stakeholders, develop a materiality matrix, and highlight the disclosure of relevant issues in the report



In 2024, we analyzed and updated our material issue matrix according to our strategic development tendency and current development situation.



Tuya 2024 Materiality Matrix



	13	Supply chain management
	14	Employee occupational health and safety
	15	Promotion of industry development
Issues of moderate	16	Corporate governance
moderate importance	Ð	Community investment and development
	18	Employee training and development
	19	Environmental management
	20	Climate change and greenhouse gas emissions
Issues of low	21	Waste management
importance	22	Resource utilization

Chairman's Statement About Tuya

Governance Enhancement for Endured Advancemen Digital Intelligence Leadership and Quality Innovation Empower with Intelligence and Co-Create the Industry

# 02

## Digital Intelligence Leadership and Quality Innovation

Tuya closely follows the trends of the digital economy and intelligent development, continuously innovating and advancing digital intelligence technologies and smart applications. Tuya is committed to delivering exceptional smart experiences for customers, creating value for the industry, and focusing on data security and privacy protection to build a healthy network ecosystem.

Response to SDGs





Green Development and Low-Carbon Operations Gather Talent for Team Success Appendix

25 >

About Tuya

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and **Ouality Innovation** 

Empower with Intelligence and Co-Create the Industry

## **Security and Compliance**

As an AI+IoT technology-based company, Tuya has always prioritized security as a core goal. Tuya has established a robust data security and compliance governance system, leveraging advanced physical safeguards and cloud-native control measures to ensure stringent data security and comprehensive user privacy protection.

## **Data Security**

## **Data Security Compliance Governance**

Tuya strictly adheres to relevant laws and regulations across its operational jurisdictions, including the *Cybersecurity Law* of the People's Republic of China and the EU's General Data *Protection Regulation (GDPR<sup>1</sup>)*, ensuring high compliance in data protection and information security. To further enhance data security management capabilities, Tuya has established a comprehensive data security management system, including the Internal Audit Management Policy, the Application Security Management Policy, and the Data Security Management Policy.

During the reporting period, Tuya continued to refine data security management requirements, revising and updating multiple data security management policies. Tuya updated the information security penalty provisions in the Information Security Manual for Employees, comprehensively covering scenarios such as data breaches and linking employee performance evaluations to their effectiveness in maintaining data security. Additionally, Tuya added confidentiality obligations and data security responsibilities for all employees, interns, contractors, and partners in the Data Security Management Policy.

Tuya consistently treats security and compliance as a core strategy, ensuring the safety and compliance of business operations in all aspects.



**Compliance Committee** 

Security and compliance team



Information security

- Build and maintain robust protection systems
- Develop and implement advanced security technology frameworks

Data Security Management Structure

#### Our security and compliance strategies

- Tuya strictly complies with laws, regulations, and industry standards, improving internal rules and regulations to ensure compliant business operations. Tuya continuously optimizes its information security management system, incorporating third-party vulnerability analysis and simulated hacker attacks to enhance the security protection of its products and services.
- To mitigate security risks such as hacking and data leaks, Tuya's information security team is responsible for monitoring and protecting the company's network and systems. Tuya conducts regular security tests and vulnerability scans, combined with data encryption and access control measures, to continuously improve overall security protection capabilities.
- Tuya implements a dynamic security and compliance strategy, establishing flexible response mechanisms to address evolving security threats and legal requirements, ensuring that its management system consistently meets industry compliance standards.





- Ensure the execution of privacy protection processes, rules, and regulations
- Conduct audits to ensure compliance with privacy protection standards

## Data Security Lifecycle Management

Tuya has established a comprehensive security management system covering the entire data lifecycle, including data collection, storage, processing, retention, and transmission, to fully safeguard data security and user privacy rights.

About this Report

#### Data collection

- Respect the right to be informed of users and customers, collect necessary data only after obtaining customer authorization or explicit user consent based on service requirements
- Strictly adhere to the principle of data minimization, conduct risk assessments and compliance reviews for sensitive data during the design phase to ensure the entire data collection process complies with relevant regulations

#### Data storage

Use encryption technologies to ensure secure storage of customer and user data, apply necessary anonymization to sensitive data

Chairman's Statement

Redesign the internal business evaluation PIA<sup>2</sup> process to incorporate compliance considerations for specific regions and data based on EU data protection laws and U.S. presidential directives

#### Data processing

- Classify data appropriately according to the *Data* Classification, Grading, and Management Policy, ensuring that each data category meets security and compliance requirements during processing
- Establish robust data processing standards, employ strict data filtering and validation processes, and implement a comprehensive data audit mechanism
- Introduce compliance design for smart device data processing and optimize the AI data flow compliance evaluation process

#### Data retention

- Formulate data retention policies to ensure personal information is processed within the shortest possible timeframe, destroy or anonymize expired data according to established procedures
- Add compliance evaluations for AI data flows in the data retention policy, ensure all stored data remains compliant with international laws and regulations throughout the retention period

#### Data transmission

- Encrypt all data during transmission, support secure algorithms, transmission encryption protocols, and commercial-grade information encryption based on dynamic keys to ensure data integrity and confidentiality
- Enhance detection mechanisms for cross-border domain access by Apps and optimize monitoring processes for cross-border data transmission

#### Data Security Lifecycle Management Measures

<sup>2</sup> PIA: Privacy Impact Assessment, an analysis of how entities collect, use, share, and maintain personally identifiable information related to existing risks.

#### Governance Enhancement for

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#### **Business Operation Security System**

Tuya has established a comprehensive business operation security system, covering development phase security management and cloud platform security management, to ensure the safety and reliability of business operations.

#### **Development Phase Security Management**

Tuya fully implements the security development life cycle methods during the development phase, integrating information security into every critical stage. During the requirements analysis phase, we introduced an intelligent security risk assessment platform, significantly improving the efficiency and accuracy of risk identification by identifying potential security threats in advance. During the design review phase, Tuya further strengthened security controls, ensuring each project undergoes rigorous security reviews before release through a dynamic security checkpoint mechanism. Additionally, we optimized the security review process, producing 258 security review reports during the reporting period, an increase of 11.7% year-on-year, providing a solid foundation for high-quality product delivery.

#### **Cloud Platform Security Management**

Tuya leverages globally leading cloud service providers to build a comprehensive cloud platform security management system through AI configuration and compliance management, in-depth security protection architecture, and cybersecurity protection.

#### **Physical infrastructure**

Tuya relies on globally leading cloud service providers (e.g., AWS, Microsoft Azure, Tencent Cloud) to build a comprehensive cloud security management system, covering data storage, access control, and various security protections for cloud services.

#### Al configuration and compliance management

as Google, AWS, Azure, and Aliyun, and has encapsulated 5 internal AI usage scenarios. Tuya added CVE<sup>3</sup> vulnerability analysis capabilities and launched a security compliance AI assistant, which has supported 720 queries to date.

#### **Defense-in-depth security architecture**

Tuya's cloud platform adopts a mature defense-in-depth security architecture, including Web Application Firewall (WAF), RASP (Runtime Application Self-Protection), CNSPs (Cloud-Native Security Platforms), HIDS (Host-Based Intrusion Detection Systems), HoneyPot, and SIEM (Security Information and Event Management), providing granular protection from the network, machine, application, to code levels.

#### Cybersecurity protection

- Tuya has built a proactive cybersecurity protection system through the deployment of honeypot systems and threat intelligence management.
- Honeypot Systems: We added 10 honeypot nodes in the internal network environment, accurately capturing and responding to third-party attacks. During the reporting period, 142,643 attacks were captured, and 4,290 attack IPs were blocked
- Threat Intelligence Management: We dynamically adjusted blocking strategies through platform integration with WAF and other defense tools, providing external business partners with threat intelligence query interfaces. In 2024, Tuya launched a self-developed threat intelligence management platform, integrating 17 threat intelligence sources and accumulating 447,865 intelligence records.

#### **Cloud Platform Security Management System**

<sup>3</sup> CVE: Common Vulnerabilities & Exposures.

About Tuya

Endured Advancement

• Tuya implements unified AI configuration management, supporting seamless integration with mainstream AI platforms such

About this Report

Chairman's Statement

About Tuya

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## Security Risk Control

To continuously enhance our information security protection capabilities, we have established and optimized a comprehensive vulnerability management mechanism that covers key areas such as security penetration testing, vulnerability risk assessment, and remediation. We proactively identify, track, and remediate potential security vulnerabilities to ensure that the security posture of our systems remains under control.

## **Vulnerability Management Program**

Tuya conducts regular security penetration tests to actively uncover potential system vulnerabilities. These vulnerabilities are assessed and prioritized based on the Vulnerability Risk Rating to ensure risk controllability. Additionally, we have established an efficient vulnerability remediation mechanism to promptly address and fix vulnerabilities, ensuring the security and stability of our systems.

## Data Leakage Prevention and Control

We continuously optimize endpoint data leakage prevention tools and implement dynamic strategies to adapt to the ever-changing threat landscape. By refining rules, strengthening employee risk management, adding dynamic strategies, and enhancing data security management for departing employees, we effectively reduce the risk of data leakage and ensure the security of sensitive information.

Control measures	Implementation details	Key achievements in 2024
Optimization of endpoint data leakage prevention tools	Audit the compliance of outbound data transfers based on data security and compliance rules	Audited <b>2,725,400</b> outbound data transfers, an <b>8.65</b> % year-on-year increase in audit volume
Employee risk management	Address risks posed by employees, with a focus on high-risk individuals	A <b>58.47</b> % month-on-month increase in the number of high-risk employees under focus
Dynamic strategy addition and anomaly detection	Add dynamic strategies and detect anomalous behaviors	Detected <b>2,184</b> anomalous behaviors, including mining virus incidents and internal network scans
HR offboarding platform data security reminders	Strengthen data security controls for departing employees	Offboarding employee lists shared with security operations; data security disciplinary clauses added to employee handbooks

## Data Leakage Incident Handling Process

Tuya follows internal procedures outlined in the Security Incident Emergency Plan and the Information Leakage Incident *Emergency Plan*, which define incident classification, handling processes, responsibilities, and measures for prevention, monitoring, resolution, and recovery. These measures ensure rapid response and effectively mitigate data leakage risks. During the reporting period, Tuya updated the Virus Infection Emergency Response Guidelines, further clarifying team responsibilities and roles, and improving end-to-end emergency

response management to enhance the ability to handle virus infection incidents.

Tuya has established an efficient emergency response mechanism to ensure swift action during security incidents. During the reporting period, Tuya identified and resolved 8 virus infection incidents, effectively preventing data leakage and minimizing losses.

#### Incident discovery and reporting

- Define data leakage incident reporting and handling processes
- Use monitoring systems or employee reports to promptly identify potential security incidents and escalate them according to established procedures to ensure rapid and effective response, minimizing impact on the company and customers

#### Initial analysis and assessment

Conduct preliminary analysis of the incident, assess its scope and severity, and determine the response level

#### **Emergency response activation**

Activate the corresponding emergency response plan based on the incident type and level

#### **Technical investigation and remediation**

Conduct in-depth investigation into the incident cause and implement isolation, repair, and other measures via the technical support team

#### **Communication and coordination**

Promptly update internal teams and external stakeholders on incident progress

#### **Post-incident review and improvement**

Conduct a thorough review, summarize lessons learned, optimize emergency plans and response processes, and continuously enhance endpoint security tools and strategies

Data Leakage Incident Response Process

#### Data leakage risk attack defense drills

To improve the blocking, detection, and response capabilities of the security protection system, Tuya regularly conducts internal and external attack defense drills to identify and fix potential vulnerabilities. During the reporting period, Tuya conducted 1 internal drill and 2 external drills. In the internal drill, 13 vulnerabilities were identified. Additionally, Tuya collaborated with external third-party organizations to conduct attack simulations on critical business systems. As a defense team, Tuya participated in a national-level network protection operation, successfully completing all attack response and traceability tasks.

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### **Information Security Audit**

Tuva consistently adheres to domestic and international information security standards, improves its security protection system. and ensures compliant business operations. We have established a robust audit mechanism, conducting both internal audits and external independent audits on an annual basis. During the reporting period, Tuya successfully passed external security annual audits.

#### **Internal audits**

- Policy updates: In 2024, Tuya updated the *Internal* Information Security Audit System with reference to the European Data Act and Artificial Intelligence Act
- Audit scope: Tuya conducted comprehensive audits of all business departments in accordance with ISO 27000 series, CSA STAR, GDPR, and other standards, covering cybersecurity, privacy protection, and crossborder data transmission. The audit frequency is once a year
- Security testing: Tuya completed 1 attack defense drill during the year

#### **External audits**

- International standard certification annual audits: ISO 27001, ISO 27017, ISO 27701, CSA STAR, AICPA SOC2 TYPE II & SOC3
- Privacy protection compliance checks: GDPR/CCPA/ Law 25 compliance verification, TRUSTe EPC; full audits covering Tuya modules, cloud services, and Apps, from cybersecurity to privacy protection, with continuous optimization based on audit findings
- National certification annual audits: CSPEC Level 3 annual audit

Based on a comprehensive security and privacy protection system, Tuya has obtained a series of security management system certifications and cyber security certifications. As of the end of the reporting period, Tuya has obtained the security management system certifications, including ISO/IEC 27001:2013, ISO/IEC 27017:2015, and ISO/IEC 27701:2019. In addition, Tuya has achieved external cyber security certifications

such as the EU's General Data Protection Regulation (GDPR) Compliance Audit, the California Consumer Privacy Act (CCPA) Compliance Audit, and the China Cyber Security (Level 3) Protection Filing Certification. For the complete list of certifications, please visit the "Services & Support - Global Compliance" section on Tuya's official website.

## **Information Security Training**

Tuya prioritizes building a culture of information security as a core task for corporate development, committed to enhancing employees' information security and compliance awareness through diverse training, assessments, and awareness activities. Tuya has developed the Information Security Manual for Employees, as a guide for employee learning and practice, alongside establishing a strict violation handling mechanism. Formal penalties are imposed for breaches of security policies, and employees with weak security awareness are publicly notified company-wide to reinforce the importance of information security. During the reporting period, Tuya conducted information security training sessions, with a total of 1,459 attendances, achieving 100% training coverage.

