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ESGrite
An Initiative of J Sundhareson and Associates

"ESGrite" Your rite - We write

ESG DIGEST

"The genesis of new era is unfolding"

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EDITORIAL

Welcome to the ESG Digest Newsletter, your essential guide to corporate governance, sustainability, and responsible business practices. As Environmental, Social, and Governance (ESG) factors continue to shape the corporate landscape, the need for effective governance strategies that integrate these principles has never been more critical.
In this newsletter, we offer valuable insights, practical advice, and in-depth discussions on how companies can align their governance frameworks with ESG considerations. We explore how ESG factors can drive decision-making, enhance risk management, and strengthen board governance structures. We firmly believe that robust corporate governance, combined with strong ESG principles, is key to sustainable growth, resilience, and ethical leadership.

The journey ahead is both exciting and challenging, but with your support, we are confident in our ability to succeed. This year's theme, "YEAR OF TRANSITION – What to so what ", reminds us that change is not just about moving forward, but about transforming challenges into meaningful outcomes.

J Sundharesan

Founder and Sustainability Visionary

Key Highlights in Sight

Moisture-Driven Direct Air Capture Could Boost CO_2 Removal Efficiency

Rising carbon dioxide levels are a major driver of climate change, fueling extreme weather, rising temperatures, and droughts worldwide. To tackle this, researchers are exploring more energy-efficient ways to remove CO_2 directly from the air. A team led by Professor Petra Fromme at Arizona State University has studied materials that capture and release carbon dioxide using changes in humidity—a process known as moisture-driven direct air capture.

Unlike traditional systems that rely on heat or high pressure, humidity-powered methods could reduce energy demands. The team examined two polymers, Fumasep FAA-3 and IRA-900, to see how their structures affect CO_2 adsorption in dry air and release under humid conditions. Using advanced imaging techniques such as X-ray diffraction and electron microscopy, they analyzed how water and carbon dioxide interact with the materials.

The results revealed that pore size plays a critical role. IRA-900, with larger pores, captured more CO_2 and did so more quickly than FAA-3. Structural features like clustering and swelling further explained performance differences. These insights highlight how material design can improve efficiency in low-energy carbon capture systems.

By harnessing humidity, moisture-driven direct air capture could become a scalable, cost-effective tool for reducing greenhouse gases. The findings mark a step toward developing advanced technologies that help limit future climate impacts and support global efforts to remove excess CO_2 from the atmosphere

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AI in Food: The Technology Powering Healthier Diets and Sustainable Food Systems

Artificial intelligence is reshaping food development by accelerating innovation, improving nutrition, and reducing environmental impact. Traditionally, creating new food products required costly trial-and-error experiments to balance taste, texture, and nutrition. AI now streamlines this process by predicting ingredient interactions, simulating sensory qualities, and estimating nutritional values before physical prototypes are made. This reduces development time and expense while enabling discovery of sustainable protein sources beyond animal agriculture, a major driver of greenhouse gas emissions and biodiversity loss.

Across the food lifecycle, AI is applied to ingredient discovery, product formulation, nutrition analysis, and safety testing. Large datasets on flavor, texture, and food chemistry allow AI models to design recipes and even generate novel foods. At the consumer level, AI-powered platforms support precision nutrition by tailoring diets to individual health needs. Public health applications include detecting ultra-processed foods, mapping food deserts with satellite data, and identifying malnutrition risks in vulnerable populations.Real-world examples highlight AI's potential: Brightseed's "Forager" platform uncovered gut-health compounds in hemp hulls, while the NIH's Nutrition for Precision Health study is building algorithms to predict dietary responses. Tech companies like Samsung are also integrating AI into consumer apps that recognize ingredients and generate personalized recipes.

Despite these advances, ethical and governance challenges remain. Ensuring transparency, diverse datasets, and explainable models is critical to building trust. With responsible oversight, AI-driven food innovation could help meet the rising global demand—nearly 20% more by 2050—while reducing environmental harm and supporting healthier, more resilient food systems.

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Shellworks Raises $15 Million to Scale Plant-Based Biodegradable Plastic Packaging Alternative

UK-based biotech startup Shellworks has secured $15 million in Series A funding to expand its biomass-based alternative to plastic packaging. Founded in 2019 by Insiya Jafferjee and Amir Afshar, the company develops compostable materials from naturally derived feedstocks.

