



报告 0000

Onewo Space-Tech Services Co., Ltd.

Carbon Neutrality and  
Emissions Reduction Pathway  
Report

Prepared by: Sichuan Carbon Investment Future Technology Co., Ltd.

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(This document is using AI translation.)

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## 1. Executive Summary

This report aims to conduct a comprehensive and in-depth analysis of Onewo's carbon emissions in 2024. By integrating Onewo's corporate and industry characteristics, and comprehensively considering the company's strategic direction alongside national dual-carbon goals, it proposes practical short-, medium-, and long-term carbon reduction targets for Onewo. The ultimate objective is to achieve carbon neutrality across the entire industrial chain. Furthermore, to ensure steady progress toward carbon neutrality over the coming decades, this report proposes corresponding measures to enhance data quality, management capabilities, and external influence. These efforts will enable Onewo to implement its carbon neutrality goals internally while leading the entire industry externally.

### 1.1. Carbon Emissions Analysis

In 2024, Onewo completed its first systematic inventory of greenhouse gas emissions across the entire value chain, with total annual emissions equivalent to 2,011,562 metric tons of carbon dioxide. Emissions characteristics across scopes are clearly defined: Scope 1 emissions totaled 50,790 tons of CO<sub>2</sub>e, accounting for 2.52% of total emissions. Mobile sources contributed approximately 91.63% (from business vehicles, construction vehicles, etc.), while stationary combustion emissions from natural gas equipment accounted for 8.37%. Scope 2 emissions reached 1,791,996 tons of CO<sub>2</sub> equivalent, accounting for 89.08% and representing the primary emission source. This primarily consists of purchased electricity (core Scope 2 emissions from public area lighting, elevators, air conditioning, etc.) and purchased heat (centralized winter heating in northern regions). The monthly purchased electricity emissions per unit project at Wanwu Liangxing reached 74.03 tCO<sub>2</sub> / (project-month), approximately double that of other similar projects; Scope 3 emissions totaled 168,777 metric tons of CO<sub>2</sub> equivalent, accounting for 8.39% of total emissions. Upstream emissions from purchased energy sources (including upstream electricity generation) constituted over 7.7% of total Scope 3 emissions. By business segment, Vanke Property, Wanjia Liangxing, Wanyu, and Regional

Offices accounted for 82.35%, 9.50%, 3.76%, and 2.70% of emissions respectively, representing the most significant business groups. Other segments collectively contributed 1.69%.

## 1.2. Carbon Neutrality Pathway

Based on the 2024 full value chain carbon emissions analysis, Onewo has established clear carbon neutrality objectives: The overarching goal is to "become a leader in urban space carbon neutrality, achieving a 16% reduction in carbon intensity at the operational level (Scopes 1 and 2) by 2030, attaining full value chain carbon neutrality by 2049, and driving a reduction of 100 million tons of carbon emissions within managed spaces." Intermediate milestones include: by 2035, achieving full fossil fuel independence (excluding special equipment), implementing comprehensive low-carbon refrigerant replacement, and establishing a low-carbon supply chain system; by 2049, achieving full value chain carbon neutrality and realizing the 100 million ton carbon reduction target within managed spaces.

Scope 1 emissions reduction focuses on three direct emission sources: First, full-scenario electrification substitution—achieving electrification upgrades for 30% of existing stationary sources (natural gas water heaters, gas stoves, etc.) nationwide by 2028; phasing out and replacing 50% of outdated mobile sources (gasoline commercial vehicles, diesel construction vehicles) with electric alternatives by 2030; and achieving comprehensive electrification by 2035, excluding emergency specialized equipment. Second, implementing full-cycle management of low-carbon refrigerants: completing nationwide inventory of refrigerants in managed projects and establishing electronic ledgers by 2030, and prioritizing the full replacement with environmentally friendly refrigerants with a GWP below 150 by 2035. Third, optimizing intelligent dispatch systems: integrating demand and optimizing routes through a cross-project vehicle dispatch center to reduce vehicle idling rates and fuel consumption during the electrification transition period.

Scope 2 emissions reduction focuses on indirect emissions from purchased energy: - Promoting comprehensive energy conservation across all scenarios by installing motion sensors for common area lighting and phased replacement of outdated high-energy-consumption

equipment (incandescent bulbs, fixed-speed pumps, etc.) with energy-efficient alternatives. Northern projects will progressively replace traditional purchased heating with geothermal heat pumps and air-source heat pumps. On the other hand, we are pursuing multi-channel clean electricity substitution. Distributed photovoltaic power stations are being installed in unused management spaces (building rooftops, parking lot canopies, etc.). Projects unable to build their own installations will supplement with purchased green electricity and green certificates. We plan for projects in first-tier cities to achieve 50% clean electricity coverage by 2035 and 100% clean electricity by 2049.

Core pathways for **Scope 3 emissions reduction** focus on identified categories: First, establishing a low-carbon supply chain system by adding low-carbon qualification requirements during supplier onboarding, setting carbon content limits for high-frequency procurement categories, and incorporating supplier emissions reduction performance into partnership evaluations; Second, establishing a travel management platform that prioritizes high-speed rail for short-distance trips and economy class flights for long-distance travel, integrates cross-departmental demands to optimize routes, recommends eco-friendly hotels, and automatically calculates travel carbon emissions for assessment. Additionally, it outlines preliminary reduction directions for waste management (to advance sorting and recycling), transportation and delivery (to encourage logistics partners to use new energy vehicles), and employee commuting (to establish green commuting incentives).

The management space **emissions reduction** pathway centers on "co-creation, co-construction, and co-reduction": First, build a carbon-reward ecosystem by integrating eight carbon-reduction activities—including second-hand goods trading, waste sorting, and green commuting—through the property service app. Calculate carbon savings based on national guidelines and design multi-dimensional incentives such as points redeemable for property fees and "Low-Carbon Family" recognition, covering 20 million residents in managed spaces; Second, implement scenario-based low-carbon advocacy through public area video displays and interactive exhibits. Offer offline workshops for seniors and personalized reports for young adults, while regularly hosting "Community Low-Carbon Days" to shift residents from passive

awareness to active emission reduction, supporting the goal of reducing 100 million tons of carbon across managed areas within 20 years.

Regarding pilot demonstrations, after implementing the aforementioned emission reduction measures, Onewo will offset any residual emissions using internationally and domestically certified carbon credits to achieve overall carbon neutrality. Simultaneously, guided by the "pilot first, advance later" principle, four pilot initiatives will be launched: First, the all-electric community pilot promotes full-scenario electrification in newly built or renovated communities, equipped with charging stations and distributed photovoltaic systems. Second, the zero-carbon park pilot employs photovoltaic building integration and solar equipment while prohibiting fuel-powered vehicles. Third, the biochar carbon asset development pilot converts landscape waste into biochar for soil improvement and calculates carbon sequestration. Fourth, CCER building energy efficiency projects, implementing retrofits or geothermal heating systems in older public buildings, with emissions reductions calculated per CCER methodology.

### **1.3. Enhancing Carbon Management Capabilities**

Building carbon management capabilities is fundamental to Onewo achieving its long-term carbon neutrality goals. This capability transforms carbon cost risks into carbon revenue opportunities, enhances market competitiveness, and provides institutional, technological, talent, and cultural safeguards for emissions reduction across the entire value chain. Onewo plans to implement this through four approaches:

**First, establishing a carbon management system.** This system focuses on cost reduction, efficiency gains, clear responsibilities, and standardized management. It introduces the PDCA (Plan-Do-Check-Act) management approach to drive technological upgrades and low-carbon transformation. By defining hierarchical responsibilities from top management (strategy formulation and team appointments) to subsidiary carbon management departments (implementing carbon performance targets and data collection), it creates a closed-loop management cycle of "Plan-Do-Check-Act." Ultimately, this approach will help build low-carbon supply chains, enhance product competitiveness, and transform carbon cost risks into

carbon revenue opportunities. It will also demonstrate corporate social responsibility and advance the achievement of global and China's carbon neutrality goals.

Second, establishing **a digital carbon management platform**. Develop a dual-core solution centered on "Carbon Accounting Methodology + Intelligent Carbon Management Platform (Carbon Beat)": The Carbon Accounting Methodology is China's first property industry guideline validated by academia and third-party verification. It defines Scope 1, 2, and 3 emission inventories for various operational scenarios, assigns responsibilities to five core roles (including project leads and site managers), and establishes a standardized process: "Data Collection - Factor Matching - Accounting Calculation - Result Verification" standardized workflow. Carbon Beat deeply integrates with energy management, procurement management, and other business processes and digital systems. It automatically captures data on water, electricity, gas, heating, procurement, and travel, leveraging its built-in accounting methodology to perform precise carbon calculations and validate anomalous data. Visual dashboards display emissions across projects and business segments, addressing the property industry's inefficient, manual carbon management practices.

**Third is talent carbon competency development.** Through the "Talent Carbon Competency Development Program," we establish a tripartite training system integrating "theory + practice + digitalization": The field study module organizes participants to visit benchmark sites like internal zero-carbon smart campuses and energy-efficient manufacturing bases, as well as external green development case studies from leading peers, translating theory into practical methods. The training module offers tiered courses: general employees focus on science popularization and carbon neutrality forums; frontline managers receive specialized courses in carbon accounting and carbon asset management (with certification as Carbon Management Professionals upon passing exams); mid-to-senior managers engage in advanced courses on carbon neutrality strategy and carbon finance. An internal carbon information platform regularly disseminates dual-carbon knowledge, policy interpretations, and course notifications to strengthen the talent pipeline.

The fourth approach involves **low-carbon cultural development**. Onewo regards low-carbon culture as a vital pillar of its long-term carbon neutrality strategy. Diverse activities engage employees—such as low-carbon themed initiatives and sharing work-life case studies—to cultivate a company-wide low-carbon mindset. This aims to transform carbon neutrality from a slogan into employees' voluntary actions, ensuring they adhere to carbon neutrality principles even in areas not covered by formal management systems or processes. Future plans include continuously enriching cultural initiatives to embed low-carbon practices as routine habits among employees. This will inject sustained momentum into the company's low-carbon transformation and help establish it as a benchmark for carbon-neutral enterprises in China.

#### 1.4. External Influence

External influence capacity building is a crucial pillar for Onewo to achieve its 2049 end-to-end carbon neutrality strategy. Onewo plans to develop external influence through the following three approaches:

The first approach involves establishing authoritative positioning to anchor industry low-carbon benchmarks. Onewo actively advances authoritative initiatives in the dual-carbon field: Second, it has joined CDP, striving to elevate its CDP rating through multidimensional efforts to surpass industry peers. This aligns its reduction actions with the global science-based carbon target system, solidifying its position as an industry low-carbon leader.

The second approach involves building professional value through content and standards. Onewo strengthens its professional authority in the dual-carbon field by internalizing value: First, it released the "China Property Management Industry Carbon Neutrality Strategy and Pathway Report," systematically summarizing the group's practical experience in carbon inventory, implementation of emission reduction measures, and low-carbon service operations, and distilling reusable methodologies tailored to the property management industry; Second, it spearheaded the development of industry-level standards like the "Property Management Industry Carbon Inventory Methodology," establishing norms for defining carbon emission boundaries, data collection criteria, and calculation methods—areas previously lacking in property management scenarios. Third, it regularly hosts low-carbon forums and energy-saving

seminars, inviting property management associations, low-carbon technology providers, and leaders from various business segments to exchange insights, fostering the accumulation of practical experience and cross-entity collaboration.

The third approach activates end-user emission reduction momentum through "inclusive + value-added services." Under its carbon-inclusive mechanism, Onewo launched a "Low-Carbon Behavior Points System" for employees, converting eco-friendly actions like paperless work, turning off lights, and public transit commuting into redeemable points. These points unlock dual-carbon training slots, cross-departmental project opportunities, and workplace perks. For community residents, a closed-loop system linking "low-carbon actions - points - benefits" is established. Residents earn carbon points through waste sorting, water conservation, and green commuting, redeemable for property fee discounts and community convenience services. For low-carbon supplementary services, Onewo provides full-cycle low-carbon management services to park enterprises, assisting in accessing specialized low-carbon renovation loans and energy-saving subsidies. For community residents, it offers household low-carbon consulting services, launches a household carbon footprint calculator, and collaborates with home furnishing brands to provide low-carbon living gift packs, activating end-user emission reduction momentum.

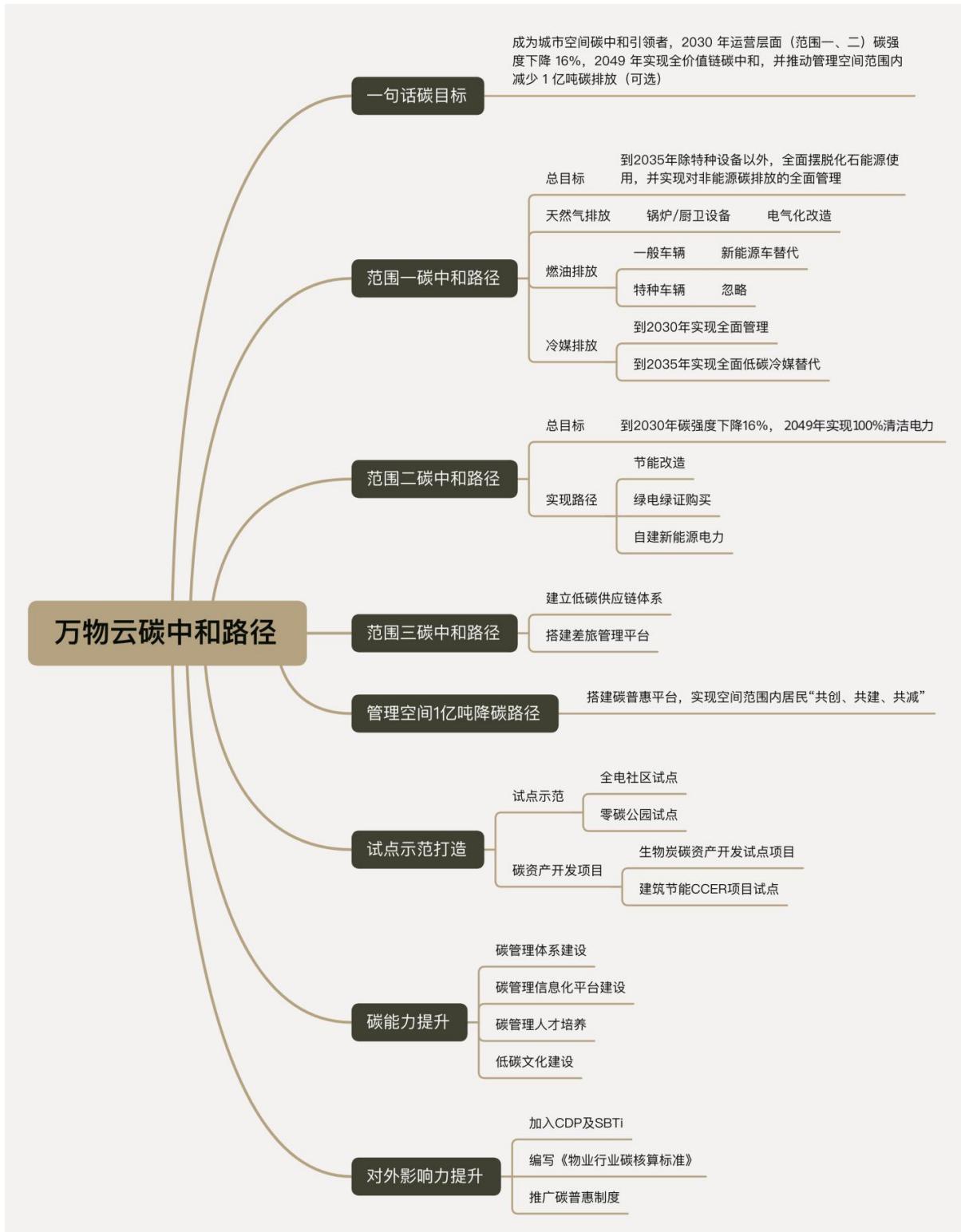


Figure 1 Onewo Carbon Neutrality Panorama (Communication Version)

## 2. Carbon Emissions Analysis

In response to China's "30 · 60" dual carbon strategy and the profound challenges climate change poses to global ecosystems, social development, and economic structures, Onewo has proactively embraced green and low-carbon development as its core philosophy, fulfilling its corporate citizenship responsibilities. The company has deeply explored emission reduction potential across all business segments. By implementing green operation plans, iterating low-carbon service models, and strengthening full-chain environmental controls, it continuously enhances climate governance effectiveness. Through concrete actions, it fulfills corporate social responsibility and builds a robust green foundation at the enterprise level to achieve the dual carbon goals.

