Deutsche Bank
Investment Bank

ESG 2022 Outlook

3 Themes Driving Capital Flow

#PositiveImpact

Deutsche Bank ESG Advisory

January 2022

Top 3 ESG Trends in 2022 & Implications for Capital Flow

1	**Net-zero transition**	*The energy transition to net-zero by 2050 has $130 trillion of capital linked to it, impacting not just how energy is generated and distributed, but also how energy is consumed.* *Corporates will be expected to* *1) communicate clear transition strategies,* *2) invest in 'smart-infrastructure' to prepare for 'Energy-as-a-Service' business models, and* *3) demonstrate emission reduction in the medium-long term*
2	**Impact of regulation on ESG investments & financing**	*Rapid growth in ESG investments is creating differing regulatory regimes, fragmenting ESG investor expectations for corporates with a cross-border investor base.* *Regulations that define green in Europe could (in the long-term) result in differentiation for 'dark green' debt that is demonstrably aligned to a net-zero by 2050 objective.*
3	**Private markets**	*As more investors turn to alternate strategies, ESG is becoming mainstream in private markets at all stages (early to mature).* *ESG is relevant for* *1) assessing a company's return profile* *2) scaling decarbonization technology and* *3) demonstrating exit preparedness in mature companies*

Source: Deutsche Bank

Net-Zero transition: $130 trillion of capital linked to the transition

Legislative changes incentivizing the net-zero transition

Country Level

Net-Zero Coalition

- Over 130 countries have committed to reach **Net-Zero emissions** by 2050
- Over 150 countries have submitted their **Nationally Determined Contributions (NDCs)**
- Nearly 200 nations signed the new deal to implement **Article 6 of the Paris Agreement** – making grounds for a global **carbon market**

Investor Level

EU pushes forward investor regulation

Sustainable Finance regulation in the EU focusses on **incentivizing flow of capital to green** as defined by the EU's net-carbon neutrality by 2050 goal

- Sustainable Finance Disclosure Regulation
- EU Taxonomy
- EU Green Bond Standard

Corporate Level

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

- UK to enforce mandatory disclosure of **transition plans** (2023)
  - UK-listed firms are to publish **net-zero transition plans**
  - Companies are to demonstrate how Climate Change will impact their operations & decision making
- US SEC to focus on disclosure of ESG risks & Climate Change factors

Net-zero transition pushing 'Energy-as-a-service'

'Energy-as-service' refers to a change in the way energy is generated, distributed and consumed, indicating a shift to a decentralized system, that facilitates a two-way flow of consumption of data, and in which the consumer is an equal participant

1 **Decentralization & Distributed Networks**

As energy sources transition to renewables, energy distribution systems will become more decentralized, relying on multiple generation and storage points

2 **Digitization**

Short-term higher costs of renewable energy will be offset by consumers through technology to improve efficiency

Corporates will actively participate in energy distribution through smart infrastructure that facilitates two-way flow of consumption data

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Decarbonization

Source: Deutsche Bank, Deloitte "Energy-as-a-Service", TCFD, SFDR

Net-Zero energy transition: Implications for Corporates

Quickly evolving business models – "Smart" infrastructure key to enabling decarbonization

Communicating a credible transition strategy

How will capital allocators assess 'credible transition'?

Near-term assessments *will be based on qualitative commitments*

Qualitative set of criteria

- Net-Zero by 2050 commitment
- Net-zero target aligned with third-party standards like Science Based Targets Initiative (SBTi)
- Recognition of climate risk (TCFD disclosure)
- Setting interim goals & tracking progress in line with 2025/ 2030 targets
- Strategic detail on business actions to be taken to hit targets (e.g. identifying key decarbonization levers for the business)
- Time bound utilization of temporary solutions like offsets
- Board level accountability of the net-zero transition plan

Mid-term *Execution & Reporting Quantified data*

Quantified tangible emission reductions

- Clear track record of reducing GHG emissions & meeting mid-term targets
- Disclosure of quantitative emissions data

Investing for the energy-transition

How can corporates prepare for 'Energy-as-a-service?'