Its flagship product, Vivomer, is a microplastic-free, home-compostable polymer created by fermenting waste biomass with microbes. Vivomer mimics plastic's versatility—rigid or flexible—while offering a sustainable alternative. According to Shellworks, the material is already cost-competitive with aluminum, glass, and paper, even at a fraction of plastic's production scale. It is currently used in packaging by Wild at Tesco and Target, and by Phil's at Whole Foods.

The fresh capital will support Shellworks' U.S. expansion and partnerships with more consumer brands. CEO Jafferjee emphasized the company's mission to challenge the perception that sustainable materials are "too expensive" for mass adoption, noting that Vivomer is proving otherwise.
The round was led by French venture capital firm Alter Equity, with participation from NFDG, Press Reset Ventures, JamJar Investments, and Kibo Invest, alongside existing investors LocalGlobe, True, Sie Ventures, and Founder Collective.

Shellworks' breakthrough highlights growing momentum in biomaterials innovation, as brands and regulators push for scalable solutions to reduce reliance on single-use plastics.

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LEGO Surpasses 50% Renewable and Recycled Raw Materials to Make its Bricks

The LEGO Group has announced major progress toward its sustainability goals, revealing that 52% of the materials used in its iconic bricks in 2025 came from renewable and recycled sources—up from 33% the prior year. This milestone was shared in the company's 2025 Sustainability Statement, which outlines its broader ambitions: achieving net zero emissions across its value chain by 2050 and reducing carbon emissions by 37% by 2032, compared to 2019 levels.

A key driver of this progress is LEGO's expanded use of the mass balance approach, under which suppliers mix virgin fossil inputs with certified renewable and recycled sources such as plant oil or used cooking oil. In 2025, 60% of LEGO's purchased materials followed this method, while 4% were directly sourced sustainable materials, resulting in the 52% overall renewable content. Notably, LEGO used less virgin fossil-based material in 2025 than in 2022, despite revenue growth of 29% over the same period.

The company also increased investments in sustainability, with spending on environmental and social initiatives rising 20% year-over-year, following a 68% increase in 2024. Packaging innovation remains a priority: LEGO continues phasing out single-use plastics, with 56% of factory packaging lines now converted to paper-based bags.

CEO Niels B. Christiansen emphasized LEGO's commitment to reducing its environmental footprint and expanding access to play for children worldwide, stating, "We will continue to invest significantly to deliver on that ambition.

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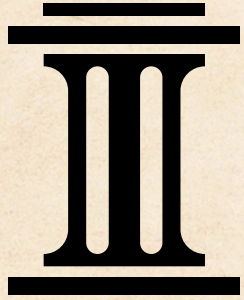
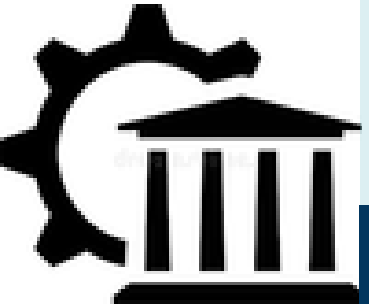
REGULATORY UPDATES




Monetary Authority of Singapore

Singapore Sets Climate Risk Management Expectations for Banks, Investors, Insurers



The Monetary Authority of Singapore (MAS) has released its finalized Guidelines on Environmental Risk Management – Transition Planning, setting supervisory expectations for banks, asset managers, and insurers to strengthen resilience against climate-related risks.

The guidelines emphasize that financial institutions should engage high-risk clients and portfolio companies rather than indiscriminately divest, warning that abrupt exits could create stranded assets and a disorderly transition. MAS encourages a multi-year engagement approach, noting that current emissions alone may not signal long-term risk if companies are actively implementing climate risk management measures.

Key common expectations include:

- Governance: Boards must oversee climate risk, embedding it into risk appetite and business strategy.
- Risk Management: Institutions should adapt business models and practices to manage both physical and transition risks.
- Data Capabilities: Firms must build climate data collection and analysis capacity, tailored to the risk and size of counterparties.
- Engagement: Client and portfolio company engagement should be risk-proportionate, offering opportunities to identify and mitigate risks.

Tailored guidance addresses sector-specific exposures:

- Banks: Credit risk and lending relationships.
- Insurers: Underwriting exposures and claims impacts.
- Asset Managers: Portfolio construction and stewardship.

Deputy Managing Director (Financial Supervision) Ho Hern Shin highlighted that the guidelines aim to support financial institutions in developing effective climate risk management capabilities, ensuring a more orderly and resilient transition for Singapore's financial system.

