



ESG Monitor

MONETARY AND CAPITAL MARKETS DEPARTMENT

July 12, 2021

ESG Monitor Highlights

- **ESG debt issuance is at a breakneck pace in 2021.** Global issuance of all sustainable debt in the first half of this year is almost equal to last year's record issuance. Green bonds are still the largest debt instrument, but sustainability-linked debt has the fastest increase given investor interest.
- **Signs of broader issuer interest around the world are clear.** Sustainable debt issuance is still mostly Europe-led, but more and more Asian (especially Chinese), North American and Latin American issuers have emerged. This ESG monitor provides a breakdown of recent issuance by sectors, geographies and more.
- **After a surge in ESG-dedicated fund flows late last year, fund flows are pulling back.** The large increase in Q4 of 2020 was partly driven by expectations of greater green stimulus in the pandemic recovery. Despite the decline, flows into ESG-dedicated funds remain large.
- **China's national emission trading system (ETS) is set to launch by the end of this month.** Despite only covering the power sector it will be the world's largest ETS.
- **Central banks in Europe place greater emphasis on greening asset purchase programs.** The Riksbank, ECB and the BOE are incorporating more sustainability consideration in monetary policy.

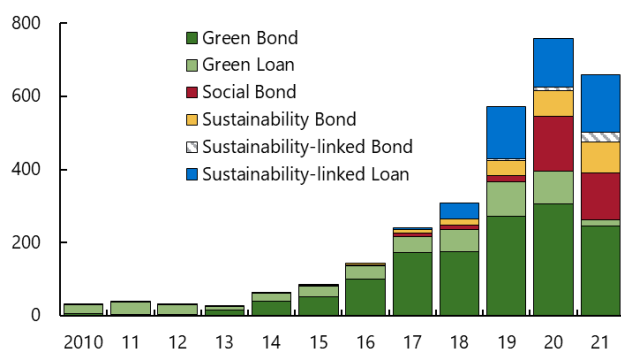
Global Sustainable Debt Issuance Is on Strong Momentum

Sustainable debt issuance is set to exceed 2020 given the strong pace.

Europe continues to dominate overall issuances.

1. Global Sustainable Debt Issuance

(Billions of US dollars; as of June 7, 2021)

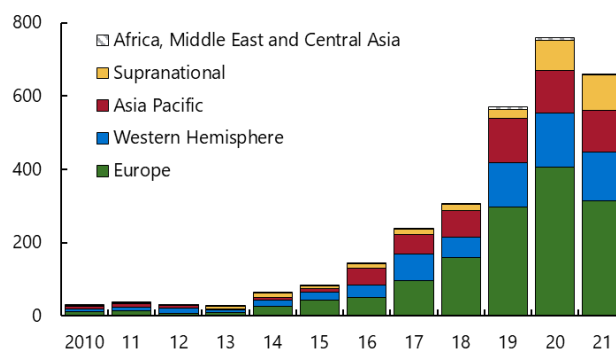


Source: BloombergNEF

- Sustainable debt issuance in 2021 YTD reached around \$660 bn, approximately 87% of the 2020 total issuance.
- Should such a similar trend continue for the rest of the year, total issuances could exceed \$1.5 tn in 2021.

2. Global Sustainable Debt Issuance by Region

(Billions of US dollars; as of June 7, 2021)



Source: BloombergNEF

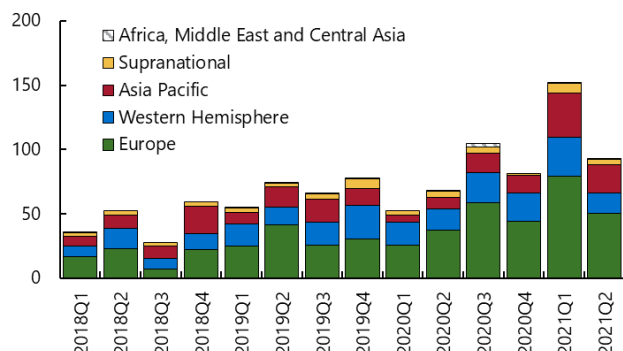
- Europe remains the largest supplier of sustainable debt, at around half of total issuances in 2021 YTD.
- Supranationals, Asia Pacific and Western Hemisphere are experiencing the strongest momentum, with issuances in 2021 tracking at more than 90% of 2020 levels.

Quarterly Uptrend in Most Types of Sustainable Debt

Green bonds remained the largest sustainable debt category.

3. Global Green Bond Issuance

(Billions of US dollars; as of June 7, 2021)



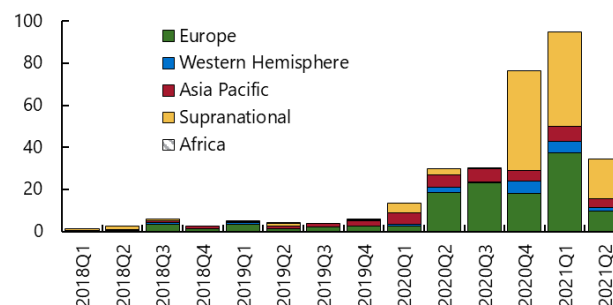
Source: BloombergNEF

- Issuance of green bonds in Jan to early-June 2021 already came in at around 80% of 2020 volumes.
- Asia Pacific has already exceeded last year's issuance driven by China.
- Around 60% of China's issuances in 2021 are RMB-denominated, with issuers ranging from real estate, banks to power generators.

Social bonds have been driven by supranationals in recent quarters.

4. Global Social Bonds Issuance

(Billions of US dollars; as of June 7, 2021)



Source: BloombergNEF

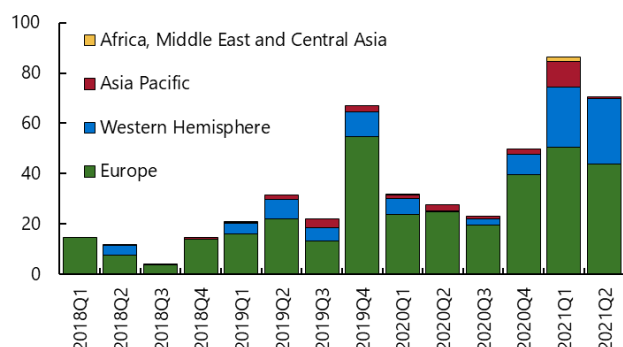
Note: Supranational include the European Union and others such as African Development Bank, Council of European Development Bank and World Bank

- Among supranationals, the European Union has been the single most important driver of social bonds issuances in the past few quarters.
- The proceeds of the social bonds are channeled towards a its €100 bn SURE jobs program. €94.3 bn has been raised so far and has seen strong demand.

Sustainability-linked loan issuance has exceeded 2020 highs.