The shift in the way energy is generated, distributed and consumed requires corporate business models to evolve, and we expect the following 3 types of decarbonization investments to continue to grow

1. **Digitization and 'demand-response'**

Corporates will optimize production processes and save on energy costs by investing in smart 'demand-response' infrastructure that enables reduction in energy emissions & consumption

H2 green steel — *"Digitalizing hydrogen and steel production is about optimization […], increasing efficiency in electricity usage […}, bringing value by cutting costs"*

2. **Co-generation and storage**

There will continue to be opportunities to participate in the new energy system by investing in generation and storage points

Blueprint Power — *"Blueprint Power raises $3.5m to enable real estate owners to become clean energy suppliers"*

3. **Investing in new technologies**

Given wide-scale decarbonization rests on technology not yet available at cost and scale, corporates investing in development of new technologies through venture or growth capital are well positioned to lower the cost of their own decarbonization

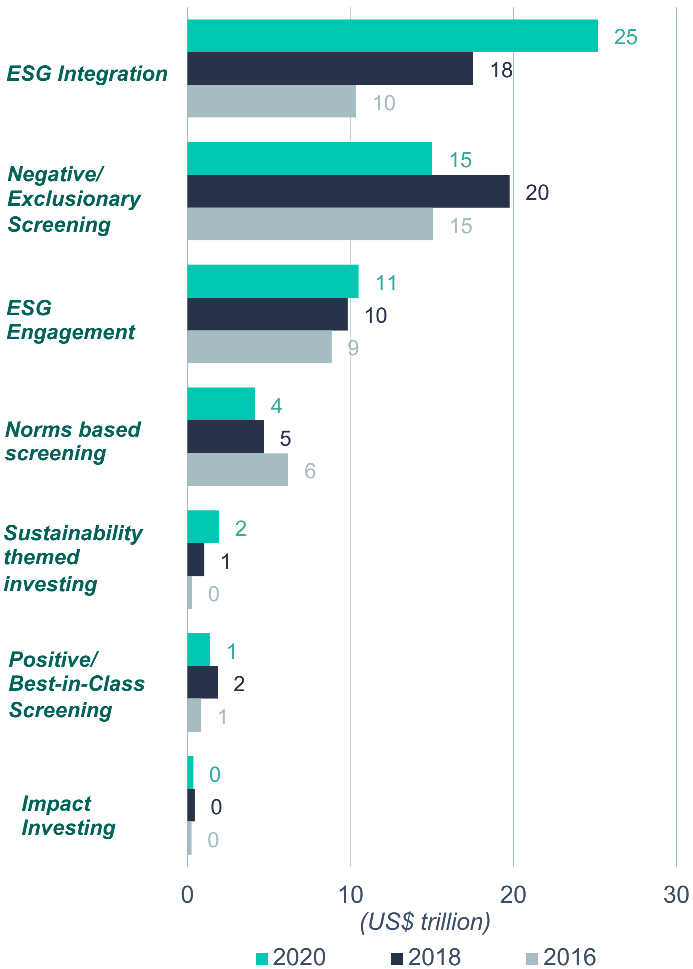
Volkswagen — *"Volkswagen plans $355m Venture Capital Fund for decarbonization"*

Source: Deutsche Bank, h2 Green Steel, Cision PR Newswire, Bloomberg

Differing ESG regulations in Europe and US

As ESG capital flows increase, differing regulations widen regional differences in investment strategies

Global Growth in ESG Investment Strategies ('16-'20)



Europe: Aligning capital to net-zero

Sustainable Finance Disclosure Regulation

Article 6 (grey)

Products that either consider ESG risks as part of the investment process, or declared as non-sustainable

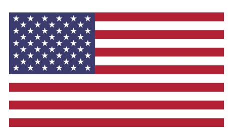
Article 8 (light green)

Promote environmental or social characteristics into their broad investment strategy

Article 9 (dark green)

Products that have an **intended sustainability target** & follow a "**do not significantly harm**" principle

USA: Disclosing ESG Risk & Integrating ESG



In the USA, the current SEC focus is on **disclosing ESG risk** factors that are financially material, particularly around climate risks

Implications for cross-border capital flow

- Regulation expected to widen difference in expectations of European vs. US investors ESG investors.
- US investors focused on ESG risk management vs. European investors have an additional focus on emissions reduction and 'do-no-harm' exclusions.
- Corporates with a cross-border investor base will increasingly need to develop strategies that meet varying investor expectations.
- Cross-border acquisitions are expected to start considering impact on ESG profile of acquirer based on the expectations of the investor base.