#### During the reporting period

Tuya conducted information security training sessions, with a total of



#### New employee training

Tuya conducted security and compliance awareness training for new employees, covering company security policies, data protection requirements, and common security risk prevention measures. Through various methods such as theoretical explanations, case studies, and practical exercises, Tuya helped new employees gain a deeper understanding of the importance of information security, ensuring they possessed basic security awareness from the start of their employment and laying a solid foundation for their subsequent work. During the reporting period, 4 training sessions were held.

#### Company-wide training

age.

## **Supplier Security and Compliance**

Tuya places high importance on supplier compliance in data security and privacy protection, establishing a comprehensive supplier security management system to ensure all suppliers and business partners meet international data protection standards and company-related management regulations. Through strict access mechanisms, regular audits, and continuous monitoring, Tuya ensures that suppliers' practices in data security and privacy protection align with Tuya's management standards.

Tuya conducts rigorous security and compliance audits on various suppliers annually to ensure they meet the company's data security and privacy protection requirements.

#### Software Supplier Management

#### Security and compliance audit questionnaire

Distribute security and compliance audit questionnaires to suppliers to evaluate their R&D process security, data privacy protection measures, internal system integrity, and penetration test reports

Data Processing Agreement (DPA)

- Require suppliers to sign a DPA when their services involve personal data, clarifying data protection responsibilities and obligations
- Record signed DPAs in the supplier management platform as a basis for subsequent annual reviews

Led by the Security and Compliance Department, Tuya conducted mandatory Information Security and Compliance Awareness Training for all employees in 2024. The training focused on preventing network attacks, phishing emails, data privacy leaks, and other risks, combining online courses with assessments to reinforce learning. The training covered 1,300+ employees, achieving 100% exam cover-

#### **Contractor training**

For contractors, Tuya conducted specialized security and compliance awareness training to ensure their information security awareness aligned with that of internal employees. The training covered company security policies, data protection requirements, and the security responsibilities of contractors, aiming to further reduce security risks in outsourcing processes.

#### **Cloud Computing Services and Key Supplier** Management

#### Third-party audit report review

• Obtain and review suppliers' third-party audit reports and security certifications, including SOC2 reports and penetration test reports, to ensure the effectiveness of their security measures

#### DPA clause updates

Assess the need to re-sign or supplement DPA clauses based on audit results, ensuring mutual understanding of data responsibilities and obligations

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## Industry Security and Compliance Development

Tuya updated and released the sixth edition of the Tuya White Paper on Information Security & Compliance, incorporating the latest industry standards and regulations to showcase its information security compliance measures. This provides the industry with best practices and standardized references. Additionally, Tuya published the *Tuya General Data Protection* Regulation (GDPR) White Paper and the Brazil's Data Protection Law [Lei Geral de Proteção de Dados (LGPD)] White Paper, strictly adhering to GDPR and LGPD<sup>4</sup> requirements to protect user privacy rights and deliver secure and reliable services.

2024 Environmental, Social and Governance (ESG) Report

Tuya deepens its collaboration with external authoritative organizations to exchange security and compliance insights, sharing the latest protection experiences and outcomes while continuously optimizing the information security system. At the same time, we leverage external expertise to empower internal security culture building, helping the team expand their security perspectives, stay aligned with industry compliance trends, and comprehensively enhance security defense capabilities.

Chairman's Statement

#### Invited to the China-Europe Cybersecurity Cooperation Forum

In 2024, Tuya participated in the China-Europe Cybersecurity Cooperation Forum, co-hosted by the Research Center for Global Cyberspace Governance (RCGCG) and Leiden University's Cybersecurity Governance Center in The Hague, Netherlands. The forum addressed challenges and cooperation opportunities in China-Europe cybersecurity, with experts from institutions such as the European Security Institute. Tuya shared its cybersecurity strategies and practices, covering software/hardware development, cloud data compliance, and privacy assurance, demonstrating its commitment to global cybersecurity and cross-border collaboration.



China-Europe Cybersecurity Cooperation Forum

#### Won AWS Partner Awards

Tuya enhanced its AI cloud platform by launching an energy management solution and collaborating with AWS to establish a security lab. This significantly improved customer energy efficiency and security compliance capabilities. The partnership also accelerated AI hardware innovation, enabling features like text translation and intent recognition, helping customers guickly iterate their products. As a result of these innovations, Tuya was honored with the AWS "Sustainable Partner of the Year" and "Design Partner of the Year" awards.



Sustainable Partner of the Year



Design Partner of the Year

## **Privacy Protection**

Tuya strictly adheres to the Law of the People's Republic of China on the Protection of Consumer Rights and Interests and other relevant laws and regulations, fully implementing privacy protection internal references such as the Privacy Policy, the Tuya Data Retention Strategy, and the Third-party Information Sharing List. During the reporting period, we updated the Privacy Policy, optimized privacy clauses in public Apps, and introduced the AI Privacy Policy, further clarifying data usage scopes and user rights.

Our privacy policy applies to all products and services on the Tuya platform, including applications and WeChat Mini Program, covering entire operations and supply chains to ensure user privacy protection throughout the business lifecycle. We require all suppliers and partners to strictly comply with privacy protection regulations and incorporate these requirements into our collaboration evaluation system, jointly building a secure and trustworthy ecosystem.

## **Implementation of Privacy Policies**

Tuya has established a clear privacy protection framework, ensuring effective implementation of privacy policies through strict violation handling mechanisms and dual guarantees of internal and external audits.

#### Organizational structure and responsibilities

Tuya established the Compliance Committee as the highest authority responsible for privacy protection, overseeing privacy protection strategies and implementation. Under the guidance of the Compliance Committee, the Privacy Office and customer service team are directly responsible for addressing and resolving privacy issues, ensuring efficient execution of privacy protection measures.

#### Audit and supervision

To ensure the effective implementation of privacy policies, we conduct regular internal audits and engage third-party audits to ensure compliance and continuity.

- Internal audits: Conducted by a professional team, comprehensively evaluating the compliance and execution of privacy policies, the effectiveness of data protection measures, and employee compliance.
- Third-party audits: Independent audits by authoritative third-party institutions to ensure privacy protection practices meet international standards and legal requirements.



#### **Violation handling mechanism**

Tuya maintains a zero-tolerance stance towards violations involving user privacy leaks. We strictly enforce disciplinary measures outlined in the Information Security Manual for Employees and the Employee Business Code of Conduct, ensuring severe accountability for any negligence.

About Tuya

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## **Eight Principles of User Information Processing**

Tuya strictly follows eight core privacy principles to ensure the security of user data and the protection of privacy rights. Additionally, we provide users with convenient channels for privacy risk feedback, including official website feedback channel, customer service email, privacy office email, and emergency response center email, ensuring users can promptly report issues and receive support.

## Principle of consistency in rights and responsibilities

 Take responsibility for any damages caused by personal information processing activities, ensuring users' rights and interests are fully protected

#### Principle of clear purpose

 Ensure that the purposes of personal information processing are legal, legitimate, necessary, and clearly defined, avoiding the use of data beyond authorized scopes

#### **Opt-in principle**

 Clearly inform users of the purposes, methods, and scope of personal information processing, and obtain their explicit consent, respecting users' right to choose

#### Principle of data minimization

 Process only the minimum amount of personal information necessary to achieve the intended purposes, and promptly delete the data once the purposes are fulfilled, avoiding data redundancy and excessive collection

#### Principle of openness and transparency

Commit to processing personal information openly and transparently, and accept external supervision

#### Principle of security assurance

 Implement sufficient administrative measures and technical safeguards to protect the confidentiality, integrity, and availability of personal information, preventing data breaches, tampering, or destruction



#### Principle of subject participation

Provide users with the means to access, rectify, delete, restrict processing, and withdraw consent, ensuring users have full control over their data

Right of access: Users have the right to request access to and obtain a copy of their personal data

Right of rectification: Users have the right to rectify information such as their registered account, username, and time zone

Right of deletion: Users have the right to deactivate their accounts and delete personal data through the settings

Right to restrict processing: Users have the right to request to temporarily or permanently restrict the processing of their personal data

Right to withdraw consent: Users have the right to withdraw consent, including for location, camera, microphone access, or opt-out of personalized push notifications

#### Principle of third-party data limitation

Collect personal data from third parties only when required by applicable laws and regulations; provide user data to third parties only within the scope necessary to complete transactions or provide services

Commit to not renting, selling, or otherwise providing personal information to third parties

Tuya ensures the security and integrity of user personal information through a series of comprehensive safeguards, covering four key areas: device access security, data communication security, data processing security, and data storage security.

Device access security: Tuya employs proprietary algorithms to achieve data isolation, access authentication, and authorization management, preventing unauthorized access.

dynamic key technology, to enable commercial-grade encrypted data transmission.

Data processing security: Tuya implements strict data filtering, validation, and comprehensive audit processes to ensure the accuracy and compliance of data processing.

Data storage security: Tuya securely encrypts all user confidential information during storage to prevent data leakage or tampering.

**User Information Security Measures** 

37 >

- Data communication security: Tuya supports secure algorithms and transmission encryption protocols, combined with

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## **Products and Services**

Tuya remains committed to technological innovation and quality assurance, striving to deliver exceptional products and services. Through continuous product innovation, a stringent quality management system, and a comprehensive intellectual property strategy, we ensure efficient and reliable solutions for customers. Our efforts support energy savings, carbon reduction, and efficiency improvements, laying a solid foundation for a smarter lifestyle.

## **Innovation Drive**

Driven by digital transformation and green, low-carbon development, Tuya prioritizes product innovation to accelerate the global green transition through intelligent solutions. Being customer-centric, we continuously develop efficient and smart products to support sustainable development goals, including energy-saving, carbon reduction and performance optimization.

## **Innovation Strategy Direction**

Tuya focuses on energy-saving and carbon reduction applications, defining a green innovation strategy and clean technology promotion goals while continuously increasing investment in related research and development. Leveraging a robust hardware ecosystem and a comprehensive energy management platform, we continuously drive technological innovation and multi-scenario implementation. We actively embrace green development trends by deeply integrating PaaS and SaaS capabilities into smart solutions. These solutions are widely applied across homes, buildings, industries, hotels, and parks, significantly improving energy efficiency and supporting customers in achieving low-carbon development goals.

## **Innovation Achievements**

In 2024, Tuya achieved significant breakthroughs in energysaving innovation. By deeply integrating technological advancements with scenario-based applications, we introduced a range of low-carbon intelligent solutions, covering energyefficient software development, hardware innovation, and scenario-based energy-saving integration. To drive continuous innovation, Tuya enhances employees' capabilities through low-carbon training and technical exchanges. During the reporting period, we integrated carbon reduction concepts into product design and development, equipping employees with the knowledge to translate carbon reduction strategies into innovative solutions, strengthening green innovation and expanding application scenarios.

#### **Energy-Efficient Software Development**

Tuya leverages IoT and AI innovation to build a low-carbon ecosystem with partners, enabling global enterprises to optimize energy consumption and achieve carbon reduction goals. Our energy-efficient software solutions focus on data-driven energy analysis, intelligent device control, and carbon footprint tracking, providing quantifiable, actionable carbon reduction strategies across industrial, commercial, and residential sectors. This supports customers in reducing operational costs and enhancing sustainable competitiveness.

#### Tuya HEMS

Tuya HEMS is an integrated energy management system combining intelligent control, energy monitoring, and analysis. It is designed to help households achieve efficient energy management and carbon reduction goals.

#### Intelligent architecture

Built on a smart architecture leveraging household power distribution lines, adopting NILM (Non-Intrusive Load Monitoring) technology for precise monitoring and analysis of home energy usage

#### Multi-device support

Compatible with a wide range of devices, including photovoltaic (PV) systems, energy storage, heat pumps, EV chargers, meters, and thermostats, covering various scenarios such as balcony solar and residential energy storage

#### **Technical Highlights**



#### Dynamic pricing integration

Enable users to adjust energy consumption based on real-time electricity prices, such as running high-energy appliances during off-peak hours and switching to energy-saving mode during peak hours

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Chairman's Statement About Tuya

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#### **Energy-Conservation Hardware Development**

Tuya drives efficiency and intelligence in home energy management through continuous innovation in energy-efficient hardware. With ultra-low power consumption technology and intelligent recognition capabilities, we empower developers to create lowcarbon, energy-saving products, enabling users to adopt a greener lifestyle.

#### Ultra-low power consumption module series

Tuya has launched the T3 and T5 module series to address industry challenges in ultra-low power Wi-Fi and audiovideo integration. The T3 series features ultra-low power technology for extended battery life, while the T5 series builds on this with integrated audio-video capabilities, reducing hardware complexity and costs. These innovative modules further advance smart AIoT technology, empowering global developers to create more efficient smart products.





#### Standby Energy-Saving Socket

Tuya's Standby Energy-Saving Socket detects household appliances in standby mode and automatically cuts off power to reduce unnecessary energy consumption. This innovative product helps users minimize standby power usage when devices are not in use. On average, households using this socket can save approximately 5%-10% in energy consumption, promoting sustainable energy use and reducing carbon footprints.

#### HEMS enabling energy-saving adoption in Singaporean households

The Housing & Development Board (HDB) is Singapore's central public housing authority, with approximately 80% of the population residing in its estates. To support the Energy Market Authority (EMA) in achieving its energy-saving target (390 kWh average monthly consumption for four-room flats), HDB aims to reduce household energy consumption through smart technology, promoting low-carbon solutions in urban housing. Pilot projects have shown that Tuya's NILM + HEMS solution enables Singaporean households to achieve estimated savings of 15% - 25% in energy consumption and costs.

#### Intelligent monitoring & sub-metering

**Core Technologies & Solutions** 

Real-time analysis of household energy consumption using non-intrusive algorithms to accurately identify high-energyconsuming appliances

2024 Environmental, Social and Governance (ESG) Report

#### Dynamic energy-saving strategies

Optimize energy usage by recommending cost-saving consumption patterns based on peak and off-peak electricity pricing

#### Green energy integration

Support the integration of renewable energy devices such as PV systems and energy storage solutions

#### Al Energy-Saving Mini Program

Tuya explores the energy sector by integrating AI and large models to launch the AI Energy-Saving Mini Program, enhancing user energy efficiency. The program automatically collects and analyzes electricity usage data, providing precise and convenient energy management services, reducing user effort, and supporting carbon reduction.

