ABU DHABI SUSTAINABILITY WEEK

WORLD FUTURE ENERGY SUMMIT

ADSW ADVISORY COMMITTEE INSIGHTS REPORT

UNLOCKING GLOBAL CIRCULAR ECONOMY

2025

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Contents

Foreword

In 2025, circular economics is no longer a niche concept, it's a mainstream pillar of sustainability strategies worldwide. Governments and businesses alike are motivated by both environmental urgency and resource security concerns to become more circular and encourage others to follow suit. As the economic and environmental benefits of addressing, reducing, and utilizing waste streams become clearer, a shift to circular economy practices looks increasingly attractive to all organizations, regardless of their origin or location.

Ambition levels are rising – UNEP's legally binding global treaty on plastics (the Intergovernmental Negotiating Committee on Plastic Pollution) made moderate progress in 2024, with further momentum expected in 2025. Humanity was expected to consume over 500 million tonnes of plastics in 2024 alone, and the INCPP is the first attempt to forge a truly global response instrument to tackle the mounting crisis.[1]

Actions at the industry and individual organization levels also matter greatly. Leading companies continue to announce bold targets (IKEA, a massive global retailer, is committed to 100% circular products by 2030)[2], which sets the tone for progress and encourages peers and competitors to match these trailblazing efforts. These developments build optimism that a more regenerative, less wasteful economy is within reach.

The challenges are daunting, however. Currently, the world is only about 7.2% circular, meaning over 90% of materials consumed are not recycled or reused.[3] Stubborn obstacles, such as a lack of investment in waste management infrastructure and ingrained industry norms placing a "green premium" on recycled materials, continue to hamper progress. Policies like extended producer responsibility and "right to repair" laws are emerging but have not yet been universally implemented or enforced even in advanced economies.

What policies, practices, and industry norms need to change to enable a circular economy to emerge? How can various groups – from governments and regulatory bodies to major retailers and everyday consumers – be galvanized to think and act in a more sustainable, circular manner? Abu Dhabi Sustainability Week (ADSW) – hosted by Masdar – recognizes that every stakeholder, from product designers and manufacturers to policymakers, financiers, and even informal waste collectors, has a role to play and a unique perspective to contribute.

This report collects the main insights from the 2025 ADSW Advisory Committee on Circular Economy, which convened experts from around the world under the Chatham House Rule to candidly discuss challenges and opportunities. The following sections explore key themes that emerged – from circular product design and industrial symbiosis to financing mechanisms, policy frameworks, local solutions, and preventing leakage of waste into our oceans. Collectively, these insights provide a snapshot of current progress and a roadmap for driving the circular economy forward.

Circular Design and Product Life Cycle Innovation

One of the foundational requirements of a circular economy is to eliminate waste from the start of the design process. The life cycle of products must be reimagined so that goods are durable, repairable, upgradable, and ultimately recyclable. “When do I have waste? Is it only when I discard it,” one committee member said, “or is it when I start designing the product itself?” Because end-of-life outcomes are largely determined at the design stage, if a product is destined to become unusable landfill after a short use, that is essentially designed failure. Instead, circular design principles call for planning a product’s next life from the outset – ensuring it can be easily disassembled for repair, refurbishment, or material recovery.

Design innovation can extend product life cycles, according to a consumer goods representative on the committee, noting that their company now follows strict circular design guidelines to ensure that most products can be reused, repaired, or remanufactured. Already, 75% of their product range is built with modular parts (such as removable covers or extendable components) that allow easy upgrading and customization instead of replacement. This approach not only reduces waste but also appeals to customers’ desire for longevity and personalization.

A service launched by another committee member’s firm facilitates repairs through an online spare parts portal offering free or low-cost replacement parts for furniture and appliances, so that broken pieces do not necessitate throwing the entire product away. Early feedback shows strong interest from consumers in fixing items if the process is made convenient – a positive sign that a culture of repair can be revived or introduced where wasteful consumer practices prevail.

