

EVALUERVE

● eBook

ESG Newsletter Q3



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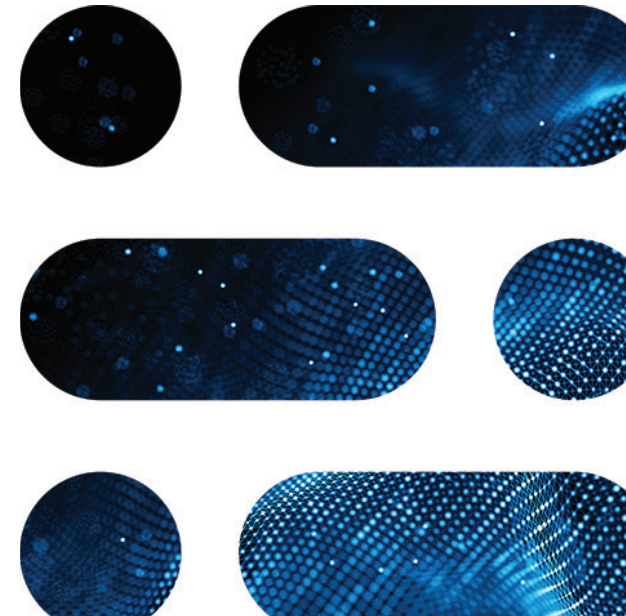
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ESG Newsletter Q3



ESG Newsletter Q3

- Whether driven by investors' concerns, regulatory mandates, or broader social norms, the number of corporations pledging net zero GHG emissions goals continues to increase. More than 750 of the world's 2,000 largest publicly traded corporations have announced net zero goals. The Science Based Targets initiative (SBTi) counts more than 3,000 businesses and financial institutions working to implement science-based targets. Nonetheless, challenges remain in turning aspirational pledges and good intentions into meaningful action and results.
- An analysis by Net Zero Tracker reveals that, despite increasing net zero pledges, only half of the largest corporations pledging net zero include corporate targets in any strategy documents or annual reports. Reporting scope 3 emissions remains elusive, with 60% of these companies only partially or not at all reporting scope 3 emissions. This lack of transparency exposes companies to criticism over the integrity of their net zero commitments.
- Companies will need to devote more resources to meet reporting expectations. Costs will undoubtedly be a factor, as highlighted by the SEC's estimated \$530,000 annual price tag for complying with its proposed regulations. Another obstacle is brainpower. In a recent survey, 79% of executives indicated their companies still have work to do to get the required skills and capabilities. These challenges are not likely to go away anytime soon, making it incumbent on companies to seek third-party support to improve their climate reporting to meet their net-zero pledges.



Key Highlights



- Key Highlights

Innovation and R&D

- ~5400 patents have been published in Q3 2022 focusing on key sustainability themes such as Energy Storage, Alternate Energy, Circular Economy and EV Charging*.
- Energy storage has highest patent filing of ~31%, followed by alternate energy having 26.5% and charging infrastructure with ~26.5%.
- Automotive companies account for ~46% of total patents and are leading the innovations and R&D efforts focused on sustainability. Most of the patents filed by these companies are focused on energy storage and charging infrastructure. However, Asian automotive companies like Hyundai, Toyota and Kia are also exploring hydrogen production as fuel.
- US has patenting activity of ~67% in automotive, ~18% in power/ utility and ~8% in oil & gas.
- US leads the patenting activity and accounts for ~43% of the total patents published in Q3 2022 focused on above research themes. These patents are focused on all the four

sustainability themes with slightly more focus on charging infrastructure and energy storage.

- Patent filings in Europe are on the lower side compared to the US, reasonably balanced across all the above four sustainability themes.
- Battery chemistries are notable contributors to the total patenting activity focused on energy storage in US wherein Lithium-ion battery chemistry accounts for ~40% of innovations. Panasonic to build \$4bn battery factory in US (Japanese technology giant Panasonic has announced its intention to build a lithium-ion battery factory in De Soto, Kansas, US).
- Hyundai is majorly patenting in [fuel cells system](#) and manufacturing of fuel cell [separator](#).
- Keeping the trends intact automotive companies are top filers in this quarter, displaying their top priority is setting-up the necessary EV infrastructure.



- Key Highlights

Innovation and R&D

- Toyota is leading in patenting activity related to charging infrastructure. Patenting focus is on technologies related to [Charging apparatus](#), [vehicle diagnosis](#) method, [transport recharge level](#) determination, [transport recharge notification](#).
- Volkswagen invest \$450 million into [US charging network](#) in collaboration with Siemens. It also has patents related to [charging method for a battery, a control device and a battery management system](#). It has [partnered with the charging solutions firm Eli for development of a renewable energy smart charging solution for EVs](#).
- GM in collaboration with Pilot Company to establish [Coast-to-Coast EV Fast Charging](#) Network in USA. It also has patent granted on improved vehicle charging system [Bi-directional electrical charging](#) for motor vehicle.
- Hyundai Motor & Kia has of patent filling in blue hydrogen in collaboration with Korea Institute of Science & Technology. The focus is in the area of [dehydrogenation reaction device](#) and [Hybrid dehydrogenation reaction system](#).
- Hitachi has filed patents related to hydrogen production system using plurality of [water electrolysis stacks](#). It has also filed couple of patents related to energy management system for [hydrogen production](#) and [fuel consumption reduction during fuel cell operation](#). Hitachi Energy has signed an [MoU with H2 Green Steel](#) to leverage electrification, digitalization, and hydrogen for green steel production.
- Linde has been working actively in the liquid hydrogen field. It is planning to increase [green liquid hydrogen production capacity](#) and has [inaugurated first hydrogen refueling system](#). Consistent with its business activity, it has filed patents related to [liquid hydrogen storage container assembly focused weighing the hydrogen in the container](#).
- Redwood Materials is leading efforts related to battery recycling by partnering with [Toyota, VW and Audi](#).