#### Granular energy consumption tracking

Collect and visualize household device energy usage, helping users understand operating time, power consumption, and costs

#### Comprehensive energy analysis

Allow users to analyze daily, monthly, and yearly energy trends to evaluate the effectiveness of optimized energy strategies

#### Al energy assistant

Provide personalized energy-saving recommendations based on real-time electricity pricing and user consumption patterns

#### **Customizable settings**

Enable users to configure device tracking, network topology, and multi-tier electricity pricing options

**Key Features** 



Automated daily energy consumption report

Device energy consumption statistics



**T5 Series Module** 



#### < 42 Tuya Inc.

2024 Environmental, Social and Governance (ESG) Report

#### **Energy-Conservation Scenario Integration**

Tuya integrates multiple energy-conservation technologies to advance smart energy management across various scenarios, including lighting and heating. These innovative solutions enhance energy efficiency and promote the adoption of low-carbon lifestyles.

About this Report

#### **Smart Lighting Solution**

Tuya's Smart Parking Lot Lighting Solution leverages its AIoT technology framework to provide a comprehensive intelligent control system for a residential parking lot. This solution optimizes energy management while enhancing the lighting experience for users.

Improved lighting efficiency: Before the upgrade, the parking lot used high-power fluorescent tubes with poor illumination, leading to significant energy waste. After the renovation, over 2,000 fixtures were replaced with Bluetooth LED tubes, achieving a 100% lighting efficiency rate.

Intelligent management: Through the Tuya platform, all lights can be remotely controlled at the area, group, and individual levels. Users can adjust brightness and status as needed. At parking lot intersections, lights intelligently detect vehicle and pedestrian movement, automatically adjusting brightness to reduce energy consumption.

**Energy-saving impact:** Post-upgrade, the parking lot achieved an estimated energy savings rate of 80.7%, reducing energy consumption by approximately 700 kWh per day. Equipped with Bluetooth radar tubes, metering circuit breakers, and smart meters, the system enables realtime energy monitoring and provides users with precise data analysis via a visualized management platform, supporting more efficient energy-saving strategies.



Chairman's Statement

About Tuya

Real-Life Demonstration of Smart Parking Lot Lighting

#### **Smart Energy-Saving Heating Solution**

Tuya empowers developers to create a range of smart heaters, integrating them with Tuya's HEMS and AI Energy-Saving Mini Program to provide users with an efficient and energy-saving heating solution. These innovative products enhance home comfort while significantly improving energy efficiency.

Take the smart thermostatic radiator as an exampleit adjusts the temperature for each room based on occupancy, ensuring precise heating where needed. Built-in features such as holiday mode and open-window detection automatically regulate temperature during inactive periods to maximize energy savings. Integrated with Tuya's HEMS, users can monitor and optimize energy consumption in real time, achieving an average energy savings rate of over 30%.



Smart Thermostatic Radiator



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## Intellectual Property

Tuya regards intellectual property protection as a cornerstone of innovation and sustainable development. We strictly comply with the Patent Law of the People's Republic of China and the Trademark Law of the People's Republic of China, establishing internal policies such as the Management Regulations on intellectual property to ensure a structured and systematic approach to intellectual property management. In 2024, we further strengthened our intellectual property protection system through policy development, risk assessment, trademark and patent management, and employee training, ensuring comprehensive management and effective protection of intellectual property.

#### **Risk assessment**

- Integrate intellectual property reviews into the standard project development process
- Conduct comprehensive intellectual property risk assessments for all new projects, especially those involving technological innovation or solution modifications

#### Trademark management

- Existing trademarks: Register new trademark categories based on business needs, covering scenarios such as live streaming platforms, online stores, and the official website
- Obsolete trademarks: Identify and discontinue the renewal of unused trademarks; issue approval reminders for trademarks with political or cultural sensitivities
- Supplementary registration: Register new trademarks in response to business expansion, ensuring comprehensive trademark protection

#### Patent management

Continue the tiered patent management strategy while introducing overseas patent application management, ensuring timely identification and filing of patents aligned with business needs

#### Intellectual Property Management Initiatives

Tuya places significant emphasis on intellectual property protection and management, establishing a comprehensive process to safeguard its legal rights concerning technological innovation and market expansion.



Intellectual Property Protection Process

To further strengthen intellectual property management and risk prevention, we continue to implement training and practical measures in areas such as patent search database usage, patent mining and application, data intellectual property concepts, and overseas intellectual property protection.

43 >

Initiate overseas patent applications based on product market potential and

Use intellectual property complaint services on e-commerce platforms to quickly

Protect the company's legal rights through negotiations, complaints, or legal

About this Report Chairman's Statement

About Tuya

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#### Intellectual property risk management training

To enhance the awareness and response capabilities of all employees regarding intellectual property risks, Tuya conducted intellectual property risk management training. The training covered topics such as NPE<sup>5</sup> lawsuits in the U.S., patent infringement in the lighting industry, the role and usage of trademarks, intellectual property case studies, and potential intellectual property issues. The training was offered both online and offline and was open to all employees, with a total of 843 employee participations, effectively strengthening employees' understanding and ability to mitigate intellectual property risks.

Tuya continues to focus on building its R&D talent pool, aiming to stimulate the team's innovation potential. The company also encourages ongoing technological innovation through a patent incentive mechanism. During the reporting period, there were no intellectual property litigation cases. As of December 31, 2024, Tuya has obtained 673 valid patents in total, including 285 invention patents and 156 utility model patents, as well as 1,357 authorized trademarks.

## **Quality Assurance**

Tuya has established a comprehensive quality assurance system that covers the entire product lifecycle, ensuring that both software and hardware products strictly comply with international quality standards from development to delivery. With a customer-driven approach and a foundation in risk prevention, we continuously optimize quality assurance processes and control measures to provide safe and reliable AIoT solutions for global users.

## Software Quality Assurance

Tuya places great emphasis on the stability and reliability of its software products, establishing a comprehensive software quality assurance system to ensure that development, testing, release, and maintenance meet high-quality standards. The company implements strict quality control processes to manage software development and operations, ensuring the delivery of safe and reliable smart software products to customers.

#### Software quality assurance

#### Software development process

- Establish a comprehensive quality control mechanism at each stage of the software development process, including requirement analysis, design, coding, testing, release, and maintenance
- Ensure the accuracy of requirements, scalability of design, stability of coding, comprehensiveness of testing, precision of release, and continuity of maintenance through strict process management

#### Proactive R&D quality control

- Optimize the R&D quality management model by bringing quality control processes forward to the early stages of the project
- Establish the role of Design Quality Engineer (DQE) to deeply participate in feasibility analysis, technical solution reviews, and Design for Excellence (DFX) assessments, ensuring that quality planning and R&D design start simultaneously

## Hardware Quality Assurance

In addition to ensuring the quality of cloud platforms and software delivery, we also focus on hardware quality, committed to providing enterprise customers with high-value integrated solutions, ensuring the best user experience.

Tuya strictly complies with domestic and international regulations and standards such as the Product Quality Law of the People's Republic of China and the ISO 9001 Management System Standards and Specifications, ensuring product compliance and market access. We have developed and implemented core documents such as the Quality Manual,

### Hardware Development Cycle Quality Management

Tuya is devoted to enhancing product development quality control, ensuring that every stage, from project initiation to mass production, undergoes rigorous scrutiny. We optimize the R&D process, strengthen project task platform management, improve the design issue database, and continuously enhance product stability and market competitiveness.

#### **R&D project management**

- Introduce a new product development maturity measurement model to assess project quality
- Reorganize the deliverables list throughout the new product development, from design to mass production
- Clearly define the review processes and participants for each deliverable, improving development collaboration efficiency

#### **Project task platform management**

- Create a task platform to ensure smooth progress at each project stage
- Follow up on reviews via the platform and provided timely feedback on issues

#### Design issue database management

Build a reliability use case library and conduct aging tests to prevent design defects from affecting product quality

Hardware Development Cycle Quality Management Measures

<sup>5</sup> NPE: Non-Practicing Entities.

the Product Strategy and Program Management Process, the *Product Design and Development Process*, and the *Product Delivery Process*, covering the entire product lifecycle to ensure quality control at every stage.

In addition, Tuya has obtained ISO 9001 quality management system certificate and undergoes regular supervision and audits by third-party organizations to ensure the continuous and effective operation of the system. During the reporting period, we successfully passed the annual audit of ISO 9001 certification with the audit result of "zero non-conformity".

Chairman's Statement About Tuya

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#### Hardware Production Process Quality Control

Tuya is committed to enhancing quality control in the hardware production process, ensuring that products maintain high standards and stability. We have introduced advanced automation equipment, strengthened quality monitoring systems, and conducted randomized reliability tests to continuously optimize production processes, driving improvements in both production efficiency and product quality.

#### Hardware Production Quality Control

#### Production process quality management

- Require manufacturers to produce according to high standards, following strict quality control and product inspection systems to ensure each stage of production meets quality requirements
- Utilize a networked sampling inspection system to monitor the production process in real time, ensuring product quality stability
- Conduct reliability testing to mitigate the impact of materials, human-machine interaction, and environmental factors on product consistency, ensuring stability across different production environments

#### Innovative technology integration

- Smart Gateway: Introduce new semi-automated testing equipment to enhance testing efficiency, significantly reducing labor costs. For example, the labor required for testing the daily production of 10,000 wireless gateways is reduced from 8 to 3 people, improving testing efficiency by approximately 133.3%.
- Smart IPC: Collaborate with suppliers to develop advanced automated equipment, enabling automatic detection of product features such as images, indicators, audio, and buttons. This effectively prevents potential quality issues from manual inspections and increases production capacity by approximately 30% to 40%.
- Machine Vision Barcode Scanning: Introduce bulk scanning equipment to improve packaging efficiency, reducing scanning time from 1 second to about 0.33 seconds, resulting in an overall packaging scanning efficiency increase of approximately 80%.



## **Product Recall Process**

Tuya continuously optimizes its quality control system by leveraging standardized and intelligent methods to improve product recall management efficiency. This ensures a rapid response when product quality issues arise, safeguarding the safety and health of global users. In 2024, we updated the *Finished Product After-Sales Complaint Handling Process Specification* based on existing product quality standards, clarifying the criteria for product recall determination. Additionally, we use an online platform to update the *Tuya PaaS Product After-Sales Quality Issue Handling Specification* in real time, ensuring that global teams are aligned with the latest quality requirements and improving the consistency of standard execution.

We have established a comprehensive product recall handling process, covering all stages from receiving customer feedback to event review and corrective actions. During the reporting period, Tuya did not experience any product recall incidents related to safety or user health impacts.

#### **Receive customer feedback**

Promptly respond to customer-reported product quality issues and initiate the investigation process

#### Form a special investigation team

Assess the scope of affected products and customer groups, determining the extent of the incident's impact

#### **Develop action plan**

Based on the severity of the incident, formulate a targeted solution

#### Customer communication and recall

Maintain transparent communication with customers and organize the product recall process in an orderly manner

#### Incident review and corrective actions

Conduct a thorough review of the incident and implement corrective measures to prevent similar issues from occurring in the future

Product Recall Process

47 >

About this Report

About Tuya

Chairman's Statement

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and **Ouality Innovation** 

Empower with Intelligence and Co-Create the Industry

## **Quality Training**

Tuya continuously strengthens employees' awareness and capabilities in quality management through a systematic and comprehensive training program, ensuring that employees have a deep understanding of quality standards and control requirements. During the reporting period, Tuya's quality-focused training sessions reached a total of 317 employee attendances.

#### Training system development

- Comprehensive training coverage: Through the Tuya Academy and Tuya's online platform, we offer various types of quality training to ensure employees deeply understand product quality standards and management requirements.
- Thematic training activities: We conduct specialized training sessions such as "New Employee Training (Quality Management)" to help new employees quickly establish quality awareness and strengthen their understanding of the company's strategy and quality management requirements.
- Online and offline integration: Tuya combines online training with offline thematic sharing sessions, using diverse training formats to ensure full participation and enhance quality management capabilities. In 2024, we held 9 production quality-focused training sessions to further improve employees' professional skills and quality control abilities.

#### Training content and implementation

- Quality awareness enhancement: Through courses on production quality management, new employee quality management training, product warranty, and finished product after-sales policies, we strengthen employees' understanding of quality standards, production processes, and after-sales policies, thereby improving their quality management skills.
- Practical application and case analysis: The training includes analyzing and discussing real-life case studies, helping employees understand the root causes of quality issues from practical scenarios and think through solutions, thereby enhancing their ability to address quality problems.

#### Continuous follow-up and assessment

- Training effectiveness evaluation: To ensure the effectiveness of training, we conduct assessments through a questionnaire system to evaluate learning outcomes. Based on feedback, we adjust the training content and format to ensure employees fully understand and master quality requirements.
- Regular skill enhancement: In addition to regular training, we periodically organize skill development activities based on employee needs and business development, ensuring that employees' quality management capabilities stay up to date.

#### **Quality Training Modes**

## **Product Standard Certification**

Tuya consistently regards international certifications as a key reflection of product quality and brand value, ensuring that product performance, safety, and compliance meet global leading standards. During the reporting period, Tuya obtained EU Radio Equipment Directive (RED<sup>6</sup>) Cybersecurity Certification for multiple modules in the WBR series, as well as China Quality Certification Center (CQC<sup>7</sup>) IoT Product Cybersecurity Certification for the WBR3 module. As of the end of the reporting period, Tuya has accumulated multiple international certifications covering various dimensions, including product performance, safety, and compliance. A full list of certifications can be found in the "Website - Services & Support - Global Compliance" section.

<sup>6</sup> RED: Radio Equipment Directive

<sup>7</sup> CQC: China Quality Certification Center

## **Service and Responsibility**

Tuya remains determined to a customer-oriented approach, delivering comprehensive and timely customer service while ensuring transparency and credibility in products and services through responsible marketing. We strive to foster long-term customer relationships and continuously enhance the service experience to meet customer expectations and needs.

## **Customer Services**

Tuya upholds the business philosophy of "customer first", adopting a demand-driven approach to continuously optimize our service system, integrate advanced technologies, and strengthen team capabilities. We provide customers with an efficient and professional full-cycle service experience. By refining our customer service framework and enhancing our service system, we ensure prompt responses and effective resolutions to customer requests, continuously improving customer satisfaction.

### **Customer Service System**

Tuya ensures standardized and efficient customer service based on internal policies such as the Code of Conduct for Customer Service, the Customer Service Customer Complaint Handling Process, and the Customer Complaint Rating Standards. In 2024, we updated the Sensitive and Major Incident Handling Process and the Account Deactivation Process to further enhance the comprehensiveness and security of customer service. In the Account Deactivation Process, we added an information verification step on the customer service side to prevent unauthorized account cancellation attempts, ensuring the security and accuracy of user data, and further improving our user privacy protection services.