## 2.1. Onewo's 2024 Greenhouse Gas Emissions

In 2025, Onewo completed its inaugural systematic inventory of full-value-chain greenhouse gas emissions for 2024, establishing a baseline for corporate carbon emissions. The inventory revealed total annual emissions equivalent to 2,011,562 metric tons of carbon dioxide, with distinct characteristics across emission scopes: Scope 1 emissions totaled 50,790 tons of CO<sub>2</sub>e, accounting for 2.52% of total emissions. These primarily stemmed from direct emissions at the company's own controlled emission sources. Scope 2 emissions reached 1,791,996 tons of CO<sub>2</sub>e, representing 89.08% of total emissions and constituting the largest emission source. These corresponded to indirect emissions generated from energy consumption such as purchased electricity and heat. Scope 3 emissions totaled 168,777 metric tons of CO<sub>2</sub>e, accounting for 8.39% of total emissions. This category encompasses various indirect emissions from upstream and downstream value chain activities not included in Scope 2. For detailed data and explanations, please refer to Appendix 3.

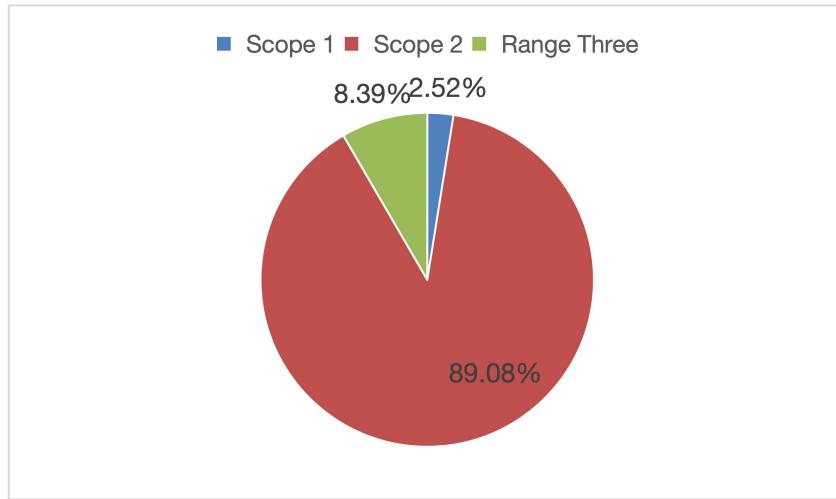


Figure2 Emission Distribution by Scope for Onewo

## 2.2. Distribution of Greenhouse Gas Emissions Across All Business Units/Sectors of Onewo

Among Onewo's business groups, Vanke Property Management, Vanke Lianghang, Vanke Yuyue, and Regional Representative Offices accounted for 82.35%, 9.50%, 3.76%, and 2.70% of emissions respectively, representing the business groups with the most significant impact on Onewo's greenhouse gas emissions. Other business groups/segments, including Vanke Cloud City, Bern Property, and Vanke Smart Technology, collectively account for only 1.69% of total emissions.

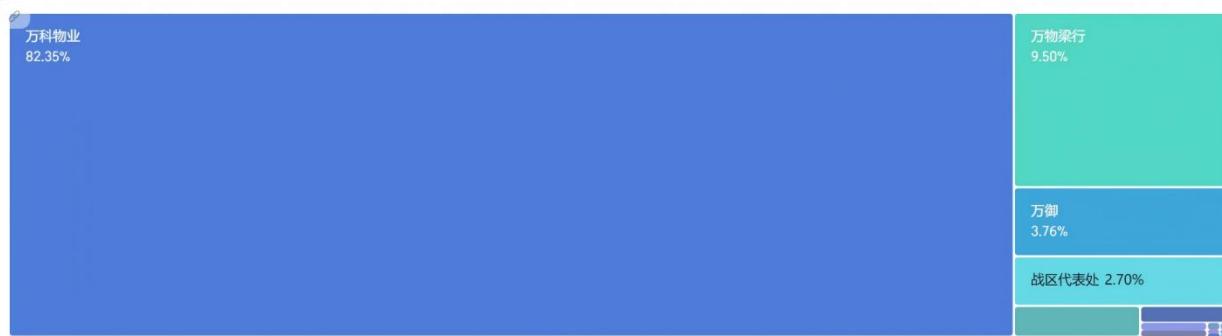


Figure3 Emission Share by Branch in Onewo

## 2.3. Breakdown of Emission Sources

Within Onewo's total greenhouse gas emissions, direct operational emissions and indirect emissions from purchased energy sources collectively accounted for over 90% (91.61%). Indirect emissions from purchased energy (purchased electricity and heat) constituted 89.09%,

representing the core operational emission source. Direct greenhouse gas emissions accounted for 2.52%, originating from direct sources such as natural gas boilers and commercial vehicles.

Scope 3 emissions constitute 8.39% of Onewo's total emissions. Among these, upstream emissions from products used and purchased energy (including upstream procurement of goods and purchased electricity) alone exceed 7.7% of total emissions. Therefore, strengthening greenhouse gas management across the supply chain and promoting the low-carbon transition of purchased electricity and other input energy sources are critical measures for achieving carbon neutrality across Onewo's entire value chain.

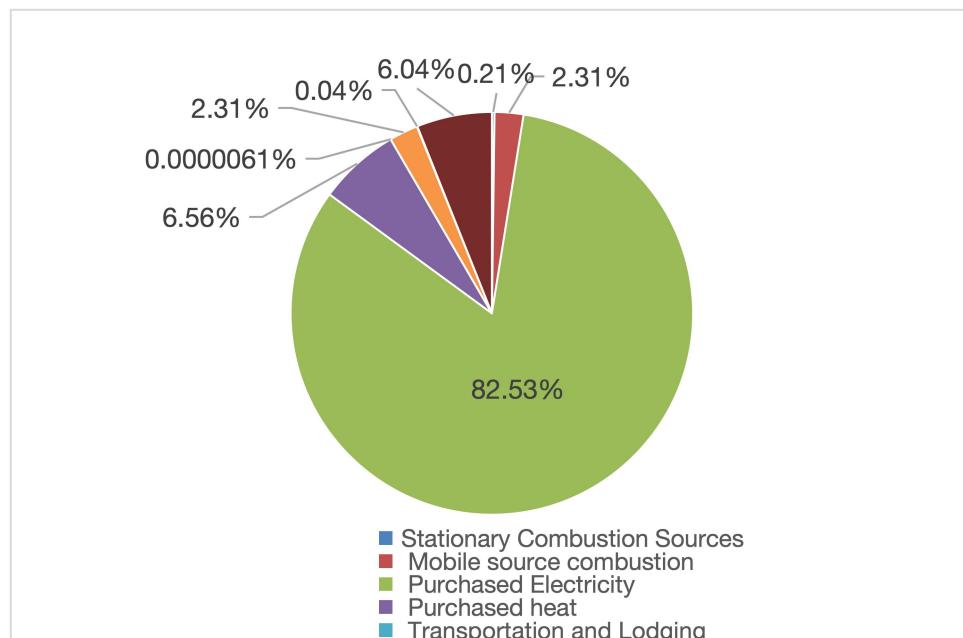


Figure4 : Onewo Emission Source Distribution

#### Scope 1:

Within the direct emissions (Scope 1) originating from greenhouse gas sources directly controlled by Onewo and its business groups, mobile source emissions are the absolute core, accounting for approximately 91.63%. These emissions primarily originate from business vehicles, construction vehicles, and specialized vehicles. Business vehicles are mainly used for daily reception and material transportation, while construction and specialized vehicles primarily serve municipal-related operations. The remaining 8.37% of Scope 1 emissions stem

from stationary combustion sources, primarily driven by the use of project-owned natural gas equipment, such as natural gas water heaters in employee dormitories and natural gas stoves in employee cafeterias.

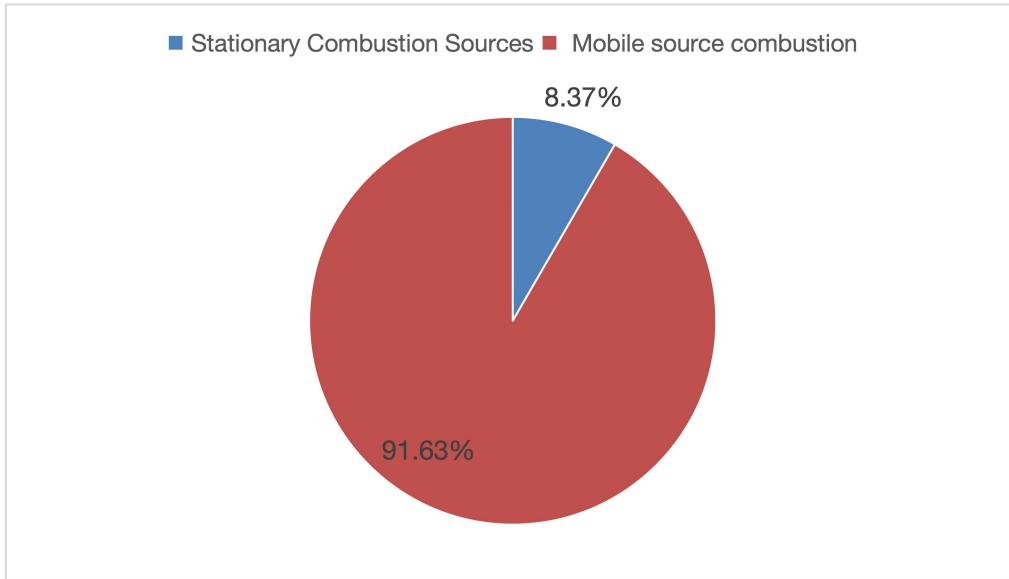


Figure5 : Scope 1 Fixed and Mobile Source Emission Proportion for Onewo

#### Scope 2:

Scope 2 (indirect emissions) constitutes the primary emissions for Onewo, accounting for 82.53% of total emissions. Scope 2 emissions primarily originate from purchased electricity, with a smaller portion from purchased heat, mainly used in public areas of the property. Based on on-site investigations, emissions from purchased electricity stem primarily from public area lighting, elevators, water pumps in certain regions, and public area air conditioning. Emissions from purchased heat result from centralized heating during winter in northern regions.

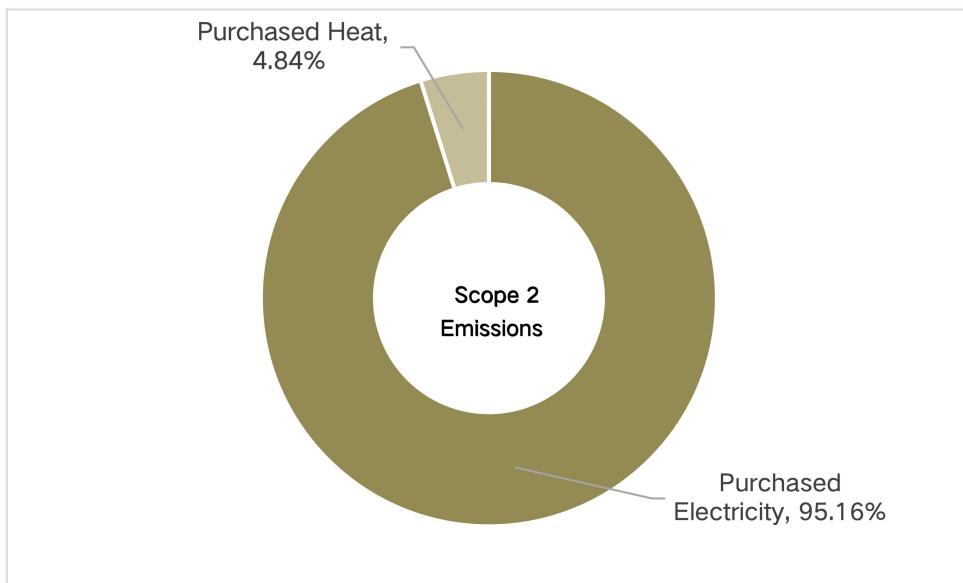


Figure 6: Proportion of Emissions Sources in Scope II of Onewo

Analysis of purchased electricity emissions by military branch type: Although Vanke Property Management has the highest number of projects, its monthly purchased electricity emissions per project are not the highest. They fall within a similar range to Vanke Yuyuan, Vanke Cloud City, and the Theater Command Representative Office, approximately 35-40 tCO<sub>2</sub> / (project-month). In contrast, Lianghang Property Management recorded exceptionally high emissions of 74.03 tCO<sub>2</sub> / (project-month), roughly double that of comparable projects, highlighting its substantial electricity consumption base. Conversely, Dantian Property Management, BG Headquarters, and Wanjing Property Management exhibited relatively lower emissions.

