December 2022

In this month's report we review some of this year's major regulatory and legislative developments as it pertains to ESG as well as recap 2022 Green, Social, and Sustainable bond debt issuance and fund flows. We also dive into some of the key investment themes and challenges for climate tech innovation.

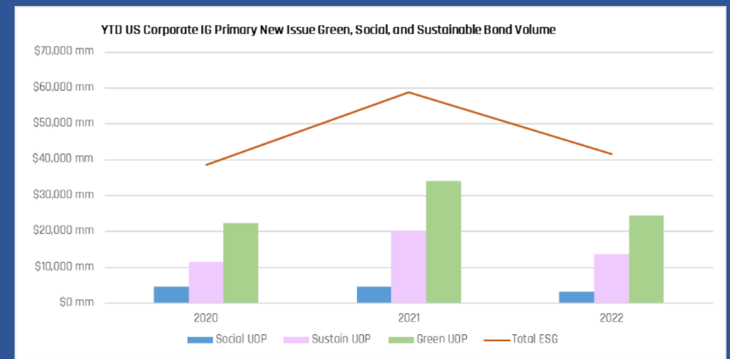
Regulatory

2022 saw no shortage of regulatory developments in the U.S. and abroad that could impact issuers and investors alike.

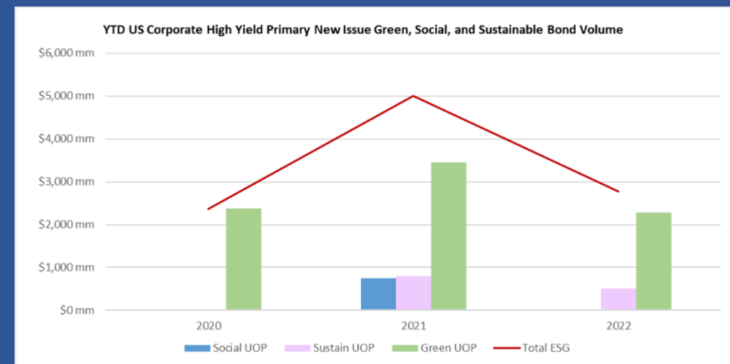
SEC, FSOC, Congress

This year the SEC released two major ESG related disclosure rules. In March there was the release of the "Enhancement and Standardization of Climate-Related Disclosures for Investors" proposal which would require registrants to provide certain climate-related information in their annual reports and registration statements. We discussed this in more depth in our [May 2022 ESG report]. Given the number of comments and a technical glitch that occurred, the comment period was extended from June 2022 to November 2022, and it is unlikely that we will see any final decision on the rule from the SEC in 2022. Also, in March, the SEC released its proposal for enhanced cybersecurity disclosure. We touched on this in our [May 2022] and [March 2022] ESG reports. In addition to more detailed reporting being required in both 8-Ks and annual reports concerning cybersecurity, the SEC's new rule will be clear on what precisely should be reported and how it is reported (XBRL format), as well as put more responsibility on companies to maintain and develop cybersecurity policies and expertise. While the comment period expired in May 2022, no updates from the SEC have been released.

2022 U.S. Green, Social, and Sustainable Debt Volume



Investment Grade: Since our last ESG report, another $6bn in green and sustainability bonds have been printed. Utilities made up a majority of the issuers including Sempra, PG&E, and Ameren. Both State Street and BofA came to market with sustainability bonds, pricing a combined total of $2.5bn (Academy served as an underwriter on both transactions).



High Yield: No new high yield offerings to report. Ford remains one of the largest.
Source: Bloomberg

In October, the Financial Stability Oversight Council (in a follow-up to its 2021 Report on Climate-Related Financial Risk) voted to establish a Climate Related Financial Risk Advisory Committee (CFRAC). The CFRAC will assist the FSOC in receiving and analyzing information on climate related financial risk and help identify, assess, and respond to climate related risks to the financial system. The committee consists of 20 members from numerous backgrounds including financial, regulatory, and academia.