Tuya continuously optimizes its closed-loop service system, integrating the triad of "Sales, Products and Customers" and the





"Iron Triangle" collaboration mechanism, and strengthening end-to-end management capabilities. This ensures customers receive efficient and professional support across all stages of engagement, through streamlined consultation channels and a tiered response mechanism to effectively meet diverse customer needs.

The trinity customer service system ensures seamless collaboration among sales, products, and customer service, providing end-to-end support from requirement communication and solution design to development scheduling and delivery. The triangular collaboration framework integrates sales, SA solutions, and the delivery team into the customer service process, maximizing the efficiency and value of every new solution implementation.

About this Report

Chairman's Statement About Tuya

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and **Ouality Innovation** 

Empower with Intelligence and Co-Create the Industry

#### **Sales collaboration**

- 24/7 Global service coverage: Provide a one-stop response through hotlines, online platforms, and a technical ticketing system, while establishing dedicated customer liaison channels
- Precise demand alignment: Actively engage in customer requirement communication and solution design to ensure seamless integration between business objectives and technical implementation

#### **Product support**

- Tiered technical support: Classify technical tickets based on the platform to prioritize urgent debugging, product upgrades, and other high-priority issues
- Customized solution delivery: Led by the SA solutions team, provide modular function configurations tailored to customer scenarios, effectively shortening development timelines

#### Customer Service System Featuring the Trinity of "Sales, Products and Customers"

## Sales (customer relations) **Delivery** (execution assurance) Focus on long-term partnership Strictly control project milestones maintenance and commercial value to ensure on-time delivery exploration SA Solutions (customized services) Lead requirement transformation and solution design

#### **Customer service**

- Exclusive support for key customers: Assign a dedicated cross-functional team comprising sales, technical, and delivery experts to strategic customers, ensuring end-to-end tracking from requirements to delivery
- Risk early warning mechanism: Embed checkpoint reviews at key project execution stages to synchronize real-time progress risks, ensuring maximum value realization of solution deployment

## **Customer Complaint Response Management**

Tuya consistently prioritizes customer feedback as the driving force for service optimization. By establishing diversified complaint channels, standardized handling processes, dynamic assessment mechanisms, and systematic capability building, we have constructed an efficient and transparent customer complaint management system, continuously improving service response efficiency and customer satisfaction.

#### Real-time online **Email service** support

Website live chat: 24/7 online customer service access

Dedicated customer service email: service@ tuya.com

Mainland China: 400-881-8611 (Mandarin) Outside Mainland China: 1-844-672-5646 (English)

hotline

Tuya follows the Customer Complaint Handling Process and the Customer Complaint Rating Standards to establish a closedloop complaint management process, ensuring that every complaint receives a timely response and resolution.

Acceptance & assessment: Receive customer complaints through multiple channels, quickly identify concerns and assign responsibility



Archival management: Maintain comprehensive complaint records to support future optimization

**Customer Complaint Handling Process** 

Tuya has established a multidimensional customer service evaluation mechanism, conducting a comprehensive assessment every six months based on metrics such as complaint response efficiency, resolution rate, and service satisfaction. We regularly evaluate customer service personnel to encourage continuous service improvement. In 2024, we received a total of 10 complaints related to products and services, achieving 100% response and resolution rates.

"Iron Triangle" Collaboration Mechanism

We provide customers with multiple convenient complaint channels, including online inquiries, customer service email, hotline, technical ticketing system, and business liaison, ensuring prompt responses to customer concerns.

#### Multilingual

#### **Technical work** orders system

Customers can log in to the platform to submit tickets, which are handled by designated specialists

#### **Business liaison** channel

Assign dedicated business advisors to provide oneon-one services, including contract consultation and delivery progress tracking



Chairman's Statement About Tuya

Governance Enhancement for Endured Advancement Digital Intelligence Leadership and Quality Innovation Co

Empower with Intelligence and Co-Create the Industry

## **Enhancing Customer Service Capabilities**

Tuya prioritizes customer value by deeply integrating AI technology with service processes to build a full-cycle digital service system. By strengthening the technical support framework, optimizing customer response mechanisms, and refining the closed-loop customer feedback management process, we continuously enhance service efficiency and customer satisfaction.

#### **Enhanced technical support**

- Continuously improve the AIoT developer platform's technical documentation library and establish a dynamic knowledge update mechanism
- Provide specialized technical support, including hardware development guidance and cloud integration solutions

#### Full-cycle service optimization

- Establish a cross-channel customer inquiry platform to integrate business collaboration consultations and order tracking services, ensuring transparent information delivery
- Build a service system covering "pre-sales solution design, mid-sales implementation support, and post-sales rapid response," while establishing a spare parts reserve mechanism
- Provide platform operation guidance and related instructions

#### Enhanced customer feedback collection

Collect customer feedback and establish a feedback mechanism to drive product and platform updates

AI Integration and Capability Building

## **Customer Service Training**

Tuya has established an all-rounded and systematic training program for its customer service team, covering pre-employment and on-the-job training. During the reporting period, we conducted customer service-related training sessions, reaching a total of 202 participant attendances.

#### New employee onboarding training

To help new employees at the platform service center adapt to the company's environment, culture, policies, business, and roles, we provide training on company regulations, platform operations, business and product support, and internal processes to enhance work quality and efficiency.

#### **Employee skill training**

To enhance employees' professionalism and skills while adapting to rapidly evolving business needs, we provide training for on-the-job staff covering product usage, customer support, issue diagnosis, service awareness, customer issue resolution, technical solutions, and tool applications.

## **Customer Satisfaction Survey**

To enhance customer service, Tuya has established a scientific and comprehensive customer satisfaction evaluation system. Through real-time feedback and periodic surveys, we identify customer needs and key service challenges. Customers can rate response speed, professional competence, service attitude, and clarity of thought. Additionally, in various scenarios including platform technical support, project completion, hotline services, and online consultations, we conduct satisfaction surveys to systematically gather customer feedback, offering valuable insights for service enhancement and innovation.

#### Platform technical support satisfaction survey

- After work orders are closed at the platform, all customers can rate the service upon completion using a 1-5 star system. Evaluation criteria include response speed, professional competence, service attitude, and clarity of thought.
- The platform technical support satisfaction in 2024 was 95.50%.

#### Hotline satisfaction survey

- After calling Tuya's global hotline, customers can rate the service at the end of the call.
- The hotline satisfaction in 2024 was 96.55%.

## **Responsible Marketing**

We continuously strengthen compliance in marketing practices, strictly adhering to laws, regulations, and internal policies to ensure transparency and fairness in advertising and branding activities.

Tuya strictly complies with the Anti-Unfair Competition Law of the People's Republic of China and the Law of the People's Republic of China on the Protection of Consumer Rights and Interests, while strengthening internal regulatory mechanisms. We have implemented policies such as the Promotion Approval Process Policy, the Tuya VI Standards, and the PBT Labeling Authorization Guidelines to ensure compliance in all external marketing activities. Additionally, we newly introduced the Sensitive and Major Incident Handling Process, which defines escalation procedures for feedback on social media and public platforms, enabling

#### Platform project satisfaction survey

- After project completion, we send monthly surveys to target customers, covering all levels of customers with completed projects that month. The survey includes satisfaction ratings for the business stage, demand communication stage, project process, project implementation, and aftersales technical service stage.
- As shown by results of the questionnaire survey in October 2024, the overall customer satisfaction with our project services was 97.60%.

#### **Online satisfaction survey**

- After an online consultation session on the platform, customers can rate the service provided.
- The online consultation satisfaction in 2024 was92.27%.

timely identification and response to sensitive issues while enhancing crisis management. Tuya also enforces a strict approval process for external communications, covering material preparation, review, feedback, and promotion, to ensure accuracy and timeliness.

Tuya actively builds its brand image in the ESG field, continuously strengthening its global market influence. In ESG brand promotion, Tuya hosted developer conferences both domestically and internationally and actively participated in global exhibitions such as the Consumer Electronics Show (CES) and the Internationale Funkausstellung Berlin (IFA) to enhance its ESG brand presence. Particularly in energyrelated initiatives, Tuya actively shared solutions for energy management systems, promoting energy-saving and lowcarbon lifestyles to the public.

Chairman's Statement Abo

About Tuya

Governance Enhancement for Endured Advancemer Digital Intelligence Leadership and Quality Innovation Empower with Intelligence and Co-Create the Industry

# 03

## Empower with Intelligence and Co-Create the Industry

We strive to be a technology leader in the AloT field, driving the adoption and practice of low-carbon living. We establish a robust supplier management system and leveraged cutting-edge smart technologies. We empower the entire industry ecosystem, delivering efficient and convenient services to diverse communities. Additionally, we collaborate with industry partners and develop industry standards to advance sustainable growth.

Response to SDGs







Gather Talent for Team Success Appendix

55 >

About Tuya

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and Ouality Innovation

Empower with ntelligence and Co-Create the Industry

## **Responsible Supply Chain**

Tuya is keen to work with partners to jointly fulfill social responsibilities and foster a healthy, stable, and sustainable supply chain. We fully recognize the importance of product and service quality, and the pivotal role of the supply chain in quality. We have extended quality management to the supply chain, communicated with suppliers actively, and organized supplier training sessions to strengthen our management competence in the supply chain and maintain a responsible supply chain.

## Supplier Management

We have strengthened our supply chain management system, covering the entire lifecycle of supplier on-boarding, procurement processes, cooperation agreements, and continuous assessment. At the same time, based on a high-standard product quality management system, we implement comprehensive supplier management procedures, including qualification verification, risk assessment, regular audits, and performance appraisal, and integrate environmental and social risk considerations into the entire supplier management process.

Tuya's suppliers include chip, software component, cloud service procurement, and operating cost suppliers. As of the end of the reporting period, Tuya has a total of 1,101 suppliers, including 969 from Mainland China and the Hong Kong, Macao, and Taiwan regions, and 132 from overseas regions.

#### As of the end of the reporting period

Tuya has a total of

Mainland China and the Hong Kong, Macao, and Taiwan regions

**Overseas** regions

132

**1,101** suppliers

969

## Supplier Access Management

We strictly adhere to the Supplier Management Procedures, the New Product Introduction Control Procedures. the Inspection Control Procedures, and other regulations, clearly defining supplier on-boarding standards to ensure they meet the Company's quality and service requirements. In 2024, we introduced a remote audit mechanism in the supplier onboarding process to preliminarily screen suppliers with high

#### Supplier qualification review optimization

By combining the Supplier Questionnaire and data from credit investigation platforms, we conduct qualification assessments of suppliers, focusing on their quality control, delivery capabilities, and operational conditions.

#### Introduction of remote audit mechanism

We use remote audits to screen suppliers with excellent production guality control capabilities, improving the efficiency of preliminary screening and the pass rate of onsite audits.

alignment in production quality control capabilities, thereby improving the pass rate of on-site audits. At the same time, we established a joint review mechanism involving procurement, technical, and quality control teams, scoring suppliers from three dimensions: commercial value, technical compatibility, and quality stability, and eliminating substandard suppliers based on the scoring results.

#### Multi-department joint on-site audit

Procurement, technical, and quality control teams jointly participate in the audit to ensure a comprehensive and objective evaluation of suppliers' production management, quality control, and environmental compliance.

#### **Business ethics and** compliance agreements

Suppliers that pass the audit are required to sign business ethics agreements, environmental protection agreements, and social responsibility agreements to ensure compliant cooperation.

## Supplier Assessment

Tuya has continuously optimized its supplier performance management system through three key strategies: hierarchical assessment, rectification support, and strict compliance control, ensuring improvements in supply chain quality and efficiency.

#### **Hierarchical Assessment and Tiered Management**

Material suppliers assessment

Annual audit: Audit dimensions include quality system control, design and development control, procurement control, supplier management, incoming material quality control, and environmental control. In 2024, we conducted 1,017 supplier assessments, with 39 failing assessments and a 100% rectification rate.

Product selection suppliers assessment

- Onboarding audit: Conducted 111 assessments for new suppliers, requiring non-compliant suppliers to undergo timebound rectification.
- Customer joint audit: Completed 17 core supplier assessments in collaboration with customers.
- Quarterly assessment: Conducted 65 supplier assessments, with all non-compliant suppliers achieving closed-loop improvements.

#### **Targeted Rectification Support**

Root cause analysis and improvement: For non-compliant suppliers, conduct special investigations and improvement plans to drive closed-loop problem resolution.

#### **Privacy Compliance Assessment**

Assessment standards: In accordance with the Supplier Assessment Process, conduct standardized assessments such as GDPR (General Data Protection Regulation)、PIA (Privacy Impact Assessment) /DPIA<sup>8</sup> (Data Protection Impact Assessment) for suppliers.



Chairman's Statement

About Tuya

Governance Enhancement for Endured Advancement Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## Supplier Empowerment

Tuya continues to deepen communication with suppliers, strengthen training and empowerment, and optimize support mechanisms, committed to building an efficient and sustainable supply chain ecosystem with its partners. In 2024, we further expanded supplier collaboration, enhanced the comprehensive capabilities of suppliers, and drove continuous improvements in the overall quality and efficiency of the supply chain.

## **Communication with Suppliers**

Tuya has established a diversified communication mechanism to maintain close collaboration with suppliers, promoting information sharing and capability building.

#### Outstanding supplier recognition

At the beginning of 2024, we held the annual Outstanding Supplier Conference, recognizing and awarding 10 suppliers for their exceptional performance in 2023, further enhancing the sense of honor and responsibility among our partners.

#### Monthly quality meetings

In 2024, we invited 28 suppliers to our premises to participate in monthly quality meetings, focusing on topics such as quality control, standard implementation, and anomaly improvement, enhancing suppliers' quality management capabilities through face-to-face communication.

#### Regular communication mechanism

In addition to daily communication, we conduct quarterly meetings with core OEMs, annual supplier audits, and special project meetings, ensuring at least one on-site visit per year for closely collaborating suppliers to maintain transparent and efficient cooperation.

#### **Suppliers Communication Mechanism**

## **Supplier Quality Training**

Tuya focuses on quality risk prevention and standard implementation, systematically conducting supplier capability enhancement training. During the reporting period, we completed 21 supplier training sessions, emphasizing general standard interpretation, quality record analysis, and quality prevention measures, helping suppliers deeply understand Tuya's quality requirements and reducing quality risks throughout the product lifecycle.