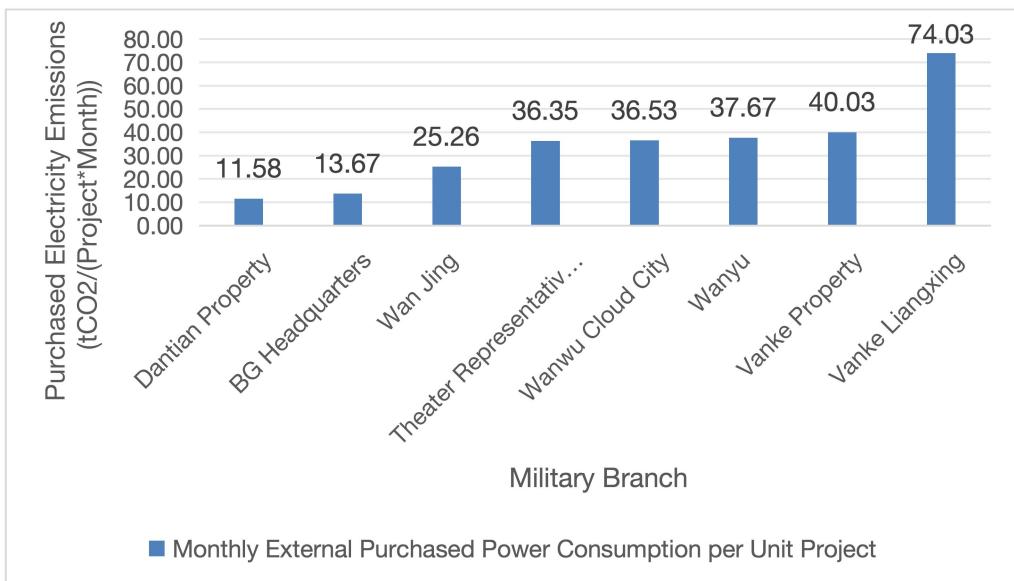


Figure7 Monthly Emissions from Purchased Electricity by Military Branch at Onewo

Currently, the granularity of Onewo's purchased electricity emissions data only covers the project level, making it impossible to accurately break down emissions by individual equipment such as air conditioning, common area lighting, water pumps, or elevators. Looking at annual emissions data, fixed emissions from common area lighting, water pumps, and elevators show no seasonal fluctuations, consistently accounting for about 7% of total annual emissions each month. These emissions cumulatively represent approximately 80% of the total, forming the primary component of purchased electricity emissions. Air conditioning emissions exhibit distinct seasonal concentration, operating only during summer (June-August) and winter (December) seasons. However, emissions peak significantly during these periods, accounting for 9.56%-9.77% of annual emissions monthly. Combined with cumulative seasonal effects, the total annual emissions are substantial and cannot be overlooked. This demonstrates that both air conditioning and fixed emissions hold considerable reduction potential. When precise breakdowns of individual equipment emissions are unavailable, the approach of targeting single equipment for reduction must be abandoned. Instead, a holistic perspective is needed to integrate both emission sources into a unified reduction system, enabling efficient management of purchased electricity emissions.

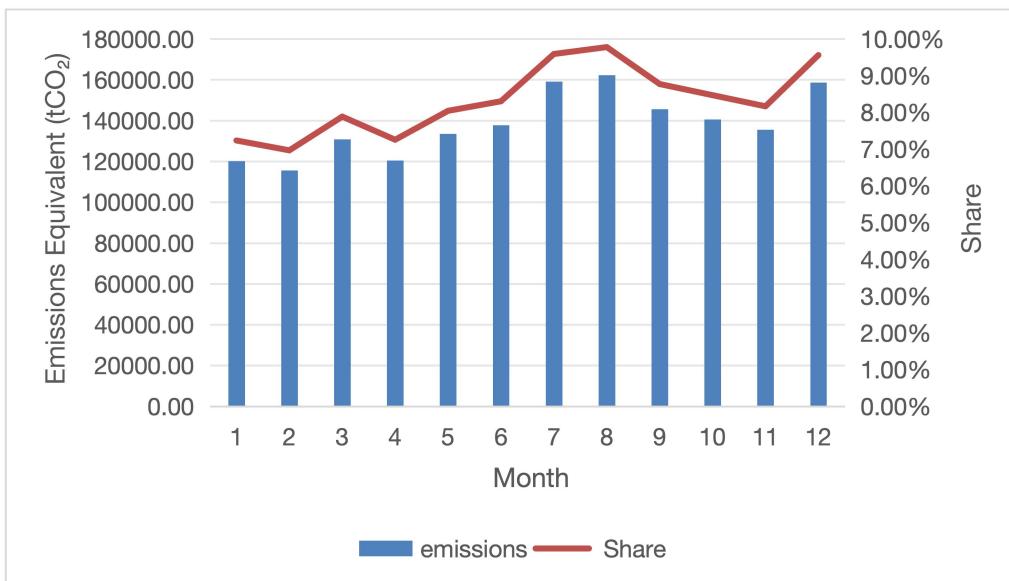


Figure8 : Monthly Breakdown and Proportion of Emissions from Purchased Electricity

### Scope 3:

Onewo's Scope 3 emissions primarily encompass three core areas: upstream emissions from purchased energy and fuels, emissions from procured goods and services, and employee travel emissions. Among these, upstream emissions from purchased energy and fuels account for the largest share at 72.01%. This is primarily due to the substantial scale of Onewo's purchased electricity and diesel, making their upstream lifecycle emissions the main contributor to Scope 3 emissions. Emissions from procured goods follow at 27.55%, stemming from embedded emissions across the entire production and transportation chain of various goods during procurement. Emissions from purchased services and employee business travel accounted for extremely low proportions—0.44% and 0.000073%, respectively—making their impact on overall Scope 3 emissions negligible. However, due to data availability constraints, 2024 business travel emissions only included rail travel. Once other travel emissions—particularly aviation—are incorporated, corresponding carbon emissions will increase significantly.

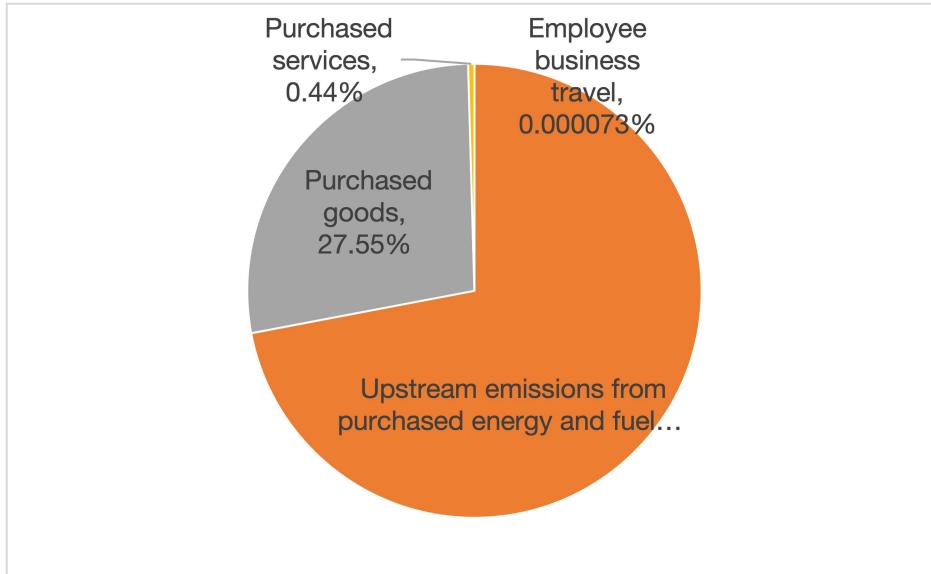


Figure 9: Proportion of Emissions Sources in Scope3 of Onewo

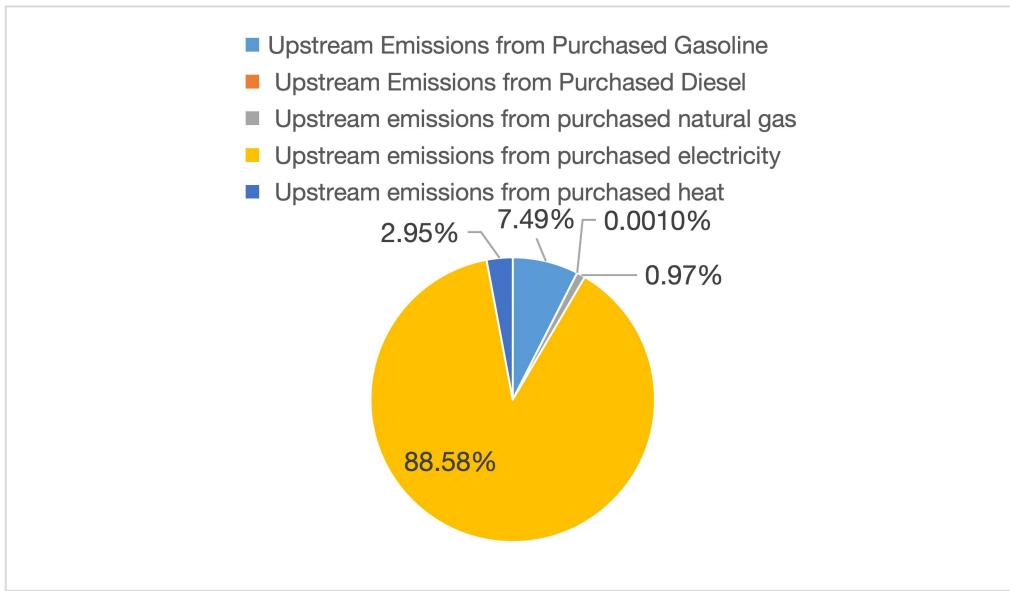


Figure10 : Proportion of Upstream Emissions from Purchased Energy Sources in Onewo's Scope 3 Emissions

## 2.4. Data Quality Management

In 2024, Onewo conducted its first comprehensive carbon emissions baseline survey across the entire group and value chain. During the carbon accounting process, we recognized areas for improvement in data accuracy and comprehensiveness. Due to the broad scope of data involved, varying degrees of data gaps existed during the initial collection phase. Consequently, we estimated certain data points using reasonable methodologies, while other

missing data were excluded from this baseline survey. These will be progressively incorporated into future audits as data quality improves. We understand that precise data and accurate quantification methods form the foundation for achieving carbon neutrality goals and are paramount to carbon emissions management. Consequently, we have established a data quality improvement plan to ensure the reliability and authenticity of every metric ton of carbon emissions and reductions. For detailed audit results, please refer to: "Onewo Greenhouse Gas Inventory Report."

#### 2.4.1. Greenhouse Gas Emission Source Identification

Through interviews with various departments of Onewo and on-site sampling surveys, we defined the operational boundary while identifying the company's greenhouse gas emission sources. All emission sources and the types of greenhouse gases generated by each source are listed in the table below:

Emission Source Category	Emission Source	Fuel (Raw Materials, Fillers, Emission Causes)	Greenhouse Gases Emitted					
			CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	SF <sub>6</sub>	HFCs	PFCs
Scope 1: Direct greenhouse gas emissions	Natural gas boilers, heating systems, cooking appliances, water heaters, etc.	Natural gas	○	○	○			
	Company-owned or operated vehicles	Gasoline	○	○	○			
	Company-owned or operated construction vehicles	Diesel	○	○	○			
	Standby diesel generator	Diesel	○	○	○			
	Carbon Dioxide Fire Extinguisher Leak	Carbon dioxide	○					

	Air conditioner refrigerant leak	Refrigerant						
<b>Scope 2: Indirect greenhouse gas emissions</b>	Electricity Consumption in Owned Offices	Electricity	<input type="radio"/>					
	Electricity for Common Areas in Operations	Electricity	<input type="radio"/>					
	Heating for Owned Office Space	Heat	<input type="radio"/>					
	Heating for Common Areas in Operational Buildings	Heat	<input type="radio"/>					
<b>Scope 3: Other indirect greenhouse gas emissions</b>	Passenger	Passenger Fuel	<input type="radio"/>					
	Hotel Accommodations	Accommodation	<input type="radio"/>					
	Water, paper, fire extinguishers, cleaning agents	Upstream Emissions of Purchased Goods	<input type="radio"/>					
	Cleaning, landscaping, security services	Upstream emissions from procured services	<input type="radio"/>					
	Upstream emissions from purchased gasoline	Oil extraction, petroleum refining, transportation	<input type="radio"/>					
	Upstream emissions	Diesel refining	<input type="radio"/>					

from purchased diesel	and transportation						
Upstream emissions from purchased electricity	Fuel extraction, transportation, power plant construction, electricity transmission	<input type="radio"/>					
Upstream emissions from purchased heat	Heat production (boiler plants), transmission	<input type="radio"/>					

Table 1: List of emission sources identified by Onewo

#### 2.4.2. Scope 1 Data Management Approach

Scope 1 originates from the GHG Protocol (Greenhouse Gas Protocol), referring to direct greenhouse gas emissions from sources owned or controlled by an enterprise. This includes categories such as stationary combustion, mobile combustion, process emissions, and fugitive emissions, forming one of the core foundational scenarios for corporate carbon accounting. Based on Onewo's operational practices, identified Scope 1 emission sources primarily encompass: natural gas boilers, heating facilities, cooking appliances, water heaters, company-owned or operated vehicles, company-owned or operated construction vehicles, backup diesel generators, carbon dioxide fire extinguisher leaks, and refrigerant leaks from air conditioning systems. Specific data management formats are as follows:

- 1) Natural Gas Consumption (Natural Gas Boilers, Heating Facilities, Cooking Appliances, Water Heaters)

Core natural gas consumption data for each project originates from gas bills, which clearly document monthly usage. This data is directly traceable to the gas supplier, ensuring the authenticity of foundational data. Project sites implement periodic aggregation management

for natural gas consumption data: Most projects compile monthly billing data and complete ledger entries monthly. A few projects, due to regional variations in gas billing cycles, aggregate data every two months. After aggregation, designated project personnel input the data into the Group's unified data system, achieving closed-loop management from "project-end recording to system-end storage."

## 2) Gasoline Consumption (Company-Owned or Operated Vehicles)

Gasoline procurement and consumption records follow a "personal advance payment - voucher reimbursement - system calculation" management model: Vehicle users pay for fuel upfront and subsequently upload fuel reimbursement vouchers to the financial reimbursement system. The system backend automatically calculates gasoline consumption based on the "amount" and "gasoline unit price" from the reimbursement vouchers.

