



# Consumers Beyond Waste:

An initiative of the  
World Economic  
Forum's Future  
of Consumption  
Platform

BRIEFING PAPER  
SEPTEMBER 2021



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# Introduction

Shifting from single use to reuse can bring immense potential to curbing the plastic waste crisis. It is possible to prevent the equivalent of almost 50% of annual plastic ocean waste by reusing just 10% of our plastics products.

Today, half of global plastic production is for single use and less than 10% of all plastic waste ever produced has been recycled. The continued increase in waste production, in which single-use plastic shares a large burden, is harmful to the planet, people and economies. The expansion of our waste footprint is environmentally and economically unsustainable and stakeholders are recognizing that we need to rethink how we produce and distribute materials, including how we manage them at end-of-life. Wide-scale adoption of reusable materials and systems may serve as a major piece of the material system's shift to circularity.

The World Economic Forum's Platform for Shaping the Future of Consumption seeks to advance more responsible models of consumption for the benefit of business and society. The Platform's Consumers Beyond Waste (previously Consumers Beyond Disposability) initiative brings together leading private- and public-sector actors committed to offering consumers sustainable and affordable alternatives to single-use products. The initiative focuses its efforts specifically on innovative reuse and durability-based solutions and has been working to test and enhance the viability of those solutions.

In July 2021, the Future of Consumption Platform published the [Future of Reusable Consumption Models](#) report in collaboration with Kearney. This report is a product of the Consumers Beyond Waste initiative, providing a framework for the viability of reuse systems and a guide for durability-based solutions. It also serves as an informational resource for the overall initiative, along with three community-authored papers: [The City Playbook](#); [Design Guidelines](#); and [Safety Guidelines](#).

Each of these three community papers, which are being released in September 2021, provide specific recommendations for implementing reuse models. This Executive Summary distills the main findings from these three papers, which collectively offer a holistic framework for practitioners and policy-makers seeking to adopt or expand reusable packaging systems in their own communities.

The three papers serve as working documents to the World Economic Forum's contribution to the Consumers Beyond Waste initiative. The findings, interpretations and conclusions expressed herein are a result of a collaborative process facilitated and endorsed by the World Economic Forum but whose results do not necessarily represent the views of the World Economic Forum, nor the entirety of its members, partners, or other stakeholders. Together, these resources establish systems change required for reuse, and these will educate practitioners and other stakeholders on approaches to transition to a reuse economy.

# ① City Playbook



The City Playbook is an action-oriented framework intended to guide municipal officials and local actors in their efforts to develop reusable packaging models. The Playbook outlines the principal resources and approaches practitioners should consider as they drive the transition from single use to reuse systems.

This is a timely issue for cities and towns worldwide. In addition to the growing climate-related stresses to residents and infrastructure, COVID-19 caused an immense surge in packaging waste (due to an increase in home deliveries and food-takeaway orders), which complicated the challenges that cities already faced in managing the environmental impact of pollution on their citizens. Reuse systems can help cities address these issues by cutting costs, creating jobs and contributing to environmental sustainability goals.

Cities are uniquely positioned as living laboratories to test and implement new circular consumption and production models. Their large and relatively dense populations are conducive to trying new programmes at necessary scale. Their highly developed physical infrastructure permits a wide range of options for transporting and handling products and waste material. Because they are home to a high share of entrepreneurs, innovators, cultural influencers and creative professionals, cities – especially larger ones – are well-suited to trying novel consumption models and to conveying the value of those models to a broader population.

Municipalities should consider the potential challenges and opportunities they might encounter as they transform current waste-management approaches, including economic viability concerns, environmental impact issues, consumer adoption uncertainties, budgetary and capacity constraints, and institutional barriers.

Signs of opportunity include rising consumer interest in pro-sustainability approaches, advances in relevant technologies, growing awareness of the limitations of current recycling and disposal programmes, and emerging interest in circular-economy principles and strategies.