### **Supplier Assistance**

To ensure efficient order delivery and quality control, we provide training and support when onboarding new suppliers. Additionally, we assist OEMs in relocation and capacity upgrades, offering technical support and planning in advance to ensure capacity improvement and quality stability.

#### New supplier onboarding support

- We certified and onboarded new manufacturing partners, providing comprehensive training on system operations, process standards, and product knowledge. Key personnel underwent rigorous qualification assessments to ensure full compliance with quality standards.
- Through phased trial production and iterative optimization, we achieved zero quality incidents during mass production, ensuring both delivery quality and efficiency.

#### Supplier Quality Assistance Measures





#### Factory relocation and capacity upgrade support

- We assisted our manufacturing partners in relocating to new facilities, proactively engaging in capacity planning and workshop layout design. We supported the development of automated testing solutions and risk mitigation plans for the relocation process, offering continuous technical expertise throughout.
- Post-relocation, the factory's production capacity exceeded expectations, with no quality anomalies reported, demonstrating our collaborative management capabilities and supply chain resilience.

Chairman's Statement

About Tuya

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and Ouality Innovation

## **Green Supply Chain**

Tuya is committed to integrating sustainable development principles throughout the entire supply chain management process, strengthening environmental responsibility constraints, and promoting low-carbon practices. We collaborate with suppliers to build a green, low-carbon, and responsible supply chain ecosystem.

## **Policy Requirements and Environmental Audits**

Tuya deeply embeds environmental protection and social responsibility into the supplier management system. Through institutional constraints and audit evaluations, we ensure that all aspects of the supply chain comply with green standards.

#### Environmental and social responsibility commitments

At the supplier onboarding stage, Tuya signs environmental agreements and social responsibility commitments with all suppliers, explicitly requiring compliance with the following terms:

Environmental compliance:

Products provided by suppliers must meet RoHS<sup>9</sup>, REACH<sup>10</sup> and other regional environmental regulations. The use of conflict minerals is prohibited, and suppliers are subject to regular investigations on environmental compliance.

Social responsibility:

Suppliers must strictly adhere to labor rights, health, and safety regulations, ensuring that the entire supply chain fulfills social responsibilities.

#### Environmental risk assessment

During supplier onboarding and annual audits, a dedicated "Environmental Control" audit is conducted, accounting for 10% of the evaluation weight. Key assessment dimensions include:

- Establishment and implementation of environmental management systems.
- Supplier environmental monitoring mechanisms and risk assessment capabilities.
- Signing of environmental agreements and document compliance.
- Environmental inspection standards for raw materials and mechanisms for handling non-compliance.
- Availability of environmental testing equipment and pollution prevention capabilities during production.
- Effectiveness of full-process segregation management for environmentally friendly and non-environmentally friendly products.

Low-Carbon Practices and Resource Optimization

Tuya is committed to driving the green transformation and digital upgrade of the supply chain. Through technological innovation and collaborative efforts, we aim to reduce the environmental impact of the supply chain.

#### **Digital transformation**

- Paperless documentation: Transitioning paperbased documents, such as sample acknowledgments and component sealing commitments, to electronic versions to reduce paper consumption.
- Packaging optimization: Redesigning PCB (printed) circuit board) packaging by eliminating wooden separators, reducing wood usage while maintaining quality.

## **Green Supplier Management**

Tuya continuously enhances suppliers' environmental compliance capabilities and sustainability awareness through system certifications, technical empowerment, and specialized training, ensuring the supply chain meets international environmental standards.

#### Certifications

Promoting core suppliers to obtain relevant certifications, ensuring their production processes comply with international environmental standards.

<sup>9</sup> RoHS: Restriction of Hazardous Substances.

<sup>10</sup> REACH : Registration, Evaluation, Authorization and Restriction of Chemicals.



#### Green production collaboration

- Environmental standards development: Collaborating with suppliers to establish standards for selecting ecofriendly raw materials, promoting renewable materials and clean production processes to reduce carbon emissions throughout the product lifecycle.
- RoHS compliance management: Conducting regular sampling tests to ensure supplier materials comply with RoHS standards, and emphasizing environmental laws and regulations during monthly and annual quality meetings.

#### Specialized training and capacity building

Conducting targeted training on topics such as environmental regulations, hazardous substance control, and low-carbon technologies. The training covers practical aspects, including interpreting environmental standards and using risk assessment tools.

Chairman's Statement About Tuya

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## **Empowering Communities**

We actively address the growing demand for smart community investment and development, leveraging our robust platform capabilities and extensive ecosystem to deliver intelligent solutions. Committed to social responsibility, we aim to make smart technology accessible to more people. During the reporting period, we donated smart products, including smart locks, lighting, voice control systems, and sensors, to underprivileged areas such as Derong County, Migrant Workers' School in Hongtang Sub-district, Louniao Town, and Zhejiang International Studies University, enhancing lives through technology. A total of RMB 730,000 worth of materials were donated to support smart community development.

## **Promoting Low-Carbon Living**

As a leader in AloT technology, Tuya is actively committed to promoting low-carbon living, leveraging its advanced solutions to enhance home energy management and support global efforts to achieve energy-saving and emission-reduction goals.

#### Partnering with Xanlite for Home Energy Upgrade

Driven by the French government's energy-saving and emission-reduction policies, Tuya has teamed up with Xanlite to help French households transition to a low-carbon lifestyle using generative AI, IoT, and other technologies. Tuya provided Xanlite with smart hardware devices, including gateways and thermostats, and, through the Tuya AI cloud platform, delivered a smart-home system that supports precise device management, personalized energy-saving recommendations, and real-time energy consumption monitoring. This project is expected to help one million households achieve a 30% energy savings, contributing to global emission reduction goals.



#### **Singapore HDB Housing Project**

In response to Singapore's national energy-saving goals and to reduce residents' electricity costs, the Housing and Development Board (HDB) of Singapore has partnered with Tuya. Tuya, leveraging a new intelligent architecture design for household distribution lines, has deeply integrated NILM (Non-Intrusive Load Monitoring) technology into the HEMS (Home Energy Management System) scenario to create a smart living solution for HDB. Tuya's innovative HEMS+NILM solution effectively alleviates urban energy pressure and aligns with global trends in low-carbon development.

Smart Device Connectivity	Connect and enable communic home system through a smart ga
Energy Data Collection	Using the Tuya Adapter, interface with the smart meter to collect en
Non-Intrusive Load Monitoring (NILM)	The Tuya Adapter is equipped wit energy consumption of individual
Energy-Saving Strategy Recommendations	Based on energy consumption strategies for high-energy device
Tuya Energy Management Solution	on

Power Consumption Optimization	This project monitors household peak electricity prices, provide costs, while supporting grid load
Energy Consumption Monitoring	The system detects and alerts fo safe electricity use. Pilot tests sh households save 15% to 25% in e
Energy Structure Transformation	The project effectively supports reliance on traditional power gri
Product Application and Results	



63 >

cation between energy devices and the entire smartateway.

e with the CCU (Central Control Unit) device configured hergy data.

ith a built-in NILM algorithm to identify and monitor the al devices within a household.

data, provide energy-saving suggestions and smart es to help users reduce their electricity usage.

Id appliance energy use and, based on peak and offes personalized optimization suggestions to reduce d balancing and improving energy system efficiency.

or abnormal energy usage or appliance failures, ensuring how that the synergy between NILM and HEMS can help energy.

s users' "solar-storage-charging-use" systems, reducing rids and further lowering carbon emissions.

About Tuya

Governance Enhancement for Endured Advancement Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## **Committed to Cross-Industry Win-Win**

Tuya actively engages in cross-industry collaborations, deeply integrating its technological advantages into sectors such as home audio-visual and smart mobility, with the goal of enhancing the level of intelligence across various industries and achieving an ecosystem of mutual benefits.

#### Triple Partnership to Create a Whole-Home Smart Audio-Visual Solution

Tuya, in collaboration with audio-visual brand Xinghuan Technology and leading smart lighting brand Sima Lighting, has jointly launched the "Starlight Dream" whole-home smart audio-visual solution to address the long-standing ecological barriers in the smart-home audio-visual sector. Leveraging Tuya's AI cloud platform and the strengths of both parties in lighting and audio-visual fields, the solution combines excellent sound quality with exquisite lighting effects to create a smart audio-visual scene, enabling users to efficiently control their audio-visual products. This partnership provides users with a higher quality, personalized, and immersive audio-visual experience, setting a new benchmark for the development of smart-home audio-visual technology.



Smart Viewing Mode



Upgrade of 4G VCU Solution to Promote the Development of Smart Mobility in Japan

In response to the urgent demand in Japan's smart mobility sector, Tuya has customized and upgraded its 4G VCU solution. By adopting high-precision positioning modules, integrating barometers, and incorporating Japan's satellite meteorological monitoring capabilities, the solution has made significant breakthroughs in three key areas: positioning accuracy, environmental adaptability, and safety alerts. Tuya's comprehensive upgrade of the 4G VCU not only significantly enhances user experience but also paves the way for a greener and more efficient new phase in smart mobility.



E-bike and its Circuit Diagram



4G VCU Central Control



## **Supporting Diverse Communities**

Tuya pays close attention to the needs of diverse social groups, offering customized solutions for the elderly, schools, and pet owners to enhance their quality of life and convenience.

## Empowering Swedish Elderly Communication Technology Company to Upgrade Customer Management System

As global aging trends accelerate, Tuya partnered with Sweden's Doro to develop smart elderly care solutions. Through its AI cloud platform, Tuya enabled Doro to upgrade its customer management system with intelligence, integrating smart hardware like video doorbells and smart tags for remote management and smart connectivity. This solution has significantly enhanced the convenience and safety of elderly communication technology, offering seniors a more comfortable and secure living experience.







About this Report

About Tuya

Chairman's Statement

Governance Enhancement for Endured Advancement Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

#### Pet Al Mini-App

To address pet owners' concerns about traveling with pets and monitoring their health, Tuya has launched a new Pet Al Mini-App, aimed at creating a more harmonious and enjoyable pet-owning experience. The program seamlessly integrates Al technology with Internet Protocol Camera (IPC) visual capabilities to accurately identify and analyze pets' emotions, health, and psychological needs, offering pet owners a smart and convenient new way to care for their pets.







Capture Abnormal Behaviors, Protect Pet Health



<b>HEDV E</b>	Empowers	Smart	Campus
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To address the needs of smart campus development, Tuya introduced the HEDV localized deployment solution, creating an information-driven and intelligent educational environment. Leveraging the strengths of AI and data-driven innovation, the HEDV platform builds an integrated AIoT foundation for smart campuses. Developers can create multi-dimensional digital applications covering teaching, safety, evaluation, campus management, and more, enabling rapid deployment of comprehensive smart campus solutions.

User Layer	Administrator PC Terminal: Student Service Terminal: One-stop Management Center Digital Class Interaction Termina			,,,,,,			Service:			
Presentation Layer	PC	📮 » Mobile Phone	E	Large Screen		🗞 Touch Sc	reen ·			
Smart Application Layer	Student Personalized Grow Education Class Scheduling Elective Course Selection Performance Analysis Classroom Inspection		Balanced Dev Co Co Ev Cla Dig ection Gr	eacher velopment Profile Evaluation mprehensive aluation ass Evaluation gital Profile owth Archive	<ul> <li>Digita</li> <li>Home educa</li> <li>Growt</li> </ul>	Precision Mai School I Class Board -school Co-	chool nagement Prol Manag Online O Logistics Equipme Maintena Notificat Official D	ffice Assets ent ance	Standards and Regulations System	roted
Business Support Layer	Data Center		Education Digital Evaluation Organization Center Center					System	a Manag	
IoT Aggregation Layer	IoT Hub Device Managemer	THUB Device Product Scenario Alert Devi Management Management Interaction Notification Authentio			0	Messag Subscript	/	gennenic o	rement S	
Transmission Layer	Zigbee	Router       Zigbee     Wi-Fi     MQTT		Switch QTT TCP CoAP		DAP	yscenn	/ctpm		
Access Layer	IoT Device Access() Switch() Air Conditioner	.ighting □Cu ℃ Human Bo	~	Socket	ہی۔ Wehic	<b>y Platform Ac</b> le Managemer en Consumpt	nt System			

#### **Overall Structure**

Additionally, the HEDV smart solution platform integrates all devices across the campus, enabling automatic activation of preset scenarios such as meeting mode, after-school mode, and class mode through IoT connectivity. This ensures precise control, energy savings, and smart alerts for various scenarios, effectively reducing energy consumption and promoting the development of green campuses.



**HEDV Smart Solutions Platform** 



Green Development and Low-Carbon Operations Gather Talent for Team Success 67 >



Chairman's Statement

About Tuya

Governance Enhancement for Endured Advancement Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## **Industry Co-Creation**

We maintain strong partnerships with industry partners, actively engaging in industry exchanges to collectively explore the sector's vast potential and unlock the power of innovative technology.

## Industry Exchanges

Tuya actively engages in global industry exchanges, hosting high-profile events to foster international collaboration and dialogue, accelerating innovation across the industry chain. During the reporting period, Tuya successfully organized four developer summits in Shenzhen, Suzhou, Dubai, and Germany, bringing together industry experts and entrepreneurs to explore AI, IoT, and cloud computing technologies, empowering global developers to unlock opportunities across industries.

#### Participated in the COP29 to Advance Global Climate Governance

Tuya participated in the "China Pavilion" side event at the 29th Conference of the Parties to the *United Nations Framework Convention* on Climate Change (COP29), where it presented the "Smart Decarb" initiative. Tuya emphasized using AI technology to drive green innovation and help industries achieve carbon reduction goals. The company's smart energy management system also attracted attention from energy and power enterprises worldwide.



#### Hosted the Energy "Smart Path" Series, Connecting Industry, Research, and Academia

Tuya, in collaboration with *Energy* magazine, Haier Haichuanghui, and the Alumni Association of Huazhong University of Science and Technology, launched the "Smart Energy" event series. The events brought together industry leaders, experts, scholars, and representatives from top universities to focus on the future trends of the energy sector. Participants shared practical experiences in frontier technologies like GenAI and smart energy, fostering deeper exchanges and collaborations between industry, academia, and research.



## **Industry Support**

Tuya upholds an open and collaborative approach, partnering with industry leaders across various fields to explore development opportunities and challenges from a global perspective. We actively promote the establishment and technical implementation of the Generative Artificial Intelligence (GenAI) Hardware Working Group to help developers efficiently utilize AI hardware technology. As a board member of the Cloud Security Alliance (CSA), we continue to contribute to the development and promotion of the Matter 1.3 standard. Through systematic research and practice, we released the *Zero-Carbon Home Evaluation Technical Standards* and the *2024 Global Low-Carbon Energy-Saving Development Path Report*, driving industry standardization and providing insights for technological innovation and industrial upgrades.