Congress is now becoming quite the battlefield for ESG disclosure and regulation. Republicans have introduced a handful of bills this year to amend components of the ERISA regarding investment decision-making to prioritize financial returns over non-pecuniary factors and prohibit investments driven by investment decisions primarily based on ESG factors in certain mutual funds available in the Thrift Savings Plan. More recently, the introduction of the Mandatory Materiality Requirement Act was designed to limit disclosure requirements set by the SEC only if there is a substantial likelihood that a reasonable investor would consider the information disclosed valuable with respect to making an investment decision. Also, this week the Texas Senate Committee on State Affairs brought in asset

managers for a hearing on their role in shareholder and corporate engagement on climate change as well as their relationship with the net-zero organizations.

Meanwhile, Democrats have also recently introduced several bills. These bills would require plans regulated under ERISA to disclose whether they have adopted sustainable investment strategies and directs the SEC to mandate issuers of securities to disclose climate related risks. These bills also require public companies to periodically disclose ESG metrics. More specifically, the Sustainable Investment Policies would require investors to establish and follow sustainable investment strategies. In addition to these bills, there is the Diverse Investment Advisers Act that would require registered companies to consider diverse individual-owned & controlled firms when seeking the services of investment advisors.

Europe and COP27

This year, the ECB set a 2024 deadline for adherence to its 13 supervisory expectations which mandates that institutions understand (and publish) climate related risks, credit & environmental risk, and the adverse impacts of climate risks on business. In its thematic review of 186 banks with total combined assets of over $25 trillion, the ECB found that at least 85% of institutions have Climate & Environmental best practices in place. However, 55% of institutions have yet to implement them effectively and one fifth of institutions acknowledged that board-approved actions over the past year have not been put in place. In addition to the ECB's deadlines there was also a call for evidence and inputs on "greenwashing." The European Parliament voted in October on sustainability reporting standards. The new Corporate Sustainability Reporting Directive standards are meant to address shortcomings in non-financial reporting and will impact over 50,000 companies (up from 11,000 and primarily larger companies both non-listed & listed). The new standards are set to be adopted in June of next year.

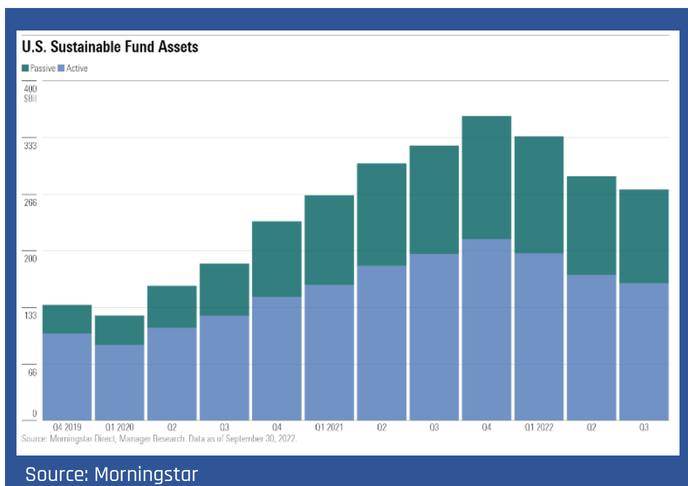
The other major global focus was COP27. Probably the biggest takeaway from this year's Conference of Parties and the Sharm el-Sheikh Implementation Plan was the focus on managing the impacts of climate change as opposed to just mitigation. COP27 saw some consensus on a "loss & damage" fund that would assist developing countries particularly vulnerable to droughts, floods, and rising sea levels attributed to climate change. Developed nations, while not required to assist with funding, are "urged" to do so. The plan also highlights the need for financial systems around the world to align capital flows with 2030 and 2050 climate goals. For instance, about $4 trillion in total renewable energy investment is needed to meet the net zero emissions requirement by 2050. Food security and agriculture were also featured as parts of the discussion. As for mitigation, the plan calls upon parties to speed up the deployment of new clean energy technologies, accelerate the phasedown of unabated coal, and phase-out fossil fuel subsidies.

U.S. ESG Funds Update and Green, Social, and Sustainable Bonds Issuance

ESG Funds:

According to Morningstar, despite some of the first outflows from sustainable funds in Q1 2022, Q3 showed that sustainable funds maintained stronger organic growth rates than the total U.S. fund universe. Clean Energy/Tech funds in particular saw some of the most significant outflows earlier this year (likely in response to high gasoline prices), but they are beginning to rebound. Overall, there remains $296+ billion in U.S. Sustainable funds, with the majority of investments being in active funds and equities. While still lower than Q4 2021's high of approximately

$345bn, Q3 2022 sustainable fund investments remained higher when compared to Q1 2021 levels.