5. Global Sustainability-linked Loan Issuance

(Billions of US dollars; as of June 7, 2021)



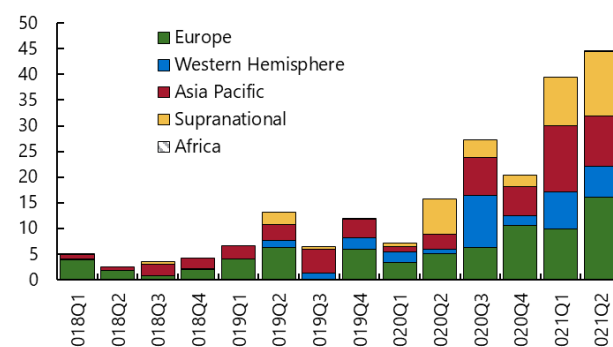
Source: BloombergNEF

- Issuance for 2021 YTD totaled close to \$160 bn, exceeding 2020's high of \$132 bn.
- Europe and Western Hemisphere drove the increase.
- Sustainability-linked debt incentivizes the borrower's achievement of predetermined sustainability performance objectives, often through interest rate rebates or penalties.

Sustainability bond issuance hit new quarterly highs.

6. Global Sustainability Bond Issuance

(Billions of US dollars; as of June 7, 2021)



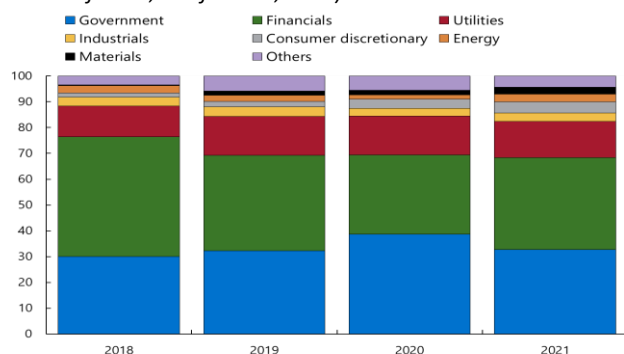
Source: BloombergNEF

- Issuance in 2021 YTD hit \$84 bn, surpassing 2020's previous record of \$70 bn, on broad-based contributions from Europe, Asia Pacific and supranationals.
- Internet retailer Amazon issued its first sustainability bond of \$1 bn in May. Proceeds will fund investments in renewable energy, clean transportation, sustainable buildings, affordable housing, and socioeconomic advancement & empowerment.

Dispersed Industry Breakdowns among Sustainable Debt Products

Green bonds are dominated by government and financials.

7. Global Green Bond Issuance Industry Breakdown (Percent of Total; as of June 7, 2021)



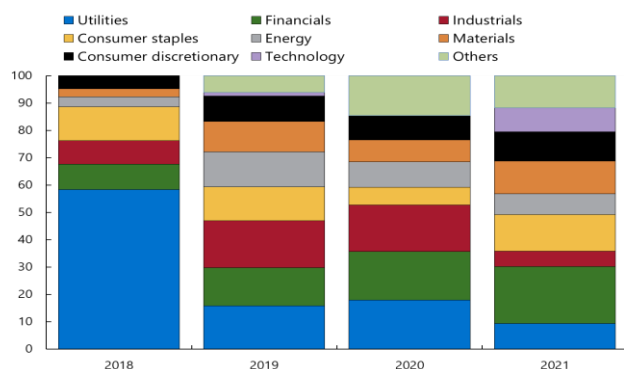
Source: BloombergNEF

Note: Government includes development banks, supranational, sovereign and local government, and US municipals. Fannie Mae is included under financials.

- Government and financials have accounted for more than 60% of green bonds issues over the past four years.
- The largest government issuers are European sovereigns. Italy is in pole position, issuing \$10.2 billion in March 2021.
- China banks are the biggest issuers within financials and they are mostly RMB-denominated.

Increased diversification among sustainability-linked loans.

9. Global Sustainability-linked Loan Issuance Industry Breakdown (Percent of Total; as of June 7, 2021)

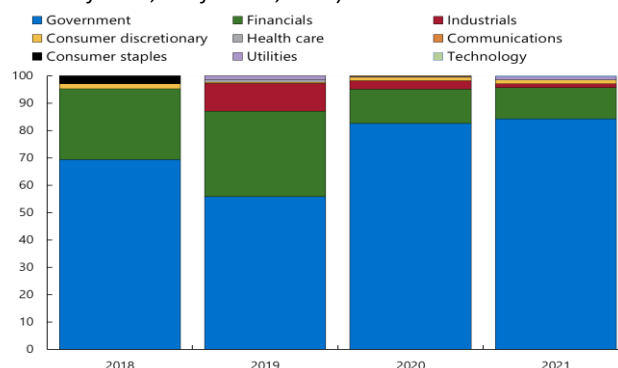


Sources: BloombergNEF. Note: Others include healthcare and communications.

- Sustainability-linked loans are diversified among seven broad industries. Issuers are recognizing the benefits of these loans.
- Some benefits for borrowers include no restrictions on the use of proceeds towards specific green/social projects as long as they improve prescribed sustainability performance, which would subsequently lower borrowing costs.

Social bonds are driven by government issuers.

8. Global Social Bond Issuance Industry Breakdown (Percent of Total; as of June 7, 2021)



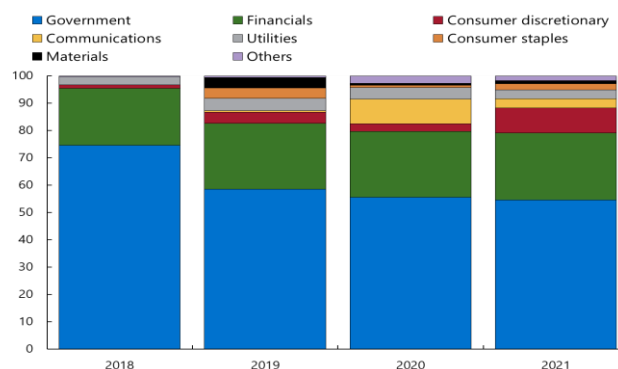
Source: BloombergNEF

Note: Government includes development banks, supranational, sovereign and local government.

- Social bonds are dominated by the governments, accounting for over 80% in 2020 and 2021.
- This was driven by the European Union's outsized contribution.
- Financials, the second biggest category, only account for slightly more than 10%, with European banks issuing the most.

Sustainability bonds are more concentrated than green bonds in government and financials.

10. Global Sustainability Bond Issuance Industry Breakdown (Percent of Total; as of June 7, 2021)



Source: BloombergNEF

Note: Government includes development banks, supranational, sovereign and local government.