Despite such progress, design for circularity is by no means universal. Many products on the market today cannot be easily fixed or recycled – often due to choices like permanent adhesives, mixed-material components, or lack of available parts. This is where policy can strongly influence design. Some regions are enacting “right to repair” regulations that require manufacturers to make repair manuals and parts accessible and to design products for longer lifetimes. The European Union, for instance, passed a Right to Repair directive last year setting an invaluable precedent for mandating repair-friendly design and affordable spare parts availability.[4]
Extended producer responsibility (EPR) laws similarly incentivize companies to think about a product’s end-of-life handling at the design phase, since producers may have to finance the recycling or disposal of their goods. Forward-looking companies are already anticipating these shifts. Some manufacturers now include end-of-life instructions in product packaging – detailing how to upgrade, return, or recycle the item after use – and even experiment with buy-back or take-back programs to loop products back into use. Such models, if scaled, could fundamentally change the producer-consumer relationship into one of stewardship rather than one-off transactions.

Crucially, circular design is not only about longevity but also about the materials themselves. Designing products for a circular economy means favoring materials that can be cycled repeatedly with minimal degradation. For example, aluminium and glass can be endlessly recycled if collected, whereas complex multi-layer plastics or composites are much harder to recover. The challenge of adhesive-laminated packaging is that it may perform brilliantly as packaging, but "that liner makes it very challenging to do a full product recycling." They called on companies to invest more heavily in their R&D to develop recyclable alternatives or improved recycling methods, as upstream choices in material and component design largely dictate downstream possibilities for circularity.

By embedding circular thinking at the design stage, manufacturers can dramatically reduce future waste and create products that keep value circulating. The technologies and expertise to design for durability, modularity, and recyclability largely exist today; the bigger hurdles are shifting mindsets, business models, and incentives. "If I don't know how to repair it, how to extend its life," a committee member said. "Would I accept to use a product if I don't know what to do with it after three or four years?" In a circular economy, both producers and consumers will place much greater emphasis on the full lifespan of goods. Pushing design innovation in that direction is one of the most impactful steps toward a zero-waste future.

> **If you're looking to be circular, you have to involve the customer and accept that their needs and priorities will change over time. Their children grow up, their tastes change, they get tired of looking at the same thing, and so on. That's where design comes in; you can greatly extend the life of a product if you design it that way – modular beds that can be extended, sofas with removable, changeable covers. Design your products so that the consumer has options and isn't tempted to simply throw it away the moment something changes in their circumstances or tastes.**

Industrial Ecosystems and Value Chain Coordination

Advancing circularity requires looking beyond individual products to the broader industrial ecosystems and value chains in which those products exist. Better coordination among different industries is needed to turn one sector's waste into another's feedstock. Nature operates in integrated cycles, one expert noted, whereas our industrial economy often operates in silos – we "drop the leaves" but fail to use them in the next season. To mimic nature's circularity, businesses must collaborate in new ways, forming networks where by-products and waste streams are exchanged as valuable inputs.

Establishing a circular marketplace is one way to connect supply and demand for secondary materials. Currently, if a company has leftover material to sell, it is often forced to seek buyers through ad-hoc, business-to-business deals. Likewise, firms that want to source "green" materials struggle to find suppliers and verify quality. "There is no marketplace where we can go," noted one committee member from the waste management industry. "Companies producing recycled materials don't always know who needs them, and companies seeking recycled inputs don't know who has them."

The idea of an online platform where any organization can post available waste resources or material needs gained strong support from the committee. Digital material exchanges have begun to emerge in some regions, but global coverage is lacking. A construction firm, for example, should be able to easily source recycled steel or plastic from a database of local suppliers, or a factory should be able to advertise its excess heat or CO_2

for use by others. Creating such interconnected marketplaces – essentially industrial matchmaking platforms – could unlock circular value on a much larger scale by scaling up industrial symbiosis.