- Key Highlights

Innovation and R&D

- Northvolt is planning to source 50% of its raw material requirements from recycled batteries by 2030. It has also filed patent related to discharging process and solutions for battery recycling.
- Shell is investing in pyrolysis upgrader unit at Moerdijk plant. It has also filed patent related to process for removing contaminants from recycled or renewable organic material, such as plastics pyrolysis oil.
- Mondi has made collaborations with Essity and Dow as well as Fiorini International to develop recycled secondary packaging products.
- **Note:** High level keyword-based patent analysis is conducted to arrive at number



North America



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Investment trends in North America show a relative interest in causes regarding the transition to renewable and clean energy sources, with an especial focus on the automobile and transportation industries. At the same time, in the U.S. there are tensions regarding ESG regulations, while the Biden administration has pushed bills promoting sustainable investments at the federal level, individual estates have taken a more conservative approach to this kind of investment.

- North America

Policy / Regulation

- [Biden signs largest-ever us climate investment into law](#)

President Biden signed the Inflation Reduction Act on Wednesday, codifying into law a major package of climate, health care, and tax legislation. The new law includes the U.S.' largest ever set of climate-focused investments, allocating nearly \$370 billion to areas including renewable energy and industrial decarbonization solutions. [esgtoday.com](https://www.esgtoday.com)

- [Recent sec enforcement hints at looming crackdown on esg claims](#)

The Securities and Exchange Commission (SEC) created its Climate and ESG Task Force, to police corporate ESG disclosures, however up until recently the unit had mostly kept working behind the scenes. In the last four months, the unit has helped bring at least three enforcement actions, according to agency records.

- [US senate deal set to unlock \\$370 billion for climate action](#)

US announced a deal that it may unlock nearly \$370 billion in investment on renewable energy, energy security and climate-focused initiatives, which had appeared threatened by political deadlock. The deal to add climate provisions to the proposed "Inflation Reduction Act of 2022," which also includes deficit reduction, corporate tax, and pharmaceutical price reduction measures, gives the bill the support of the 50 senate Democrats, clearing a major hurdle for the legislation.



- North America

Policy / Regulation

- [US national renewable energy laboratory outlines paths and challenges of reaching 100% clean electric grid by 2035](#)

The NREL modeled technology deployment, costs, benefits, and challenges to decarbonize the U.S. power sector by 2035, evaluating a range of future scenarios to achieve a net-zero power grid by 2035. [nrel.gov](https://www.nrel.gov)



- North America

Additional reading:

- [SEC Approves NASDAQ proposal aimed at diversifying boards](#)
- [US will consider limiting plastics in federal purchasing](#)
- [US environmental protection agency sets health advisory limits for 6 PFAS](#)
- [US securities and exchange commission adopts amendments to proxy rules governing proxy voting advice](#)
- [US securities and exchange commission proposes amendments to shareholder proposal rule](#)
- [New ESG rules to hit small canadian businesses](#)
- [California to end sales of gas-powered cars by 2035](#)
- [Florida bans ESG investing in \\$228 billion state pension](#)



- North America

Initiatives

- [S&P Dow Jones indices launches index series targeting annual emissions reductions to net zero by 2050](#)

S&P Dow Jones Indices and S&P Global SustainableI announced the launch of the S&P Net Zero 2050 Carbon Budget Indices, a new series of market benchmarks measuring the performance of securities from key S&P indices selected to target a defined carbon emissions reduction 'budget' to achieve net zero emissions by 2050.

- [S&P Global SustainableI launches physical risk exposure scores and financial impact](#)

S&P Global SustainableI launched enhanced Physical Risk Exposure Scores and Financial Impact. The dataset includes exposure scores, describing the exposure of an asset or company to climate change hazards, and financial impact metrics reflecting the projected future financial costs of changing hazard exposure expressed as a percentage of the value of the exposed assets.

- [US Department of Energy announces over \\$2.6 billion funding for carbon capture & transport infrastructure projects](#)

The U.S. Department of Energy (DOE) announced plans to provide \$2.6 billion of funding for two programs supporting carbon capture, transport, and storage projects aimed at helping to decarbonize power generation and heavy industry sectors.

- [New U.S. Climate Initiative promoting key climate-positive behaviors begins in Boston](#)

Rare, an international conservation organization launches its first community-based program in the U.S. "Climate Culture Boston". Climate Culture will be customized to local markets, to direct actions around diet, transportation, energy use, and support for nature toward collective impact.



- North America

Initiatives

- [Biden turns to private sector to ramp building decarbonization efforts](#)

The Biden administration announced the launch of the Climate Smart Buildings Initiative, a new government-wide program aimed at modernizing federal buildings through public-private partnerships, driving significant reductions in greenhouse gas (GHG) emissions from the government's existing building stock.

- [Biden admin and 11 states enter partnership to boost offshore wind power](#)

The Biden administration is teaming up with 11 East Coast states to boost offshore wind energy. This will generate 77,000 new jobs and power 10 million homes while working towards the administration's plan to fight the climate crisis by getting the nation's power sector to net zero by 2035.

