

Private Equity Investment in the Global Clean Economy





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About the research

The **CleanBridge Private Equity Investment in the Global Clean Economy** report provides an insight into Global Private Equity Investment in the global clean economy. The findings of the report are based on primary and secondary research conducted by CleanBridge and its research partner Alchemy Research and Analytics.

The report provides an overview of the global private equity investment market focusing on global and regional trends around capital raising, investment activity, exit markets, and available dry powder for further investment. It also explores the role of private equity investment in the global clean economy and analyses the trends in private investment in renewable energy over the years.

Major private equity GPs who have invested in renewable energy, or the broader clean economy have been profiled in the later part of the report. Data on the private equity industry has been sourced from established industry sources such as Preqin, Bain & Company, Bloomberg NEF and others. Information on private equity GPs has been primarily sourced from Pitchbook and the companies' corporate materials. This has been supplemented by news articles and reports from industry associations, trade journals and national statistical agencies.

The report is an outcome of a collaboration between CleanBridge and its research partner Alchemy Research and Analytics and was completed between March and May 2022.

We would like to thank the following executives for their contribution in preparing the report:

CleanBridge

- L. Warren Pimm, Partner & Sr. Managing Director
- Rob Hays, Managing Director
- Pedro Obregon, Vice President
- Federico Fermin, Associate

Alchemy Research and Analytics

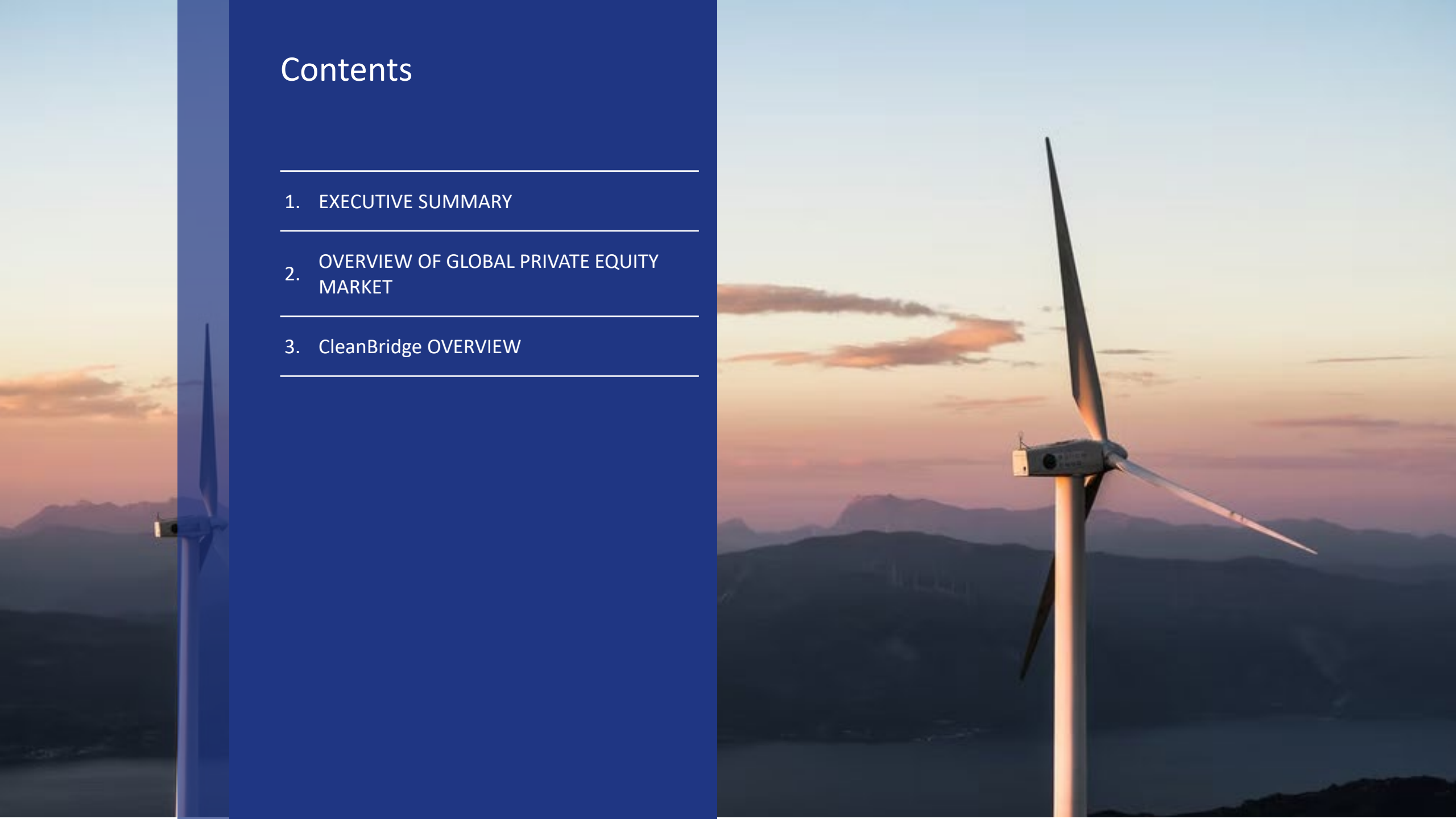
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Introduction