City officials will need to create a strategic roadmap on how they can achieve their reusability targets and how these targets connect to their overall sustainability goals. Social, environmental and safety considerations are foundational for the success

of any reuse system. They also represent non-negotiable public policy imperatives that need to be fully integrated into the design, implementation and impact assessment for such systems.

Given the systemic complexity and nascent nature of many reuse models, measuring and optimizing social, environmental and safety impacts should be viewed as an ongoing, dynamic and reiterative process involving all relevant stakeholders. In collaboration with other public- and private-sector stakeholders, city authorities should put in place robust reporting, monitoring, evaluation and learning frameworks to be able to continuously assess and respond to any risks.

The transition to reuse systems requires significant changes in consumer behaviour, private-sector practices and the existing city infrastructure, as well as to a wide range of municipal incentive structures and policies. Therefore, a multistakeholder and cross-disciplinary approach will be critical. This means collaborating internally across divisions and agencies, as well as externally with private sector, civil society, academia and other public-sector actors.

Municipalities play an integral role in enabling, building and managing infrastructure, which is critical to establishing reuse systems that are economically and environmentally superior to single-use systems.

That infrastructure falls under two primary categories. Physical infrastructure includes the various back-end functions needed for recapturing the value of packaging through its collection, cleaning and redistribution into the forward supply chain; it also includes a city's existing recycling capabilities. Soft infrastructure refers to the myriad means by which a city provides a neutral platform in areas such as data pooling, deposit-scheme management, communications and education.

In addition, municipal government leaders can stimulate circularity and market innovation by building circular-procurement capacity at the municipal level, leading a market dialogue to facilitate cross-sectoral collaboration, and expanding circular procurement through cooperation across a region.

**The detailed Community Paper on The City Playbook for reuse systems can be found [here](#).**

## ② Design Guidelines



The Design Guidelines support designers, materials scientists, packaging engineers and reuse-system providers in designing, developing and implementing durable consumption models. This community paper outlines the design criteria and considerations for practitioners.

Virtually all consumer-packaged goods (CPG) packaging, with a few minor exceptions, is designed for single use. To maximize the benefits of reusable packaging systems, a mindset shift in packaging design is needed. As reuse systems transition from pilot to scale, a shift is required away from light-weighting and minimized packaging costs towards using higher-quality packaging materials that provide maximized longevity and optimized user experience. Refill/reuse models will enable materials like metals, higher quality glass and high-performance plastics that were not previously economically viable as single-use packaging.

Beyond achieving higher durability, reusable packaging needs to be designed for the reuse loop and its distinct steps related to refilling, cleaning and sanitization, collection and return. In addition, reusable packaging design needs to deliver against broader imperatives, in particular public health and safety, reduced environmental impact compared to the status quo, and consumer engagement.

To achieve necessary scale, reuse systems therefore require improved guidance on safety questions and need to be informed by environmental criteria that look at packaging from a refill context on a product by product and a business model by business model case. Such environmental criteria embedded in the design principles help accelerate the transition to a more circular system. Finally, innovative design for reuse opens an exciting world of opportunities to rethink how consumers can engage with and derive value from products and packaging.

Reuse thus offers the design community a massive opportunity and responsibility to envision and lead the way in developing the packaging and delivery systems of the future that can enable truly sustainable production and consumption models.

This report's proposed framework is organized around the four reuse models defined by the Ellen MacArthur Foundation: refill at home; refill on the go; return from home; and return on the go.