- [Mckinsey, Microsoft partner on end-to-end decarbonization solution](#)

McKinsey and Microsoft announced the creation of a new integrated solution aimed at helping organizations plan and execute decarbonization strategies. The collaboration comes to address companies' needs for an efficient and scalable technology solution that can calculate their organizations' overall carbon footprint and help build and carry out a decarbonization plan.

- [Morningstar launches platform enabling investors to identify fund esg risk, impact & opportunities](#)

Investment research firm Morningstar announced the launch of Investable World, a new digital platform aimed at making sustainable investing "more understandable, engaging, and actionable," with tools allowing investors to explore key ESG themes including water, food, energy, health, and community, and to screen funds for ESG risk, impact, and opportunities.



- North America

Initiatives

- [J.P. Morgan launches new digital ESG platform for investors](#)

J.P. Morgan announced the launch of ESG Discovery, a new digital platform aimed at providing investors with a central source for ESG views from the firm's sector and ESG analysts and enabling assessments of the current and forward-looking company and sector material ESG risks, opportunities, and impacts.



- North America

Additional reading:

- [Canada signs EV and battery supply chain agreements with Volkswagen, Mercedes-Benz](#)
- [UPP launches roadmap to net zero portfolio emissions by 2040, reports on 2021 year](#)
- [Biden calls climate change an emergency, considers use of executive powers to take action](#)
- [Biden-Harris administration launches new solar initiatives](#)
- [US grant of \\$1.66 Billion for new buses aims to curb missions](#)
- [US department of transportation awards \\$1.44 Million to North Dakota for electric vehicle charging solutions](#)
- [J.P. Morgan builds out suite of sustainable thematic active ETFs](#)
- [Moody's launches solution to integrate esg factors into P&C insurance underwriting](#)
- [California sets goal to ramp offshore wind to 25gw, powering 25 million homes](#)
- [Chicago to transition buildings, airports & operations to 100% renewable energy by 2025](#)
- [Carboncapture to build the first megaton-scale direct air capture project in U.S. Following passage of climate law](#)
- [Pepsico, ADM announce groundbreaking agreement aiming to reduce carbon intensity by supporting regenerative agriculture practices on up to 2 million acres of farmland](#)
- [KKR, GCM Grosvenor invest in U.S. Renewable energy developer Arevia Power](#)
- [US senate climate, drug bill estimated to cut 10-year deficit by \\$101.5 Billion](#)
- [Agricultural groups launch Ag bioeconomy coalition](#)
- [Texas places blackrock, credit suisse & ubs on divestment list for "boycotting" fossil fuel companies in anti-ESG backlash](#)
- [Accenture acquires leading emissions and climate strategy consultancy carbon intelligence](#)
- [Delta, DG fuels partner in pivotal expansion of sustainable fuel market](#)
- [Projects from Colombia, Spain, Peru, and Ecuador lead the first Latin American competition for sustainable and safe urban logistics](#)

- North America

Innovation and R&D Push

A. Sector innovation index for different players

- Automotive companies are leading innovation efforts with energy storage & charging infrastructure being major research themes.
- Energy Storage is a major research theme for power/utility companies whereas Oil & Gas companies are mainly focusing on alternate energy.
- FMCG companies are exploring the circular economy theme.

B. Domain focus areas and key-innovations

Energy Storage

- Battery chemistries are notable contributors to the total patenting activity focused on energy storage in US.
- Lithium-ion battery chemistry accounts for ~40% of innovations followed by fuel cell (~24%).
- GE partners with Department of Energy on solar, [energy storage](#), grid integration research.
- Australia and U.S. join forces on the [Path to Net-Zero](#).
- Hyundai is majorly patenting in [fuel cells system](#) and manufacturing of fuel cell [separator](#).
- PRIME PLANET ENERGY SOLUTIONS has majorly fillings in US on [Lithium ion](#) secondary battery, followed by Honda motor - working on [electrode material](#) and [non-aqueous electrolyte](#).



- North America

Innovation and R&D Push

- SMT Energy enters into partnership with SUSI partners to own and operate U.S. [battery energy storage](#) projects.
- UAE, US to invest [\\$2.3 billion in India](#) under the framework of I2U2.
- To support the GMP Energy Pathway, the United States will provide \$3.5 million in technical assistance through the [Global Methane Initiative](#).
- Panasonic to build \$4bn [battery factory in US](#) (Japanese technology giant Panasonic has announced its intention to build a lithium-ion battery factory in De Soto, Kansas, US).
- Volkswagen and Siemens invest \$450 million into [US charging network](#).
- The Department of Transportation said that \$5 billion of the [\\$7.5 billion for EV chargers](#) will go to states, which can partner with other groups.
- GM, Pilot Company to establish [Coast-to-Coast EV Fast Charging](#) Network in USA.
- GM also has patent granted on improved vehicle charging system [Bi-directional electrical charging](#) for motor vehicle.
- South Korea's SK Group on Tuesday announced plans to [invest \\$22 billion in the United States](#) on industries including semiconductors, green energy and bioscience.

Charging Infrastructure

- Keeping the trends intact automotive companies are top filers in this quarter, displaying their top priority is setting-up the necessary EV infrastructure.
- Toyota is leading in patenting activity related to charging infrastructure. Patenting focus is on technologies related to [Charging apparatus](#), [vehicle diagnosis](#) method, [transport recharge level](#) determination, [transport recharge notification](#).