## 3) Diesel Consumption (Company-Owned or Operated Construction Vehicles)

Diesel is centrally procured by each project company. Procurement data includes both weight-based and volume-based measurement results, with a fixed conversion ratio established based on diesel density. In actual data management, project procurement personnel first verify the consistency of weight and volume data on supplier-provided purchase documents to ensure accuracy. The calibrated diesel consumption data is then entered into the Group's data system by the project team.

## 4) Standby Diesel Generators

The core usage scenarios for backup diesel generators are emergency power supply (e.g., during grid outages) and monthly equipment inspections. Operational startup frequency is extremely low—generators are only briefly activated during monthly maintenance, with each run lasting approximately several minutes. Emergency starts occur sporadically depending on regional grid stability, resulting in minimal overall diesel consumption. Regarding current measurement practices, precise measurement conditions are lacking: generator diesel consumption must be calculated based on the difference in fuel tank level gauge readings. However, the level change after each activation is minimal (due to short runtime and low fuel consumption, the level fluctuates by only a few millimeters). Conventional level gauges lack the

precision to capture such subtle changes, making it impossible to directly read actual consumption. Onewo currently does not perform real-time measurement for this portion of consumption.

Data management relies solely on "indirect estimation": Monthly consumption is calculated based on standby generator diesel purchase records (single-purchase volume) and purchase interval months, using the formula "Monthly average consumption = Single purchase volume  $\div$  Purchase interval months." This figure is then roughly allocated to each usage scenario based on the fixed activation frequency observed during monthly inspections. However, this estimation method has significant limitations: procurement intervals may be influenced by inventory stocking strategies (e.g., purchasing multiple months' worth at once), failing to fully align with actual consumption patterns. Furthermore, it cannot distinguish between consumption from emergency use and inspection use, resulting in data that only reflects general consumption trends rather than accurately corresponding to actual emissions. Consequently, data quality remains extremely low.

## 5) Carbon Dioxide Fire Extinguisher Leakage

As a standard firefighting facility in Onewo's managed projects, carbon dioxide extinguisher leakage constitutes Scope 1 fugitive emissions. However, Onewo currently exhibits significant deficiencies in managing these extinguishers, lacking a systematic and refined management system: No unified inventory has been created for CO<sub>2</sub> fire extinguishers across all managed projects, making it impossible to determine the exact quantity, type, and charge level of extinguishers at each site. This lack of visibility makes it difficult to pinpoint leakage sources. To ensure fire safety compliance, it employs a crude "periodic batch replacement" approach—replacing fire extinguishers in certain areas at fixed intervals ranging from several months to a year. However, it fails to record the quantity, type, original charge level, and service life of extinguishers involved in these replacements. Consequently, it cannot use replacement records to infer the operational status and leakage risk of extinguishers not replaced. This management practice directly results in a lack of foundational data for calculating carbon dioxide fire extinguisher leakage emissions. It prevents the accurate

determination of reasonable leakage rates and fails to cover all actual leakage scenarios across the group. Ultimately, reliance on industry default values for estimation yields extremely low-quality data, undermining the ability to support precise emission reduction decisions.

#### 6) Air Conditioning Refrigerant Leakage

Air conditioning refrigerant leakage constitutes Scope 1 fugitive emissions and represents a potential emission source within the air conditioning systems of Onewo's managed projects. However, the Group's current management of air conditioning refrigerants exhibits significant shortcomings, directly resulting in inadequate data support for leakage emission calculations: On one hand, no unified refrigerant management ledger has been established. The specific types of refrigerants used across the Group's managed projects' air conditioning systems have not been systematically documented, making it impossible to define fundamental calculation parameters. Second, refrigerant replenishment relies entirely on routine maintenance procedures. When refrigeration efficiency declines, maintenance contractors add refrigerant without recording critical details such as the quantity added, reason for replenishment (e.g., leak repair or normal consumption), or the specific air conditioning unit ID. This prevents the estimation of leakage scale based on replenishment volumes. This management practice prevents accurate calculation of refrigerant leakage emissions. Estimates can only be made using industry-average leakage rates, resulting in extremely low data quality that fails to reflect actual emissions.

#### 2.4.3. Scope 2 Data Management Approach

Scope 2 emissions, as defined by the GHG Protocol, refer to indirect greenhouse gas emissions generated during the production of purchased energy sources such as electricity, heat, and steam. The core principle is that the emission sources belong to the energy suppliers, with enterprises indirectly associated with emissions through energy consumption. Based on the operational realities of Onewo, Scope 2 specifically covers two major categories: purchased electricity (including electricity for project offices and public area operations) and purchased heat (for centralized winter heating in northern projects). Data management for both energy types relies primarily on payment receipts as core evidence, with the specific formats as follows:

## 1) Purchased Electricity Data Management

Activity-level data for purchased electricity primarily originates from electricity payment receipts obtained during project operations. These receipts clearly document purchased electricity volumes for each billing cycle, ensuring data completeness and direct traceability to the power supplier, thereby guaranteeing the authenticity of foundational data. Regarding data collection and upload processes, projects regularly input electricity consumption data from payment receipts into the energy management system each month, ensuring data timeliness and cross-project consistency.

Differentiated management characteristics emerge at the data accounting level: Most projects feature independent meters for common-area electricity, capable of recording specific usage items like lighting, elevators, air conditioning, and water pumps. However, electricity payment invoices only aggregate monthly total common-area consumption without itemized breakdowns. Therefore, the data ultimately uploaded to the energy management system for these projects is the monthly total common area consumption, which cannot be broken down into specific usage categories. For older projects constructed many years ago, insufficient independent meters in common areas prevent direct measurement of common area electricity consumption. Actual common area consumption must be calculated inversely by subtracting "resident electricity payments" from the "project's total electricity consumption" to ensure the integrity of the accounting logic.

## 2) Purchased Heat Data Management

Purchased heat data management primarily applies to northern projects requiring centralized heating, with heating season payment invoices as the core data source. These invoices explicitly record key information such as heating costs and unit prices. Projects can only calculate actual heated area using "Heating Cost  $\div$  Unit Price," as precise heat consumption data (e.g., gigajoules) is currently unavailable. Due to limitations in the heating supplier's billing model and metering conditions, the actual heat consumption per unit heating area is difficult to calculate precisely. Differences in building insulation effectiveness and heating temperature requirements across projects mean that even with identical heating areas,

actual heat consumption may vary significantly. Furthermore, payment invoices do not provide breakdowns of heat consumption per unit area, making heating area the only available proxy metric for heat consumption at present. Regarding data upload and storage, projects upload heating area and billing statement information to the energy management system on a monthly or bimonthly basis. The system archives this data to provide foundational support for subsequent carbon emissions accounting. However, the data granularity is relatively coarse, making it difficult to support detailed emissions reduction analysis.

#### **2.4.4. Scope 3 Data Management Framework**

The concept of Scope 3 originates from the Greenhouse Gas Protocol (GHG Protocol), a corporate greenhouse gas emissions accounting standard developed since 1998 by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). The definition of Scope 3's accounting boundaries and standards is derived from the Corporate Value Chain Accounting and Reporting Standard, encompassing 15 emission categories. Under ISO 14064:2018, value chain emissions beyond Scope 1 and Scope 2 are categorized into four groups: indirect emissions from transportation, indirect emissions from organizational product use, indirect emissions from use of organizational (sold) products, and other indirect emissions. The first three categories correspond to the 15 Scope 3 emission categories in the "Enterprise Value Chain Accounting and Reporting Standard," while "Other indirect emissions" covers the remaining items.

As Onewo Space Technology Services Co., Ltd. does not engage in product manufacturing, Category 5: Indirect emissions from the use of the organization's (sold) products is not applicable to this inventory and is therefore excluded. Categories such as waste disposal and emissions from upstream transportation and distribution were not included due to data acquisition challenges. Category 6: Other indirect emissions is not relevant. The following Scope 3 items were selected for accounting in this inventory:

- 1) Upstream emissions from purchased energy and fuels

Upstream emissions from purchased fuels, electricity, and heat refer to emissions generated during the consumption of fuels, electricity, and heat by the production organization,

including emissions from fuel extraction, processing, transportation, and other stages. These emissions do not originate from sources directly owned or controlled by the organization but occur upstream in the organization's value chain.

## 2) Purchased goods and services

Indirect emissions from purchased goods and services refer to greenhouse gas emissions generated during the production, transportation, and delivery of raw materials, goods, or services procured by the organization upstream in its value chain. This inventory covers the procurement of materials such as water, paper, fire extinguishers, and cleaning agents. Emissions from fire extinguishers are calculated using a pro-rata allocation method, reasonably distributing procurement costs between the extinguishing agent and the steel cylinder to meet accounting requirements. Additionally, procured services include cleaning, landscaping, and security services. All contract terms and service details are entered into the platform according to specifications to ensure data traceability and auditability.

## 3) Employee Business Travel

Employee travel emissions refer to greenhouse gas emissions generated by an organization's business travel and accommodation activities. The primary factors influencing transportation emissions are mode of transport and distance traveled, while the main factor for accommodation emissions is the number of overnight stays. In 2024, Onewo established a dedicated travel platform capable of recording detailed data for each trip, including mode of transport, origin and destination information, and number of overnight stays. Through collaboration with Baidu Maps, the platform calculates relatively accurate mileage for most travel itineraries based on mode of transport, origin, and destination. For rare special itineraries where Baidu Maps calculation is unavailable, the platform employs an algorithm using origin and destination coordinates to compute the straight-line distance between locations. Due to data unavailability and missing 2024 travel data, this inventory only includes rail transport emissions. Emissions from air and rail transportation will be progressively incorporated into the inventory once 2025 data becomes available.

### 2.4.5. Data Quality Enhancement

Addressing core data gaps based on the current state of Scope 1 and Scope 2 data management within Onewo and the requirements for implementing full-value-chain carbon neutrality goals, the following targeted improvement plans have been formulated to strengthen the data foundation and support precise emission reduction decisions:

- 1) Mobile Emission Sources: Establish comprehensive vehicle management ledgers to strengthen consumption-scenario linkage

To address fragmented data recording and insufficient correlation for mobile emission sources, a unified, comprehensive electronic vehicle ledger will be established across the group, enabling granular "one vehicle, one file" management. The ledger will systematically compile core information for all owned or operated vehicles, including fuel consumption, mileage, usage frequency, vehicle age, model, fuel type, etc. It will synchronously link fuel payment receipts, reimbursement documents, and onboard GPS data to generate monthly vehicle gasoline consumption records. By establishing a correlation between "fuel consumption, mileage, and usage scenarios," every fuel expenditure will be traceable to specific driving tasks. This enhances the accuracy of mobile source carbon emissions accounting and provides data support for subsequent emission reduction pathways, such as vehicle energy-saving retrofits and new energy alternatives.

- 2) Standby Diesel Generators: Precision Measurement + Record-Based Traceability to Enhance Scenario-Based Consumption Accounting

To address the challenges of inaccurate measurement and undocumented usage scenarios for backup diesel generators, initial efforts focus on strengthening data quality requirements. Designated personnel regularly record and upload diesel consumption data. Future plans include phased installation of high-precision metering equipment for high-frequency emergency start-up projects to enable real-time consumption data collection. Simultaneously, a comprehensive operational logging mechanism will be established. Each generator start-up at project sites must be documented in the Group's unified system with key details including "reason for start-up, duration of operation, load ratio, and operator," forming a complete operational log. By integrating metering device data with operational logging information, this

approach replaces traditional rough estimation methods. It provides scenario-based evidence for consumption accounting, precisely differentiates consumption variations between inspection and emergency scenarios, and enhances data accuracy.

3) Carbon Dioxide Fire Extinguishers: Establishing a Unified Electronic Ledger for Standardized Full-Process Record Management

To address management shortcomings such as unclear inventory and lack of replacement/maintenance records for carbon dioxide fire extinguishers, a group-wide fire extinguisher census will be conducted to establish a unified electronic ledger. The ledger will clearly document core information for each extinguisher, including equipment ID, installation location, type, charge capacity, factory date, initial installation date, and expiration date, enabling "one item, one code" full lifecycle traceability. Simultaneously, standardized procedures for replacement and maintenance records will be implemented. During replacements, detailed documentation must include "quantity replaced, original equipment charge capacity, service life, and presence of leakage traces." Post-maintenance updates will synchronously record seal status, pressure readings, and maintenance provider data, ensuring full operational traceability and providing foundational data support for precise leakage emission calculations.

4) Air Conditioning Refrigerant Leakage: Comprehensive Surveys and Documentation + Standardized Maintenance to Facilitate Low-Carbon Refrigerant Replacement

To address issues of unknown refrigerant types and missing maintenance data, the Group will conduct a comprehensive survey of refrigerants across all air conditioning equipment. This will clarify key parameters for each unit, including refrigerant type, charge quantity, refill date, and GWP value, establishing a full lifecycle ledger for refrigerants. Simultaneously, refrigerant data recording will become a mandatory requirement in maintenance contracts to standardize maintenance data management. Maintenance providers must meticulously document each refrigerant charge amount, reason for charging (leak/normal loss), leak detection results, and repair details. Failure to record as required will result in non-payment. Through ledger development and maintenance standardization, this

approach provides precise data for refrigerant leakage emission calculations while laying the groundwork for future high-GWP refrigerant replacement and low-carbon refrigerant promotion, supporting the implementation of fugitive emission reduction targets.

## 5) Purchased Electricity and Heat: Enhanced Granularity + Precise Measurement for Fine-Grained Energy Conservation

Addressing coarse granularity in purchased electricity data and metering substitution for purchased heat, improvements will advance in two areas: For purchased electricity, data granularity will be upgraded by requiring project sites to disaggregate system-uploaded data from "monthly total consumption" to specific electrical equipment. This will be achieved through sub-meter data or equipment electricity usage ledgers. For older projects lacking sub-metering, metering equipment will be installed in phases. Where retrofitting is not feasible, consumption breakdowns will be estimated using "equipment power  $\times$  operating hours" to identify high-energy-consumption equipment and formulate energy-saving pathways. For purchased thermal energy, efforts will focus on directly obtaining heat supply data.

Negotiations with suppliers will aim to include "heat supply volume" as a core field on billing statements. Simultaneously, heat metering devices will be installed in phases: new projects will be fully equipped, while existing projects will be upgraded progressively based on feasibility. This transition from "area-based metering" to "precise consumption accounting" will support thermal consumption optimization and emissions reduction analysis.