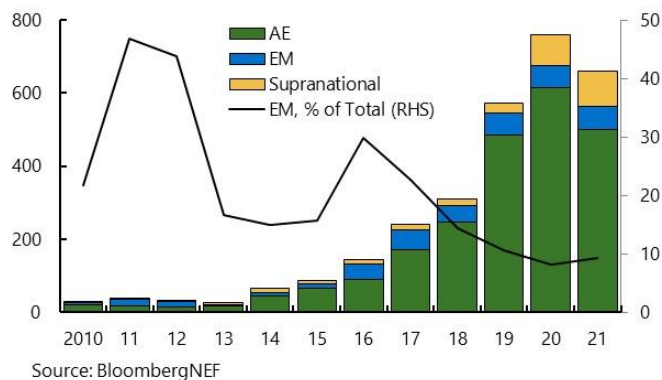
- Government and financials accounted for around 80% of sustainability bonds issuances in the past three years.
- Supranationals such as the Asian Infrastructure Investment Bank are the biggest issuers among government.
- Asia Pacific banks account for the largest share of issuances among financials and the remainder of financials is evenly split between Europe and Western Hemisphere.

Emerging Market (EM) Sustainable Debt Issuances Off to a Great 2021

EMs are still a small part of global sustainable debt.

11. Global Sustainable Debt Issuance

(Billions of US dollars; as of June 7, 2021)

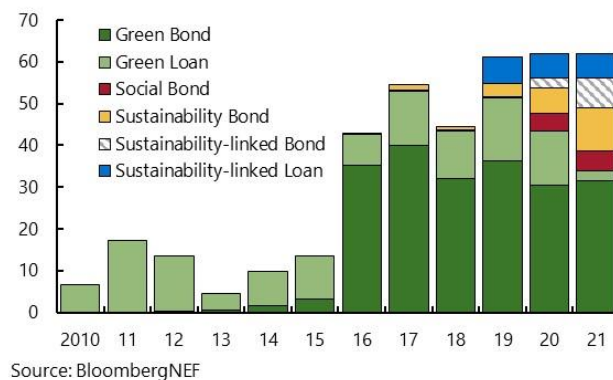


- EM has seen its share of global sustainable debt issuance trend lower since 2016.
- Nevertheless, EM issuances have been increasing in absolute terms, reaching a high of \$62 bn in 2020.
- EM already issued \$62bn in 2021 YTD, on track to set a new record.

EM issuances is set to exceed its 2019 and 2020 highs of \$62 bn in 2021.

12. Emerging Market Sustainable Debt Issuance

(Billions of US dollars; as of June 7, 2021)

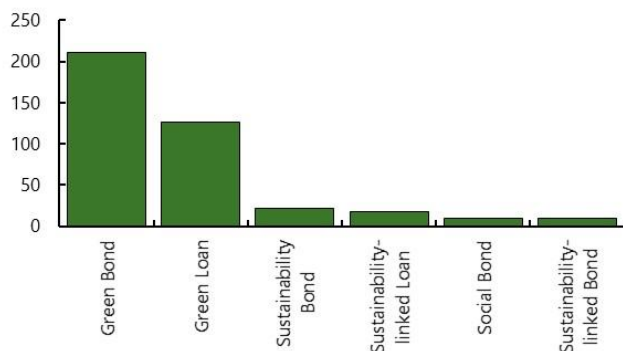


- Green bonds, the largest category of EM sustainable debt issuances, have hovered around \$30 bn of issuances per annum since 2016.
- Sustainable bonds have picked up since 2019 and have hit record highs so far in 2021, driven by Asia. Sustainability-linked products also reached new records, led by Western Hemisphere.
- Social bonds are bonds where the proceeds are exclusively applied to finance or refinance in part or in full new and/or existing eligible social projects.

Green bonds are the largest EM sustainable debt product.

13. Emerging Market Stock of Sustainable Debt

(Billions of US dollars; as of June 7, 2021)

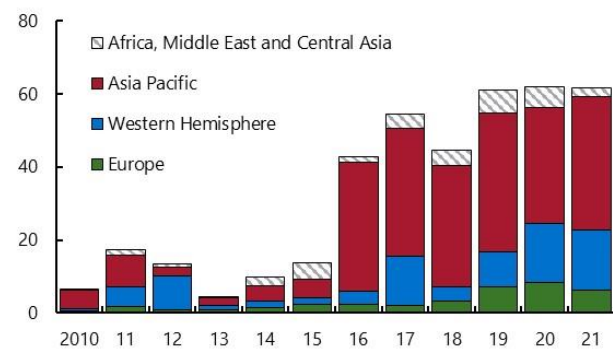


- Cumulative issuance is close to \$400 bn, with green bonds account for about half and green loans at around 32%.
- Other categories remain very small, ranging from \$9 bn each for sustainability-linked bonds and social bonds to \$22 bn for sustainability bonds.

Asia Pacific has been the key driver of emerging market sustainable debt issuances.

14. Emerging Market Sustainable Debt Issuance by Region

(Billions of US dollars; as of June 7, 2021)

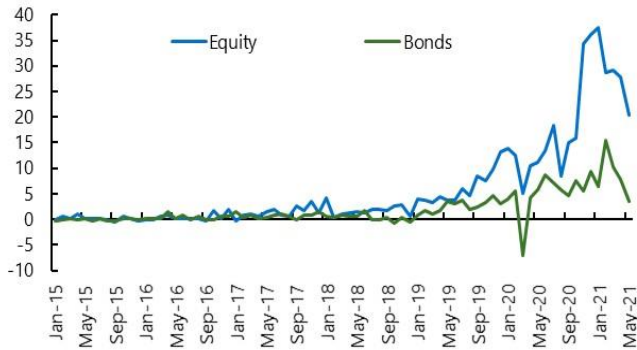


- Issuances have been driven by China since 2016.
- China accounted for more than 70% of the total yearly Asia Pacific issuances since 2016, followed by India at slightly above 10%.
- Financials drove almost 60% of Chinese issuances.

ESG Fund Flows Are Pulling Back but Still High Historically

Both equity and bond inflows are slowing ...

15. Overall Equity and Bond Flows into ESG/SRI Funds
(Billions of US dollars; latest end May)

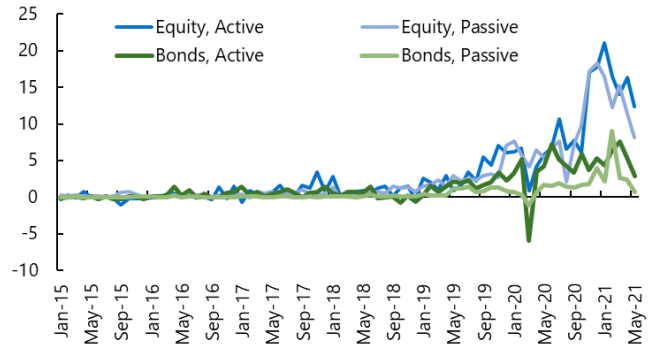


Source: EPFR

- ESG equity fund inflows moderated to \$21 bn in May from a high of \$38 bn in January, still higher than average inflows of \$16 bn for the entire 2020.
- ESG bond fund inflows reversed lower after reaching new highs in February.

... on broad-based weakness.