- North America

Innovation and R&D Push

Alternate Energy

- Green hydrogen, blue hydrogen and Solar / Wind / Geothermal energy are major contributors to the total innovation index related in area of alternate energy.
- Green hydrogen, blue hydrogen and biohydrogen is majorly linked to automotive.
- Solar / Wind / Geothermal energy is linked to both automotive and power / utility.
- Hyundai Motor & Kia has of patent filling in blue hydrogen in collaboration with Korea Institute of Science & Technology. The focus is in the area of [dehydrogenation reaction device](#) and [Hybrid dehydrogenation reaction system](#).
- US Department of Energy released a Notice of Intent to fund USD 8 billion to [develop regional clean hydrogen](#).
- Adani, Total partner in a deal to invest \$50 Billion in [Green Hydrogen](#).
- Iberdrola and bp collaborate to accelerate EV charging infrastructure and [green hydrogen production](#).
- Hyundai Motor & Kia has majority of patent fillings in green hydrogen production domain in collaboration with Korea Institute of Science & Technology followed by Honda Motor.
- US giant Chevron Corp. is ready to spend billions on a mixture of green and blue hydrogen.
- Toyota has patents filling in solar / wind / geothermal energy with focus on [In-vehicle solar charge control](#) system.
- DENSO announced [Solar Energy Commitment](#) in partnership with City of Maryville Electric, TVA, and Silicon Ranch.
- DOE joined new Federal-state partnership to grow domestic [Offshore Wind Supply Chain](#).
- EIA: Total [US biofuel](#) capacity is at 21 billion gallons per year.
- [Algae Biofuel Market Size](#) is projected to reach USD 15.39 billion by 2030, growing at a CAGR of 8.76%.



- North America

Innovation and R&D Push

Circular Economy

- CCUS accounts ~51% of the share of patents focused on circular economy. The patenting activity focused on CCUS is contributed by Oil and Gas players (Saudi Aramco). Hyundai & Kia also have patent filings in CCUS technology.
- FMCG players like Procter & Gamble are innovating in plastic recycling (recycling of superabsorbent polymer).
- IBM has patent filling in Plastic recycling with focus on [pre-reaction purification](#), [recovery of cotton](#) from polyester-cotton fabrics.
- In battery recycling, UT Battelle is working on recovery of materials from spent [batteries using green solvent](#), and Stora Energy has patents on flame-assisted direct recycling and upcycling of [spent cathode materials](#).
- Sixring is focusing on [modification of sulfuric acid](#) with use of composition in [delignification of biomass](#) under milder conditions in kraft pulping process.
- U. S. Steel, Equinor and Shell to explore Regional [Clean Energy Opportunities](#).
- CarbonCapture Inc. announced Five Megaton [Direct Air Capture and Storage](#) project in Wyoming.
- University of Illinois received \$3.5 Million from the Department of Energy to [Advance Air Capture and Storage Study](#) at U. S. Steel's Gary Works.
- [Sonoco Expanding Residential Recycling of Paper Cups](#) to its Mill in Hartsville, South Carolina.



Europe



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The trend to enhance ESG disclosure is still prevailing in Europe. For example, an addition to the additional Climate Change-related disclosure requirements by UK Government, there are strong voices from different stakeholders to disclose more detailed Transition Plans.

Amid energy crisis in Europe, investments and regulations that control this field are taking the top in the recent conversations. At the same time, it is balanced by introducing new partnerships and programs that are going to remove excess of carbon emissions from the atmosphere.

- Europe

Policy / Regulation

- [EU lawmakers include nuclear and gas in the green taxonomy](#)

The European Parliament voted against a resolution plan to exclude certain nuclear and gas activities from the EU Taxonomy.

- [EU lawmakers vote for tougher rules to ensure deforestation-free products](#)

The European Parliament proposed to implement rules to ensure that products sold in the EU are not sourced from deforested or degraded land.

- [UK'S new taskforce to support social factors incorporation in pension scheme investment](#)

The UK Launched a new task force that aims to support pension schemes incorporating social elements into their ESG investing.

- [UK government transition plan taskforce considers just transition](#)

Members of the UK government-mandated Transition Plan Taskforce (TPT) are working on a technical briefing paper on incorporating Just Transition considerations into its recommendations.



- Europe

Policy / Regulation

- [The European Central Bank and IMF call on climate standard setters to align company disclosures](#)

The European Central Bank (ECB) and IMF call for a global standard for corporate climate disclosures that are aligned with European and United States alternatives.

- [FCA commands that boards will start reporting against the regulator's new rules from the second half of 2023](#)

In April, FCA set out positive diversity targets especially on gender for listed companies to promote greater disclosure, which will help investment companies.

- [UK high court orders government to publish more detailed climate plan](#)

The UK high courts rules government's plan to hit net zero targets failed to provide sufficient details. The government is ordered to provide an updated version by end of March 2023.

- [Britain says global sustainability disclosures need phasing in](#)

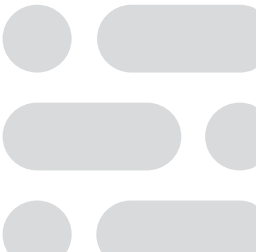
Britain plans to introduce the ISSB standards for listed companies but some proposals may prove challenging if made mandatory straight away.