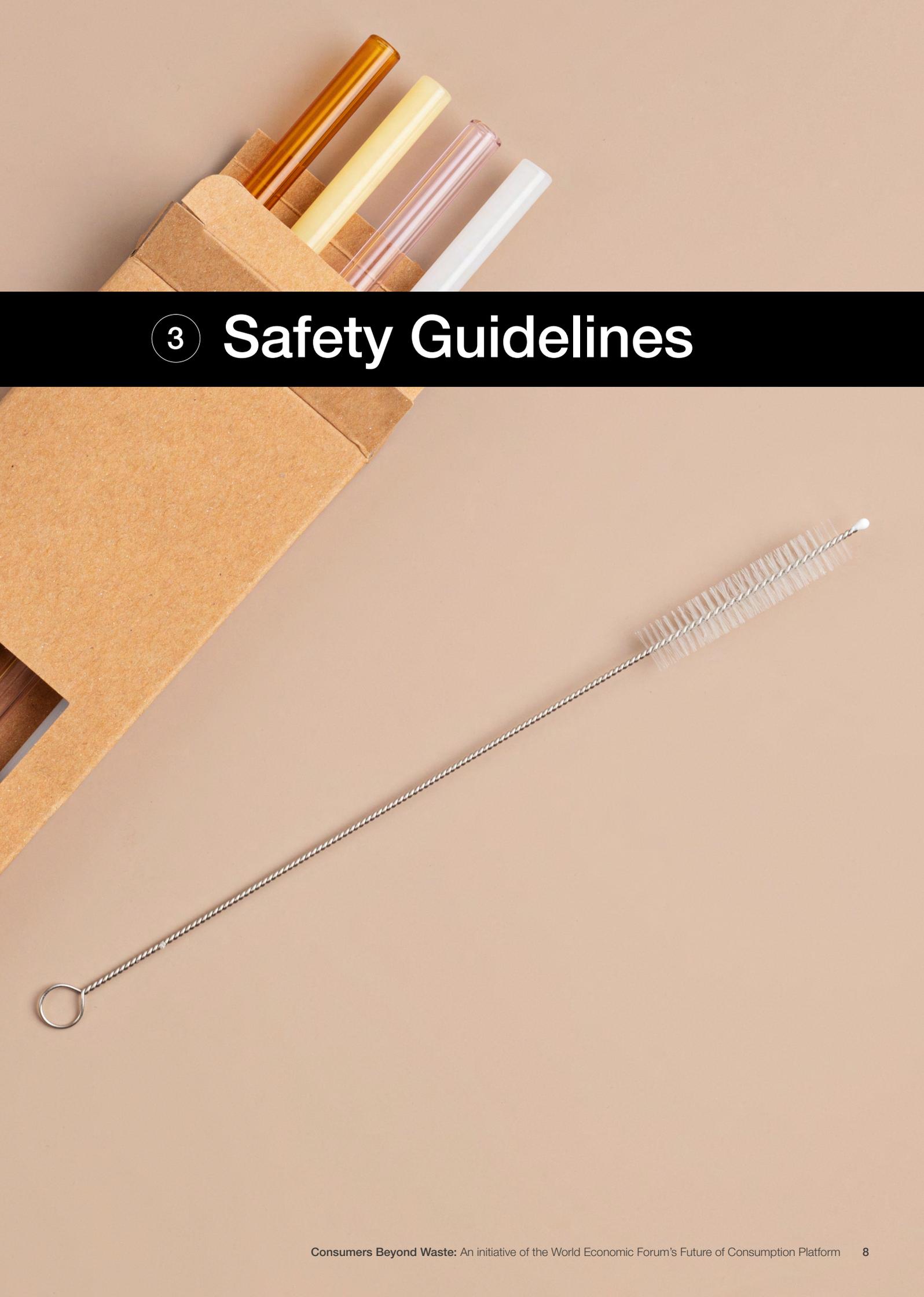
The framework is based on three interdependent design dimensions: reusable-container design, reuse-system design and environmental criteria for reuse.

**Reusable Container Design:** Direct replacement by the manufacturer or retailer of a single-use container with a reusable container that is ultimately recovered from the consumer, cleaned, and refilled for the next reuse cycle. The design criteria and considerations for reusable containers include four key elements: Materials, Design, Artwork and labelling, and Technology. Each of the four elements entails its own set of considerations as detailed in the community paper. However, across all of them, design needs to support the overarching objectives of durability (for optimizing the container's reuse cycle) and recyclability (for optimizing the container's lifecycle).

**Reuse System Design:** Design criteria and considerations associated with systems across the various stages of the product lifecycle of a reusable container. This specifically looks at the big questions designers need to think of at the various stages of the product lifecycle in the context of the reuse system: Production, Filling and refilling, User experience, Collection, Transport and storage, Cleaning, End of life.