16. Overall Equity and Bond Flows into ESG/SRI Funds
(Billions of US dollars; latest end May)

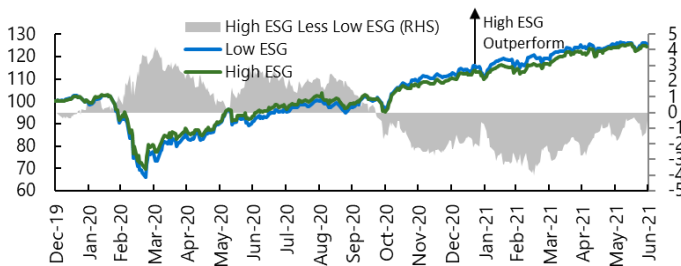


Source: EPFR

- Equity flows of active and passive funds have trended lower.
- Bond flows weakened, with a greater drag on passive funds.

Underperformance of high ESG equities have narrowed.

17. S&P Global 1,200 Equity (High and Low ESG Baskets)
(Index; Normalized to 100 as of End-19)



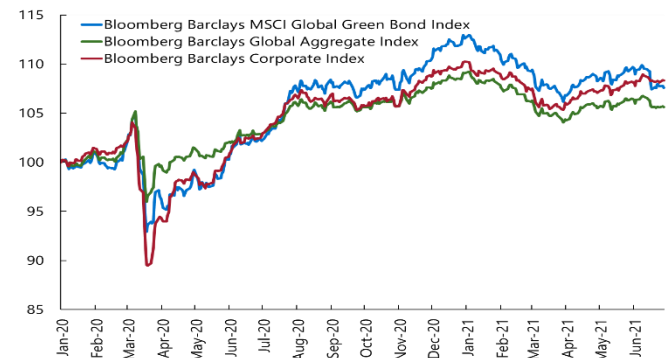
Sources: Bloomberg

Note: Indices are created using members of the S&P Global 1,200 Index. High ESG = Average of indices created from 75th percentile scores from RobecoSam, Sustainalytics, Thomson Reuters; Low ESG = Average of indices created from 25th percentile from RobecoSam, Sustainalytics, Thomson Reuters

- Global equities with low ESG scores continued to outperform but the margin has narrowed as tech recovered from the sell-off in early 2021.

Green bonds continued to lag for the year.

18. Bloomberg Barclays MSCI Global Green Bond Index and Various Fixed Income Indices
(Normalized to 100 as of end-2018)



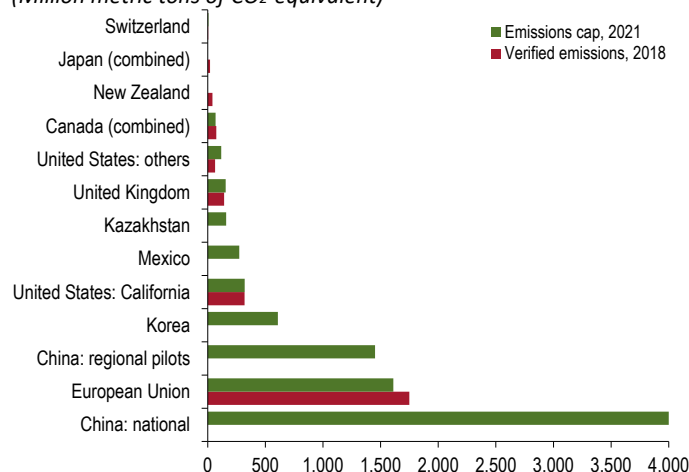
Source: Bloomberg

- Green bonds returned 1% so far in Q2, weaker than the Global Aggregate (1.4%) and Corporate (2.6%) indices, as they resumed their downtrend.

China's Emissions Trading Systems (ETS)

China's national ETS, once launched, will be the world's largest.

19. Size of Emissions Trading Systems
(Million metric tons of CO₂-equivalent)

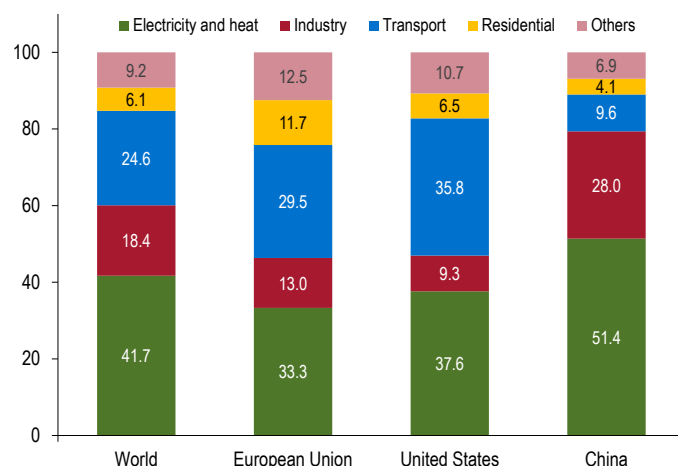


Sources: International Carbon Action Partnership; and IMF staff calculations.

- China's national ETS, scheduled to be launched in July 2021, is expected to cover emissions of at least 4,000 metric tons of CO₂-equivalent for 2021.
- China also has eight regional pilot ETSs, the first pilot in Shenzhen operational since 2013. The size of China's regional pilot ETSs together are only second to the European Union ETS.

The power sector dominates China's carbon emissions and is covered by the national ETS at the launch.

21. Sources of Carbon Emissions, 2018
(Percent of total emissions)

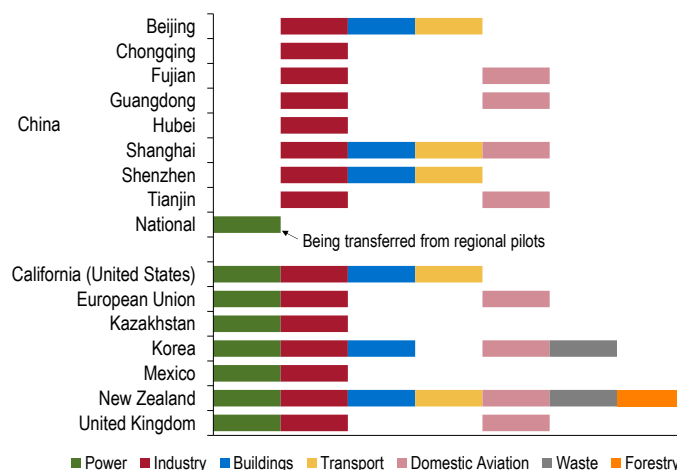


Sources: International Energy Agency; and IMF staff calculations.

- China's national ETS is estimated to cover about 30 percent of total emissions (about 14 bn metric tons in 2020).
- Electricity and heating account for half of carbon emissions in China, driven by the reliance of coal as the main energy source.
- The industry sector was the second largest source, dominated by steel (15% of carbon emissions in China).

China's national and regional ETSs together cover a wide range of sectors.