- Europe

Additional reading:

- [EFRAG Draft European Sustainability Reporting Standards \(ESRS\)](#)
- [UK commits to net zero domestic aviation by 2040](#)
- [G7 Statement on Climate Club](#)
- [Germany lawmakers back renewable electricity target](#)
- [European securities and markets authority releases results of its ESG rating market assessment](#)
- [Ireland sets targets to halve greenhouse emissions](#)
- [UK competition regulator investigates green claims of fashion retailers](#)
- [Euronext announces its science-based climate targets supporting its “Fit for 1.5°” commitment](#)
- [Member states commit to reducing gas demand by 15% next winter](#)



- Europe

Initiatives

- [Energy impact partners raise €390 million for the european climate tech fund](#)

Sustainability-focused venture capital fund Energy Impact Partners (EIP) announced the launch of its European Fund, it's first outside North America, aimed at investing in climate tech companies accelerating the net zero transition.

- [EU invests €1.8 In clean tech projects](#)

EU recently announced its investment of over €1.8 in 17 large-scale clean tech projects, located in Bulgaria, Finland, France, Germany, Iceland, the Netherlands, Norway, Poland, and Sweden.

- [UK government introduced the Humber carbon-capture project to reduce emission](#)

Humber Zero, which is one of just 20 projects shortlisted by the UK government for carbon capture, usage, and storage deployment, aims to prevent up to 8 million tons of carbon dioxide from the Immingham industrial area from entering the atmosphere by around 2030.

- [MSCI and the London Stock Exchange reject EU ESG regulation proposals](#)

Leading ESG rating providers including MSCI, and the London Stock Exchange Group have rejected the European Union's proposals to regulate the sector.

- [Corporate emissions targets across all G7 countries fall short of global climate goals: report](#)

Corporate emissions reduction targets across G7 countries are only ambitious enough to align with limiting global average temperature increase to 2.7°C above pre-industrial levels, falling well short of the Paris Agreement's 1.5°C ambition needed to avoid the most significant effects of global warming.



- Europe

Initiatives

- [Coca-Cola Europacific Partners launches sustainability-linked supply chain finance program](#)

Coca-Cola Europacific Partners (CCEP), the world's largest Coca-Cola bottler, announced the launch of a new sustainability-linked supply chain finance program, rewarding suppliers for improving their ESG performance, in collaboration with Netherlands-based Rabobank.

- [UK green bond is issued to tackle drought](#)

Anglian Water has issued a corporate green bond to direct water pipelines to drier areas to improve resilience against droughts following extreme weather conditions this summer.

- [PwC Switzerland signs 10-year carbon removal contract with climeworks](#)

PwC Switzerland has announced its net zero by 2030 roadmap to achieve its validated science-based targets and selected Climeworks as one of the solutions contributing to removing its remaining emissions.

- [Norway's future CO2 cemetery takes shape](#)

The future terminal is to pump tonnes of liquefied carbon dioxide captured from the top of factory chimneys across Europe into cavities deep below the seabed.



● Europe

Additional reading:

- [European Central Bank published results of climate stress test](#)
- [BNP Paribas asset management publishes sustainable strategy for next 3 years](#)
- [euNetworks delivers sustainability progress in Europe](#)
- [Germany, Denmark to build offshore wind "island" to bolster climate, energy independence goals](#)
- [Ingka Investments acquires 49% stake in offshore wind project in Sweden](#)
- [BP company to invest up to \\$60 million in UK EV battery R&D center](#)
- [Ecovadis announces acquisition of Ecotrek](#)
- [Iberdrola to build \\$170 million UK green hydrogen plant](#)
- [First 100% hydrogen-powered passenger train route begins operation in Germany](#)
- [UK's new energy chief Rees-Mogg wants to drill 'every last drop'](#)
- [Manulife launches global climate action fund in Europe](#)
- [Vanguard has unveiled two more funds for its building block suite of ESG ETFs](#)
- [DWS expands Paris Agreement-aligned ETF suite](#)
- [Fashion firms look to single-fiber clothes as EU recycling regulations loom](#)
- [Shareaction campaign asked finance companies to disclose their ethnicity gap](#)



- Europe

Innovation and R&D Push

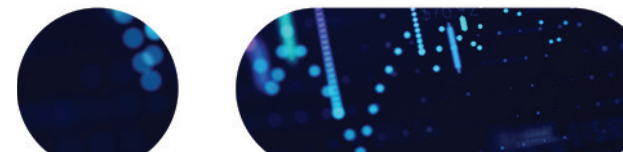
A. Sectoral innovation index for different players

Patenting activity is majorly driven by the chemical companies and supported by Automotive companies. Energy storage contributes significantly to the innovation index of these companies.

B. Domain focus areas and key-innovations

Energy Storage

- Battery chemistries are notable contributors to the total patenting activity focused on energy storage in Europe. Fuel Cell accounts for ~27% of innovations followed battery Chemistries like Sodium ion battery and Lithium-ion batteries.
- Automotive players Volkswagen are patenting technology on [current collectors for battery cell](#).
- Chemical company Evonik has filed patents related to [anion conducting members for use in fuel cells, redox flow batteries, etc.](#)
- Linde has been working actively in the liquid hydrogen field. It is planning to increase [green liquid hydrogen production capacity](#) and has [inaugurated first hydrogen refueling system](#). Consistent with its business activity, it has filed patents related to [liquid hydrogen storage container assembly focused weighing the hydrogen in the container](#).
- CATL leading EV battery manufacturer has filed patents related to [battery module manufacturing](#).
- Corre Energy, a European business specializing in long-duration energy storage based on compressed air technology, and Siemens Energy have entered [a partnership agreement](#).