Globally, private equity investment in the global clean economy has continued to grow at significant pace, given a combination of increasing allocations to private equity by large asset owners generally, growing policy commitments by global governments towards net zero emissions economies by 2050, and an increasing focus on environmental, social, and governance features by all investors.

Investment in clean energy, the electrification of the global transportation system, and the built environment, specifically the underlying technologies, supply chains, and operating companies within those sectors, is expanding at a rapid pace. Global investment in clean growth and a clean economy is now mainstream, and no longer a niche area of investment by private equity.

The purpose of **CleanBridge's Annual Private Equity Investment in the Global Clean Economy Report** is to provide a high-level view of the demand drivers, opportunities, challenges and outlook prevalent in major markets for private equity investment in clean economy sectors of renewable energy, electric transportation, and the built environment. An understanding of global industry trends and country-specific market factors are critical to success for all potential market entrants.

We hope you will enjoy reading our inaugural report on the Global Private Equity Investment the Clean Economy.

L. Warren Pimm, CFA
Partner & Senior Managing Director
CleanBridge

1. EXECUTIVE SUMMARY



Executive Summary

Green Capex will be the dominant driver of global PE investment

- ❖ Net Zero targets have emerged as a useful tool to indicate a country, company or asset manager's commitment to climate action, uniquely focused on carbon emissions or equivalents
- ❖ Around \$6 Tn of annual investment is required in 2020s to meet Net Zero, Clean Water and Infrastructure objectives, up from legacy \$3.2 Tn
- ❖ China, US and Europe represent more than half of required investment for Net Zero by 2050 pathway, consistent with weighting of overall emissions
- ❖ Meeting the Net Zero pathway objectives involves not only the expansion of power plant capacity but also of transmission lines, batteries, charging infrastructure, and carbon capture/sequestration

Private equity remains the preferred fund model

- ❖ Slowdown in global economic growth owing to pandemic has failed to deter investors from allocating more funds to private equity, with commitments around \$0.7 trillion in 2021. Fundraising in PE rebounded globally, falling just short of a full recovery to pre-COVID 19 levels
- ❖ Investor preference for private equity is driven by the search for higher yields, which is being delivered by higher-risk growth equity and venture capital segments
- ❖ Private equity outperformed other private markets asset classes and returned a 27.1% pooled internal rate of return in the first three quarters of 2021, slightly below the 33% in full-year 2020. Venture capital was the fastest growing strategy within PE in terms of AUM, while buyout remained the largest PE sub-asset class

Increasing competition in fundraising market

- ❖ The fundraising market remains highly competitive and crowded as more funds are returning to market more quickly. This is creating a tough fundraising environment for managers that lack a clear differentiated strategy
- ❖ With more capital in the market and greater competition for new deals, it is expected increasing number of managers might resort to other options such as Social Impact funds
- ❖ The competition is even more intense in the secondaries market as the market is growing quickly, and adoption of single-asset funds effectively takes the ceiling off the market. The competition extends beyond GPs: several highly regarded investment bankers serving the space have changed organizations in recent years

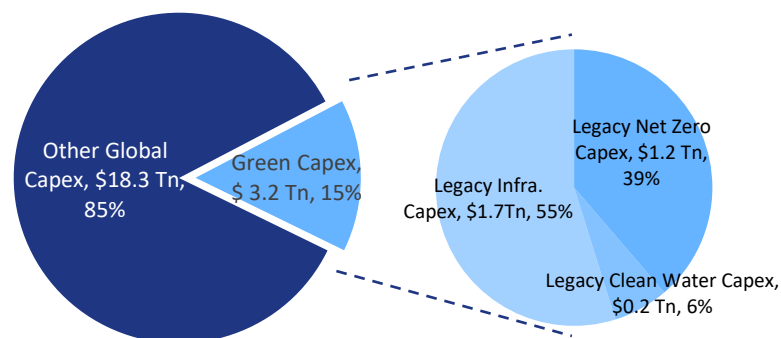
Resurgence of PE/VC investments in Clean Technology