Source: Deutsche Bank, GSIA "2020 Global Sustainable Investment Review", Bloomberg

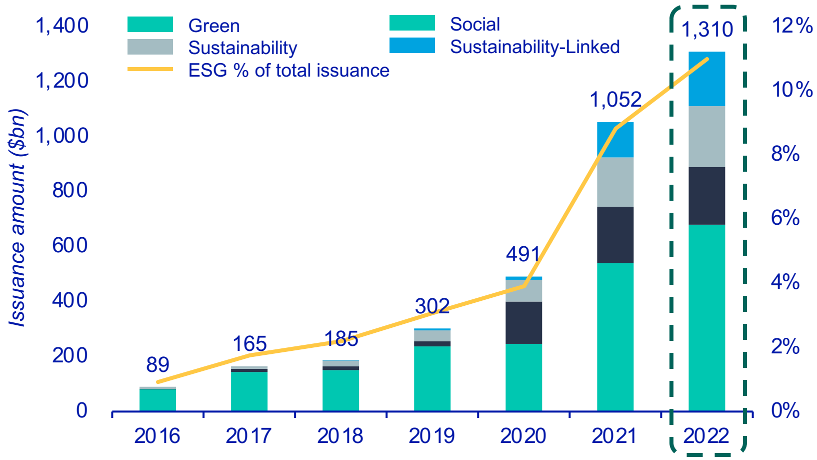
Financing the Transition: ESG labelled bonds 10-15% of total issuance in 2022

Regulations could result in pricing differentiation for 'dark green' debt

Global ESG bond issuance ($bn)

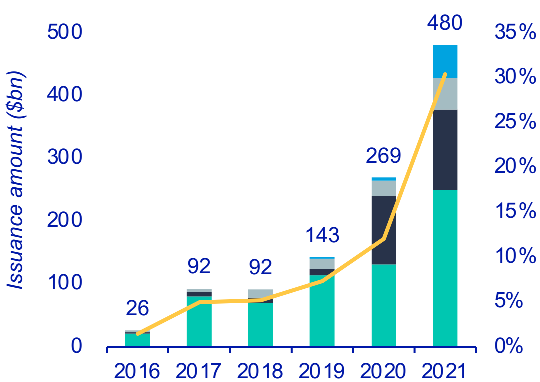
Outlook 2022[1]

$1,310 ($bn)	**Global ESG Bond Issuance**
$680	Green Bonds
$210	Social Bonds
$220	Sustainability Bonds
$220	Sustainability-Linked Bonds

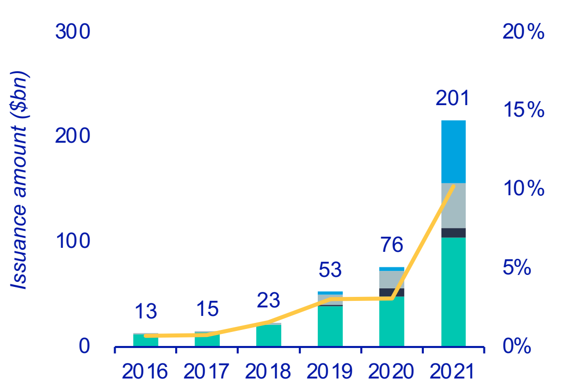


	2016	2017	2018	2019	2020	2021	2022E
ESG supply ($bn)	89	165	185	302	491	1,052	1,310
Annual % of total	0.9%	1.8%	2.2%	3.1%	3.9%	8.8%	10-15%

EUR ESG bond issuance ($bn)



USD Corp & FI ESG bond issuance ($bn)[2]



Drivers of issuance

While the need to finance decarbonization initiatives spurs growth in ESG labelled issuance, regulation to standardize definitions of 'green' will act counter rate of growth.