- Europe

Innovation and R&D Push

Charging Infrastructure

- Innovation activities related to charging infrastructure are driven by Automotive players.
- Automotive players Volkswagen are patenting technology on [charging method for a battery, a control device and a battery management system](#). It has [partnered with the charging solutions firm Eli for development of a renewable energy smart charging solution for EVs](#).
- Toyota Motors has filed patents related to [vehicle control device](#) that slows the progress of degradation of battery performance.
- [GS Yuasa](#), a leading battery manufacturer, have launched a brand-new range of fully automatic YCX smart battery chargers and maintainers at Automechanika in Frankfurt.

Alternate Energy

- Solar/Wind energy and Hydrogen (Green and blue) contributes majorly to the total innovation activity related to alternate energy.

- Chemical companies like Air liquid and Linde are working on green hydrogen technology.
- British Petroleum has filed [patent related use of green hydrogen produced using renewable energy and captured carbon dioxide for production of methane](#).
- ORSTED has filed patent related to [a guide apparatus for guiding a load being hoisted between a wind turbine platform and a nacelle](#). ORSTED has acquired Ostwind, a leading German developer, owner, and operator of onshore wind and solar power projects in Germany.
- Hitachi has filed patents related to hydrogen production system using plurality of [water electrolysis stacks](#). It has also filed couple of patents related to energy management system for [hydrogen production and fuel consumption reduction during fuel cell operation](#). Hitachi Energy has signed an [MoU with H2 Green Steel](#) to leverage electrification, digitalization, and hydrogen for green steel production.



- Europe

Innovation and R&D Push

Circular Economy

- CCUS (~50%) and Plastic Recycling (~26%) are key focus areas under circular economy.
- Trinseo GMBH has filed patent related to recycling and separation of elastomers from elastomer toughened thermoplastics such as high impact polystyrene. It is also planning to construct polystyrene recycling plant in the Netherlands.
- Shell is investing in pyrolysis upgrader unit at Moerdijk plant. It has also filed patent related to process for removing contaminants from recycled or renewable organic material, such as plastics pyrolysis oil.
- Northvolt is planning to source 50% of its raw material requirements from recycled batteries by 2030. It has also filed patent related to discharging process and solutions for battery recycling.
- SK Geocentric, an SK Innovation subsidiary specializing in eco-friendly chemicals, will establish a plastic waste recycling joint venture in France, with SUEZ, a French environmental company, and Loop Industries, a Canadian company with plastic recycling technology.
- Following a €5m investment from Infinity Recycling's Circular Plastics Fund, Itero Technologies is building a pyrolysis-based chemical recycling plant in Geleen, the Netherlands.
- Munich-based Siemens and London-based Plastic Energy have teamed up to help divert plastic waste from landfills and incineration.
- Mondi has made collaborations with Essity and Dow as well as Fiorini International to develop recycled secondary packaging products.



South America



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In South America, sustainability efforts seem to be divided as governments take actions for and against sustainable practices, prioritizing in some instances short-term economic gains. The Amazon Forest has been at the center of environmental disputes, as its exploitation threatens this natural resource of global importance. The allocation of investments and other resources has been focused on making structural changes to different industries, including the construction and energy sectors, to make significant shifts to the different countries' economies. The South American sustainability landscape also contains a significant number of startups or entrepreneurial projects that support the sustainability efforts made at the government level.

- South America

Policy / Regulation

- [New Brazil bill puts cattle pasture over pantanal wetland](#)

A new bill has been approved by the Mato Grosso state that loosens restrictions on cattle ranching in the Pantanal wetland, which could lead to the loss of thousands of hectares of native vegetation.

- [Brazilian insurance regulator publishes guidelines on sustainability requirements for the insurance sector](#)

The Brazilian Superintendence of Private Insurance (“SUSEP”) has published a new regulation, setting forth sustainability requirements with the goal to establish guidelines for the management of ESG risks for insurance and capitalization companies, local reinsurers, and pension funds.



- South America

Additional reading:

- [Brazil's supreme court rules Paris Agreement is a human rights treaty](#)
- [Voters in Chile reject new progressive constitution](#)



- South America

Initiatives

- [The Inter-American Development Bank approves \\$300 million loan to underpin Costa Rica's decarbonization plan](#)

Costa Rica is continuing its transition to a net-zero economy by 2050 and has been approved by The Inter-American Development Bank (IDB) for a \$300 million loan. The IDB loan is the second in a series of two policy-based lending operations, to deepen reforms that aim for a nationwide shift to a green economy.

- [Uruguay looks to timber buildings to reduce its construction emissions](#)

Uruguay's construction sector has turned to timber to transition its industry to more sustainable practices as it builds South America's first cross-laminated timber plant. Over the past two decades, the country has transformed its energy sources, with 94% of its electricity generated by renewables between 2017 and 2021, and it is now laying the foundations for another sustainable shift.

- [Climate and spills in focus as offshore oil gather pace in Argentina](#)

The Argentinian government has awarded permits to explore the country's deep-water subsoils in hopes of exploiting potential reserves of natural gas and oil. This move has sparked conflicts among companies, civil society, and the state itself, however, despite these complaints' exploration is expected to begin early next year.



- South America

Additional reading:

- [Latin America discusses regional strategies for lithium production](#)
- [The Inter-American Development Bank boosts Latin America ESG bond campaign with \\$1 billion push](#)
- [Chile's Sernapesca steps up sanctions against salmon farmers in Aysén region](#)
- [Blockchain startup ucrop.It raises \\$3.1m to help farmers prove sustainable practices](#)
- [How argentinian wine is securing a sustainable future](#)
- [Betterfly arrives in Spain after acquiring Flexoh](#)
- [Women win decades-long clean air battle in Chile's own "Chernobyl"](#)



APAC

The background features a dark, almost black, space filled with numerous vertical lines of light. These lines are composed of small, circular dots, creating a grid-like pattern that recedes into the distance. The colors of the dots range from bright white and light blue to deep orange and red. The lines are slightly blurred, giving a sense of motion and depth. The overall effect is reminiscent of a data center or a futuristic digital landscape.