This industrial symbiosis has great potential for sectors such as metals and heavy industry sector. An aluminium smelting company for instance, has achieved zero waste-to-landfill by finding takers for its by-products. Spent carbon anodes from the smelting process, once considered a disposal problem, are now sent to cement and steel plants which use them as an alternative carbon fuel and raw material, keeping them out of landfills. However, the economics can be challenging – initially the smelter had to pay other industries to take its by-product because those industries were not accustomed to paying for "waste." This highlights a classic barrier: if virgin materials or conventional disposal are too cheap, companies have little financial incentive to use secondary materials. Over time, as policies internalize waste costs, e.g., through carbon prices or landfill taxes, and as supply chain pressure to use recycled content grows, these exchanges can become mutually profitable. In the meantime, pioneering companies are proceeding anyway to gain experience and pre-empt regulations.

Another striking case comes from the construction materials sector. One company replaces expensive mined inputs (like quarried stone or sand) with locally sourced industrial waste in making tiles and bricks. By substituting a waste that costs as little as $10/ton for a raw material that would have to be mined and shipped in, they dramatically cut production costs. Their recycled-content tiles are not only cheaper to produce but perform on par with conventional ones. When the company showcased these recycled tiles to a city municipality, demand surged – contractors were eager to procure sustainable materials once they knew they existed.

This illustrates a key point: market signals for circular products do exist, but coordination is missing. Once the connection was made, "all the contractors were phoning us to order large quantities of the recycled tiles," the committee member said. The limiting factor was scaling up production to meet that interest. It reveals a virtuous circle worth fostering: if suppliers invest in circular production and buyers are made aware of the option, the market can respond very positively.

An ecosystem to truly close loops would require some complexity, as transforming waste into a resource often isn't a simple one-to-one exchange, potentially involving multiple players and steps. For instance, plastic waste in a developing country can pass through many hands, with informal waste pickers collecting valuable PET bottles to sell into recycling, but low-value plastics being left behind and ending up dumped in rivers.
To create a circular economy, stakeholders should raise their ambitions on industrial symbiosis to go beyond linking two factories – they should be aiming for a system that spans whole sectors.

Enabling such ecosystems will likely require neutral facilitators or brokers (such as government agencies or industry alliances) to convene all stakeholders. Governments should also help centralize and coordinate these efforts, rather than leaving it entirely to private sector initiative. The European Union, for example, has set clear targets for waste reduction and recycling, which industries and municipalities collaborated to achieve. A similar structured approach could help build interconnected industrial ecosystems in other regions.

Achieving an economy where no by-product is left behind means breaking down silos and fostering communication between traditionally separate industries. It also means recognizing and creating value in unlikely places. "The core task is that we generate value," as one committee member pointed out. Circular systems must create value from waste, rather than treating it as mere trash to be safely disposed of, or simply dumped. Whether through marketplaces, symbiotic partnerships, or industry-wide frameworks, the goal is to align incentives so that everyone, from a giant manufacturer to a local recycler, benefits by participating in an integrated circular ecosystem. This level of cooperation is ambitious but necessary: complex ecosystems with multiple players are how nature operates, and every industry must learn to do the same.

> **Imagine asking a tree to recycle its leaves. That would never work. The leaves dropping on the floor are not going to be kept and reattached and cleansed ready for the next springtime. Recycling should not be considered in a very tight mindset; circularity is a complex process that needs flexibility to work. You need multiple players at multiple levels coming together to form an ecosystem where you innovatively generate value where there was none previously.**

Financing Circular Infrastructure and Technologies

Transitioning to a circular economy at scale will require mobilizing significant investment and suitable financial incentives to accelerate funding into the appropriate infrastructure and make circular business models financially viable. Many circular solutions today face a cost competitiveness gap compared to the linear status quo, especially in the short term. New technologies for recycling, reuse, or material substitution often carry a "green premium" because they are first-of-a-kind or haven't achieved economies of scale. Meanwhile, incumbent linear industries benefit from decades or even a century of optimization and, in many cases, legacy subsidies (what one member called the "fossil discount" embedded in virgin material prices). Overcoming this imbalance is both a financial and policy challenge.

One approach to this is implementing market incentives and pricing mechanisms that level the playing field. For example, if landfill tipping fees and virgin material extraction fees are increased, it immediately improves the business case for recycling and reuse methodologies. In regions where landfilling is cheap and regulatory measures are lax, clients are reluctant to pay for recycling services – they compare everything to the low cost of dumping. By contrast, in places with high landfill taxes or strict landfill limits (as seen in parts of Europe), companies are driven to find alternatives, spurring investment in circular solutions.