2022 Drivers of issuance	
Corporates incentivized to issue in ESG format to signal progress of net-zero strategies	– 62% of corporates keen to use ESG bonds to convey decarbonization and sustainability strategy.[3] – Proven execution and pricing benefits in labelled bonds.
High demand for ESG issuances	– $35 trillion, or 36% of global AUM, have an ESG mandate. – US and Europe continue to represent >80% of global sustainable investing assets.
Sustainability-Linked Bond (SLB) issuance as 'transition' instruments	– Investors view as most promising near term ESG instrument[3] unlocking significant growth of the ESG market. – Democratizes issuance to non-capex heavy and emissions intensive sectors that may not be issue in 'green format.'
Increased regulation and scrutiny around 'green' and 'SLB' labels	– Driven by the EU taxonomy and other regulations, investors are increasingly scrutinizing the 'quality' of ESG/green debt to be in line with 1.5 degree decarbonization trajectory. – While this could counter the rate of growth, we expect this new found focus on definition of green to over time result in a pricing benefit for higher quality green/ESG debt.

(1) Environmental Finance
(2) Includes Corporates and Financials
(3) Deutsche Bank ESG Survey - What corporates and investors think (November 2021)
Source: Deutsche Bank, Bloomberg, Dealogic

ESG is becoming mainstream in private markets

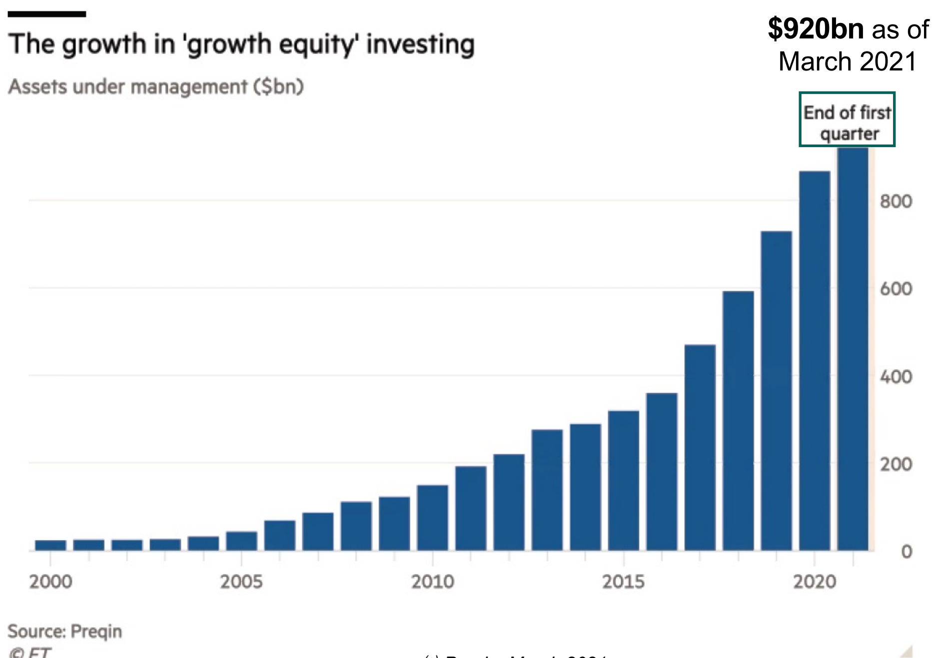
As capital flows into alternatives, ESG is seen as key to an investment's return profile at all stages of investing

Private capital to "growth equity" investing

Growth equity has **more than doubled** from 2016 to 2021[(a)]

73% of 200+ institutional investors stated they plan on **increasing investments in the private markets**[(b)]

Capital towards fast-growing private companies



1 ESG data to further improve practice & disclosure

ESG due diligence to increase value-add for exits

- Private equity firms and VCs are increasingly carrying **ESG due diligence**, impacting their **investment decisions & exit strategies**
- Shifting from risk management to value creation, private investors are seeking **ESG best practices** at an early stage