Emission Sources	Fuel (Raw Materials, Fillers)	Current Data Management Approach	Data Quality Improvement Management Approach
<b>Natural gas boilers, heating systems, cooking appliances, water heaters, etc.</b>	Natural Gas	Natural gas consumption data for each project can be obtained from payment invoices, which clearly document monthly usage. Projects aggregate this data, and designated personnel upload consumption figures to the system.	For projects involving natural gas usage, monthly consumption figures are uploaded to the carbon management platform by the responsible personnel.

<b>Diesel Generators</b>	Diesel	Unmetered diesel consumption.	Initially, designated personnel regularly record and upload diesel consumption data to the carbon management platform. Subsequently, high-precision metering equipment will be installed in phases for high-frequency emergency start-up projects. Establish a full-process operation filing mechanism to record "start-up reason, operating duration, load ratio, and operator," combining metering data to enhance calculation accuracy.
<b>Air conditioning refrigerant</b>	Refrigerant	Unmeasured refrigerant leakage.	Conduct a comprehensive survey of refrigerants across all project air conditioning equipment to identify refrigerant type, charge quantity, refill date, and GWP value, establishing a full lifecycle ledger. Incorporate refrigerant data recording into maintenance contracts, requiring maintenance providers to document refill quantities, reasons for refills, and leak detection results. Failure to record as required will result in non-settlement, ensuring refill information is uploaded to the carbon management platform by maintenance personnel.
<b>Carbon Dioxide Fire Extinguishers</b>	Carbon dioxide	Unmeasured carbon dioxide leakage volume.	Conduct a group-wide fire extinguisher survey to estimate equipment serial numbers, installation locations, charge item, one code" traceability. Standardize replacement quantities, original charge levels, leakage traces, etc. Update after maintenance.
<b>Company-owned or operated vehicles</b>	Gasoline	Employees pay upfront for fuel purchases and upload reimbursement receipts. These transactions are recorded in the system.	Establish a unified, comprehensive electronic vehicle ledger across the group, tracking fuel consumption, mileage, vehicle models, etc., linked to fuel payment receipts and onboard GPS data. Establish a "fuel consumption-mileage-usage scenario" correlation to generate monthly gasoline/diesel consumption ledgers and upload them to the carbon management platform.
<b>Company-owned or operated construction vehicles</b>	Diesel	Project companies are responsible for purchasing diesel, ensuring accurate consumption data is recorded in the system.	To refine data granularity, monthly total consumption must be disaggregated to specific electrical equipment. This requires uploading detailed breakdowns based on sub-meter data or equipment usage logs. For older projects lacking sub-meters, metering equipment will be installed in phases. Where retrofitting is not feasible, consumption breakdowns will be estimated using the
<b>Electricity consumption from outlets for lighting, air conditioning, computers, etc.</b>	Office Electricity Usage	Data is sourced from electricity bills obtained during project operations. The project regularly uploads electricity consumption data from these bills to the energy management system each month.	To refine data granularity, monthly total consumption must be disaggregated to specific electrical equipment. This requires uploading detailed breakdowns based on sub-meter data or equipment usage logs. For older projects lacking sub-meters, metering equipment will be installed in phases. Where retrofitting is not feasible, consumption breakdowns will be estimated using the

<b>Common area lighting, elevators, water supply/drainage, electrical distribution rooms</b>	Common Area Electricity	<p>Monthly public area electricity consumption is calculated via billing statements. While consumption granularity can be broken down by usage category (e.g., lighting, elevators), the data uploaded to the system remains aggregated monthly totals without breakdown. For relatively older buildings with fewer meters, direct measurement of public area usage may be impractical. In such cases, project electricity consumption is derived by subtracting the electricity paid on behalf of residents from the project's total consumption.</p>
<b>Office Heating System</b>	Office Heating	<p>Projects pay heating fees per heating season. Payment slips include heating charges and unit prices, enabling accurate calculation of heated areas. Data is uploaded monthly/bimonthly to the system for archival storage.</p>
<b>Public Area Heating System</b>	Public Area Heating	<p>Negotiate with heat suppliers to include "heat consumption" as a core field on billing statements. Install heat metering devices in phases: fully equip new projects, and progressively retrofit existing projects based on renovation feasibility. Transition from "area-based estimation" to "precise consumption accounting," while uploading relevant data to the carbon management platform.</p>
<b>Aviation, Rail, Road, and Marine Fuel</b>	Passenger Transport	<p>Travel modes, origins, and destinations for business trips will be uploaded to the system. For most trips, the system will calculate relatively accurate mileage based on travel mode, origin, and destination information. For a small number of special trips where calculation is impossible, the platform will use an algorithm based on origin and destination coordinates to calculate the straight-line distance between the two locations, supplementing mileage data completeness.</p>
<b>Hotel Accommodations</b>	Accommodation	<p>The Oneowo-based travel platform requires hotel booking orders to be uploaded for each business trip, with orders providing details such as the number of nights stayed.</p>

<b>Water, paper, fire extinguishers, cleaning agents, etc.</b>	Procurement Items <p>All procurement projects strictly adhere to predetermined schedules, with relevant information regularly uploaded to the system. Uploaded data includes specific quantities of purchased goods, precise amounts, and complete procurement service contracts. This inventory covers the procurement of supplies such as water, paper, fire extinguishers, and cleaning agents. For fire extinguishers, emissions calculations employ an amount-based allocation method, reasonably distributing procurement costs between the extinguishing agent and the steel cylinder to meet accounting requirements.</p>	<p>Relevant procurement information is integrated into the carbon management platform.</p>
<b>Cleaning, Landscaping, and Security Services</b>	Procurement Services <p>Procurement services encompass cleaning, landscaping, and security services. All contract terms and service details are entered into the platform according to specifications, ensuring data traceability and auditability.</p>	<p>Relevant procurement information integrated into the carbon management platform</p>

Table 2: Current Data Quality and Data Quality Improvement Management Forms on Onewo

### 3. Carbon Neutrality Pathway

As a responsible spatial technology service provider, Onewo focuses on addressing climate change by building a low-carbon ecosystem centered on spatial service scenarios. Leveraging smart technology capabilities, we implement energy-saving and carbon-reduction solutions in scenarios such as property services and urban space operations (e.g., smart building energy consumption management, community low-carbon facility upgrades). Simultaneously, we collaborate with upstream partners to build a low-carbon service supply chain, actively driving comprehensive green transformation across the entire spatial services industry chain. We integrate carbon reduction principles into every stage of spatial lifecycle management, contributing to climate change mitigation and continuously advancing the achievement of carbon peak and carbon neutrality goals through our specialized expertise in spatial services.

#### 3.1. Overall Approach

Onewo confronts the opportunities and challenges presented by the dual carbon goals. Through comprehensive greenhouse gas emissions auditing across the entire spatial services value chain, we clarify emissions profiles for each segment and process—including property operations, urban spatial services, and supply chain collaboration. We innovate technical solutions and low-carbon energy utilization methods for the service delivery, operational management, and supply chain segments. By exploring diversified pathways for carbon neutrality and carbon peaking tailored to the spatial services sector, we actively contribute to the industry's successful achievement of carbon neutrality goals.

#### 3.2. Overall Objective

We have established overarching carbon neutrality objectives, with specific milestones defined for 2030 and 2049. By planning meticulously before acting, we are committed to becoming a benchmark for sustainable development models within China's property management industry.

##### 1. Our overarching objectives are as follows:

- Support the national dual-carbon strategy and become a leader in urban spatial carbon neutrality

- Publish a carbon reduction roadmap by 2026
- Achieve a 16% reduction in carbon intensity at the operational level (Scopes 1 and 2) by 2030
- Achieve full value chain carbon neutrality by 2049

## 2. **Phase objectives are as follows:**

- Starting in 2026, under the unified guidance of the Board of Directors, the company's management will conduct annual reviews and assessments of carbon reduction targets and implementation pathways.
- Starting in 2026, the company will fully implement a digital management system for carbon emissions within its operational scope, enabling real-time data updates, annual third-party verification, and blockchain-based evidence storage. All newly purchased vehicles will be new energy models.
- By 2035, performance evaluations for all management personnel will be fully aligned with climate change mitigation targets. Concurrently, the company's directly managed fleet (excluding specialized vehicles) will achieve 100% electrification across global operations.
- By 2049, the company will drive a reduction of 100 million tons of carbon emissions within its managed spaces and ensure that 100% of its operational electricity supply comes from renewable sources.

## 3. **Basis for Setting Overall Targets**

- ① 16% reduction in operational carbon intensity (Scopes 1 and 2) by 2030:

The 16% reduction target for operational carbon intensity by 2030 comprehensively considers Onewo's strategic direction, peer benchmarking, national power transition, and market-based green electricity trading.

First, Onewo has positioned itself as a leading enterprise in energy-saving applications within the real estate sector. This signifies that energy-efficient retrofits of buildings and facilities within its managed spaces will be a key focus area, laying the foundation for achieving the 16% carbon intensity reduction target.

Second, benchmarking against peers reveals that the highest carbon reduction target among comparable mainland Chinese enterprises is 16%. To demonstrate leadership in carbon reduction, Onewo must set a target exceeding this benchmark.

Third, China's national power transition will reduce grid emission factors by approximately 2% – 3% annually. Even without additional energy-saving measures, carbon intensity will decrease by around 10% by 2030. Coupled with the growing marketization of green power trading—where green electricity is sometimes cheaper than grid power—Onewo can further lower its carbon intensity by purchasing green power without increasing corporate costs.

## ② Achieving Full Value Chain Carbon Neutrality by 2049

Onewo's 2049 full value chain carbon neutrality goal is underpinned by actual emission characteristics and industry development logic: 2024 carbon inventory data clearly indicates that electricity's full lifecycle emissions account for 87.88% of total emissions, representing the company's core emission source. This data anchors the critical direction for emissions reduction. Concurrently, aligning with China's current energy development trajectory, the share of non-fossil energy generation is steadily increasing. Industry consensus anticipates the power system will achieve near-zero emissions by 2045, naturally reducing carbon emissions associated with purchased electricity and providing external environmental support for carbon neutrality. Furthermore, Onewo can proactively address residual emissions through concrete actions such as energy conservation, building distributed renewable energy facilities, and purchasing green electricity. This multi-path approach transforms full-value-chain carbon neutrality from a directional goal into an achievable objective.

## ③ Through the Carbon Benefits Ecosystem, reduce 100 million tons of carbon emissions within the scope of management.

The feasibility of reducing 100 million tons of carbon emissions within managed spaces stems from the property management industry's inherent capacity for strong user interaction,

providing natural conditions for carbon-inclusive initiatives: The residential communities, commercial buildings, and campuses currently managed by Onewo cover at least 20 million citizens. Calculated over a 20-year cycle, each person needs to reduce only 0.25 tons of carbon annually to achieve the 100 million ton target. This reduction intensity is less than 3% of China's average annual per capita carbon emissions, placing it within the low-threshold range achievable through ordinary daily behaviors. Furthermore, the reduction scenarios focus on actionable daily behaviors within managed spaces—such as secondhand goods trading, waste sorting, and green commuting. These activities require minimal additional cost and can be facilitated through Onewo's service guidance. Once sufficiently scaled, they can progressively accumulate to achieve the 100 million ton reduction target, providing practical feasibility for the goal.

### 3.3. Comparison of Onewo's Carbon Goals with Industry Peers

Enterprise	Short-Term Goals	Long-Term Goals	One-Sentence Goal
Onewo	Reduce operational carbon intensity by 16% by 2030	Achieve full value chain carbon neutrality by 2045	Become a leader in urban space carbon neutrality, achieving a 16% reduction in operational carbon intensity by 2030, full value chain carbon neutrality by 2045, and driving a reduction of 100 million tons of carbon emissions within managed spaces.
China Overseas Property	By 2030, reduce carbon emissions intensity per unit area in Scopes 1 and 2 by 15% compared to the base year	Achieve carbon neutrality within operational boundaries by 2060	Using 2022 as the base year, by 2030, fully implement low-carbon operational technologies to reduce Scope 1 and Scope 2 carbon emissions intensity per unit area by 15% compared to the base year. By 2060, fully implement renewable energy utilization to achieve carbon neutrality within operational boundaries.

China Resources MixC	By 2030, carbon intensity per unit of managed area will decrease by 16% compared to the base year.	Carbon Neutrality by 2050	Establish the overarching "dual carbon" management goal of achieving peak carbon emissions by 2030 and carbon neutrality by 2050
Yuexiu Services	By 2030, emissions from Scope 1 and 2 of residential projects will reach peak levels	Carbon neutrality by 2060	Strive to achieve carbon peak by 2030 or earlier and carbon neutrality by 2060 or earlier; achieve carbon peak for Scope 1 and 2 emissions in residential projects by 2030

Table 3: Comparison of Carbon Targets Between Onewo and Other Domestic Property Management Companies

### 3.4. Operational Carbon Reduction Pathways

#### 3.4.1. Core Pathways for Scope 1 Emissions Reduction at Onewo

Scope 1 emissions are greenhouse gas emissions directly controlled by the enterprise, covering carbon emissions from sources owned or controlled by the company. For Onewo, its Scope 1 emissions primarily originate from:mobile source fossil fuel combustion (e.g., gasoline-powered commercial vehicles, diesel-powered construction vehicles), and non-CO<sub>2</sub> greenhouse gas emissions (e.g., refrigerant leaks). These three emission categories are directly linked to the foundational operational aspects of space services and represent the core challenge areas for achieving the goal of "completely phasing out fossil fuels by 2035."Addressing the characteristics of Scope 1 emissions, WANWOYUN has outlined three major reduction pathways. Through technological substitution, management upgrades, and intelligent optimization, it aims to reduce emissions at their source, laying the foundation for carbon neutrality across the entire value chain.

##### **Path 1: Full-scenario electrification to gradually reduce fossil fuel dependency**

With the goal of "full electrification by 2035 except for specific critical equipment," Onewo is advancing the replacement of combustion equipment in fixed and mobile sources in

phases: For fixed sources, priority is given to retrofitting natural gas water heaters and stoves in project company offices, employee dormitories, and public areas within management spaces. Electric-powered equipment like air-source heat pumps will be selected, with regional rollouts planned to complete electrification upgrades for 30% of existing fixed sources nationwide by 2028. For mobile sources, the focus is on mobile emission sources like gasoline-powered commercial vehicles and diesel-powered engineering vehicles. The core strategy is "phasing out outdated vehicles"—establishing phase-out lists based on vehicle age and emission standards, prioritizing the removal of fossil fuel vehicles over 8 years old that fail to meet emission requirements. Concurrently, electric vehicle models such as electric inspection vehicles and electric engineering vehicles will be promoted. By 2030, 50% of outdated mobile emission sources will be phased out and replaced with electric alternatives. Achieve full electrification of mobile emission sources by 2035. For safety-critical equipment like emergency rescue vehicles and diesel backup generators (used for emergency power supply to ensure basic electricity needs in extreme situations), fossil fuel configurations will be temporarily retained. However, energy efficiency will be optimized through regular maintenance, and usage scenarios and duration will be strictly limited to avoid unnecessary consumption. This ensures electrification replaces fossil fuels in core operational scenarios while maintaining the safety and stability of space services.