This gives governments a powerful tool in adjusting the financial goalposts by making landfill more expensive and internalizing environmental costs. Extended producer responsibility fees function similarly – if producers must pay for end-of-life management of their products, they have a direct incentive to reduce those costs through better design and partnering with recyclers. The concept of true cost accounting should underpin circular economy financing. So long as it remains essentially free to pollute or waste resources, linear models will retain an artificial advantage. Policies that assign costs to waste and pollution push capital toward circular systems that avoid those costs. Even with better price signals, however, scaling up circular economy projects requires upfront capital. Greater investment is needed in circular infrastructure, spanning everything from modern recycling plants and material recovery facilities to refurbishment centers, reverse logistics networks, and digital platforms. Encouragingly, some large corporations and venture investors are starting to put serious money into this space. Major global retailer Ingka Group recently committed over $1 billion to recycling and circular venture investments, seeing it as both an environmental responsibility and a market opportunity.

Similarly, industries tied to critical materials (like battery metals) are investing in recycling technologies to secure future supply. However, current investment levels are still far below what is needed for a systemic shift, and both public and private financiers should view circular economy projects as strategic, future-proof investments. Multilateral development banks and green funds, for instance, could prioritize waste management infrastructure in developing countries as a key climate

and health intervention (given the links between waste, emissions, and pollution). Likewise, private equity and venture capital could seek out startups that turn waste into value – indeed, funds dedicated to circular economy innovation are on the rise.

The role of subsidies and public funding sparked a nuanced debate. One school of thought is that subsidies are essential in the early stages to de-risk circular technologies and help them compete. Renewable energy is a comparable precedent: government support helped drive down the cost of solar and wind, and now they thrive on market terms. However, subsidies should not be relied upon long term. "If you are only relying on the government's cash, you will never get out of it," one committee member cautioned. "You need to stop that by finding market strategies that support your case and secure reliable income." Circular ventures should focus on high-value niches initially (a "skimming" strategy) to generate profits without perpetual subsidy and then scale up from there. Either way, the end goal is financial self-sufficiency for circular business models – subsidies should be a temporary bridge, not a permanent crutch. Promising mechanisms to support circular ventures in the interim include blended finance, outcome-based incentives, and green bonds or "circular economy bonds" earmarked for infrastructure development.

On the technology front, moving from pilot to mainstream can be challenging. Many circular economy solutions work well in tech demos but scaling them requires significant capital expenditures and market creation. Carbon capture and utilization (CCU) is an illuminating case study. Utilization of CO2 to make fuels or products is circular in concept and technically feasible, but fossil-based options are cheaper. Without policy support like tax credits or mandates, CCU projects struggle to attract investment. By introducing suitable incentives, policymakers can drive financing into those circular technologies that otherwise might stall.

> **CCUS focuses very heavily on the S part (sequestration), which goes against the circular economy concept, because you're just burying the carbon rather than using it to make new products that otherwise would have used fossil fuels. But it always comes back to the price factor – there are wonderful technologies out there, but they are competing against established models with baked in subsidies and over 100 years of refining the business model. It will take time for more circular technologies to catch up.**

Aligning financial flows with circular economy goals is about reconciling short-term vs. long-term value. Many circular solutions offer long-term payoffs: supply chain resilience, reduced regulatory risk, and brand goodwill through lower environmental impacts. However, they may not provide the immediate returns comparable to traditional projects. It falls to visionary leaders – both in government and the private sector – to prioritize these long-term benefits.

Governance, Policy, and Extended Producer Responsibility

Effective governance and policy frameworks are indispensable for a circular economy, setting the rules and incentives that guide all actors. Without strong policy signals – from international agreements down to local regulations – progress will remain patchy.

