infrastructure upgrades and cultural initiatives. These include installing elevator energy recovery devices, organic waste treatment systems, electric vehicle charging stations, and solar-powered street lighting, along with hosting low-carbon cultural activities, organizing recyclable goods markets, and implementing used clothing recycling programs. As a result, per capita carbon emissions have decreased from 1.695 tons of CO_2/person in 2021 to 1.518 tons of CO_2/person in 2023—over 10% lower than the city average and the community's baseline level.

4. Advancing Green Community Concepts: Through extensive advocacy for green, low-carbon, and energy-saving practices, more than 4,000 residents have been engaged in the community. Over 2,000 residents use green energy for transportation, with 74% of residents using electric bicycles and 27% using electric cars, substantially increasing green mobility in the community.
5. Publicity and Recognition: In October 2024, Gold Liu Xiang Yuan will participate in the low-carbon community construction evaluation organized by the Shanghai Municipal Ecology and Environment Bureau for the 2022 cycle. The community is also scheduled to be featured in a special report titled "Model Property Companies" in the Shanghai Evening News in November, highlighting its dedication to environmental sustainability and commitment to fostering green living practices among residents.

Project Highlights

Gold Liu Xiang Yuan has received unanimous recognition from the community, local government, and residents for its nearly two years of work in developing green energy, sustainable development technology innovation, and building a low-carbon community.

1. In 2017, it was awarded the "Green Community" plaque by the Jiading District Environmental Protection Bureau of Shanghai.
2. In 2020, it received the "Water-saving Community" certificate from the Shanghai Municipal Spiritual Civilization Construction Committee Office and the Shanghai Municipal Water Affairs Bureau.
3. From 2022 to 2024, it participated in the low-carbon community demonstration project organized by the Shanghai Municipal Ecology and Environment Bureau

Project Implementation

As a leading property management company in China, Onewo is committed to pioneering low-carbon energy conservation in the real estate sector, with a particular focus on residential communities. In 2021, the Gold Liu Xiang Yuan project in Shanghai was designated a "low-carbon demonstration community" by the Shanghai Municipal Ecology and Environment Bureau, and under the guidance of the Community Management Office in Juyuan New District, Jiading District, Shanghai City, launched a series of low-carbon transformation projects:

1. Microgrid System

Leveraging advanced technology, Onewo established a microgrid, named Magic Stone, to integrate and optimize the community's primary energy sources and consumption. This small, controllable, and integrated power distribution system enables self-monitoring, protection, and regulation. By networking photovoltaic power, energy storage, and property office loads with strategic algorithms, the microgrid achieves cost-effective, low-carbon operations. This innovative model not only addresses high design and construction costs in low-carbon retrofits but also ensures ongoing, effective management, avoiding operational challenges commonly seen in traditional low-carbon communities.

2. Green Energy

The project's property office operates on 100% green electricity. Photovoltaic installations across 300 square meters of suitable rooftops, including office and waste management buildings, provide a total capacity of 80 MWp, generating up to 36,000 MWh annually. Energy storage systems maximize photovoltaic energy use, enhancing overall efficiency and sustainability.

3. Solar Street Lighting

In partnership with the community and homeowners' committees, Onewo installed 50 solar-powered street lights, accounting for 22.22% of all street lights in the community. Solar lighting improves safety, reduces crime rates, and enhances quality of life by extending outdoor activity time and fostering community engagement. In emergencies, such as power outages, solar lights serve as backup sources. Additionally, solar street lighting educates residents on renewable energy and promotes the transition to sustainable energy.

4. Elevator Energy Recovery System

Two high-use elevators in the community were equipped with energy feedback devices, reducing energy consumption by 26.7%, with an average savings of 30%. Each elevator generates approximately 6-8 kWh daily, totaling 2,190-3,000 kWh annually, thereby improving energy efficiency and lowering operating costs.

5. Wet Waste Treatment

In collaboration with the homeowners' committee, Onewo installed two wet waste processors to reduce, neutralize, and recycle waste. The processors, located in waste rooms on opposite sides of the community, grind and ferment 10 kg of waste daily, using 20 g of compost bacteria to produce eco-friendly fertilizer for 10 square meters of green space. This promotes recycling, enhances public awareness of waste management, and encourages community engagement in environmental initiatives.

6. Electric Bicycle Charging Stations

To promote green commuting, Onewo, with government support, installed six electric bicycle charging stations across two community locations. This infrastructure supports the adoption of low-carbon transportation, encouraging residents to choose electric bicycles over fuel-based vehicles.

7. Public Advocacy

Community-wide advocacy efforts support low-carbon living through over 10 monthly events, including workshops, exhibitions, and online forums that promote knowledge of low-carbon practices. The community's public account broadcasts these initiatives, with over 100 families participating in government-supported "Green Family" events organized with the Women's Federation. These activities foster a culture of sustainability and environmental responsibility among residents.

Project Impact & Sustainability

Currently, many existing residential communities in China lack energy-saving facilities and equipment from the early planning stages, making future low-carbon retrofitting a key challenge for asset holders and property managers. Shanghai's Gold Liu Xiang Yuan project, as an innovative pilot led by Onewo in "low-carbon transformation of residential communities," serves as a model for other communities managed by Vanke Service and for tens of thousands of residential communities nationwide.

For example, the property service center and photovoltaic storage investors maintain sustainable operations through energy performance contracting (EPC). Technologically, the project has pioneered Magic Stone microgrid systems that integrate power management, energy storage, load balancing, control systems, and networked management. This approach has enabled the widespread adoption of cost-effective, high-impact energy-saving solutions, such as solar street lighting and elevator energy regeneration devices. Additionally, low-carbon concepts and science-based knowledge on community transformation have been integrated into community life through accessible initiatives, like "flea markets" and "green low-carbon community cultural activities," fostering a strong community consensus on sustainability.

The development of low-carbon communities not only supports environmental sustainability but also brings notable social and economic benefits, with high potential for promotion and sustainability. With increased global focus on climate change and expanded response measures, low-carbon community development is poised to become a central trend in future community growth.

Expert Comments

At the current stage of economic and social development in China, rapid growth in societal electricity consumption necessitates energy-saving measures to reduce energy consumption and lower greenhouse gas emissions. This project, through a series of low-carbon, energy-saving facility upgrades and new constructions, has achieved a 10% reduction in per capita carbon emissions intensity within the community over three years. Additionally, by encouraging residents to participate in resource recycling, the project has significantly raised environmental awareness and community engagement. The valuable hands-on experiences gained from this project are expected to be transferable to other communities, promoting green renovations, encouraging residents to adopt low-carbon lifestyles, and ultimately enhancing the quality of the living environment.