- ❖ PE/VC investment in clean technology is expected to more than triple to \$1 trillion annually over the next five years, as economic viability improves, and overall dynamics of a low carbon economy are shaped by favourable policy environment
- ❖ There is a massive \$90 trillion investment opportunity till 2050 across renewable energy, electrification technologies and energy efficiency sub-sectors in order to reach the goals of the Paris Agreement
- ❖ Given the quantum of capital requirements, private sources including private equity and venture funding are expected to play a major role in capital mobilization

2. OVERVIEW OF GLOBAL PRIVATE EQUITY MARKET

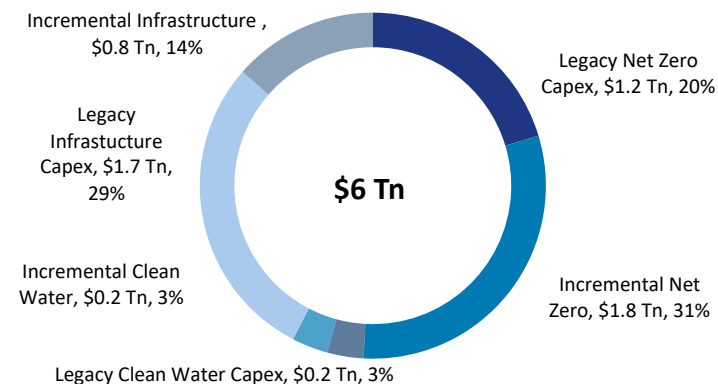
Green Capex Requirement to Meet Sustainable Development Goals

Green Capex toward Net Zero, infrastructure and clean water vs. 2016-19 annual global capital investment



Source: World Bank, IEA, McKinsey, OECD, Goldman Sachs Global Investment Research

Green Capex requirement in the Net Zero scenario

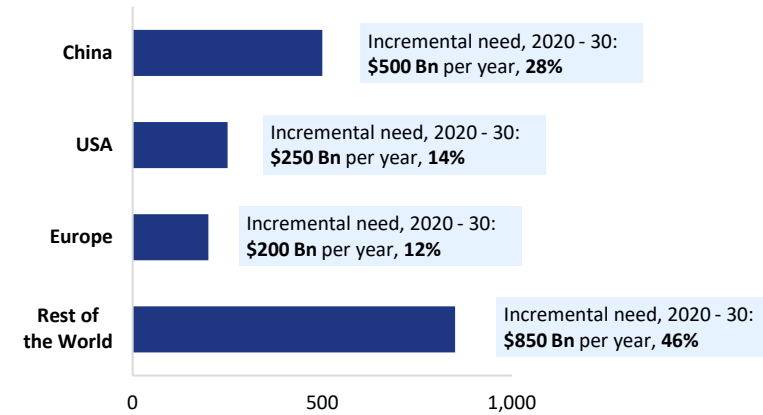


Source: World Bank, IEA, McKinsey, OECD, Goldman Sachs Global Investment Research

- Around **\$6 Tn** of annual investment is required in 2020s to meet Net Zero, Clean Water and Infrastructure objectives, up from legacy **\$3.2 Tn**
- As per Goldman Sachs Research and FactSet, growth in investment in global CAPEX + R&D (not solely Green) in 2022 is expected to be **3% - 4%** vs. 2021
- Geographically **China and the US** should represent the greatest percentage of overall and incremental Net Zero/infrastructure investment needs. In 2019, China emitted around 28% of global CO₂, while the US emitted about 15%
- The incremental **\$2.8 Tn** of annual investment needed this decade represents around **2.7%** of global GDP
- As per latest estimates by International Energy Agency (IEA), Net Zero by 2050 investment requirements (excluding fossil fuels) during the 2020s will be **\$3 trillion annually (rising to \$4 trillion in 2030)** vs. \$1.2 trillion annually on average in 2016-20

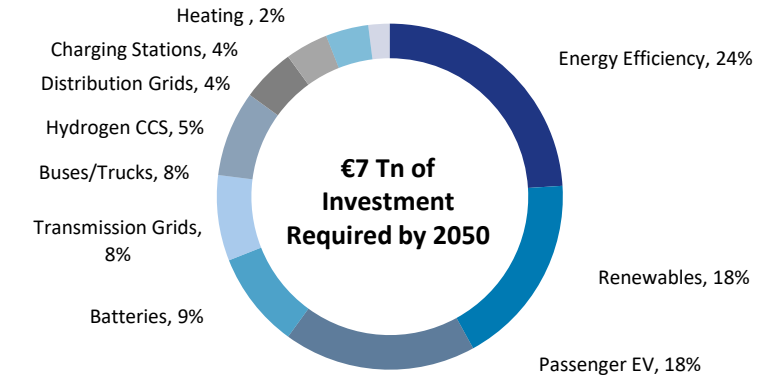
Capex Requirement by Region & Sector

Incremental investment / yr in the 2020s needed for Net Zero by 2050 pathway (\$ Bn)