Extended Producer Responsibility (EPR) is one policy approach that makes producers responsible for the end-of-life of their products (financially and/or physically). EPR is "critical to funding waste management," the committee said, and to driving accountability. EPR is gaining traction outside of the EU, where it originated. The UAE, for example, is developing a national EPR policy, which could be a game-changer for waste funding in the region.[5] Meanwhile, in the US, states like California have introduced EPR laws for packaging, essentially pricing the externalities of waste and penalizing non-compliance.[6]

These developments are a positive sign that a coordinated push for EPR regulations could quickly turn it into an established industry norm rather than the exception. However, they also cautioned that EPR needs to be thoughtfully implemented. Some early EPR programs have been too simple or too lenient, allowing companies to pay minimal fees that don't go far enough to cover waste management costs. To truly impact mindsets, EPR fees should reflect the real environmental cost of difficult-to-recycle products.

> **EPR has a vital role to play in areas like electronics. In some industrial sectors it's easy to recycle or repurpose waste because it comes in huge quantities, but for electronics you're looking at the severe complications of trying to recycle products on a household level. This is where EPR can really motivate OEMs to design more sustainably, to choose more recyclable materials and packaging, and to be more circular overall.**

Beyond EPR, a range of policy levers could promote circularity. Setting clear targets and standards is crucial. The success of the EU hinged on directives that laid out exactly what percentage of recycling or waste reduction needed to be achieved by which dates. This provided certainty and alignment for businesses and local authorities to plan investments. Such targets galvanize action and enable consistent measurement.

Standards for recyclability and reusability are equally important. Plastic shopping bags have been a frustrating case in some regions: a fee was introduced for consumers to pay for bags, but there was no standard for improving the bag's recyclability or reusability. As a result, people paid a bit more, but the bags remained the same problematic product, and overall waste did not significantly decrease. The lesson is that policy should intervene at the design/production stage rather than only at the disposal stage. If products are required to meet certain circular criteria before they can be sold, it can drive innovation up stream.

Government coordination is also crucial to circular economy efforts, which can span multiple ministries and levels of government – from city waste management to national trade rules. Often municipalities expect private waste contractors to solve all of the problems of waste and environmental impact. In reality, those companies can only operate within the system defined by policy. The call was for governments to create a centralized framework that aligns everyone's responsibilities.

Global cooperation is an extension of the governance discussion. Waste and resource flows do not respect borders; materials are mined in one country, manufactured into products in another, and often

discarded in a third. Without global alignment, there's a risk of simply shifting the waste burden around. For example, bans on plastic waste imports by countries like China (instituted in 2018) forced exporting countries to improve their own recycling, which was a positive outcome, but also led to redirection of waste to other, less regulated countries.[7] A truly circular economy will likely require global rules or agreements that prevent leakage of waste to the environment anywhere on the planet.

Enforcement and public awareness are critical for policy success. Good laws on paper need enforcement mechanisms and transparency to be effective. If EPR fees are collected, are they transparently reinvested in recycling infrastructure? If recyclable packaging is mandated, is there follow-up to ensure those items are being recycled in practice? At the same time, engaging the public through awareness campaigns can amplify policy impact. Bans or fees work better when consumers understand why – e.g., knowing that a fee on single-use bags is meant to encourage reusable bags and cut down on litter. Consumer behavior ultimately drives corporate behavior: if people demand circular products and avoid wasteful ones, companies and regulators will respond. Thus, soft policies like education and information campaigns (eco-labels, public service announcements on waste, school programs on circularity) are complementary to formal regulations.

Policy drives practice. Strong, well-designed regulations such as EPR, product standards, and targeted incentives can fundamentally reshape how businesses operate, from design through disposal. Governments at all levels have a toolkit – fees, bans, mandates, public investment – and should use it in concert to accelerate the circular transition. Many of the technical solutions are already known; smart policy and governance are needed to knit these solutions into a functioning circular economy.

Local Solutions, Waste Management, and Informal Sector Inclusion

Circular economy strategies must ultimately deliver results on the ground in communities and cities around the world, including local solutions and the informal sector, especially in developing countries. A significant portion of the world's population lives in places where waste management is limited or non-existent. In these contexts, innovative local initiatives and informal waste workers often fill the gap, and any global circular economy must empower these actors rather than replace or ignore them.