Green Development and Low-Carbon Operations Gather Talent for Team Success
About this Report

Chairman's Statement About Tuya

Governance Enhancement for Endured Advancement Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

#### Established the GenAI Hardware Working Group to Accelerate AI Hardware Commercialization

To further support global developers in innovating AI hardware products, Tuya, in collaboration with the Asia-Pacific Artificial Intelligence Business Alliance and other founding members, established the GenAI Hardware Working Group. As a founding member, Tuya will release and share research reports and white papers on AI hardware, facilitate technical exchanges, and connect members with business opportunities, fostering an industry-academia-research ecosystem.



Contributed to the Development of the Zero-Carbon Home Evaluation Technical Standards, Leading Green Development in the Home Industry

The Zero-Carbon Home Evaluation Technical Standards, drafted by Tuya, was officially released at the 39th Shenzhen International Furniture Fair. This marks the launch of China's first zero-carbon home industry standard. Initiated by the Shenzhen Furniture Industry Association and Tuya, the standard aims to drive the home industry towards green and sustainable development. It introduces an innovative definition of "zero-carbon home," expanding carbon reduction from the industrial sector to daily household life, providing scientific guidance for low-carbon living.



Published the 2024 Global Pathway for Low-Carbon and Energy-Efficient Homes Report, Providing **Industry Reference** 

On February 7, 2024, Tuya and IQS Research Institute published the 2024 Global Low-Carbon Energy-Saving Development Path Report, the first comprehensive report focused on home energy efficiency. It offers practical solutions for global households to reduce energy consumption and carbon footprints, emphasizing clean energy sources, energy reduction, and technologies like Home Energy Management Systems (HEMS). The report highlights Tuya's technological strength and forward-looking strategy in the field.



#### 中国家庭低碳节能发展驱动与限制

用电结构出现变化,家庭用电占比增加,但电价平稳导致低碳发展

用电结构调整:用电量超预期增长。信达证券指出:第三产业复合增速最高、弹 速(5.86%、7.03%、6.69%)与GDP增速(6.68%、5.98%、5.44%)。而用 这也就意味着最近十年间,三产与居民生活用电已经成为全社会用电量增长的主





中国   美国   徳国	日本   印度   哥伦比亚   新加坡   澳大利	9 <b>]3</b> 2
を低碳す そ报告	5 <b>1</b>	
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限制	电价平稳 消费者低碳意识不够	
如 2022 年1月发布:国家发 制机制和政策措施的意见; 念做好碳达峰碳中和工作的 长期的电价平稳会使得消费 家庭低碳生活方式无法快速		

居民平均用电价格为0.138美元/千瓦时,中国居民用电价格为0.084美元/千瓦 时,排名98位。

About Tuya

Governance Enhancement for Endured Advancem Digital Intelligen Leadership and Quality Innovati Empower with Intelligence and Co-Create the Industry

# 04

Green Development and Low-Carbon Operations

We firmly believe environmental protection is key to sustainable development. By promoting green office practices, fostering a culture of eco-awareness, and optimizing energy and resource efficiency, we build an eco-friendly operational model. We also enhance environmental risk management, tackle climate challenges, and explore green technologies to drive sustainable development.

Response to SDGs





Green Development and Low-Carbon Operations Gather Talent for Team Success Appendix

73 >

oort Chairman's Statement

About Tuya

Governance Enhancement for Endured Advancement Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

# **Green Practices**

# **Environmental Management**

We strictly adhere to relevant environmental laws and regulations including the *Environmental Protection Law of the People's Republic of China* and the *Emergency Response Law of the People's Republic of China*. In accordance with these laws and regulations, we have formulated management systems and operational specifications such as the *Enterprise Environmental Policy*, the *Rules for Waste Management*, and the *Control Procedures for Energy Conservation and Consumption Reduction*, which clearly define the processes and operational standards for environmental management. We are committed to building a comprehensive environmental management system and have set up a dedicated safety and environmental protection team

to collaborate with administrative departments in overseeing environmental management within the company. Until the end of the reporting period, there were no environmental violations.

We place great emphasis on enhancing employees' environmental awareness and actively promote their participation in environmental trainings. We have conducted diversified environmental training programs covering energy conservation, water saving, and waste reduction. To ensure effective environmental protection, employees in environmental protection roles are required to undergo regular training, with their training performance integrated into their overall assessments.

### **Resource Management**

Tuya strictly abides by the *Water Law of the People's Republic of China* and other applicable laws and regulations of the places where it operates. We set water conservation targets and conduct regular water use assessments, leveraging monthly monitoring and inspections to identify opportunities for water efficiency improvements. Additionally, we focus on optimizing water management through water recycling and enhancing wastewater quality to further boost conservation efforts.

#### Water Resource Management Targets

- Improve water efficiency and reduce water use.
- Promote water-saving devices and optimize water management.
- Enhance employees' water conservation awareness and foster a culture of water-saving.

Our primary water source is municipal supply. We have installed water-saving equipment, such as automatic sensor faucets and flushers, to prevent water waste. Additionally, we post conservation slogans and organize water efficiency training programs, fostering a corporate culture dedicated to sustainable water use. Additionally, we post conservation slogans and organize water efficiency management trainings, fostering a corporate environment committed to sustainable water use.

In paper resource management, we promote green office practices by adopting paperless operations and transitioning document preparation and access to digital platforms, significantly reducing our paper consumption. Given our business nature, we almost do not need packaging materials, and the quantity of packaging materials for our samples and their impact on the environment are insignificant.

Water consumption in 2024<sup>11</sup>

**3,303.1**<sup>m<sup>3</sup></sup>

11.1

Water consumption per unit of operating revenue in 2024



# Waste Discharge Management

We strictly comply with applicable laws and regulations, such as the *Law of the People's Republic of China on Prevention and Control of Environmental Pollution by Solid Waste*, and have established internal *Waste Management Regulations* 

#### Waste Management Targets

- Increase the recycling rate of recyclable waste.
- Implement paperless office practices to reduce paper consumption.
- Minimize the use of packaging materials in office areas and promote eco-friendly alternatives or reuse solutions.

Given the nature of our business, we do not produce waste gas. Our main source of waste water is domestic sewage. Waste generated mainly includes office waste, discarded materials, and equipment. We strictly implement waste classification: recyclable waste is managed and recorded systematically, while non-recyclable and hazardous waste is handled by qualified service providers in compliance with regulations.

#### Recyclable wastes

Recyclable waste is collected at designated points and stored centrally in a warehouse. The admin team arranges pickup by professional recycling firms, tracks data, and generates monthly and annual recycling reports to ensure a transparent and traceable process.

#### Non-recyclable wastes

Non-recyclable waste must be disposed of in designated bins, with the admin team arranging compliant handling by qualified external service providers.

Gross wastewater discharge in 2024



discharge in 2024

<sup>11</sup> Excluding water consumption in Shenzhen office.

75 >

to rigorously control pollutant discharge. Annually, we track total emissions of non-hazardous and hazardous waste to identify reduction opportunities. Additionally, we set waste management targets to minimize waste.



We actively promote waste recycling, encouraging employees to exchange used batteries for new ones to minimize environmental impact. During the reporting period, we reused approximately 250 cardboard boxes per month (totaling 375 kg) for shipping or moving, effectively reducing waste. These initiatives optimize waste disposal and advance resource recycling efforts.

Gross non-hazardous waste

Gross hazardous waste discharge in 2024



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# **Climate Action**

## **Energy Management**

We strictly comply with the Energy Conservation Law of the People's Republic of China and follow internal Control Procedures for Energy Conservation and Consumption Reduction to promote efficient energy use. During the reporting period, we developed the Standard Operating Procedures for Small Property Energy Conservation, providing detailed guidelines for energy management across all areas. We have set energy management targets, regularly reviewing and tracking progress to ensure effective implementation and continuous optimization of energy-saving measures.

#### **Energy Management Targets**

- Gradually establish a comprehensive energy management system.
- Promote green design and adopt high-efficiency, energy-saving equipment.
- Explore opportunities for clean energy development.

In our daily operations, purchased electricity is our primary energy source. We utilize our self-developed Smart Commercial Lighting Solution, an AIoT-based control system, to enhance energy management efficiency and reduce consumption. Additionally, we track energy usage data to identify optimization opportunities and achieve energy management targets.

#### Smart Garage Lighting Management

Collaborating with the building operations team, we deployed the smart lighting system to dynamically adjust underground garage lighting, enabling an energy-saving mode where "lights turn on when cars arrive and off when they leave." Since implementing the smart lights, the building's parking lot electricity consumption has significantly decreased.

#### Green Travel Initiative

We encourage employees to prioritize low-carbon travel options such as public transport, carpooling, or cycling, reducing private car usage. During the reporting period, we partnered with a third-party platform to track employee travel carbon emissions and recommend green flights and low-carbon travel solutions, further reducing our travel carbon footprint.

#### Office Area Smart Lighting Control

We implemented a smart lighting management system that adjusts lighting duration and intensity based on office usage. The system automatically detects unoccupied areas to turn off lights and dims lights during lunch breaks, achieving rational energy savings.

#### Meeting Room Energy-Saving System

We installed smart sensors in meeting rooms that automatically switch to energy-saving mode if no meeting is detected within five minutes, turning off lights and unnecessary devices. This reduces energy waste during idle periods, extends equipment lifespan, and improves operational efficiency.

**Energy Conservation Measures** 

To enhance energy efficiency and raise employee awareness, we organized training sessions titled "Improving Energy Efficiency, Building a Green Environment." The training combined lectures and hands-on practice, covering energy efficiency basics, energy-saving technologies, and daily energy conservation practices. During the reporting period, we conducted four energy-saving training sessions, reaching 23 key employees, boosting their skills, advancing company-wide energy-saving initiatives, and driving progress toward our energy reduction goals.

# 2,542.8 MWh Energy consumption intensity in 2024 8.5<sub>MWh</sub> / million U.S. dollar



Chairman's Statement

About Tuya

Governance Enhancement for Endured Advancement

**Digital Intelligence** Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## **Climate Risks and Opportunities**

Climate change poses an unprecedented threat to the development of human society, and the Earth's ecosystems are facing severe challenges. In response to this global challenge, the international community reached the Paris Agreement in 2015, setting a long-term goal of limiting the global average temperature increase to within 2°C above pre-industrial levels. As a socially responsible technology company, Tuya has consistently integrated the concept of sustainable development into its corporate strategy,

implementing scientific environmental management strategies and fulfilling its emissions reduction commitments.

We attach great importance to climate change governance, continuously optimizing our internal climate change management mechanisms, and have clearly set carbon emission management targets.

Total GHG emissions in 2024<sup>12</sup>

GHG emissions per unit of operating revenue in 2024

1,489.1 tons of carbon dioxide equivalent 5.0 tons of carbon dioxide equivalent / million U.S. dollar

#### **Carbon Emission Targets**

- Gradually establish a carbon emission management system.
- Gradually reduce the carbon emission intensity in operational processes.
- Deeply explore low-carbon technology and develop smart products.
- Strengthen employees' awareness and practice of low-carbon concepts.



 $^{\rm 12}\,$  Calculated based on the national grid average emission factor of 0.5856 t CO\_2/MWh.

With reference to the Recommendations of the Task Force on O
consideration of our operations, industrial and geographical factor
and formulated measures to address the risks brought by climate c

Risk type	Item	Risk description	Countermeasures
Transition risk	Policies and laws	Government policies and regulations on carbon emissions are increasingly strin- gent, and the national carbon emission trading market has fully launched. With rising carbon prices, businesses will face growing operational cost pressures.	We closely monitor the latest regulatory developments, continuously optimize our environmental management system, and enhance the quality of information disclo- sure to ensure Tuya complies with increasingly strict legal requirements. Additionally, we are actively implementing energy-saving and carbon reduction projects to reduce our greenhouse gas emissions.
	Technology	As the standards for low-carbon envi- ronmental protection technologies and solutions continue to rise across various sectors of society, enterprises need to in- crease their investment in research and development to address the challenges posed by the growing demand for tech- nology.	We are proactively adjusting our green development strategy, accelerating the layout and pace of techno- logical innovation in the low-carbon research field. We deeply analyze the compatibility of new technologies or solutions with Tuya's existing business and conduct a comprehensive evaluation of their investment benefits.
	Market	The market is experiencing a shift in consumer preferences, with consumers increasingly favoring products and ser- vices that have lower carbon emissions.	We continuously monitor market dynamics and analyze environmental trends in real time to ensure that the low-carbon characteristics of our products, services, and solutions align precisely with the needs and preferences of our customers.
Physical risk	Acute	Extreme weather events (such as heavy rain, typhoons, heavy snow, floods, etc.) can have a destructive impact on infra- structure, leading to service interrup- tions, increased equipment repair and procurement costs, and potential risks to the health and safety of employees.	We systematically review and summarize past experienc- es in typhoon and flood prevention, and have proactively developed a series of emergency response plans and ear- ly warning mechanisms, including the <i>Workplace Safety</i> <i>Incident Emergency Response Plan Compilation</i> and the <i>Tuya Safety Assurance Management Specifications V2.0.</i> We also deploy weather warning devices to address the challenges posed by natural disasters such as typhoons and heavy rain.
	Chronic	The increase in average temperatures leads to higher energy consumption in data centers during the summer, there- by increasing operational costs.	We closely monitor temperature changes and forecasts, quickly assess their impact on business operations, and take corresponding measures to address them, such as expanding the use of renewable energy.

Climate-related Financial Disclosures (TCFD) and taking full tors, we initially identified various climate change-related risks change.

Chairman's Statement Abo

About Tuya

Governance Enhancement fo Endured Advancem Digital Intelligence Leadership and Quality Innovation Empower with Intelligence and Co-Create the Industry

# 05 Gather Talent for Team Success

Tuya is committed to a people-centric management philosophy, building a robust human resource system to offer employees ample growth opportunities. We focus on holistic employee development, safeguard their rights, and prioritize their well-being, fostering a diverse, innovative, and dynamic team to drive mutual growth for employees and the company.