There is significant law-enforcement news in the region. One of them is embedding GHG reduction targets into the law by Australian government.

Singapore, Taiwan, and Japan are publishing additional guidance for companies to enhance their ESG disclosure.

After COP26 attention to the Carbon Trading schemes is on a rise in the world. In APAC regions, countries like Thailand, Malaysia and others are working on developing local carbon markets or local carbon exchanges which will lead to the boost in Carbon trading in this part of the world.

- APAC

Policy / Regulation

- [Australia integrates greenhouse gas emission target into law](#)
As one of the government's election promises, the new bill adds a reduction target for greenhouse gas into legislation. Besides, the government makes it mandatory for Minister for Climate Change to report to Parliament on the progress of greenhouse gas reduction.
- [Compulsory climate change disclosure for listed companies in Taiwan from 2024](#)

The FSC has stepped up its efforts to promote sustainability by announcing that starting in 2024, listed companies will be required to disclose in their annual reports nine key pieces of information, including the impact of climate change on the company's financial business, corporate governance attitude, and risk assessment.

- [China Green Bond Principles released](#)
China Green Bond Standards Committee released China's first unified criteria of green bonds, the China Green Bond Principles, on Jul 29th, 2022. The Principles is in line with the Green Bond Principles released by International Capital Market Association.



- APAC

Policy / Regulation

- [Singapore launches ESG disclosure platform](#)

The Monetary Authority of Singapore (MAS), the central bank and financial regulator of Singapore, and the Singapore Exchange (SGX Group) announced the launch of ESGenome, a new ESG disclosure platform aimed at simplifying the environmental, social, and governance reporting process for companies, and providing investors with access to consistent and comparable corporate sustainability data.

- [Singapore enhances ESG metrics for funds](#)

Singapore's central bank has introduced new ESG metrics and measures that are aligned with the Taskforce for Climate-related Financial Disclosure (TCFD). Listed companies will be required to disclose their climate-related risks, based on TCFD recommendations, from 2023 onwards.

- [Japan publishes guidance on climate change issue processing for the financial sector](#)

Japan Financial Services Agency has published guidance on climate change issue processing for the financial sector. The guidance encourages the

financial sector to consider their clients' potential climate change impact when conducting business.

- [Standard chartered successfully issues its inaugural ESG structured Formosa note out of Taiwan](#)

Leveraging its international network and strong capabilities in sustainable finance, Standard Chartered has launched the first ESG structured note issued in Taiwan by the Bank with a USD40m ESG structured Formosa note that was sold to investors in Taiwan.

- [Japan starts mandatory disclosure of gender salary gap](#)

Japan's Ministry of Health, Labor and Welfare has published updated guidance on corporate information disclosure, which applies to companies with more than 301 regular employees. The new regulation is expected to stimulate companies to adjust their internal policies to further narrow the gender salary gap.



- APAC

Policy / Regulation

- [India banning single-use plastics](#)

The Ban came into effect on 1st July, prohibiting the manufacture, sales, and use of specific plastic products, to reduce total plastic waste generation.

- [Bursa Malaysia enhances sustainability reporting framework with new climate change reporting](#)

Main Market listed issuers will now be required to include the following disclosures in their Sustainability Statements:

1. "common sustainability matters"
2. "TCFD-aligned disclosures"
3. "enhanced quantitative information"
4. "statement of assurance"

- [Task force on climate-related financial disclosures \(TCFD\) application guide for Malaysian financial institutions](#)

This Guide is developed as a source of reference for financial institutions and, in particular, those supervised by Bank Negara Malaysia and Securities Commission Malaysia.

- [SZSE releases ESG ratings methodology and ESG indices to improve the index system with SZSE's characteristics and serve low-carbon and sustainable development](#)

On July 25, SZSE's wholly owned subsidiary Shenzhen Securities Information Co., Ltd. (SSIC) officially launched CNI ESG Ratings Methodology and released ESG indices and ESG leading indices of SZSE's core indices (Shenzhen Component Index, ChiNext Index, Shenzhen 100) that were compiled based on the methodology.



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Additional reading:

- [India proposes a national blue bond standard and cop-aligned green bonds](#)
- [Philippines issues ESG banking expectations](#)
- [Singaporean government announced net-zero road map](#)
- [National policy statement for indigenous biodiversity: exposure draft](#)
- [How to avoid greenwashing when offering or promoting sustainability-related products](#)



- APAC

Initiatives

- [Hong Kong makes an effort to establish a global carbon trading market](#)

Due to the maturity of the carbon trading market and greenhouse gas offset project, Hong Kong held the Council to tackle the problem of the carbon trading market regarding liquidity and data availability.

- [Platform promises Singapore corporates streamlined ESG reporting](#)

STACS and U-Reg have collaborated on the platform designed to address the fragmented reporting environment across industries and geographies for Singapore corporates' ESG reporting.

- [China development bank disclosed the total biodiversity loan for H1 2022](#)

A total of 126.2 billion RMB loan is used in initiatives including carbon emission reduction, biodiversity, and environment protection, environment infrastructure, and pollution prevention.