In many developing economies, it is the informal waste sector that performs the lion's share of recycling. Globally, an estimated 59% of all recycled plastic is collected by informal waste pickers – individuals who scavenge and sort trash to extract materials of value.8 In countries like Indonesia and the Philippines, armies of waste pickers recover PET bottles and cardboard to sell into recycling markets, but lower-value waste like multi-layer plastics or dirty film often gets left behind and ends up polluting rivers. This dynamic means that the informal sector is both crucial and vulnerable – they prevent significant amounts of waste from being simply dumped or burned, yet they operate in precarious conditions and only recycle what can turn a quick profit.

Empowering and integrating the informal sector is key to a more circular economy. Policymakers and companies are beginning to recognize this. Cities can formally contract or partner with waste picker cooperatives to provide collection services, ensuring they have stable income and better equipment. Social enterprises and NGOs can help informal workers get training, protective gear, and access to direct buyers (cutting out exploitative middlemen). When informal recyclers were organized and supported, collection rates of recyclables shot up, benefiting both the community and the recyclers' livelihoods. This inclusive circularity ensures the shift to circular economy also improves social outcomes for those at the base of the waste pyramid.
Local waste management infrastructure is another piece of the puzzle, with many regions still lacking basic systems like regular waste pickup, sanitary landfills, or recycling facilities. In such situations, expecting sophisticated circular economy practices is unrealistic until foundational systems are in place.

> **Most of us come from contexts where you put your waste in a bin and it goes away, but we're working in places where waste management isn't functioning because it is underfunded to the tune of billions of dollars. In these areas, simply establishing reliable waste collection can be transformative, while also creating a supply of materials that recyclers or upcyclers can work with.**

Amid the challenges, inspiring local solutions are being piloted in various communities. One entrepreneur on the committee described a project turning green waste into biochar, a form of charcoal that can enrich soil. By collecting garden clippings and farming waste that would otherwise rot (and emit methane or get burned), their team pyrolyzes it into biochar, which farmers then mix into soil to improve water retention and reduce need for fertilizers. This closes a local loop (organic waste to soil amendment) and addresses multiple issues: reducing landfill volume, cutting emissions, and aiding agriculture. They are even experimenting with mixing biochar into asphalt for road construction, which could make roads more durable and simultaneously sequester carbon in the pavement. Such innovative uses of waste at the local level illustrate how circular economy principles can be applied creatively with available resources and know-how.

Making the circular economy work for everyone means paying attention to people and local context. The best solutions in one locality might not work elsewhere – strategies must adapt to local waste streams, cultural attitudes, and economic realities. However, sharing best practices is invariably helpful. Approaches from different regions could be made relevant to a wider range of regional and local contexts. Circular economy is not just an industrial or environmental agenda, but a community agenda, too. It can empower citizens, provide cleaner and safer neighbourhoods, and create dignified jobs – if we design policies and projects with inclusion in mind.

Ocean Leakage and Global Material Flows

An urgent topic cutting across circular economy discussions is the problem of leakage – especially of plastics and other pollutants – into oceans and the environment. No circular economy report in 2025 can ignore the stark images of plastic-choked rivers and the statistic that roughly 11 million metric tons of plastic waste enter the oceans each year, a figure on track to nearly triple by 2040 without major intervention.9 Our failure to close material loops has led to a global pollution crisis, but implementing circular economy principles can mitigate and perhaps eventually solve it.

Current recycling systems tend to "skim" value, leaving the rest to be discarded. Valuable plastic polymers like PET and HDPE (used in bottles and containers) are often collected and recycled because they have market value, whereas multi-layer films, sachets, and other hard-to-recycle plastics are frequently dumped. In developing countries without robust waste management, the cheapest way to get rid of this unwanted trash is to toss it in waterways. This means that only achieving partial recycling of complex products is contributing to ocean pollution.