## **Pathway Two: Full-Cycle Management of Low-Carbon Refrigerants to Address Non-CO<sub>2</sub> Emissions**

Given the widespread lack of refrigerant management in the property industry, OneWeb prioritizes refrigerant emissions reduction as the core approach for Scope 1 non-CO<sub>2</sub> emissions control, advancing through three phases: "Survey - Control - Replacement": By 2030, complete a comprehensive inventory of refrigerants across all managed projects nationwide. Establish a dedicated team to create electronic ledgers tracking refrigerant types, charge volumes, and service lifespans for central air conditioning systems in commercial buildings and supporting facilities within campuses. Integrate refrigerant leakage into routine carbon audits, using IoT sensors for real-time pipeline integrity monitoring and implementing leakage early-

warning and response mechanisms to minimize unnecessary emissions. Achieve full replacement with low-carbon refrigerants by 2035, Prioritizing environmentally friendly refrigerants with a Global Warming Potential (GWP) below 150. For outdated air conditioning equipment, implementing a "trade-in + refrigerant recovery" model to standardize disposal procedures, prevent environmental pollution and emission oversights. Filling industry gaps in refrigerant management through a full-cycle system, aligning with China's NDC 3.0 policy requirements for comprehensive greenhouse gas control, and strengthening reduction efforts for non-CO<sub>2</sub> emissions.

### **Pathway Three: Optimizing Intelligent Dispatch Systems to Reduce Fuel Consumption During Electrification Transition**

Before comprehensive electrification of mobile sources, Onewo leverages its digital spatial management strengths to reduce vehicle usage frequency and empty-run rates through intelligent dispatch systems, thereby lowering gasoline and diesel consumption: - Establishes a cross-project vehicle dispatch center on Onewo's "Cloud Platform," integrating vehicle demand for inspections, material transport, and business coordination across national property projects. Algorithms optimize routes and carpooling solutions to minimize redundant trips and empty-run mileage. The dispatch system incorporates a full-process module covering "vehicle approval - mileage tracking - fuel consumption analysis," enabling real-time monitoring of vehicle trajectories and fuel usage data. Vehicles exceeding fuel consumption standards trigger alerts, facilitating prompt investigation of anomalies and optimization of usage patterns. For diesel-powered construction vehicles, the system centrally coordinates project requirements to rationally schedule work times and zones, eliminating cross-regional redundant transport. This maximizes daily mileage reduction and fuel savings, achieving phased emission reductions from mobile sources during the electrification transition period and laying a solid foundation for comprehensive replacement.

#### **3.4.2. Onewo's Core Pathways for Scope 2 Emissions Reduction**

Scope 2 emissions refer to indirect greenhouse gas emissions generated during the production of purchased energy sources such as electricity and heat, constituting a significant

portion of Onewo's total value chain carbon emissions. Onewo's Scope 2 emissions primarily encompass two categories: First, emissions from purchased electricity, which constitute a very high proportion of both Scope 2 and overall carbon emissions. This stems from the continuous operation of equipment in managed commercial buildings and residential communities—such as elevators, lighting systems, central air conditioning, and circulating water pumps—which generate stable and substantial electricity demand, particularly due to the high energy intensity of some equipment. Second, emissions from purchased heat, primarily concentrated in northern projects where purchased heat is required for public area heating during winter. These emissions exhibit seasonal patterns. Centered on the core goal of "achieving 100% clean electricity by 2049," Onewo has outlined two major reduction pathways, tackling Scope 2 emissions from both dimensions of "reducing demand" and "switching energy sources" to drive deep emission cuts.

### **Path One: Comprehensive Energy Conservation Across All Scenarios to Reduce Total Purchased Energy Demand**

Centering on "source-based consumption control," Onewo implements targeted energy-saving measures tailored to spatial operational characteristics for purchased electricity and heat scenarios: For electricity consumption reduction, priority is given to optimizing equipment efficiency through intelligent control systems—installing motion sensors and light-sensing devices for common area lighting to dynamically adjust activation duration and brightness, minimizing unnecessary power usage; For high-energy-consuming equipment in older residential complexes and buildings, phased replacement and upgrades are implemented. Examples include replacing traditional incandescent and fluorescent lights with LED energy-saving fixtures, converting fixed-speed water pumps to variable-frequency pumps, installing kinetic energy recovery devices in elevators, and gradually phasing out outdated central air conditioning systems with high energy consumption ratings in favor of Class 1 energy-efficient variable-frequency units. These measures reduce electricity consumption per unit time at the equipment level. For reducing purchased heat consumption, focus on winter heating scenarios in northern regions by promoting new heating technologies like ground-source heat pumps and

air-source heat pumps. Directly adopt heat pump systems in new projects, and gradually replace traditional purchased heat heating models in existing projects. Utilize heat pumps to absorb thermal energy from the air or ground for heating, significantly reducing reliance on fossil fuel-produced heat and cutting indirect emissions from purchased heat at the demand end.

### **Pathway Two: Multi-channel Clean Electricity Substitution for Gradual 100% Green Power Coverage**

Onewo advances clean electricity substitution through a dual "self-generation + external procurement" model, progressing toward a 100% clean electricity target by 2049 in phases: On one hand, it develops self-built renewable energy by prioritizing distributed photovoltaic power stations in suitable areas within its managed spaces (e.g., commercial building rooftops, residential parking lot canopies, open municipal park areas). This utilizes idle space for electricity generation, with the produced power directly supplying common-area equipment to reduce reliance on conventional purchased electricity. For projects unsuitable for self-generation, clean power sources will be supplemented through external procurement of green electricity and green certificates—establishing long-term purchase agreements with green electricity suppliers while annually acquiring green certificates to trace and certify the origin of consumed clean power, ensuring the low-carbon attributes of every kilowatt-hour. Additionally, a clean electricity substitution progress ledger is established, with differentiated implementation plans developed by region and project type. Projects in first-tier cities will achieve 50% clean electricity coverage by 2035, while projects in second-tier and lower cities will meet the same target by 2035. Through a combination of "self-built consumption + external procurement supplementation," the proportion of clean electricity will gradually increase, ultimately achieving 100% clean external electricity procurement by 2049.

## **3.5. Full Value Chain Carbon Reduction Pathways**

### **3.5.1. Core Pathways for Scope 3 Emissions Reduction in Onewo**

Scope 3 emissions represent indirect greenhouse gas emissions generated by upstream and downstream activities within a company's value chain, excluding Scope 1 and Scope 2 emissions. They span the entire value chain from raw material procurement to product use and waste

disposal, featuring complex emission scenarios highly dependent on industry characteristics. Given Onewo's property management industry attributes, only 10 of the 15 internationally recognized Scope 3 emission subcategories align with its spatial service operations. Based on current carbon inventory progress, this Scope 3 assessment prioritizes three core categories: purchased goods and services (e.g., cleaning supplies), upstream emissions from procured energy (e.g., indirect emissions from energy extraction and transportation beyond electricity generation), and employee business travel. For the remaining applicable categories (waste disposal, transportation and delivery, employee commuting, etc.), preliminary emission reduction directions are proposed. Following the completion of specialized inventories, corresponding reduction pathways will be refined to ensure comprehensive and precise coverage of Scope 3 emissions reductions. Centering on the three key scenarios currently included, Onewo has outlined two core reduction pathways while establishing preliminary directions for other scenarios, advancing indirect emissions reduction across the value chain in phases.

### ① Core Reduction Pathways

#### **Path 1: Building a Low-Carbon Supply Chain System to Manage Indirect Emissions at the Procurement End**

Centering on "collaborative supplier decarbonization," Onewo establishes an end-to-end low-carbon supply chain management mechanism for two scenarios: "procured goods and services" and "upstream emissions from purchased energy." First, it creates low-carbon supplier selection criteria, adding low-carbon qualification requirements (e.g., carbon footprint certification, green product labeling) during supplier onboarding, prioritizing suppliers with low-carbon production processes and recyclable packaging. Second, we define low-carbon procurement standards, setting explicit carbon content limits for high-frequency procurement categories (e.g., maintenance tools, office supplies). Suppliers are required to provide product carbon footprint reports, reducing the embedded carbon emissions of procured goods at the source. Finally, implement collaborative low-carbon management with suppliers. Regularly communicate emission reduction targets with key suppliers to drive process optimization (e.g.,

energy suppliers reducing emissions from fossil fuel extraction) and enhance transportation efficiency. Integrate supplier emission reduction outcomes into the partnership evaluation system, forming a closed-loop management cycle of "screening-procurement-collaboration-evaluation." This progressively reduces indirect emissions from procured goods/services and upstream purchased energy sources.

### **Pathway Two: Establish a Travel Management Platform to Drive Low-Carbon Transformation in Transportation**

For employee travel scenarios, Onewo has developed an integrated travel management platform guided by the principles of "green travel and efficient control" to encourage low-carbon travel behaviors: - For mode selection, the platform prioritizes high-speed rail and intercity rail for short-distance trips, economy class flights for long-distance travel, and encourages low-carbon options like shared bikes or electric ride-hailing at destinations, while restricting high-emission private vehicles for solo trips. For route planning, the platform's built-in intelligent algorithms automatically consolidate cross-departmental travel requests, merging same-direction itineraries and minimizing detours (e.g., prioritizing centralized travel for multiple projects within the same city). It also updates real-time traffic conditions to avoid congestion and reduce energy consumption. For accommodation, the platform integrates a green hotel database, prioritizing "carbon-neutral hotels" and "Green Building Certification," while restricting bookings at high-energy-consumption, high-emission hotels. Additionally, the platform features travel carbon emissions tracking, automatically calculating emissions for each trip and generating reports. These metrics are incorporated into employee low-carbon performance evaluations, driving low-carbon transformation in travel scenarios through a combination of "policy guidance + data management + incentive-constraint mechanisms."

#### **② Brief emission reduction directions for other applicable categories**

- 1) Waste Management Scenario: Future efforts will focus on establishing a sorted recycling system for public area waste within managed spaces, adding collection points for recyclables, and collaborating with specialized recycling agencies to enhance resource utilization rates. For non-recyclable waste, prioritize disposal providers implementing

carbon reduction measures (e.g., incineration plants that generate electricity and recover waste heat) to reduce emissions from landfill and incineration processes.

- 2) Transportation and Delivery Scenario: Focusing on supplier material delivery and inter-project logistics, we will encourage logistics partners to gradually transition to new energy vehicles while optimizing delivery routes (e.g., centralized delivery, off-peak scheduling) to reduce fuel consumption and carbon emissions in transportation.
- 3) Employee Commuting Scenarios: Address daily commuting and cross-project travel needs by implementing green commuting incentives—launching new energy shuttle buses between projects in densely concentrated areas; encouraging shared bikes, e-scooters, public transit, or carpooling with points rewards for low-carbon choices; Exploring flexible and remote work models to reduce high-frequency short-distance commutes; simultaneously establishing employee commuting carbon emissions ledgers to progressively optimize the carbon footprint of commuting scenarios.

### **3.5.2. Core Pathways for Emissions Reduction via the Onewo Intelligent Management Platform**

The intelligent management platform planned by Onewo serves as a "digital support hub" focused on emission reduction scenarios within the property management industry. Its core positioning adheres to the principle of "data-driven emission reduction with tiered functional implementation." Through phased enhancements to data collection, accounting, reporting, and value-added functions, it will integrate the entire process from "emission data acquisition" to "implementation of reduction measures," providing precise and actionable technical support for achieving carbon neutrality across the entire value chain. The platform will progressively build multi-scenario emission reduction management capabilities following a priority logic of "core functions first, value-added features later," ensuring each development phase aligns with current emission reduction needs.

**Path 1: Prioritize optimizing the data monitoring and upload system to establish a robust emissions reduction data foundation at the equipment level**

As the top priority in platform development, optimizing the data monitoring and upload system will focus on enhancing data capture granularity to the specific equipment level, ensuring data accuracy at the source: First, conduct a comprehensive inventory of all equipment across scenarios. For Scope 1, Scope 2, and Scope 3 categories already identified, clearly define the specific equipment requiring monitoring and corresponding data items—such as daily electricity consumption for elevators, or single-trip mileage and fuel consumption for individual gasoline vehicles—ensuring no equipment is overlooked. Second, we will advance the implementation of device-level data collection technology. Fixed equipment will be retrofitted with smart monitoring devices, while mobile equipment will be equipped with location and energy consumption monitoring modules. This enables direct data transmission to the platform. Additionally, each device will be assigned a unique identifier to ensure collected data is precisely attributed to specific equipment, eliminating the ambiguity of "area-aggregated" data. Third, enhance equipment-level data quality control by implementing new anomaly detection rules (e.g., automatic alerts when an air conditioner's daily power consumption significantly exceeds historical averages) and conducting periodic manual spot checks to calibrate accuracy, ensuring equipment-level data error rates remain below 1%. The implementation strategy adopts a "pilot-to-rollout" approach: complete equipment-level data capture upgrades for core projects in first-tier cities by 2028, and achieve granular coverage of all key emission equipment across national projects by 2030. This provides the finest-grained data foundation for subsequent accounting and analytical functions.

### **Pathway Two: Building a Precision Accounting Engine to Form Core Decision-Making Basis for Emissions Reduction**

Following the initial refinement of the data monitoring and upload system, the second-priority initiative will focus on building an accounting engine centered on "compliance, precision, and adaptability": The engine will adopt GHG Protocol and China's National Greenhouse Gas Accounting Guidelines as core standards while adapting to the property management sector's specific scenarios. It will support multidimensional automated accounting, distinguishing Scope 1, Scope 2, and Scope 3 emissions by emission category; Management-level

breakdown will enable four tiers of granularity: "Region-Service Branch-Project-Specific Equipment," ensuring calculation error rates remain within  $\pm 2\%$ . For unique property sector emission scenarios (e.g., refrigerant leaks from individual central air conditioners, consumption of distributed photovoltaic power generation at projects), specialized calculation modules will be developed. These include automatic GWP value calculations for refrigerant emissions linked to specific equipment and real-time deduction of corresponding carbon emissions from photovoltaic power generation. This ensures calculation results closely align with Onewo's operational needs and provides quantitative basis for adjusting emission reduction pathways.