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Warns Simplified EU Sustainability Reporting Standards “Significantly Reduce Transparency for Investors”

The European Central Bank (ECB) has issued a staff opinion on the revised European Sustainability Reporting Standards (ESRS), warning that simplifications introduced under the EU's Omnibus process could undermine transparency and comparability of sustainability data.
The Omnibus changes removed about 90% of companies from the Corporate Sustainability Reporting Directive (CSRD) scope, cut mandatory datapoints by 61%, eliminated voluntary disclosures, and expanded reliefs and phase-ins. While easing burdens, the ECB cautioned that permanent reliefs, exemptions for financial firms, and reduced climate and biodiversity standards risk creating "blind spots" for investors and weakening risk management.

Key concerns highlighted include:

- Reduced climate and biodiversity disclosures, limiting assessment of physical and transition risks.
- Excessive reliefs and exemptions, which could permanently reduce data quality.
- Loss of interoperability with IFRS standards, threatening global comparability and investor confidence.
- Impact on banks, with curtailed value chain disclosures diminishing reporting quality.

The ECB recommended time limits on reliefs, shortening the six-year phase-in for anticipated financial effects, and stronger alignment with international standards.
With fewer companies now covered by CSRD, the ECB also suggested using the revised ESRS as the basis for voluntary reporting, instead of the SME-focused VSME standard, to better serve the diverse group of over 40,000 companies now reporting voluntarily.
The opinion echoes investor concerns raised in an EFRAG study, which found that reduced comparability and loss of climate-related data could weaken confidence in EU corporate sustainability reporting.

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Future of ESG

Building Resilient and Responsible Supply Chains

In the modern global economy, supply chains are no longer evaluated only on efficiency and cost. Increasingly, they are being assessed on their sustainability, transparency, and ethical standards. Environmental, Social, and Governance (ESG) principles are therefore emerging as a key framework for strengthening supply chain resilience. Rather than functioning merely as a reporting requirement, ESG is transforming the way organizations design, monitor, and manage their supply networks.

Environmental considerations play a significant role in ensuring long-term supply chain stability. Climate change has already begun disrupting global logistics through extreme weather events, resource scarcity, and shifting environmental regulations. Companies that incorporate environmentally responsible practices—such as sustainable sourcing, circular economy models, and reduced carbon logistics—are better positioned to manage these disruptions. By diversifying suppliers and prioritizing environmentally compliant partners, businesses can reduce dependency on environmentally vulnerable supply routes.

The social component of ESG addresses the human element within supply chains. Global production networks often involve multiple tiers of suppliers operating in jurisdictions with differing labour laws and working conditions. Issues such as child labour, unsafe working environments, and unfair wages can expose companies to reputational and legal risks. Integrating ESG-driven social due diligence, supplier audits, and ethical sourcing standards allows organizations to detect and address such vulnerabilities early, strengthening trust among consumers, regulators, and investors.

Governance acts as the backbone of ESG-driven supply chains. Strong governance mechanisms enable companies to establish clear policies, enforce supplier codes of conduct, and maintain transparency throughout procurement processes. Modern technologies such as blockchain and advanced data analytics are further improving traceability, enabling companies to track materials, verify supplier compliance, and respond quickly to emerging risks.

Ultimately, ESG integration transforms supply chains from fragile, cost-driven systems into adaptive and responsible networks. By aligning sustainability with operational strategy, organizations can build supply chains that are not only efficient but also resilient, ethical, and capable of supporting long-term business stability.

Mahima , Trainee at
J Sundharesan and Associates

DID YOU KNOW?

WORLD WILDLIFE DAY
3 MARCH

WORLD WILDLIFE DAY IS OBSERVED ANNUALLY ON MARCH 3RD TO CELEBRATE THE WORLD'S DIVERSE FAUNA AND FLORA, AS WELL AS TO RAISE AWARENESS ABOUT THE URGENT NEED TO PROTECT ENDANGERED SPECIES. THIS DAY HIGHLIGHTS THE IMPORTANCE OF CONSERVING NATURAL HABITATS TO ENSURE A SUSTAINABLE FUTURE WHERE BOTH HUMANS AND WILDLIFE CAN THRIVE IN HARMONY.

WORLD WATER DAY IS HELD ANNUALLY ON MARCH 22ND TO FOCUS ATTENTION ON THE IMPORTANCE OF FRESHWATER AND ADVOCATE FOR ITS SUSTAINABLE MANAGEMENT. IT AIMS TO RAISE AWARENESS OF THE GLOBAL WATER CRISIS AND SUPPORT THE ACHIEVEMENT OF SUSTAINABLE DEVELOPMENT GOAL 6: WATER AND SANITATION FOR ALL BY 2030.