> **Out of sight, out of mind, that's why waterways are used as dumping grounds for anything that is too complicated to recycle, or when there is no inherent value for informal waste collectors to capture. This half-way effort at achieving a circular economy is causing massive destruction of the oceans.**

Government policy can play a big role here by making the non-valuable materials valuable – essentially through EPR fees or deposit schemes that put a price on items that would otherwise be trash. Multi-layer sachets were one highlighted example: "fantastic for preserving food, terrible for the environment," said a member of the committee. If regulatory bodies were to impose a high EPR fee on them, that money could either subsidize their collection or spur companies to replace them with something more recyclable. Similarly, a deposit-return system for things like plastic pouches or cigarette butts could entice people to collect them. We must create value (or at least a cost) for what is currently valueless waste. Pilot projects in some places are looking at paying communities to gather ocean-bound plastics, which then get used in products. These initiatives are promising but need scaling and stable funding.

Addressing global material flows – essentially tracking and managing resources through their full journey – can also improve circularity. Better international protocols, for example, can be developed for waste trade and recycling. The Basel Convention was amended in 2019 to restrict the export of mixed or dirty plastics, pushing countries to deal with their own waste rather than export the problem. Greater transparency in material supply chains can also have an impact. If companies knew exactly where their waste and emissions ultimately end up, they might take more responsibility. Emerging tools like digital product passports (which the EU is planning for certain goods) could in the future show not just a product's origin but also its end-of-life handling, thereby shining a light on leakage points.

Circular economy is often framed as a land-based issue, ignoring the oceans, which cover 70% of the planet's surface and 91% of living space by volume. The circular economy paradigm, if extended to the oceans, means preventing litter and contaminants from entering marine ecosystems and also exploring circular opportunities in the oceans. For example, the burgeoning concept of a circular blue economy: reusing brine from desalination plants instead of dumping it back into the sea or developing bio-based plastics from seaweed that can safely biodegrade. The group briefly noted desalination brine as a specific challenge in the Middle East – with more desalination, tons of concentrated saltwater are produced and usually discharged, potentially harming marine life. Finding ways to recover minerals from brine (like salt, magnesium, even lithium) or use brine in other industrial processes would align with circular thinking and reduce ocean impact.

Addressing leakage requires a mix of upstream and downstream actions: upstream innovation and substitution to avoid problematic wastes, and downstream capture and valorization of any wastes that do occur. International cooperation is crucial, because oceans connect us all, and forums like ADSW and the World Circular Economy Forum need to put river and ocean systems front and center when discussing the circular economy.

Key Takeaways

Design for longevity and recovery: The journey to circularity begins at the drawing board. Products should be conceived with repair, upgrade, and recyclability in mind – waste is largely a design flaw. Embracing circular design is no longer optional, and regulations like right-to-repair are raising the bar for manufacturers. Companies that innovate in this space are finding that longer-lasting, upgradable products can unlock new business models and stronger customer loyalty.

Collaborate across value chains: No organization can go circular alone. Industrial symbiosis and marketplaces for secondary materials are essential to link waste generators with potential users. Breaking down silos between industries allows one sector's by-products to become another's raw input. Neutral platforms or brokers are needed to facilitate these exchanges and for governments to coordinate stakeholders. The most successful circular systems function as ecosystems, with multiple players exchanging materials and energy in a mutually beneficial network.

Fix the economics of circularity: Moving away from linear practices requires overcoming cost barriers that currently favor the status quo. This means aligning financial incentives with circular outcomes. Policy tools – EPR fees, landfill taxes, recycled content mandates, tax credits – are powerful levers to make recycling and reuse more cost-competitive. At the same time, innovative financing is needed to scale up circular enterprises: blended finance to de-risk projects, green bonds targeted at circular infrastructure, and impact investment in circular startups. Uncertainty or unfavorable economics are barriers to circularity, while clear price signals and supportive funding can unleash a wave of investment in circular economy solutions.

Policy is a catalyst: Strong governance and policy frameworks set the playing field on which circular solutions either thrive or falter. Extended producer responsibility is a cornerstone policy – when implemented robustly, it generates funds for waste management and pushes producers toward better design. Likewise, government mandates are driving change in sectors from packaging to electronics. Policymakers should be bold and proactive in legislating for circular economy, providing clear targets and timelines. Consistency and enforcement are key.