20. Sectoral Coverage of Emissions Trading Systems

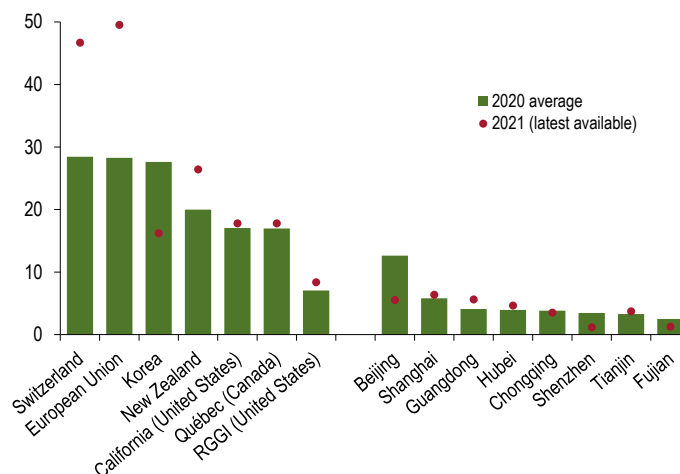


Source: International Carbon Action Partnership.

- Initially, China's national ETS covers only the power sector (including captive power plants in other sectors). Over time, it may expand to cover more sectors, including petrochemical, chemical, building materials, steel, nonferrous metals, paper, and domestic aviation.
- The EU ETS covers 39% of emissions, and the New Zealand ETS, with the widest sectoral coverage, covers 51%.

Prices of emissions allowance are currently much lower in China than most other major markets.

22. Prices of Carbon Emissions Allowance
(US dollar per metric ton of CO₂-equivalent)



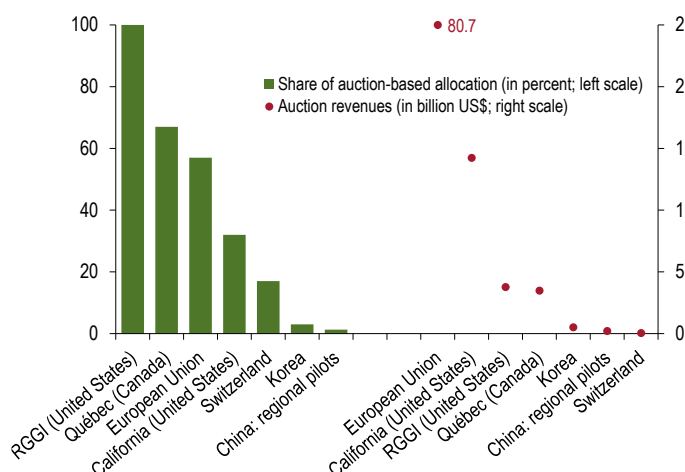
Sources: International Carbon Action Partnership; and IMF staff calculations.

- Low carbon prices in China are partly due to lenient targets for emissions and free allocation of allowances.
- The national ETS's allocation is an intensity-based system, with the amount of total allowances being adjusted ex-post based on actual production levels.
- In the EU, the Market Stability Reserve, which has reduced an allowance surplus since 2019, and a tougher emissions reduction target, drove up carbon prices more recently.

China's Emissions Trading Systems (ETS)

The use of auction for allocating allowances is still limited in China.

23. Allocation of Allowances Based on Auction



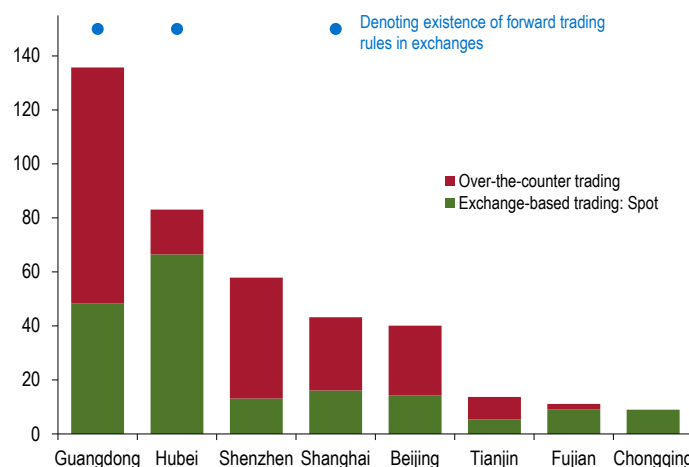
Sources: International Carbon Action Partnership; and IMF staff calculations.

- Guangdong has the most active use of auctions. For the power sector, 5% of allowances are allocated via auctions. The shares of auction allocation are zero for the domestic aviation sector and 3% for others.
- Fujian, Hubei, Shanghai and Shenzhen have conducted auctions, albeit on a limited scale, to allocate additional allowances.
- So far, auction revenues have been limited in China.

OTC trading takes up a large chunk of some regional pilots' trading volume.

25. Cumulative Trading of Allowances

(Million metric tons of CO₂-equivalent; as of October 2020)



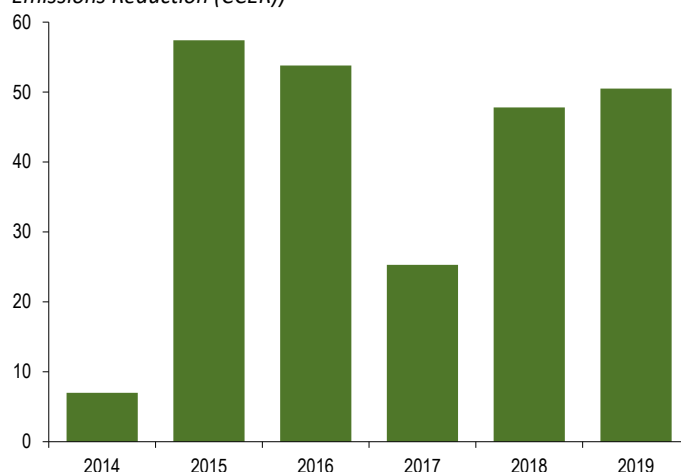
Sources: China Carbon Forum; and IMF staff calculations.

- The national ETS will be traded on Shanghai for spot, while the newly established Guangzhou Future Exchange is exploring the feasibility of introducing futures trading.
- Forward trading is also available in some regional pilots, with trading rules being formally introduced in Guangdong, Hubei and Shanghai.

China allows using carbon offsets to promote renewable energy and low-carbon projects.

24. Carbon Offsets

(Million metric tons of CO₂-equivalent; based on China Certified Emissions Reduction (CCER))



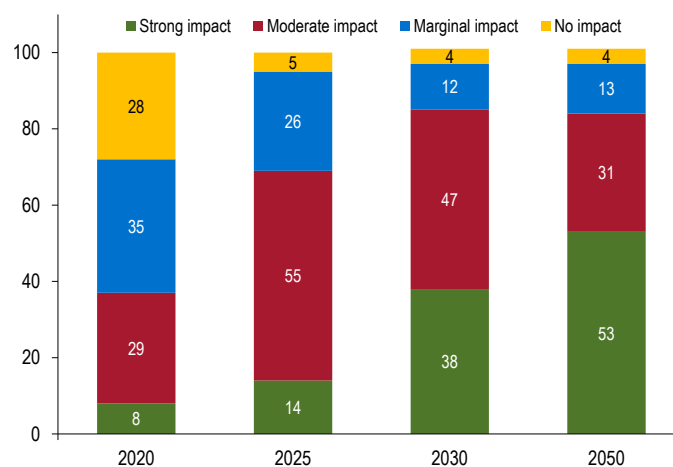
Sources: International Carbon Action Partnership; and IMF staff calculations.