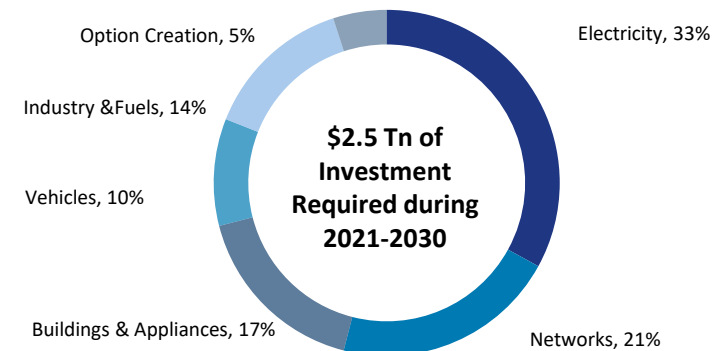
Source: Princeton University, EU Commission, IEA, Goldman Sachs Global Investment Research

EU Net Zero costs by investment category by 2050



Source: Goldman Sachs Global Investment Research, Princeton University, European Commission

US Net Zero costs by investment category during 2021-2030

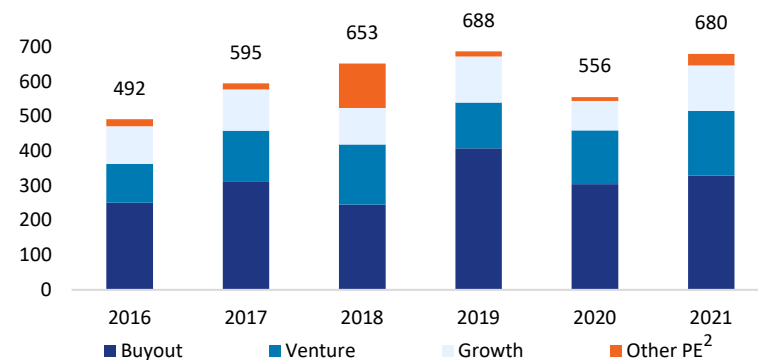


Source: Princeton University, EU Commission, IEA, Goldman Sachs Global Investment Research

- China, US and Europe represent more than half of required investment for Net Zero by 2050 pathway, consistent with weighting of overall emissions. Meeting Net Zero objectives will likely require capex of about \$11 Tn in the EU by 2050 and \$16 Tn in China by 2060 (as China is pursuing a Net Zero Path by 2060, means spending will be less in 2020s than what would have been required to reach Net Zero by 2050)
- In the US a combination of demand efficiency and increased deployment of additional clean generation capacity is needed to accomplish the goal set by President Biden to reduce US greenhouse gas emissions 50%-52% by 2030 vs. 2005 levels
- Meeting the Net Zero pathway objectives involves not only the expansion of power plant capacity but also of transmission lines, batteries, charging infrastructure, and carbon capture/sequestration, supported by investment friendly policy framework ahead of aggressive capex increases

Global Private Equity Fundraising

Global private equity fundraising by asset subclass¹ (\$ billion)

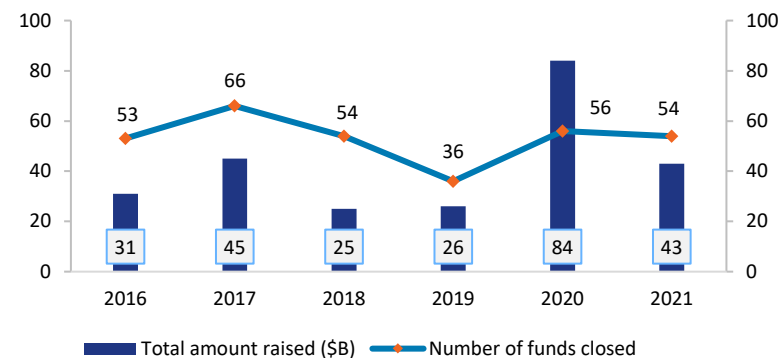


Note: ¹Excludes secondaries, funds of funds, and co-investment vehicles to avoid double counting of capital fundraised