Invest in waste management and inclusion: A circular economy must be inclusive and globally applicable, which means drastically upgrading waste management in regions where it is lacking and integrating the informal sector. Billions of people rely on informal recyclers and rudimentary disposal methods today. Empowering these communities with better infrastructure, education, and integration into formal systems is non-negotiable.

Close the loop to prevent leakage: A truly circular economy must be equipped to stop the leakage of global material flows into waterways and, ultimately, the oceans. This means finding solutions for even low-value or hard-to-recycle materials through redesign, incentives, or new technologies so that nothing is simply discarded into nature. It also means enhancing global cooperation: aligning standards, sharing best practices, and assisting countries that are overwhelmed by waste.

About the ADSW Advisory Committees

The committees are designed to foster candid discussions that break down silos between sectors and regions. Participants include CEOs and senior executives of international companies, government policymakers, leading researchers, and technology innovators. This diversity ensures a wide range of perspectives. In closed-door sessions, members share insights, highlight key challenges, and propose actionable solutions and areas for collaboration. Discussions are held under the Chatham House Rule, allowing participants to speak openly about successes and setbacks, learn from one another, and identify common ground. The dialogue is intentionally forward-looking and focused on practical outcomes.

Insights from the committees help shape ADSW's content, direction, and related initiatives. Recommendations are distilled into official reports such as this one and shared with a broader audience to inspire continued dialogue and action. These findings often inform the agendas of ADSW summits, panels, and workshops, and may guide Masdar and its partners in developing new initiatives or advancing policy advocacy aligned with the committee's conclusions. In past years, the committees have contributed to meaningful outcomes, from catalyzing cross-border partnerships to introducing new topics into global forums such as the World Future Energy Summit.

Advisory Committee Members

Salman Abdulla
Executive Vice President, ESG & Sustainability
EGA

Sharifa Al Aidid
Chairwoman and Founder
Net Zero Solutions

Tanzeed Alam
Director of Sustainability
Parsons

Deborah Backus
CEO
Clean Rivers

Freya Burton
Chief Sustaimability Officer
LanzaTech

Nicolas Calvet
Co-Founder & CEO
Seramic

Youssef Chehade
Co-Founder
ReLoop App

Pooja Dhingra
Regional Sustainability Manager
IKEA

Sivapalan Kathiravale
Head of Research & Development
Tadweer Group

Raya Makawi
Regional Leader for Sustainability, EMA
3M

Anssi Mikola
CEO
Riverrecycle Oy

Gunter Pauli
Founder
Zero Emissions Research and Initiatives (ZERI)

Daker Rabaya
CEO Waste Processing & Recycling Environment
BEEAH

Andrew Walker
Chief Commercial Officer
Evove Ltd.

Meeting Co-Chairs

Valerie Peyre
Director, Abu Dhabi Sustainability Week
Masdar

Oisin Commane
Head, Thought Leadership and Programing ADSW
Masdar

ABU DHABI SUSTAINABILITY WEEK

About Abu Dhabi Sustainability Week

Abu Dhabi Sustainability Week (ADSW) is a global platform supported by the UAE and its clean energy leader, Masdar, to address the world's most pressing sustainability challenges through crucial conversations accelerating responsible development and fostering inclusive economic, social and environmental progress.

For more than 15 years, ADSW has convened decision-makers from governments, the private sector and civil society to advance the global sustainability agenda through dialogue, cross-sector collaboration and impactful solutions. Throughout the year, ADSW conversations and initiatives facilitate knowledge sharing and collective action that will ensure a sustainable world for future generations.

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WORLD FUTURE ENERGY SUMMIT

About the World Future Energy Summit

The World Future Energy Summit is the leading global event for clean energy and sustainability, bringing together innovators, business leaders, policymakers, and investors to turn ambition into action.

Over three days, the international exhibition and conference addresses the most pressing challenges of our time—clean energy, climate change, sustainable cities, water security, waste management, green finance, and the transformative power of artificial intelligence.

By uniting almost 42,000 attendees from public, private, and non-profit sectors, it serves as a critical bridge between bold policy and real-world solutions.

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