**Path Three: Develop automated report generation to meet both compliance and management needs**

Following stable operation of the calculation engine, the third priority is advancing automated report generation to address the inefficiencies and error-prone nature of traditional manual reporting. This functionality will cover two key scenarios: "Compliance Reporting + Management Reporting." On the compliance front, it enables one-click export of standardized reports compliant with ISO 14064, ESG disclosure requirements, and government carbon inventory standards, automatically populating equipment-level calculation data and visual charts to reduce manual effort by 90%. At the management level, customized reports can be generated, such as the "Monthly Single-Equipment Emissions Reduction Effectiveness Report" for project teams (comparing carbon emissions before and after an elevator retrofit) and the "Quarterly Regional Equipment Emissions Analysis Report" for management (identifying high-emission equipment types and potential reduction points). Flexible adjustments to report formats and data dimensions are supported to meet diverse internal and external use cases, ensuring compliance and management transparency in emissions reduction efforts.

**Pathway Four: Launch Value-Added Emissions Reduction Features to Expand Platform Collaboration Capabilities**

After refining core functionalities (data collection, calculation, reporting), prioritize launching value-added features like vehicle management and carbon credits in the fourth phase to enhance the platform's emission reduction synergy: Vehicle management will integrate

with existing intelligent dispatch systems. Leveraging real-time fuel consumption and mileage data per vehicle, it will achieve an integrated "vehicle load optimization-route planning-energy consumption alert" system. For instance, it will automatically push maintenance recommendations for high-fuel-consumption diesel construction vehicles to reduce unnecessary emissions from mobile sources. The Carbon Rewards feature will establish a carbon credit system for residents and employees within managed spaces. Citizens can earn credits through low-carbon actions like building-level waste sorting or household energy conservation (credits redeemable for property service discounts), while employees receive incentives for low-carbon commuting or green business travel. This "incentive-driven" approach will mobilize multi-stakeholder participation in carbon reduction. Additionally, feature rollouts will follow a "small-scale testing → iterative optimization → nationwide deployment" model. Core city pilot projects will be completed by 2030, with nationwide project coverage achieved by 2032. This will elevate the platform from an "internal corporate emissions management tool" to a "multi-stakeholder collaborative carbon reduction platform."

### **3.6. Pathways for Managing Space Emissions Reduction**

The Onewo Management Space Emission Reduction Pathway centers on the core logic of "co-creation, co-construction, and co-reduction." Leveraging its unique positioning as a "spatial service," it deeply integrates into the high-frequency interaction scenarios of 20 million citizens within the management space. This builds a differentiated carbon-inclusive ecosystem while synchronizing with targeted low-carbon advocacy, driving citizens' transition from "passive awareness" to "active carbon reduction." Ultimately, it aims to achieve the goal of "reducing 100 million tons of carbon within the management space over the next 20 years."

#### **Pathway One: Building a Carbon-Benefit Ecosystem with "All-Scenario Participation + Full Data Traceability + Closed-Loop Incentives"**

Centered on making citizens' daily low-carbon behaviors recordable, quantifiable, and incentivizable, the carbon benefit ecosystem creates a virtuous cycle: "Behavioral Carbon Reduction → Data Verification → Benefit Redemption → Continuous Participation." Leveraging the existing property service app of Onewo (or developing a standalone module), a

carbon benefit platform is established. After registration, citizens link their community/building. The platform integrates eight carbon-reduction activity entry points: second-hand goods trading, waste sorting, public transportation, new energy vehicle usage, equipment electrification, low-carbon refrigerant substitution, low-carbon product purchases, and green carbon sinks. For instance, second-hand goods trading categorizes items by type.buildings. The platform integrates eight carbon reduction activity entry points: secondhand goods trading, waste sorting, public transportation, new energy vehicle usage, equipment electrification, low-carbon refrigerant substitution, low-carbon product purchases, and green carbon sinks. For instance, secondhand goods trading calculates carbon savings by item type, while waste sorting records data via smart bin QR code scanning. These activities are linked to community-wide carbon reduction achievements (e.g., carbon savings from public area equipment upgrades are allocated based on resident usage frequency).A precise accounting system follows national guidelines, with activity-specific coefficients (e.g., mileage-based calculations for different transportation modes). Data authenticity is ensured through "smart device auto-sync + resident credential upload + property management verification."Design a multi-dimensional incentive mechanism: short-term carbon credits can be redeemed for property fee discounts or supermarket benefits; mid-term community carbon reduction leaderboards recognize "Low-Carbon Households"; long-term integration with the city's carbon credit system enables cross-platform credit usage. Provide offline assistance for elderly residents to ensure barrier-free participation across all age groups.

**Pathway Two: Implement "scenario-based + segmented + interconnected" low-carbon outreach to strengthen public awareness of carbon reduction**

Low-carbon campaigns move beyond one-way messaging by tailoring content to management spaces and audience characteristics, making reduction knowledge "visible, understandable, and actionable": - Scenario-based promotion: Display low-carbon micro-videos on community bulletin boards and elevator screens; install interactive panels in common areas showing reduction progress; have property staff share micro-reduction tips (e.g., setting AC to 26° C) during routine services, embedding awareness into daily routines;Tailored outreach

includes offline low-carbon classes for seniors using local dialects to illustrate case studies, personalized carbon reduction reports for young adults paired with "public transit challenges," and school-led youth activities like secondhand markets and plant care workshops to engage entire families. For collaborative outreach, regularly host "Community Low-Carbon Days" featuring secondhand swap meets, waste sorting competitions, and carbon reduction achievement exhibitions. These events allow residents to tangibly experience how "small actions add up to significant carbon reduction," fostering a sense of collective belonging and elevating "individual carbon reduction" to "community-wide reduction."

### **3.7. Carbon Offsetting**

Despite implementing the above reduction measures, a small residual emissions gap remains unaddressed. To achieve carbon neutrality, Onewo will utilize carbon credits developed and approved in compliance with international and domestic standards. Through carbon offsetting, these residual emissions will be neutralized, enabling overall carbon neutrality.

### **3.8. Onewo Emissions Reduction Pilot Demonstration**

Onewo manages over 4,000 projects spanning diverse scenarios including residential communities, commercial buildings, parks, green spaces, and industrial parks. These projects exhibit significant variations in building age, infrastructure, geographical conditions, and operational requirements. Guided by the principle of "pilot first, validate results, then scale gradually," Onewo prioritizes projects with suitable implementation conditions for advanced emission reduction technologies. Through practical operation, it verifies technical feasibility and emission reduction effectiveness. Once models mature and meet expectations, replicable experiences are refined and expanded to similar projects. This approach avoids resource waste or compatibility issues caused by blanket implementation, laying a solid foundation for full-scale emission reduction.

#### **Pilot 1: All-Electric Community Development – Exploring Fossil-Free Pathways in Residential Settings**

Prioritizing newly built residential complexes or established communities with renovation potential (e.g., entry-level housing developments in the Yangtze River Delta with stable power

supply and infrastructure for charging stations and heat pumps), the core focus is implementing "full-scenario electrification substitution": - Community common areas and household energy use completely transition away from fossil fuels. Common areas adopt electric heating systems (e.g., air-source heat pumps), electric stoves, and electric water heaters to replace traditional natural gas equipment. Install smart charging stations in parking lots to meet residents' new energy vehicle charging needs, while deploying electric patrol vehicles and electric waste collection trucks to support community operations; Simultaneously establish a community microgrid integrating distributed photovoltaic systems (rooftops, parking lot canopies) with energy storage devices to increase the proportion of self-consumed clean electricity. Through these pilots, achieve "zero natural gas, zero gasoline" consumption within the community, providing data support for subsequent rollout in communities with well-developed power infrastructure.

### **Pilot Project 2: Zero-Carbon Park Development, Establishing Low-Carbon Operational Models for Open Spaces**

Selecting urban core-area parks or community pocket parks as pilot sites, the initiative centers on "clean energy + low-carbon operations": Service stations within parks adopt Building-Integrated Photovoltaics (BIPV) design, with rooftops and canopies fitted with solar panels to power station lighting, air conditioning, and drinking water facilities. Visitor rest areas feature solar-powered charging benches, while all streetlights and surveillance equipment run on solar energy. Smart irrigation systems utilize recycled water combined with weather data for precise watering, reducing water consumption. Additionally, pilot "carbon sink forests" are planted within park green spaces, selecting locally native tree species with strong carbon sequestration capabilities and regularly calculating vegetation carbon sequestration volumes. Furthermore, the park prohibits entry by fuel-powered vehicles, permitting only electric sightseeing vehicles and shared bicycles. The visitor center features a low-carbon science exhibition zone promoting zero-carbon concepts. Following the pilot's implementation, the park achieved "zero carbon emissions during operation," providing a reference scenario for low-carbon retrofits of urban open spaces.

### **Pilot 3: Developing Carbon Assets Through Biochar, Exploring Circular Carbon Reduction with Biomass Resources**

Select projects with abundant biomass resources as pilot sites to explore the "waste-to-resource + carbon asset conversion" pathway: Collaborate with professional environmental agencies to convert shredded landscape waste into biochar through high-temperature pyrolysis. This biochar is then used for soil improvement in community green spaces, enhancing soil fertility and water retention while reducing chemical fertilizer use. Based on voluntary emission reduction standards (e.g., Puroearth, VCS), the carbon sequestration capacity of biochar is calculated. After registration, tradable carbon credits are generated. Through biochar development, pilot projects address carbon emissions from landscaping waste landfill/incineration while achieving "waste-to-asset" value enhancement, offering new emission reduction and revenue pathways for projects rich in green resources.

### **Pilot 4: CCER Building Energy Efficiency Project Development, Unlocking Emission Reduction Potential in Existing Buildings**

Prioritize existing public buildings over 10 years old with high energy consumption (e.g., aging office buildings and government offices in northern cities) or projects with geothermal resources (e.g., communities in North China with abundant shallow geothermal energy). Focus on developing CCER projects through "energy efficiency upgrades + clean energy substitution": For public buildings, implement envelope retrofits (e.g., replacing exterior walls with insulation and Low-E energy-efficient windows), while upgrading HVAC systems (e.g., replacing traditional gas boilers with variable-frequency electric air conditioners and installing smart thermostat systems) to reduce energy consumption per unit area. For projects with favorable geothermal conditions, develop medium-to-deep geothermal heat exchange systems. These systems extract underground thermal energy via underground heat exchangers and combine it with heat pump units to provide building heating, replacing traditional coal/gas heating. Both project types calculate emission reductions according to CCER methodologies. Upon completion of filing, they can generate revenue through carbon market transactions. This pilot program not only validates the technical and economic viability of energy retrofits for existing

buildings but also establishes a dual pathway of "emission reduction + revenue generation" for eligible projects, accelerating the rollout of similar initiatives.

#### **4. Enhancing Carbon Management**

Achieving carbon neutrality is not an overnight goal but a long-term endeavor for enterprises. Transforming carbon cost risks into carbon revenue opportunities to enhance market competitiveness is a systematic and challenging undertaking. It requires robust professional teams and scientific oversight systems to realize the intended carbon neutrality outcomes. Therefore, elevating internal carbon management capabilities is a critical component of achieving corporate carbon neutrality.

##### **4.1. Carbon Management System Development**

The carbon management system serves multiple functions: reducing costs and improving efficiency, clarifying responsibilities, standardizing management practices, ensuring feasibility and effectiveness, and continuously enhancing carbon performance. Ultimately, it will empower Onewo to build a low-carbon supply chain and achieve low-carbon transformation. This contributes to global and China's carbon neutrality goals, demonstrates Onewo's social responsibility, enhances its product competitiveness, and transforms carbon cost risks into carbon revenue opportunities.



Figure 11: Significance of Establishing a Carbon Management System

#### 4.2. Digitalization Platform Development

Amid the deepening implementation of China's "3060" dual carbon strategy and stricter ESG disclosure regulations by capital markets like the Hong Kong Stock Exchange, the property management industry faces multiple carbon management opportunities yet remains in a rudimentary, manual phase. Core challenges include the absence of carbon benchmarks and inefficient carbon auditing. To address this, Onewo has developed a dual-core solution combining "carbon accounting methodology + intelligent carbon management platform (Carbon Beat)"—a "standard + tool" approach. This aims to propel the property management sector's carbon management from rudimentary practices toward "standardization and intelligence," providing the industry with replicable and scalable carbon management pathways.

The Property Industry Carbon Accounting Methodology stands as China's first systematic carbon accounting guide for the sector, validated by academic institutions including Tsinghua University and Renmin University, and third-party verified by Huaxia Certification. It adheres to core principles of "scientific rigor, industry applicability, and clear accountability." Addressing the property sector's ambiguity in identifying Scope 1, Scope 2, and

Scope 3 emission sources, it delineates emission source inventories for residential, commercial, and industrial park scenarios. It also establishes a "full-process accountability loop" by binding carbon management responsibilities to five core roles: project lead, on-site manager, administrative staff, maintenance specialists, and travel personnel, ensuring effective implementation. Furthermore, the methodology establishes standardized operational protocols for the entire "data collection-factor matching-calculation-verification" process. It specifies data collection frequencies, emission factor sources, and data validation rules for different scenarios, reducing corporate learning and implementation costs. Based on the principle of "who controls, who benefits, who is responsible," it dynamically defines carbon management accountability by aligning financial control with operational control. For instance, energy consumption for public lighting in residential complexes falls under the property management company's responsibility, while energy use from owner-owned charging stations is the owner's responsibility. This approach complies with international accounting standards while aligning with the practical operational logic of property management.