Source: Morningstar

In addition to fund flows, some asset managers are rethinking their alignment with certain initiatives. Most notably is Vanguard, which has pulled out of the Net-Zero Asset Managers initiative. The decision was based on wanting more independence on matters of importance to their investors. Simultaneously there has been growing pressure from certain state financial officers who feel that ESG practices have taken priority over financial performance. The chief concern of state financial officers is the impact of energy related investments on consumer energy costs.

Green Bond Issuance:

U.S. IG GSS issuance (while still slightly higher than in 2020) saw a 29% reduction compared to last year. 2022 total IG GSS volume was $41.5bn, dominated primarily by utilities and financials. Only about 6% of the $139bn in GSS debt issued in 2022 by IG issuers came from TMT, Consumer Staples, Automotive, and Health Care issuers. High Yield GSS issuance (with the exception of Ford's $1.75bn green bond in August) remained muted with only $2.7bn pricing, which is down by over 50% year over year.

Climate Tech Innovation and VC Investment

2022 saw over $39bn in climate tech VC investment. More than $22bn of this was directed toward companies in the United States that are developing new climate friendly or sustainable technologies and services. Morgan Stanley and Mass Mutual have both recently launched new funds with a combined total of $1.1bn in capital focused on climate tech and decarbonization. Union Square Ventures, WorldFund, and Energy Impact Partners have raised a total of $800mm for their respective funds focused on climate tech.

2022 US VC Climate Tech Investment

Sector	Amount (mm)	Percent
Batteries/Battery Tech	3,275	14%
Energy	2,582	11%
AgTech	1,791	8%
Charging	1,748	8%
Solar	1,745	8%
Emissions Mgmt.	1,646	7%
Materials	1,414	6%
Finance	1,365	6%
Food	1,354	6%
EVs & E-Mobility	888	4%

Source: CTVC

Overall, key areas of focus for VC investors in 2022 included battery related technology, charging infrastructure, sustainable energy, and AgTech. However, energy storage and charging were the largest investments. About 14% ($3.2bn) of 2022 U.S. climate tech VC investment went into batteries and another 8% ($1.7bn) was directed into charging. Battery storage and charging technology comprised over one fifth of U.S. climate tech VC investments. Sustainable AgTech was another area that received a lot of interest from VC investors and saw over $1.5bn in VC capital (mostly equity). Going forward, recent legislative actions (like some of those we discussed earlier in this piece) might result in reduced institutional capital for burgeoning climate tech companies making growth-stage funding more challenging. The passing of the IRA may buffer some of this because it provides additional subsidies for climate tech in the form of grants and tax advantages.

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Bottom Line

- While enhanced ESG disclosure in areas like emissions may still be "up in the air" for the U.S. (no pun intended), they will be required for large European issuers and will impact U.S. companies operating in the region.
- Use of GSS funding instruments (while slightly subdued) are likely to continue in light of the COP27 decision to further align capital flows that facilitate mitigating climate change.
- There will be continued VC climate tech investment in 2023. In particular, the focus will be on EV fleet development and profitable climate tech services and technology that address gaps in energy storage, distribution, and generation.

Further Resources

Morningstar: https://www.morningstar.com/articles/1120612/sustainable-fund-flows-shine-bright-in-a-dismal-third-quarter-for-us-funds

CTVC: https://www.ctvc.co/tag/newsletter/

ECB: https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.202011finalguideonclimate-relatedandenvironmentalrisks~58213f6564.en.pdf

ECB: https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.thematicreviewcerreport112022~2eb322a79c.en.pdf Water Use and Energy: Global Meta Analysis: https://www.sciencedirect.com/science/article/pii/S1364032119305994

Sharm el-Sheikh Plan: https://unfccc.int/documents/624444

FSOC: https://home.treasury.gov/news/press-releases/jy0987

GreenWashing: https://www.eiopa.europa.eu/document-library/feedback-request/call-evidence-european-commission-mandate-regarding-greenwashing_en

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