Response to SDGs



Green Development and Low-Carbon Operations Gather Talent for Team Success Appendix 81 >

Chairman's Statement

About Tuya

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

# **Talent Attraction**

Talent is a precious asset of Tuya and the source of its innovative vitality. We prioritize talent acquisition and rights safeguarding, aiming to create a diverse and inclusive workplace. By fully implementing talent management policies, we provide a solid foundation of talent to support the company's sustainable growth.

# **Talent Recruitment**

We strictly comply with applicable laws and regulations, such as the Labor Law of the People's Republic of China and the Labor Contract Law of the People's Republic of China. We have established internal policies, including the Tuya Recruitment Management Policy and the Basic Human Resources Policy, to provide clear guidelines for human resource management.

We view talent as the core driver of company growth and are committed to building a comprehensive recruitment system. We actively expand recruitment pipelines, including experienced hires, campus hires, and internal transfer. During the reporting period, we launched a graduate recruitment program, leveraging intelligent tools to streamline the hiring process and attract outstanding graduates. Additionally, we established localized recruitment websites overseas, further broadening our global perspective and accelerating the deployment of a worldwide talent network to support the company's global business expansion.





<sup>13</sup> The calculating way of the number of total employees is not the same as the number of employees paid in the annual report. <sup>14</sup> Tuya fully respects and protects the right of employees to maintain their personal privacy. So, the data classified by age includes some employees who are not willing to disclose their age.

Thanks to our global business footprint and advanced human resource management practices, we have received extensive recognition in this field. In 2024, Tuya was granted the "China Human Resource Sirius Award - Best Employer Brand for Global Companies".







Green Development and Low-Carbon Operations

**Gather Talent for** Team Success

83 >

About this Report

Chairman's Statement About Tuya

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and **Ouality Innovation** 

Empower with Intelligence and Co-Create the Industry

# Labor Rights

Tuya always practices the principle of compliant employment, and observes the Labor Law of the People's Republic of China in employment. And we have developed internal labor management rules and policies, such as the *Employee* Handbook, and the Basic Human Resources Policy, specifying compensation, dismissal, recruitment, promotion, working hours, holidays, equal opportunities, diversity, and antidiscrimination. During the reporting period, in alignment

with internationally recognized standards such as the UN Guiding Principles on Business and Human Rights and the ILO Declaration on Fundamental Principles and Rights at Work, we formulated the Code of Human Rights and Labor *Protection*. This further clarifies our commitment to respecting human rights and provides an institutional framework for its implementation.

#### **Preventing Child and Forced Labor**

- Tuya strictly verifies employee identities throughout the recruitment and onboarding process to prevent child labor and ensure compliance with labor laws. We implement standard working hours and prohibit any form of forced labor.
- Any illegal labor practices are addressed seriously in accordance with the law. During the reporting period, no cases of child labor or forced labor were identified.

#### **Discrimination & Harassment**

- Tuya prohibits discrimination and differential treatment based on gender, skin color, race, ethnicity, nationality, age, religion, genetics, or disability in its Code of Human Rights and Labor Protection.
- We maintain a zero-tolerance policy toward workplace harassment, including but not limited to offensive language, abuse, gender or racial slurs, and sexual harassment.
- We have established escalation process for reporting incidents specific to discrimination and/or harassment, taking corrective or disciplinary actions as needed.

#### **Promoting Diversity and Equality**

- Tuya upholds a diverse and inclusive workplace, protecting the rights of minority groups. We have implemented programs for employees with disabilities and continuously improve the rights of foreign employees working in China.
- We ensure fairness and transparency in recruitment, employment, training, promotion, and compensation, upholding equal remuneration and opportunities for all employees.

#### **Freedom of Association**

- Tuya respects employees' freedom of association, supporting their right to form, join, or refuse trade unions and associations in compliance with applicable laws.
- We recognize legally elected employee representatives and encourage collective bargaining through employee congresses.

# **Talent Development**

Recognizing that high-quality talent development is the driving force behind sustainable corporate growth, we are committed to building a comprehensive and multi-dimensional training system, offering employees clear career paths and ample growth opportunities to enhance their skills and unlock their potential. We fully support employees in achieving self-improvement, exceeding their limits, and creating value.

## Training and Development

Tuya prioritizes talent development as a core strategic driver of corporate growth, integrating internal and external resources to continuously empower employees. Guided by our Training *Management Policy*, we have built a comprehensive training system through the Tuya Academy online learning platform, covering all ranks, positions, and development prospects. Based on in-depth insights into employees' expectations, we tailored training programs to provide systematic support throughout employees' career lifecycles.

#### **New Employee Training**

To help new employees, including fresh graduates, familiarize themselves with the company's operations and adapt quickly to the workplace, we continue to carry out new employee training programs. During the reporting period, we conducted 4 sessions, training 130 employees with an average satisfaction score of 4.97/5, effectively supporting their smooth transition into the workplace.

#### Leadership Training

To build a high-quality management team, we systematically deliver specialized training based on our leadership model, focusing on team building, performance management, and recruitment/dismissal skills.

#### Professional Competence Training

• We customized training programs for key roles in sales, R&D, and technology, such as AI series courses and Tuya Matter training, providing employees with a structured platform to deepen their understanding of business strategies and strengthen professional skills.

During the reporting period, we upgraded the Tuya Academy, adding real-time course and exam notifications and enabling 85% of offline training sessions to be tracked on the platform, significantly enhancing the learning experience and management efficiency. The Tuya Academy recorded a total of 2,091.8 hours of employee learning time for the year.

About this Report

Chairman's Statement About Tuya

Governance Enhancement for Endured Advancement Digital Intelligence Leadership and Quality Innovation C

Empower with Intelligence and Co-Create the Industry

# Performance Management

In line with the Rules for *Performance Management Policy*, we implement open, transparent, and standardized performance management. Through semi-annual and annual performance evaluations, we fairly assess each employee's contributions, promoting mutual growth for employees and the company.

We have established a comprehensive and objective performance appraisal mechanism, assessing employees from multiple



#### **Goal Setting**

The CEO and department heads define and break down s performance targets are aligned with the company strate employees to reach a consensus.

#### **Process Tracking and Coaching**

 Supervisors and employees jointly monitor performance per communication and coaching to facilitate or exceed the ach

#### Performance Improvement and Development

 For employees who do not meet expectations, a performant a specified period to promote continuous development and

#### Performance Evaluation and Feedback

 Performance evaluations are conducted through employ performance calibration, and CEO/president reviews, ensue employees.

#### The "New Sprout " Graduate Traineeship Program

The "New Sprout" Graduate Traineeship Program supports fresh graduates in transitioning from campus to the workplace. It combines professional training with soft skills like interpersonal management and efficiency improvement, incorporating hands-on learning to enhance workplace adaptability. The program has successfully helped graduates navigate role transitions, strengthening the company's talent pipeline and supporting sustainable development.



#### **Flagship Product Training Camp**

To enhance the competitiveness of our core product lines, we invited consulting experts from external educational institutions to hold a 3-month flagship product training camp. The program engaged 28 key personnel from three core product lines, incorporating pre-training diagnostics, on-site workshops, and post-training mentoring. By integrating industry best practices and case studies, it aimed to systematically enhance participants' strategic thinking and practical skills. This initiative successfully strengthened the participants' product management capabilities, fostered innovation, and ultimately boosted our competitive edge in the market.



#### AI Training

To unlock employees' innovative potential in AI and drive its practical application in business, we launched a 6-month AI Tech Lecture. The program focused on internal AI tools, edge AI research, and practical use cases, attracting over 330 participants. It significantly enhanced employees' understanding and application of AI, driving innovation and efficiency while supporting business growth.



Tuya actively advocates for employees' self-growth and supports all employees in participating in degree advancement and professional certification programs. The HR department assists employees in obtaining necessary documentation for external education and provides flexible work arrangements to facilitate their pursuits. During the reporting period, Tuya achieved a 94.3% training coverage rate.

dimensions. During the reporting period, we have introduced a "Performance Invitation Review" feature, utilizing a 360-degree feedback system that incorporates input from supervisors, colleagues, and partners. Additionally, we implemented a scientific performance management process, outlined below, ensuring alignment between employees' individual goals and the company's strategic objectives, while fostering their self-awareness and continuous development.

ability ment dimensions		P
	ndividual goals, ensuring mmunicated thoroughly	
rogress, resolving issues p ievement of goals.	romptly through continuc	bus
nce improvement plan is Id performance enhancen	developed and tracked w nent.	ithin
	epartment leader evalua ess, with feedback provide	

Chairman's Statement

About Tuya

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and **Ouality Innovation** 

Empower with Intelligence and Co-Create the Industry

# **Talent Care**

Tuya places great value on the contributions of every employee and is committed to enhancing their sense of belonging and achievement. While ensuring the health and safety of our employees, we continuously improve our two-way communication mechanisms and organize a variety of employee activities to strengthen team cohesion and unity, fostering a positive and uplifting corporate culture.

# Health and Safety

Tuya prioritizes the health and safety of employees, strictly complying with applicable laws and regulations, such as the Work Safety Law of the People's Republic of China and the Fire Control Law of the People's Republic of China. During the reporting period, we established the Code of Human Rights and Labor Protection, further clarifying our responsibilities and commitments to occupational health and safety.

We have installed Automated External Defibrillator (AED) defibrillators in our offices to handle emergencies effectively and regularly hold fire drills for all employees, boosting their emergency response and self-rescue skills to ensure their health and safety at work.

#### Health Checkup Program Adjustment

Based on the analysis of last year's employee health checkup results, the checkup program has been adjusted from a comprehensive examination to targeted screening, focusing on high-incidence health issues. This approach is more effective in identifying potential health risks among employees, enhancing early intervention, and reducing health hazards.

#### **On-site Medical Consultation**

• We introduced professional medical teams to provide on-site services such as massage, dental check-ups, traditional Chinese medicine pulse diagnosis, and acupuncture. These services quickly alleviate discomfort in the shoulders, neck, and lumbar spine, identify dental issues, and offer personalized traditional Chinese medicine advice.

#### **Health Education**

health awareness. We continuously carry out health education to help employees master scientifically-based health management methods, reduce the incidence of diseases, and promote long-term physical and mental well-being.

**Compensation and Benefits** 

In accordance with the Rules for Remuneration Management, Tuya provides a comprehensive compensation incentive system and diverse benefits to attract and retain talents. Additionally, we offer equity incentive programs to share the company's growth with employees. Based on performance and potential, we grant equity incentives to key talent, driving motivation and fostering a strong sense of belonging. As of the reporting period, approximately 20% of employees are eligible for the equity incentive plan.

Additionally, we adhere to the principle of fairness, ensuring equal remuneration between male and female employees, rewarding efforts and contributions fairly. We regularly review and optimize compensation strategies, adjusting salary ranges and levels to maintain market competitiveness.

Fixed remuneration	Determined based on job value, employee competency, performance, and market salary benchmarks.
Annual performance bonus	Awarded based on company performance, departmental results, and individual performance.
Special bonus	Includes referral bonuses, training bonuses, and patent rewards.
Excellent project bonus	Awarded to sales employees who contribute to outstanding projects.

Remuneration Incentive Mechanism

Tuya is dedicated to developing a comprehensive and diverse non-pay benefits program that supports employees' needs in career development, life security, and healthcare. By taking this holistic approach, we create an employee care ecosystem that not only strengthens professional identity but also promotes growth and fosters a strong sense of belonging.

In health management and insurance, we comply with applicable laws and regulations, such as the Social Insurance Law of the People's Republic of China, by providing all employees with five insurances and one housing fund. Additionally, we offer housing subsidies, health check-ups, and commercial insurance. We also seek discounted health checkups and supplementary medical insurance for employees' families, ensuring comprehensive medical coverage for employees and their families.

We place great importance on work-life balance and support employees in pursuing career development while maintaining a healthy balance between family and personal life. We offer a variety of holiday benefits, generous paid leave, and tailor flexible work arrangements to meet individual needs, helping employees better balance their work and personal lives.

#### **Holiday Benefits**

We carefully prepare holiday activities for employees, such as traditional holiday gift packs, custom merchandise for Programmer's Day, health checkups and skincare activities for International Women's Dav. etc.

#### Paid Leave

We offer a variety of paid leave options for employees, including annual leave, maternity leave, prenatal checkup leave, paternity leave, parental leave, and only child caregiver leave.

We implement flexible working hours and allow employees to apply for remote work in special circumstances.

Flexible Working

Additionally, we place high importance on employees' physical and mental health, continuously improving health safeguards by providing annual health check-ups, commercial insurance, and work injury insurance. We have further optimized the process for handling and recognizing work-related injuries to effectively protect employees' rights. At the same time, we address employees' health needs through targeted health screenings, on-site free clinic services, and health education initiatives.

At the end of each month, we publish health tips to promote disease prevention knowledge and raise employees'

Chairman's Statement

About Tuya

Governance Enhancement for Endured Advancement **Digital Intelligence** Leadership and **Ouality Innovation** 

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# **Enjoyable Workplace**

Tuya promotes work-life balance by organizing diverse employee activities, such as Programmer's Day and Women's Day celebrations, to boost team cohesion and belonging. We also fund employee clubs like badminton, basketball, and band, encouraging hobbies and healthy stress relief, fostering personal and professional growth in a supportive environment.

#### Tuya's 10th Anniversary Celebration

On the occasion of Tuya's 10th anniversary, we invited all employees and their families to join the celebration. Custom anniversary gifts were distributed to each employee, while tea breaks and interactive game zones created a relaxed and joyful atmosphere. The event strengthened employees' sense of belonging and pride, further boosting their and their families' recognition and support for the company.





**Communication with Employees** 

We advocate for an open and free communication culture, encouraging employees to express their opinions and actively participate in company affairs. We have established diverse communication channels both online and offline to promptly collect employees' feedback and suggestions on company management, cultural development, and other aspects, building a mutually trusting and beneficial cooperative relationship that fosters the joint growth of the company and its employees.

#### **Online communication channels**

Company's WeChat official account: Voice of Tuya

Company's WeChat HR channel: T Mei

Column on the WeChat official account: "You Yi Shuo Yi"

Public email: voice@tuya.com

Offline communication channels

HR interview: daily communication and interview with the Human Resource Department

"Free Talk" seminar: exchange with core employees

Strategic communication with executives: business and technical leaders regularly discuss strategic directions, and report implementation progress

#### Tuya's Major Employee Communication Channel

We place great importance on keeping employees aligned with the company's information, ensuring they stay updated on the latest developments. During the reporting period, we published 23 bi-weekly reports covering the company's business progress, major events, and strategic direction, ensuring transparency and efficient communication. Additionally, we recorded interviews with outstanding projects, sharing key milestones and success stories from their implementation, fostering internal knowledge sharing, and inspiring innovation and collaboration within the team

The Basic Human Resources Policies clearly states that employees have the right to report misconduct or violations, either anonymously or with their real name. The company has a dedicated grievance reporting and escalation procedure to ensure timely and fair investigation of all reports. Employees can also appeal or request reconsideration of company decisions affecting them, such as attendance, salary, and other matters, with the Human Resources Department coordinating with relevant departments to resolve the issues.