万物云

2025年碳排放数据 碳排放数据看板 第三方鉴证声明 碳排放历史数据 碳盘查基准

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## 万物云碳核算方法论—— 基于GHG Protocol的范围一、二、三披露框架

第一部分：标准选择

企业碳核算是指依据相关标准，对运营边界的碳排放参数及活动数据进行收集、统计与计算，最终量化企业温室气体排放总量的技术流程。当前国际国内主流标准或指南包括《温室气体核算体系》(GHG Protocol)、ISO 14064-1:2018 以及《GB/T 32151 温室气体排放核算与报告要求》等。

基于标普全球 (S&P Global) ESG评级体系及香港联合交易所的披露要求，万物云在碳核算过程中选择遵循《温室气体核算体系》(GHG Protocol) 并作为核算依据。

第二部分：基本原则

Figure 12: Onewo Carbon Accounting Methodology

The intelligent carbon management platform (Carbon Beat) deeply integrates with Onewo's business processes—including energy management, procurement management, project operations, and travel requests—as well as digital systems such as energy consumption systems, procurement management systems, and expense reimbursement systems. This creates a complete closed-loop cycle of "business data → carbon data → management decisions." At the data collection level, the platform directly interfaces with electricity, water, gas, and heating meter systems via APIs and data lakes to automatically capture real-time consumption data. For older residential areas or remote projects with insufficient metering equipment, it incorporates a "cost-based reverse calculation" data conversion model to ensure energy consumption data accuracy. Simultaneously, it integrates with procurement management systems to capture purchased goods and services information, and interfaces with travel approval systems and booking platforms to obtain employee travel itineraries and accommodation data, enabling multi-dimensional automated data collection. For accounting functions, the platform incorporates the aforementioned carbon accounting methodology. After data collection, it automatically classifies emissions by scope, matches corresponding calculation formulas and emission factors, and performs real-time carbon emission calculations. Multiple rules—including data logic validation and historical data comparison checks—automatically identify anomalies and trigger manual review, completely replacing traditional manual accounting. This resolves issues of low quality and inefficiency in manual calculations. For visualization management, the platform uses dashboards and trend charts to intuitively display total emissions, emission structures, and reduction potentials across projects and business segments. It supports multi-dimensional analysis by time, region, and business type, helping enterprises quickly identify high-energy consumption and high-emission processes to provide precise basis for formulating reduction measures.

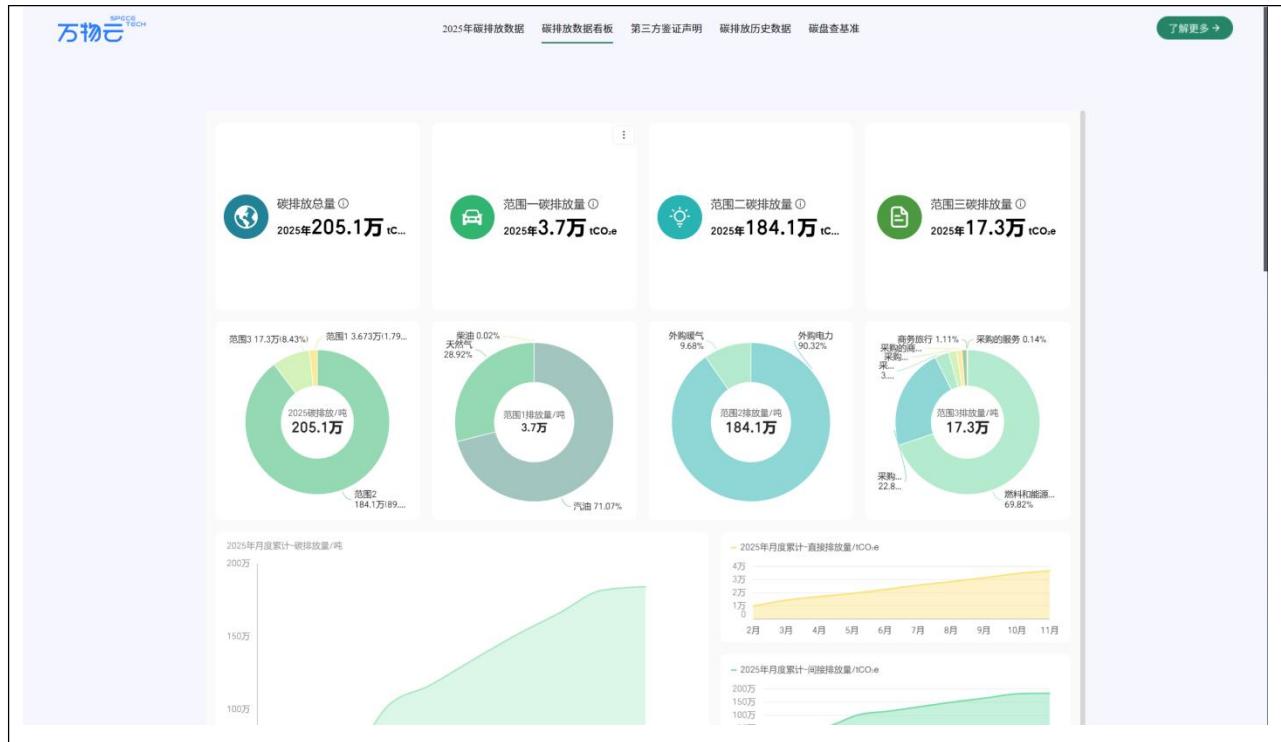


Figure 13: Onewo Carbon Management Platform

#### 4.3. Talent Carbon Competency Development

To support the implementation of Onewo's 2045 end-to-end carbon neutrality strategy and effectively address practical operational challenges faced by business groups and manufacturing bases in carbon auditing, emissions reduction planning, and low-carbon operations, this low-carbon training program aims to enhance capabilities across different groups:

- Raise awareness of dual carbon goals among general employees to establish a foundational atmosphere for the Group's carbon neutrality journey;
- Strengthen carbon emissions accounting and management capabilities for frontline managers to ensure data accuracy and execution of carbon neutrality initiatives;
- Empower mid-to-senior management with carbon strategy awareness to facilitate business-integrated low-carbon decision-making;
- Simultaneously develop a talent pipeline for carbon management and cultivate a green development culture involving all employees, providing core support for the Group's long-term low-carbon business growth.

Onewo has designated the "Talent Carbon Competency Development Plan" as the core vehicle for this low-carbon training initiative. It establishes an integrated "theory + practice +

digitalization" training system, implemented through three key modules: "Study Tours," "Training Programs," and "Online Platforms."

1. **The Field Study Module** centers on "internal benchmarks + external peer companies" to focus on practical skill transfer: Participants will visit Onewo's internal zero-carbon smart campuses, energy-efficient manufacturing bases, and other low-carbon exemplary sites. Concurrently, they will engage with leading green development cases from industry peers. Project leads or peer specialists will provide on-site explanations of carbon reduction measures, energy consumption management system applications, and low-carbon service implementation practices. This direct connection to business scenarios enables participants to translate theoretical knowledge into actionable job methodologies.
2. Training modules follow a tiered coverage principle to match the competency needs of different groups: For general employees, the focus is on carbon neutrality science courses (basic understanding of dual carbon goals) and carbon neutrality forums (external experts sharing policies and technologies), enhancing awareness of dual carbon issues across the organization; For frontline managers, the curriculum simultaneously covers science courses, specialized carbon skills enhancement courses (including carbon emissions accounting and carbon asset management—mandatory for frontline carbon management roles, with certification as a Carbon Management Professional available upon passing an exam), carbon management capability enhancement courses, and carbon neutrality forums to strengthen their data accounting and implementation capabilities. For mid-to-senior management, leverage science education courses, carbon management competency enhancement courses (covering advanced topics like carbon neutrality strategy and carbon finance), and carbon neutrality forums to foster strategic-level understanding of carbon management and enable business-integrated low-carbon decision-making. For managers in other departments, utilize science education courses, carbon management competency enhancement courses, and carbon neutrality forums to help them develop low-carbon thinking relevant to their specific roles.

Course Structure		Key Content	Target Audience	Expected Outcomes	Notes
Regular Course	Science Education Courses	Basic Support for Climate Change Response and Carbon Neutrality	All	Raise awareness about carbon neutrality among as many people as possible	Series of Science Popularization Videos/Articles
	Foundational Courses	Carbon emissions accounting, carbon asset management, etc.	Carbon management professionals	Enhance technical skills and knowledge reserves to ensure the implementation of carbon management and carbon neutrality goals	Essential Course for Entry-Level Carbon Management Personnel
	Advanced Courses	Carbon neutrality strategy, carbon finance, etc.	Practitioners in carbon management, strategic management personnel	Recognize the importance of carbon strategy and integrate it with business operations	Essential Course for Managers
Carbon Neutrality Forum		Sharing of domestic and international carbon neutrality policies, carbon neutrality	All Participants	Stay abreast of policy and market trends, focusing on opportunities and risk mitigation under carbon neutrality	Primarily led by external instructors

	technologies, etc.			
<b>Field Study Bases / On-site Instruction</b>	Customized training programs for subsidiaries, supply chains, and other organizations	Customized	Demand-driven	Tailored to specific requirements
<b>Internal Carbon Information Platform</b>	Regularly publishes carbon neutrality knowledge, course announcements, policy interpretations, and learner interactions.	Group-wide	Serving as a hub for carbon neutrality knowledge and exchange	Enterprise WeChat Official Account

Table 4 Talent Carbon Competency Development Plan

3. **The Carbon Information Platform** serves as the long-term vehicle for plan implementation, centered on "subtly conveying dual-carbon values": Through a dedicated platform, it regularly pushes dual-carbon policy updates, industry insights, and progress on Onewo's low-carbon initiatives. It simultaneously releases science popularization knowledge, course announcements, and policy interpretations. This provides all employees with a channel for accessing fragmented dual-carbon information while establishing an internal window for exchanging dual-carbon experiences. It integrates dual-carbon awareness into daily work scenarios and continuously reinforces training outcomes.

#### 4.4. Low-Carbon Culture Development

Onewo places significant emphasis on low-carbon culture development. Carbon neutrality is a long-term strategic goal for the company, necessitating the cultivation of an internal low-carbon culture. This ensures employees voluntarily adhere to carbon neutrality principles in areas not covered by formal carbon management systems and processes, thereby advancing the achievement of Onewo's strategic objectives.

Onewo aspires for carbon neutrality to transcend mere rhetoric. Through diverse activities, it strengthens low-carbon culture development by engaging employee interest, cultivating low-carbon lifestyles and work practices, and driving tangible low-carbon actions. Moving forward, Onewo will continue enriching and deepening its low-carbon culture initiatives, embedding low-carbon behaviors as habitual norms in employees' lives and work. This will accelerate Onewo's low-carbon transformation and establish it as a benchmark for carbon-neutral enterprises in China.

## 5. External Influence

Onewo's external influence strategy for advancing emission reduction pathways centers on building multidimensional support for its 2045 full-chain carbon neutrality goal: First, enhancing strategic credibility by delivering standardized, authoritative value propositions to secure professional recognition for the Group's emission reduction targets and pathways across industry, capital, and societal spheres; Second, enhancing industry influence by leveraging low-carbon practices in property technology and urban services to fill methodological gaps in specialized sectors and lead standardized emissions reduction development. Third, connecting diverse stakeholders by communicating the long-term value of low-carbon development to investors, demonstrating green service capabilities to clients, and sharing collaborative emissions reduction experiences with partners. Fourth, fulfilling social responsibility by establishing a responsible brand image through tangible low-carbon actions, thereby strengthening user and public recognition. Onewo simultaneously strengthens its influence and value delivery in the dual-carbon field through a three-dimensional strategy of "external expansion, internal consolidation, and downward penetration":

### 5.1. Establishing Authoritative Positioning as an Industry Low-Carbon Benchmark

Onewo is actively advancing authoritative positioning in the dual-carbon field: On one front, it has initiated research for joining the SBTi (Science Based Targets initiative). Currently, it is aligning its business segments (smart campuses, manufacturing base services, community property management) with the SBTi framework to establish emission reduction baselines. Concurrently, it is calculating science-based carbon targets consistent with the 1.5° C temperature control goal. Subsequently, it will develop phased emission reduction roadmaps based on actual business operations, aligning its reduction actions with the global science-based carbon target system. On the other hand, it has joined CDP and is enhancing its CDP rating through multi-dimensional efforts, aiming to achieve a rating higher than its peers.

### 5.2. Building Professional Authority Through Content and Standards

Onewo solidifies its professional authority in the dual-carbon field through internal value accumulation: First, it released the "China Property Management Industry Carbon

Neutrality Strategy and Pathway Report," systematically summarizing the group's practical experience in carbon inventory, implementation of emission reduction measures, and low-carbon service operations, while also distilling replicable methodologies tailored to the property management sector. Second, it spearheaded the development of industry-level standards like the "Property Management Industry Carbon Inventory Methodology," establishing norms for defining carbon emission boundaries, data collection criteria, and calculation methods—areas previously lacking—to provide practical guidance for carbon management across the sector. Third, it regularly hosts low-carbon themed forums and energy-saving specialized forums, inviting property management associations, low-carbon technology service providers, and leaders from various business segments of the group to discuss topics such as "Implementing Energy-Saving Technologies in Smart Parks" and "Innovating Low-Carbon Service Models in Communities." These forums not only consolidate internal practical experience but also promote cross-entity collaboration in technology and resources. Innovation in Community Low-Carbon Service Models." This approach consolidates internal best practices while fostering cross-organizational collaboration on technology and resources.

### **5.3. Activate terminal emission reduction momentum through "universal access + value-added services"**

Regarding the carbon-friendly incentive mechanism, Onewo plans to activate low-carbon participation enthusiasm across different groups through a tiered design: For internal employees, the company will launch a "Low-Carbon Behavior Points System," converting eco-friendly office practices—such as paperless operations, turning off lights when leaving, and commuting via public transportation—into corresponding points. Employees can redeem these points for career development resources like specialized dual-carbon training slots and cross-departmental project opportunities, as well as exchange them for office perks. For community residents and property owners, the plan establishes a closed-loop system linking "low-carbon actions-points-benefits." Residents can accumulate carbon points through practices like waste sorting, water conservation, and green commuting. These points can be redeemed for property fee discounts or community convenience services (e.g., housekeeping discounts, family activity

slots), thereby strengthening grassroots willingness to proactively engage in emission reduction efforts.

Regarding low-carbon supplementary services, Onewo offers customized solutions for different owner groups: For enterprise owners in industrial parks, it provides full-cycle low-carbon management services. Initial phases include customized low-carbon assessments for businesses, generating carbon footprint reports via smart park energy monitoring systems that highlight potential reduction areas. Mid-term, it will design emission reduction solutions like rooftop solar installations and energy storage equipment based on business characteristics, coordinating with specialized teams for implementation support. Later, it will establish routine carbon management mechanisms for enterprises, including monthly energy consumption tracking and quarterly performance reviews. Additionally, it plans to integrate green credit resources and government subsidy policies to assist enterprises in accessing specialized low-carbon renovation loans and applying for energy-saving subsidies. For residential property owners, we plan to launch household low-carbon consulting services, regularly organizing dual-carbon experts to visit communities and provide home energy-saving renovation recommendations. We will launch a household carbon footprint calculation tool to help residents understand their carbon emissions. Additionally, we plan to collaborate with home appliance brands to offer "low-carbon living packages," providing benefits such as group purchase discounts on low-carbon appliances and free replacement of energy-saving lighting fixtures. This extends emission reduction services into residents' daily lives, building a collaborative emission reduction network between "Onewo and property owners."