**Environmental Criteria for Reuse:** An environmentally beneficial reuse system is one that reduces waste, pollution, and other environmental impacts as compared to single-use packaging. This section covers the main environmental opportunities and risks associated with reusable packaging regardless of material type, production area, and available infrastructure. The criteria for consideration include: Sourcing and materials, Production, Durability, Transportation, Use (and consumer engagement that enables reuse), and End of life.

**The detailed Community Paper on Design Guidelines for reuse systems can be found [here](#).**



## ③ Safety Guidelines

The Safety Guidelines are intended as parameters to help practitioners and policy-makers better understand and navigate important public health and safety considerations in their efforts to enable and expand reusable packaging systems. It is targeted at reuse solution providers, as well as business leaders and experts from the consumer goods, retail, infrastructure, logistics and sanitation industries.

The community paper provides insights and recommendations for a range of functions, including operations, quality assurance, policy, risk, regulatory compliance, consumer engagement, communications and marketing. Key areas covered include:

**Product categories:** Health and safety requirements differ by product category. Packaging standards for ingested products like food and beverages are much stricter than for products applied to the body such as skincare and cosmetics.

**Reuse categories and implications for cleaning:** The four reuse categories, as defined by the Ellen MacArthur Foundation, have different implications for cleaning operations of reusable packaging. The refill-at-home and return-from-home modalities are fairly straightforward. The customer is the one primarily responsible for handling the reusable packaging.

With the other two reuse categories, there are more variables. In a refill-on-the-go system, reusable packaging may be owned or provided by the consumer and cleaned prior to refill (either on-site at the retailer, or at home). Alternatively, reusable packaging may be both provided and cleaned by the retailer prior to refill. Yet another possibility is that the reusable packaging is cleaned by a third-party cleaner before it even reaches the retailer.

Finally, under the return-on-the-go structure, reusable packaging may be returned to a retailer, who cleans it on-site prior to refill. Or it may be returned to a designated drop-off point and transported to a third-party cleaner.

**Operational considerations:** Design and material choice plays a critical role in the safety of reusables. Relevant factors include ease of cleaning, filling-process principles, heating and cooling considerations; durability and degradation of materials, and overall customer safety and ease of use.

With regard to cleaning, factors to address include consumer education on hazards and proper usage, varying needs of home and professional cleaners, inspection criteria, and such variables as speed of drying and need for ventilation. For filling, relevant criteria include whether the product is filled at home, at a retail site, or at a warehouse, who performs the filling, who performs refilling and where.

Several factors related to shipping, handling and storage also may apply, including the need to clean and rotate items, risk assessments for handling materials that may be toxic or otherwise dangerous, and the logistical and financial viability of bulk handling.

Finally, numerous environmental considerations may come into play, including how to limit the use of such resources as water, energy and chemicals, the availability of eco-friendly cleansers, and the need for “wet cleaning” as opposed to “dry cleaning”.

**Role of consumers:** Consumers play a crucial role in achieving a successful and widespread adoption of reusable packaging systems. In that context, they also play a critical role in ensuring the health and safety of such systems. While businesses and governments control the design of the system and safety standards, ultimately the consumer, as the end user of the packaging, must understand how to use and/or clean the packaging and make the decision to do so properly.

Consumer engagement and communication is crucial. This includes labelling and collateral, information on cleaning and refilling, protocols for conveying whether a product has become unclean or unsafe, and the means by which consumers can recognize when a reusable container is at the end of its lifecycle. Additionally, reuse models may raise distinctive liability questions; and how to give the consumer ample notice of potential responsibilities or hazards is another factor that producers should bear in mind.

**The detailed Community Paper on Safety Guidelines for reuse systems can be found [here](#).**

# The Path Forward

Building on the foundational content of the City Playbook, the Safety Guidelines and the Design Guidelines (along with the Reuse Viability Framework), we now commence Phase 2 of Consumers Beyond Waste initiative.