- APAC

Initiatives

- [First carbon trade record in Taiwan](#)

A manufacturer – Chimei Corp, has purchased 10,000 tons of carbon credit to compensate for GHG emissions generated by employee commuting and business travels for the 2021 to 2025 period. The carbon credit is certified by Verified Carbon Standard.

- [Thai securities authority starting the initiation of its carbon credit market](#)

The Stock Exchange of Thailand (SET) is looking into how to initiate a carbon credit market in the country, which develops global standard contracts that can be verified locally cheaply and can be used globally, to support companies that are undertaking green energy initiatives.

- [Bochk and S&P Dow Jones indices launches the climate index](#)

The index is designed to evaluate the performance of corporation in the Guangdong-Hong Kong-Macao Greater Bay Area regarding climate targets, which meets the minimum requirement of EU Climate Transition Benchmarks.

- [China's leading oil company starts a consecutive plan of carbon capture](#)

China's Sinopec Corp said it has put into operation the country's largest carbon capture, utilization, and storage (CCUS) facility in east China, and plans to build two more plants of similar size by 2025.

- [Japan's climate scenario analysis reveals inconsistencies](#)

The exercise revealed that the results significantly depend not only on banks' analytical models and the selection of variables for the models but also on additional assumptions made by each bank given the lack of information and data on prospects.

- [Malaysia's engagement in carbon exchange is scheduled](#)

Bursa Malaysia (BM), the Malaysian stock exchange, will open a voluntary carbon market (VCM) exchange later this year, enabling companies to purchase voluntary carbon credits from climate-friendly projects and solutions.



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Initiatives

- [Securities commission expands SRI Sukuk, Bond Grant Scheme](#)

The Securities Commission Malaysia (SC) announced the expansion of the Sustainable and Responsible Investment (SRI) Sukuk and Bond Grant Scheme. SC said this was done to facilitate companies raising sukuk to meet their sustainable finance need.

- [Citi expands social finance funding for Home Credit Philippines to support finance inclusion for more filipinos](#)

Manila – Citi, the largest foreign bank in the Philippines in terms of asset base, has expanded its joint social finance program with Home Credit by increasing its credit facility to Php820 million, up from Php420 million approved and drawn last May 2022.

- [Mizuho issues €800 million green bond to finance environmental projects](#)

Tokyo-based banking and financial services company Mizuho announced today an €800 million green bond issuance, its largest to date, and the largest euro-denominated green bond issued by a financial institution. The green bond offering forms part of Mizuho's initiative to accelerate its environmental business and expand its positive impact through finance, which includes a goal to facilitate 12 trillion yen (\$85 billion) of environmental finance between 2019 – 2030.

- [Development Bank of Singapore, the first bank in southeast Asia to announce a landmark set of decarbonization commitments](#)

As part of its commitment to being net zero in its financed emissions by 2050, DBS announced sectoral targets that are aligned with science-based decarbonization glide paths in its report – 'Our Path to Net Zero – Supporting Asia's Transition to a Low-carbon Economy.



- APAC

Initiatives

- [COP26 president returns to Vietnam to drive progress on clean energy transaction](#)

On his third visit to the country as COP President, Sharma is continuing the work of the UK COP Presidency in pressing for updated climate commitments from all countries ahead of COP27 as agreed in the Glasgow Climate Pact. He suggested development partners transfer technology related to renewable energy to Vietnam as well as offer loans at reasonable costs.

- APAC

Additional reading:

- [SGX first Asian exchange to commit to 1.5°C-aligned science-based emission reduction targets](#)
- [JPXI launches one-stop platform for listed company ESG disclosure “JPX listed company esg information web \(beta version\)”](#)
- [JPX and JPXI launch ESG bond information platform](#)
- [Hong Kong considered increasing the proportion of nuclear power](#)
- [Australia selected EY to support its green taxonomy work](#)
- [Hong kong exchange establishes carbon market committee](#)
- [Singaporean Bank DBS announced landmark set to decarbonization commitment](#)
- [Malaysian company works with BASF to improve pineapple protections plastic material](#)
- [Nisshin OilliO published a new procurement policy for its critical raw materials](#)
- [PWC helps Australia on energy transition](#)
- [Singapore collaborates with Google on fintech programme](#)
- [Mizuho moves to 100% usage of renewable energy](#)
- [Deutsche Bank collaborates with home credit on ESG-linked loan](#)
- [Acen starts renewable energy transaction](#)
- [Japan’s air transport giant announces carbon neutral roadmap](#)
- [Taiwan starts its investment in offshore wind power by cooperating with Denmark](#)
- [Visa launches Asia-Pacific eco-friendly payment](#)
- [Blackrock acquires battery storage developer Akaysha Energy](#)
- [Blackrock acquires solar firm in New Zealand](#)
- [HSBC, Temasek launch sustainable finance firm in Singapore](#)
- [Northern Trust expands philanthropy in Malaysia](#)
- [Gap still exists between investors’ awareness and market guidelines for ESG](#)

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Additional reading:

- [Samsung commits to fully renewables powered by 2050](#)
- [Sony receives recognition of SBTI Net Zero standards](#)
- [Taiwan's PCB manufacturer envolved in RE100](#)
- [ESR group closes \\$714.1 Mil sustainability linked loan with upside option](#)
- [Alibaba Cloud provides carbon emission management software for global customers](#)
- [Longevity partners opens Asia headquarters in Tokyo, Japan](#)
- [Thailand SEC Launches 'SDG Investor Map'](#)