- All regional pilot ETSs allow carbon offsets. CCER is the main source, with some ETSs also allowing for provincial level reduction programs.
- CCER can be obtained by eligible projects, which could differ across national and regional pilot ETSs. For the national ETS, acceptable CCER projects include renewable energy, carbon sinks, and methane utilization.

Chinese businesses expected rising impact of the ETS on their investment decision over time.

26. Expected Impact of Carbon Pricing on Investment Decisions

(Percent of total)



Sources: China Carbon Forum; and IMF staff calculations.

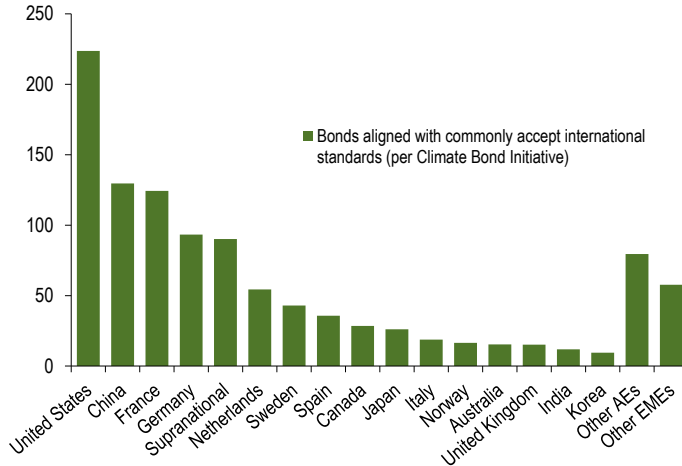
- The impact on investment decisions reflects an expectation of rising carbon prices and stricter climate policies over time.
- Based on the 2020 China Carbon Pricing Survey (before the 2030/2060 commitment), average carbon prices are expected to increase from US\$8 in 2022 to US\$26 in 2050.

China's Green Finance Landscape

China is a major green bond issuer, only behind the European Union and the United States.

27. Total Green Bond Issuance

(Billions of US dollar; cumulative until end-2020)



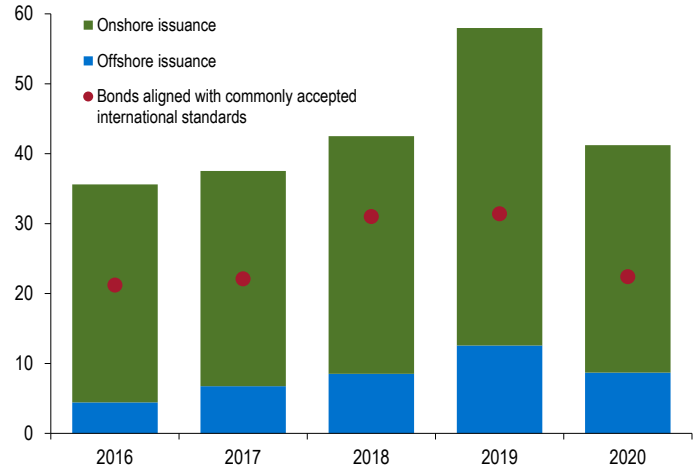
Sources: Climate Bond Initiative; and IMF staff calculations.

- As of 2020, China's total green bond issuance amounts to about US\$216 bn, of which US\$130 bn are aligned with commonly accepted international standards according to Climate Bond Initiative.
- China's green bonds have been largely issued onshore (about four-fifths of total issuance).
- The sizeable portion of onshore issuances are not aligned with international standards.

However, a sizeable portion of issuances are not aligned with international standards.

28. China: Green Bond Issuance

(Billions of US dollar)



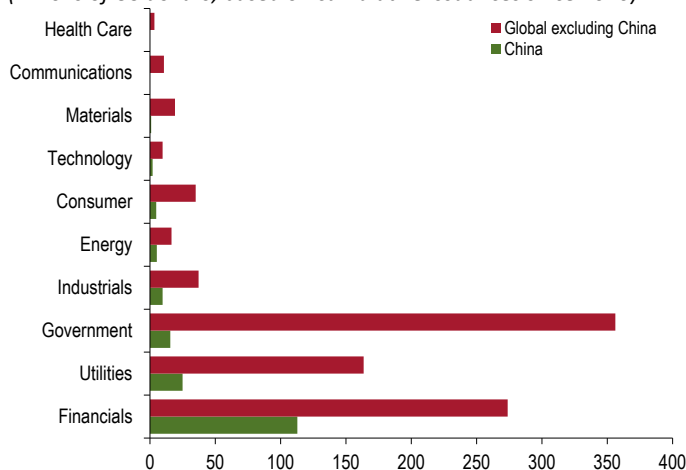
Sources: Bloomberg; Climate Bond Initiative; WIND; and IMF staff calculations.

- Deviations from international standards include financing of ineligible projects (e.g. 'clean' utilization of coal) and a large portion of bond proceeds being used for working capital (up to 50% under the Chinese framework, instead of 5% internationally). According to Fitch, the latter accounts for about 60% of non-aligned green bonds.
- Chinese taxonomy updated in May 2021 removed financing of fossil fuels but still lacks carbon emissions threshold.

About two-thirds of China's green bonds were issued by financial institutions, in contrast to the global trend.

29. Green Bond Issuance by Sector

(Billions of US dollars; based on cumulative issuances since 2016)



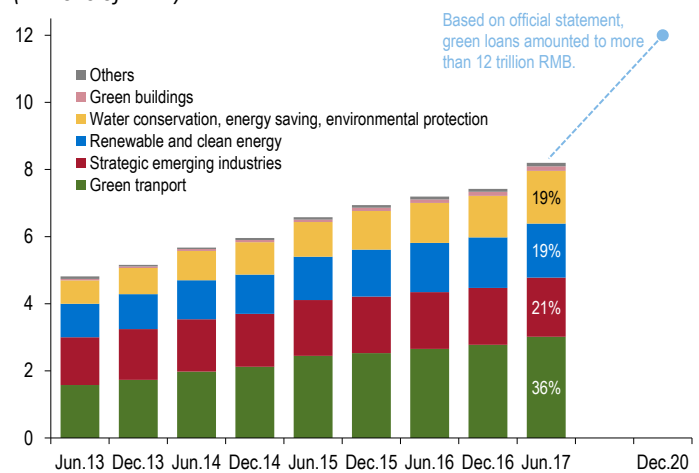
Sources: Bloomberg; and IMF staff calculations.