Looking ahead, the initiative is committed to bringing about further innovation and partnership as the reuse movement gains momentum. The initiative will mainstream reuse models and continue to develop compelling, real-world examples of successful reuse networks via two strategies running in parallel:

## Strategy 1: Knowledge Sharing

The core objectives are to increase awareness and knowledge of reuse models, distil and share best practices and lessons learned, amplify existing market solutions and address barriers to scale.

The World Economic Forum proposes to host knowledge-sharing sessions on specific topics relevant to the community, including national and city reuse policy, standardization, measurement and reporting, consumer adoption and scaling.

## Strategy 2: Transformative Action to Scale

The intent is to expand reuse efforts by amplifying and empowering ecosystem innovators, activating and accelerating reuse-system implementation, and reducing barriers to implementation.

By facilitating collaborative action between stakeholders across priority regions and product categories, the World Economic Forum seeks to expand existing reuse solutions to new markets and to deploy new reuse standards, tools and guidelines through pilot programmes in select markets.

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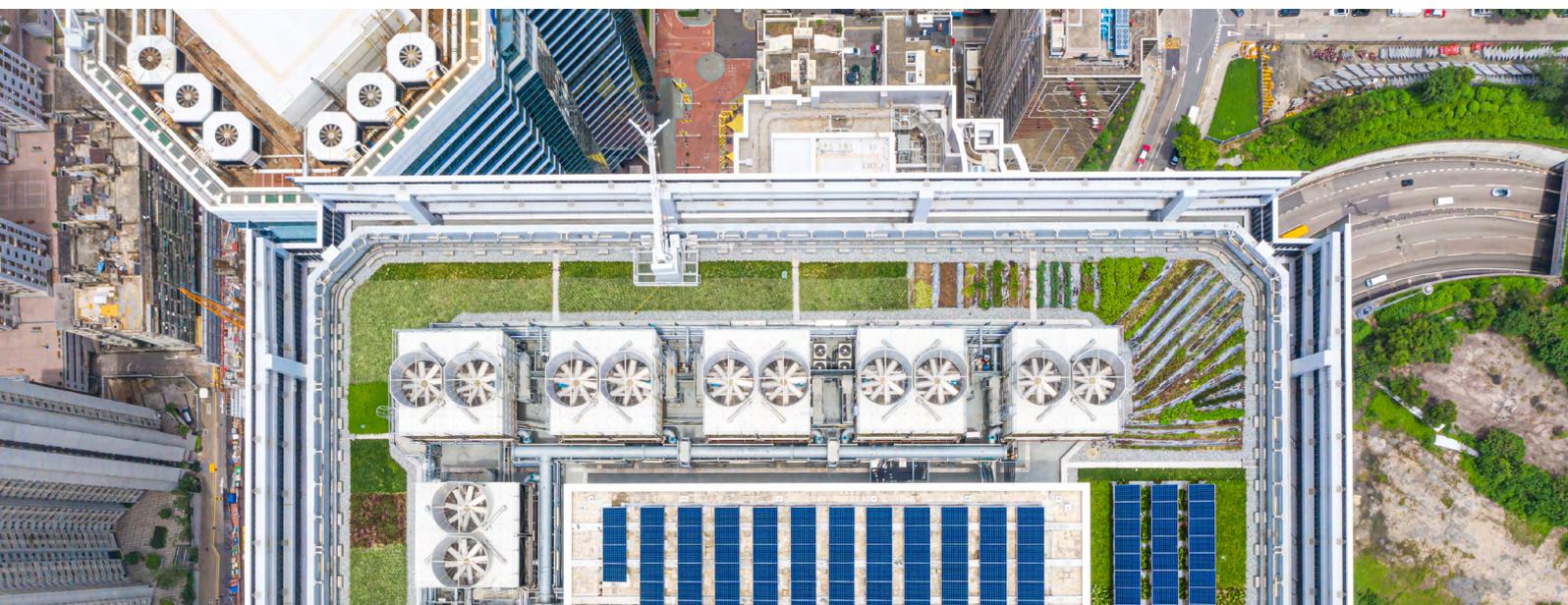
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