2 Opportunities: Climate solutions technology

Directed capital to developing disruptive technologies

- **$222 bn of capital** has been invested towards technology contributing to the net-zero economy transition between 2013 – 2021 ($87.5bn in 2020-2021 alone on **climate solutions**)[(c)]
- **Mobility & Transport,** is the area currently benefitting from the most funding
- **Strong growth** expected in climate technology in various sectors following COP26

3 ESG linked-finance to demonstrate exit preparedness

ESG-linked leverage finance volume

- For more mature companies, growth of ESG- linked leverage finance is an example of how demonstrating commitment to ESG in private markets is important for creating a 'halo' effect on exit strategies
- New-issue volume hit an all-time high in 2021
  - EMEA's volume for FY 2021 was EUR 114m[(d)]
  - More than half was debt raised to support M&A activity[(e)]

[(a)] Preqin, March 2021
[(b)] Numis Securities' survey, 2021
[(c)] PwC, "State of Climate Tech 2021", 2021
[(d)] Dealogic
[(e)] Penningtons Manches Cooper, 2021
Source: Deutsche Bank, Preqin – FT

Deutsche Bank's ESG credentials

Notable Deutsche Bank-led sustainable bond transactions

Deutsche Bank's Sustainable Finance team has been a driving force in helping issuers bring ESG-related transactions to market. The team has been at the forefront of innovative transactions, both as Green Bond structuring agent as well as active Bookrunner.

Recent sustainable bond transactions

EUR-denominated transactions

VodafoneZiggo	Lanxess	Kerry Group	Talanx	Xunta de Galicia	Electricite De France SA
(B1/B+/BB) €750m 3.500% 15-Jan-2032 $1.525bn 5.000% 15-Jan-2032	(Baa2/BBB/BBB+) €600m 0.625% 01-Dec-2029	(Baa2/BBB+/-) €750m 0.875% 01-Dec-2031	(-/A-/-) €500m 1.750% 01-Dec-2042	(Baa1/A/-) €500m 0.268% 30-Jul-2028	(A3/BBB+/A-) €1.75bn 1.000% 29-Nov-2033
Joint Bookrunner January 2022	Sole Sustainability-Linked Structuring Advisor and Joint Active Bookrunner November 2021	Joint Bookrunner November 2021	Joint Bookrunner November 2021	Joint Bookrunner November 2021	Joint Bookrunner November 2021
Sustainability-Linked Bond	Sustainability-Linked Bond	Sustainability-Linked Bond	Green Bond	Sustainable Bond	Green Bond

USD-denominated transactions / **Transaction issued in other currencies**

Merck & Co Inc	Vistra Corp	General Mills	The World Bank	United Kingdom	Treasury Corporate of Victoria
(A1/A+/-) $1.0bn 1.900%10-Dec-2028	(-/B/-) $1.0bn 7.000% Perp	(Baa2/BBB/-) $500m 2.250% 05-Oct-2031	(Aaa/AAA/-) A$500m 1.350% 22-Apr-2027 A$300m 1.100% 18-Nov-2030	(Aa3/AA/AA-) £10bn 0.875% 31-Jul-2033	(Aa1/AA/-) A$2.5bn 2.000% 17-Sep-2035
Joint Lead Manager December 2021	Joint Bookrunner December 2021	Joint Bookrunner October 2021	Joint Bookrunner October 2021	Joint Lead Manager September 2021	Joint Bookrunner September 2021
Inaugural Sustainability Bond	Green Bond	Inaugural Sustainability-Linked Bond	Sustainable Bond and IBRD's first AUD benchmark in 2021	Inaugural Green Gilt	Sustainable Bond

Green Bond | Social Bond | Sustainability Bond | Sustainability-Linked Bond

All Global ESG Debt Products FY2021

Rank	Bookrunner	% Share
1	JPMorgan	7.2%
2	Citi	5.7%
3	BofA Securities	5.7%
4	BNP Paribas	5.4%
5	**Deutsche Bank**	**4.6%**
6	Goldman Sachs	4.6%
7	HSBC	4.5%
8	Barclays	4.2%
9	Credit Agricole CIB	3.9%
10	Morgan Stanley	3.8%
	Total	**100**

Source: Internal Analysis of Dealogic data as of 20 December 2021

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