- Banks play a larger role in China's green bond market than in other markets, both as bond issuers and investors.
- The PBC's Macroprudential Policy Assessment evaluates green finance (investment and lending) based on the metrics of scale, growth and riskiness. The PBC's Medium-term Lending Facility also accepts green bonds and loans as eligible collateral.

Green loans provided by Chinese banks reached \$1.7 trillion in 2021.

30. China: Outstanding Green Loans

(Trillions of RMB)



Sources: China Banking and Insurance Regulatory Commission; and IMF staff calculations.

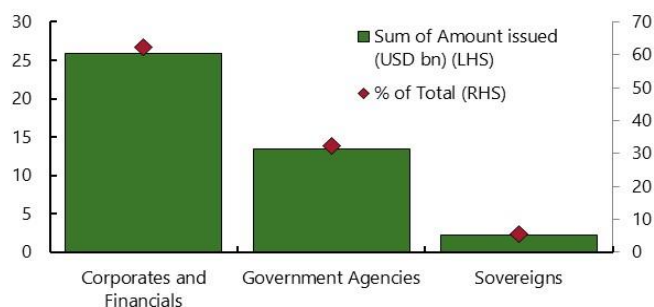
- The green credit framework was first developed in 2012 based on CBRC's "Issuing Green Credit Guidelines". Going forward, China envisages three roles of green finance—credit allocation, risk management, and carbon pricing.
- Some local governments have introduced measures to promote green finance—e.g. in Guangzhou, banks could receive a compensation up to 20% of green loan losses.

Central Banks in Europe Place Greater Emphasis on Greening Asset Purchases Programs (APP)

The Swedish central bank is a first mover in integrating sustainability criteria into asset purchases.

31. Sweden Stock of Green Bonds by Type

(Billions of US dollars; as of June 7, 2021)



Source: BloombergNEF

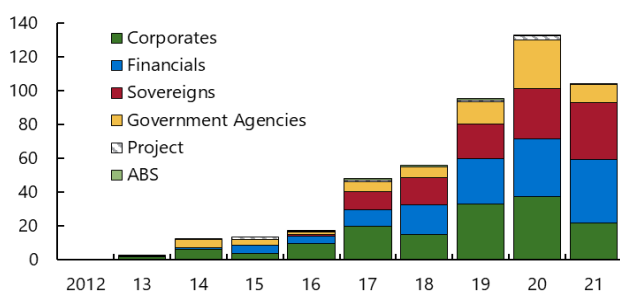
Note: Include bonds issued in Swedish krona by entities domiciled in Sweden

- The Riksbank has already started purchasing sovereign green bonds, green municipal bonds and applying negative screening for corporate bond purchases since 2021Q1.
- Sweden's green bond market (those issued by local entities in SEK) is dominated by corporates and financials.

The European Central Bank (ECB) has invested in green bonds as part of its APP and is looking at addressing climate change with monetary policy in its strategic review.

33. Europe Green Bonds Issuance by Type

(Billions of US dollars; as of June 7, 2021)



Source: BloombergNEF

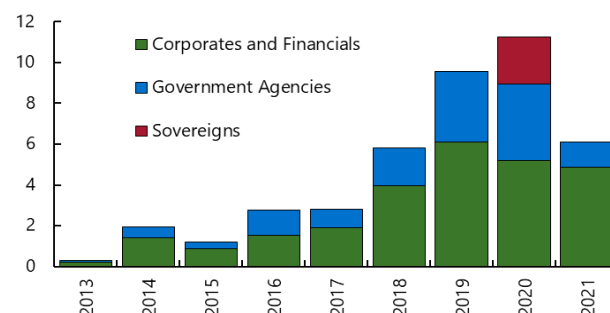
Note: Include bonds issued in EUR by entities with European risk

- Proposals under the ECB's strategic review to integrate climate considerations include tilting purchases towards green assets or penalizing the largest polluters.
- The ECB has already started to invest in green bonds under its APP. It has also invested in the BIS's green bond fund in January 2021.
- The European green bond market has mainly driven by corporates, financials and sovereigns in recent years.

Sweden's green bond issuance reached new highs in 2020, helped by the sovereign and government agencies.

32. Sweden Green Bond Issuance by Type

(Billions of US dollars; as of June 7, 2021)



Source: BloombergNEF

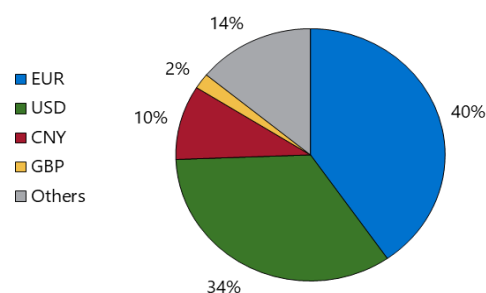
Note: Include bonds issued in Swedish krona by entities domiciled in Sweden

- Sweden's green bond issuances picked up strongly since 2018, with majorly issued by corporates and financials.
- The Swedish national debt office raised SEK20 bn (\$2.3 bn) in its first ever sale in September 2020 to fund climate investments, protection of natural environment and railway maintenance.

Bank of England is looking at greening its corporate bond purchase program and is looking to purchase eligible green bonds.

34. Global Green Bond Issuance by Currency

(Percent of Total; as of June 7, 2021)



Source: BloombergNEF

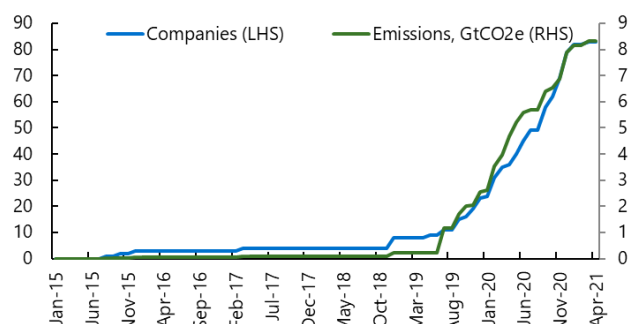
- Purchases of eligible green bonds are one of the considerations for BOE to integrate climate considerations.
- However, global green bond issuance in GBP has been modest so far at only 2%, significantly lagging behind the EUR and USD.
- The UK government is looking to issue its first green gilt in 2021 at a minimum of £15 bn. A green financing framework was issued on June 30, 2021, with proceeds set to fund expenditures in areas such as clean transportation, renewable energy and climate change adaptation.

Net-Zero Corporate Commitments on the Rise; Financials Increasing Climate Integration

Companies deemed to be the private sector's largest emitters are committing to net-zero emission targets.