The employee sub-mits a reconsideration application if he/she has objection to the initial handling result

The Human Resource Depart-ment investigates the case, and coordinates with relevant departments to reject the objection, or propose handling suggestions

The employee is allowed to resolve it through judicial channels if he/she is dissatisfied with the reconsideration decision



The Human Resource Department updates the employee on the reconsideration result within 10 workdays

**Employee Appeal and Reconsideration Procedures** 

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91 >

#### **Tuya's First Badminton Tournament**

During the reporting period, Tuya held its first badminton team tournament, enriching employees' leisure time and promoting a healthy work environment. Organized by department, the event combined competitive and fun matches, boosting physical fitness, cross-department collaboration, and team cohesion.





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# **Appendix I: HKEX ESG Contents Index**

Subject Areas, A	Location (Section)					
Environmental						
	General Disclosure	Information on: the policies; and compliance with relevant laws and regulations that have a significant impact on the issuer	Green Practices			
	A1.1	The types of emissions and respective emissions data	Green Practices			
	A1.2	Amount and density of greenhouse gas emissions	Climate Action			
A1: Emissions	A1.3	Hazardous waste amount and density generated	Green Practices			
	A1.4	Non-hazardous waste amount and density generated	Green Practices			
	A1.5	Describe the emission targets set and the steps taken to achieve them	Green Practices			
	A1.6	Describe methods for handling hazardous and non-hazardous waste and describe waste reduction targets and steps taken to achieve them	Green Practices			
A2: Use of Resources	General Disclosure	Policies for the efficient use of resources (including energy, water and other raw materials)	Green Practices			
	A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total and intensity	Climate Action			
	A2.2	Water consumption in total and intensity	Green Practices			
	A2.3	Description of energy use efficiency target(s) set and steps taken to achieve them	Climate Action			
	A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency target(s) set and steps taken to achieve them	Green Practices			
	A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced	Green Practices			
A3: The	General Disclosure	Policies on minimising the issuer's significant impacts on the environment and natural resources	Green Practices			
Environment and Natural	A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them	Green Practices			
A4: Climate	General Disclosure	Policies on identification and mitigation of significant climate-related issues which have impacted, and those which may impact, the issuer	Climate Action			
Change	A4.1	Description of the significant climate-related issues which have impacted, and those which may impact, the issuer, and the actions taken to manage them	Climate Action			

Subject Areas, A	spects, Gene	ral Disclosures and KPIs	Location (Section)
Social			
B1:	General Disclosure	Information on:the policies; and compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare	Talent Attraction
Employment	B1.1	Total workforce by gender, employment type age group and geographical region	Talent Attraction
	B1.2	Employee turnover rate by gender, age group and geographical region	Appendix II: ESG Performance
	General Disclosure	Information on: the policies; and compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards	Talent Care
B2: Health and	B2.1	Number and rate of work-related fatalities occurred in each of the past three years including the reporting year	Appendix II: ESG Performance
Safety	B2.2	Lost days due to work injury	Appendix II: ESG Performance
	B2.3	Description of occupational health and safety measures adopted, and how they are implemented and monitored	Talent Care
B3: Development and Training	General Disclosure	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities	Talent Developme
	B3.1	The percentage of employees trained by gender and employee category	Appendix II: ESG Performance
	B3.2	The average training hours completed per employee by gender and employee category	Appendix II: ESG Performance
B4: Labor	General Disclosure	the policies; and compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labor	Talent Attraction
Standards	B4.1	Description of measures to review employment practices to avoid child and forced labor	Talent Attraction
	B4.2	Description of steps taken to eliminate such practices when discovered	Talent Attraction
	General Disclosure	Policies on managing environmental and social risks of the supply chain	Responsible Supp Chain
B5: Supply Chain Management	B5.1	Number of suppliers by geographical region	Responsible Supp Chain
	B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, and how they are implemented and monitored	Responsible Supp Chain
	B5.3	Description of practices used to identify environmental and social risks along the supply chain, and how they are implemented and monitored	Responsible Supp Chain
	B5.4	Description of practices used to promote environmentally preferable products and services when selecting suppliers, and how they are implemented and monitored	Responsible Supp Chain

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#### < 94 Tuya Inc.

2024 Environmental, Social and Governance (ESG) Report

About Tuya

Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

# **Appendix II: ESG Performance**

### Environment

Subject Areas, A	spects, Gene	ral Disclosures and KPIs	Location (Section)
	General Disclosure	the policies; and compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress	Security and Compliance
	B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons	Products and Services
B6: Product Responsibility	B6.2	Number of products and service related complaints received and how they are dealt with	Service and Responsibility
	B6.3	Description of practices relating to observing and protecting intellectual property rights	Products and Services
	B6.4	Description of quality assurance process and recall procedures	Products and Services
	B6.5	Description of consumer data protection and privacy policies, and how they are implemented and monitored	Security and Compliance
B7: Anti- corruption	General Disclosure	compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering	Corporate Governance
	B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases	Corporate Governance
	B7.2	Description of preventive measures and whistle-blowing procedures, and how they are implemented and monitored	Corporate Governance
	B7.3	Description of anti-corruption training provided to directors and staff	Corporate Governance
B8: Community Investment	General Disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests	Empowering Communities
	B8.1	Focus areas of contribution	Empowering Communities
	B8.2	Resources contributed to the focus area	Empowering Communities

Indicators	Unit	2022	2023	2024
Gross waste water discharge	m <sup>3</sup>	4,263.2	2,833.0	2,972.8
Wastewater discharge per unit revenue	m <sup>3</sup> /USD million	20.5	12.3	10.0
Gross hazardous waste	Tons	0.1	0.1	0.1
Gross hazardous waste generated per unit revenue	Tons/USD million	0.0007	0.0003	0.0004
Gross non-hazardous waste discharge	Tons	48.9	50.4	43.6
Recyclable waste	Tons	6.6	0	0.4
Non-recyclable waste	Tons	42.3	50.4	43.2
Gross non-hazardous waste generated per unit revenue	Tons/USD million	0.2	0.2	0.1
Gross GHG emissions (Scope 1 + Scope 2)	Tons of carbon dioxide equivalent	1,634.5	1,367.6	1,450.2
Scope 1 GHG emissions	Tons of carbon dioxide equivalent	0	0	0
Scope 2 GHG emissions <sup>15</sup>	Tons of carbon dioxide equivalent	1,634.5	1,367.6	1,489.1
GHG emissions per unit revenue	Tons of carbon dioxide equivalent/ USD million	7.9	6.0	5.0
Purchased electricity	MWh	2,866.1	2,399.2	2,542.8
Energy consumption intensity	MWh/USD million	13.8	10.4	8.5
Water consumption <sup>16</sup>	m³	4,736.9	3,148.0	3,303.1
Water consumption per unit of operating revenue	m <sup>3</sup> /USD million	22.8	13.7	11.1

 $^{\rm 15}$  Calculated based on the national grid average emission factor of 0.5856 t CO\_2/MWh.

<sup>16</sup> Excluding water consumption in Shenzhen office.

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Chairman's Statement

About Tuya

Governance Enhancement for Endured Advancement

Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

## New Employees

Indicators
Total number of new employees
Number of new employees by gender
Male
Female
Number of new employees by age
< 30
≥ 30
Number of new employees by region
Mainland China, and Hong Kong, Macao and Taiwan regions
Overseas regions
Number of new employees by rank
Senior-level management
Middle-level management
Primary-level management
General employees
Number of new employees by ethnic group
Han
Ethnic minority
Unknown

# Diversity

Indicators	Unit	2022	2023	2024
Proportion of female employees in the primary-level management	%	/	24.0	24.4
Proportion of female employees in the middle-level management	%	/	40.4	40.0
Proportion of female employees in the senior-level management	%	/	20.0	15.8
Proportion of female employees in revenue-generating positions	%	/	27.9	33.2
Proportion of female employees in STEM-related positions	%	/	20.1	19.9

# Employment

Indicators	Unit	2022	2023	2024
Total number of employees	people	1,829	1,454	1,425
Number of employees by employment type				
Full-time employees	people	1,803	1,453	1,408
Contract employees	people	26	1	17
Number of full-time employees by gender				
Male	people	1,256	1,000	976
Female	people	547	453	432
Number of full-time employees by age				
< 30	people	617	339	276
≥ 30	people	1,186	1,110	1,128
Unknown	people	0	4	4
Number of full-time employees by region				
Mainland China, and Hong Kong, Macao and Taiwan regions	people	1,781	1,434	1,397
Overseas regions	people	22	19	11
Number of full-time employees by rank				
Senior-level management	people	20	20	19
Middle-level management	people	70	57	55
Primary-level management	people	221	179	156
General employees	people	1,492	1,197	1,178
Number of full-time employees by ethnic group				
Han	people	1,763	1,397	1,355
Ethnic minority	people	40	37	39
Unknown	people	0	19	14
Number of employees in management by ethnic group				
Han	people	/	/	223
Ethnic minority	people	/	/	6
Unknown	people	/	/	1

Unit	2022	2023	2024
people	90	134	196
people	63	88	149
people	27	46	47
people	/	54	114
people	/	80	82
people	/	126	195
people	/	8	1
people	/	0	0
people	/	3	3
people	/	5	2
people	/	126	191
people	/	121	183
people	/	6	11
people	/	7	2

Chairman's Statement About Tuya

Governance Enhancement for Endured Advancement

Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

# **Turnover Rate**

Indicators	Unit	2022	2023	2024
Voluntary turnover rate	%	18.1	12.5	10.4
Turnover by gender				
Male	%	18.8	13.3	10.0
Female	%	16.2	10.6	11.1
Turnover by region				
Mainland China	%	17.5	12.4	10.0
Hong Kong, Macao and Taiwan regions (China), and overseas regions	%	61.3	14.6	33.3
Turnover by age				
<30	%	24.8	17.7	18.6
30~50	%	13.0	10.3	8.1
>50	%	50.0	0	0
Turnover by rank				
Senior-level management	%	/	0	5.1
Middle-level management	%	/	1.6	10.7
Primary-level management	%	/	6.0	3.6
General employees	%	/	/	11.4

# Health and Safety

Indicators	Unit	2022	2023	2024
Number of work-related fatalities	people	0	0	0
Number of lost-days as a result of work injuries	days	237	65	27

# **Development and Training**

Indicators	Unit	2022	2023	2024
Proportion of employees receiving training	%	97.0	94.4	94.3
Average employee training cost	RMB	/	/	2,300.0
The percentage of employees t	ained by gender			
Male	%	97.0	94.3	94.4
Female	%	96.0	94.6	94.1
The percentage of employees t	ained by rank			
Management	%	92.0	93.1	90.0
General employees	%	97.0	94.6	98.1
The percentage of employees t	ained by age			
<30	%	/	/	96.8
30~50	%	/	/	93.8
⊳50	%	/	/	75.0
The percentage of employees to	ained by region			
Mainland China	%	/	/	94.9
Hong Kong, Macao and Taiwan regions (China)	%	/	/	0
Overseas regions	%	/	/	57.9
The percentage of employees to	ained by ethnic grou	р		
lan	%	/	/	95.0
Ethnic minority	%	/	/	92.3
Employee training participation	1			
The average training hours of employees	hours	0.8	7.1	8.9
The average training hours of e	mployees by gender			
Male	hours	0.8	6.6	9.0
emale	hours	0.8	8.0	8.7
The average training hours of e	mployees by rank			
Management	hours	2.8	6.6	6.1
General employees	hours	0.3	7.2	9.0
The average training hours of e	mployees by age			
<30	hours	/	/	14.8

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About this Report

Chairman's Statement About Tuya

Governance Enhancement for Endured Advancement Digital Intelligence Leadership and Quality Innovation

Empower with Intelligence and Co-Create the Industry

# Privacy & Data Security

Indicators	Unit	2022	2023	2024
ISO 27001 Certification coverage	%	/	/	100
Customer privacy data breach incidents	case	/	/	0
Total number of individuals affected by information security or cybersecurity incidents	people	/	/	0

# Supply Chain Management

Indicators	Unit	2022	2023	2024
Number of suppliers by region				
Mainland China, and Hong Kong, Macao and Taiwan regions	number	816	779	969
Overseas regions	number	131	123	132

### **Customer Services**

Indicators	Unit	2022	2023	2024
Number of product and service-related complaints received	case	136	39	10
Complaint resolution rate	%	100	100	100
Complaint response rate	%	100	100	100

# Philanthropy

Indicators	Unit	2022	2023	2024
Charitable donation	RMB 10,000	479	90	73

Indicators	Unit	2022	2023	2024
30~50	hours	/	/	7.4
>50	hours	/	/	5.6
The average training hours of	employees by regi	ons		
Mainland China	hours	/	/	8.9
Hong Kong, Macao and Taiwan regions (China)	hours	/	/	0
Overseas regions	hours	/	/	6.0
The average training hours of	employees by ethi	nic group		
Han	hours	/	/	8.9
Ethnic minority	hours	/	/	10.5

# **Employee Compensation**

Indicators	Unit	2022	2023	2024
Gender gap in average base salary (Male vs. Female)	%	/	/	29.7
Gender gap in median base salary (Male vs. Female)	%	/	/	27.6
Gender gap in average cash incentives (Male vs. Female)	%	/	/	35.8
Gender gap in median cash incentives (Male vs. Female)	%	/	/	46.2

# Others

Indicators	Unit	2022	2023	2024
Employee absenteeism rate	%	/	0.4	0.2
Percentage of employees covered by collective bargaining agreements	%	/	/	98.2
Total weeks of paid parental leave utilized by employees	week	/	/	415.3
Total weeks of paid family/caregiver leave utilized by employees	week	/	/	281.2
Legal cases related to corruption, bribery, money laundering, or anti-competitive practices	case	0	0	0
Discrimination or harassment incidents	case	0	0	0
Conflict of interest incidents	case	0	0	0



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