35. Climate Action 100+ Focus Companies with Net-zero Targets and Their Projected Emissions Reductions

(LHS: Number of Companies; RHS: GtCO₂e)



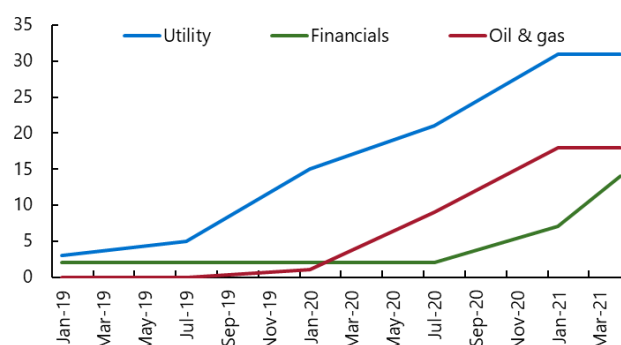
Sources: BloombergNEF, Bloomberg Terminal, Climate Action 100+, company filings

- Climate Action 100+ is an investor-led initiative to ensure the world's largest corporates greenhouse gas emitters take necessary action on climate change.
- 167 focus companies, covering 20% global emissions, have been selected for engagement. 83 of them have already set a net-zero target, a significant rise versus 2019.
- If all 83 companies were to achieve their targets by 2050, annual emissions would fall by 8.3 GtCO₂e, according to BloombergNEF.

Net-zero commitments are increasing among key polluting sectors and financials.

36. Companies in Key Sectors Setting Net-zero Targets

(Number of Companies)



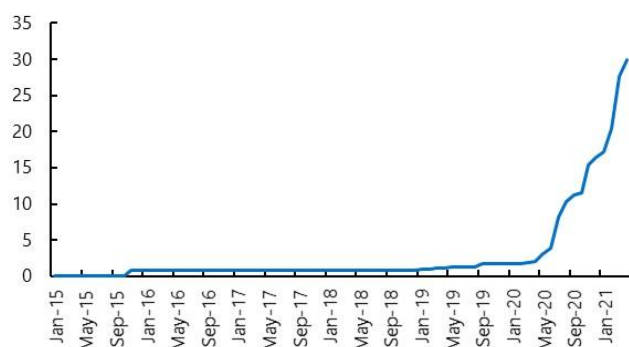
Source: BloombergNEF

- Utility, oil & gas and financials have seen a rapid increase in net-zero commitments.
- BloombergNEF points out that when a leading company sets a target, it tends to set off a chain reaction among competitors.

Increasing number of financial institutions are working together to improve carbon accounting disclosures.

37. Total Financial Assets of Partnership of Carbon Accounting Financials (PACF) Members by Commitment Date

(Trillions of US dollar)



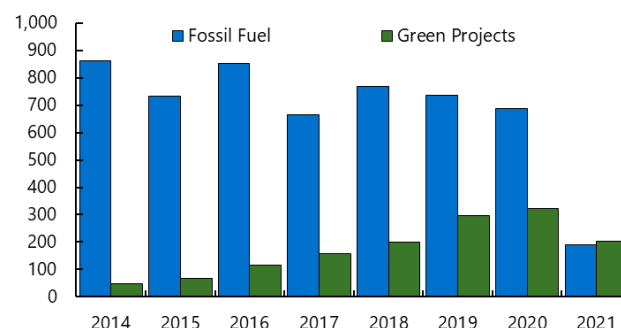
Source: BloombergNEF

- The PACF is a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose greenhouse gas emissions associated with their loans and investments.
- PACF's history began in 2015 and since then many financial institutions have joined, bringing the number to 115, representing almost \$30 tn in assets under management.

Banks' fossil fuel financing has exceeded green financing since 2014, except for 2021 YTD.

38. Banks' Fossil Fuel Financing vs Green Financing

(Billions of US dollars; as of May 14, 2021)



Source: Bloomberg report 'Banks Always Backed Fossil Fuel Over Green Projects - Until This Year'. Note: Covering almost 140 financial institutions.

- Banks' green financing has been steadily increasing since the Paris Climate Agreement in 2015, reaching a high of around \$320 bn in 2020, according to Bloomberg analysis.
- Fossil fuel financing while decreasing has remained high at around three times of green financing until 2020.
- For the first five months of 2021, banks' green financing exceeded fossil fuel financing as banks commit to more climate-friendly projects.

Annex: IMF ESG Monitor

- Environmental, social and governance (ESG) considerations are being increasingly integrated in the decision-making of lenders, investors and firms. This is largely driven by rising concerns about climate-related *physical risks* (losses as climate-related changes disrupt economic activity and destroy capital) as well as growing awareness of *transition risks* (the potential for losses resulting from a shift toward a lower-carbon economy).
- The ESG Monitor discusses the role of ESG factors in financial markets covers global developments in sustainable finance, and provides periodic updates on ESG issuance, asset price performance, and ongoing policy initiatives that affect the private sector perception of ESG-related risks.

Sustainable Finance Is the Incorporation of ESG Principles in Business and Investment Decisions

Select Environmental, Social, and Governance (ESG) Issues

Key Pillars	Key Themes		Key Issues
Environment	Climate change	Carbon footprint	Vulnerabilities from climate change events
	Natural resources	Energy efficiency Sourcing of raw materials	Water efficiency Usage of land
	Pollution and waste	Toxic emissions Wastewater management Hazardous materials management	Air quality Electronic waste management
	Opportunities and policy	Renewable energy Clean technology	Green buildings Environmental and biodiversity targets and investment
Social	Human capital	Workplace health and safety Development opportunities	Employee engagement, diversity, and inclusion Labor practices (e.g., wages, working conditions)
	Product responsibility	Product safety and quality Selling practices and product labeling	Customer privacy and data security Access to products
	Relations	Community Government	Civil society
Governance	Corporate governance	Board structure and accountability Accounting and disclosure practices	Executive compensation and management effectiveness Ownership and shareholder rights
	Corporate behavior	Management of corruption Systemic risk management Earnings quality	Competitive behavior Management of business environment (e.g., legal, regula Transparency on tax and related-party transactions

Source: IMF, Global Financial Stability Report (Chapter 6, October 2019).

Glossary of Frequent Terms in Sustainable Finance in This Issue

ESG	Environmental, Social and Governance
ETS	Emissions Trading System (related to carbon emissions)
NGFS	Network (of Central Banks and Supervisors) for Greening the Financial System
PRI	Principles for Responsible Investment (UN-supported network of investors)
SRI	Sustainable, Responsible and Impact Investing
TCFD	Task Force on Climate-related Financial Disclosures

Endnote: Sustainable and Responsible Impact Investing Strategies

Impact and underperformance concerns have led the evolution of ESG strategies from exclusions to more selective inclusion and investor activism. Initially, sustainable investing was primarily about negative screening strategies that excluded firms or entire sectors from investment portfolios. Over time, concerns about risk management, benchmark underperformance, and a need to demonstrate material ultimate impact have given rise to strategies based on positive screening for companies with good ESG performance (best-in-class, improvement), companies that fulfill certain minimum standards or norms (norm-based screening), or sectors that are considered sustainable (sustainability-themed investments). For more information see Chapter 6 of the October 2019 *Global Financial Stability Report*.