²Includes turnaround PE funds and PE funds with unspecified strategy

Source: Preqin

PE secondary fundraising by closing year¹ 2016 - 2021



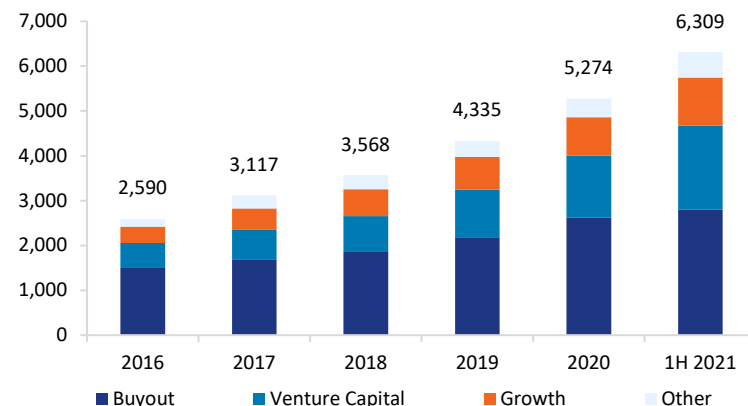
Note: ¹Excludes real estate and infrastructure secondaries

Source: Preqin; McKinsey analysis

- Compared to 2020, fundraising rebounded in 2021 to \$680 billion, continuing the long-term trend of fundraising growth. Strong fundraising growth in 2021 was primarily fueled by higher-risk growth equity and venture capital segments
- Currently, average private equity fund size across strategies stands at approximately \$340 million, up from approximately \$210 million in 2016. There were nine \$10 billion funds in 2021 alongside seven additional mega funds which are currently in the market and tracking for final close in 2022
- Over the five-year period ending 2021, fundraising in North America grew 13.2%, outpacing both Europe (up 6.1%) and Asia (down 7.1%). Additionally, the average flagship fund size of the top 20 global private equity fundraising share gainers more than doubled to \$10.7 billion during this period
- In terms of secondary fundraising, the year 2021 proved to be a slow-moving compared to 2020, in which five of the six largest secondaries firms were in the market at the same time, each raising more than \$5 billion. These five funds collectively raised \$61 billion in 2020, more than the total secondaries fundraising in any other year
- Compared to 2020, 2021 saw similar number of funds in the market, but only one raised more than \$5 billion. However, 2021 was the third-largest fundraising year on record
- Over the last five years, secondaries fund raising stood at \$223 billion, which is 71% higher than the prior five-year period. Currently, there are at least four funds in the market targeting to raise over \$10 billion, which shows clear signs of rejuvenated fundraising activity to continue in 2022

Global Private Equity Assets Under Management

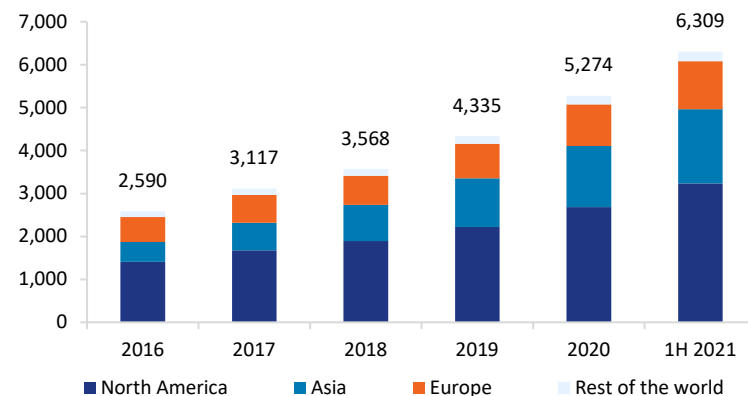
Global private equity assets under management by fund type
2016 - 1H 2021, \$ billion



Note: AUM = dry powder + unrealized value
Source: Preqin

- The Global private equity AUM increased by 38% between Q2 2020 and Q2 2021, reaching an all-time high of \$6.3 trillion. Venture capital was the fastest growing strategy within PE in terms of AUM, while buyout remained the largest PE sub-asset class
- The primary driver of the growth of private equity AUM across regions and strategies has been the expansion in net asset value. Between Q2 2020 and Q2 2021 net asset value growth was predominantly attributed to higher valuations on unrealized assets. Private equity net asset value has grown by a factor of 14 since 2000, significantly outpacing the public market, which grew fourfold
- Private equity outperformed other private markets asset classes and returned a 27.1% pooled internal rate of return in the first three quarters of 2021, slightly below the 33% in full-year 2020

Global private equity assets under management by region
2016 - 1H 2021, \$ billion

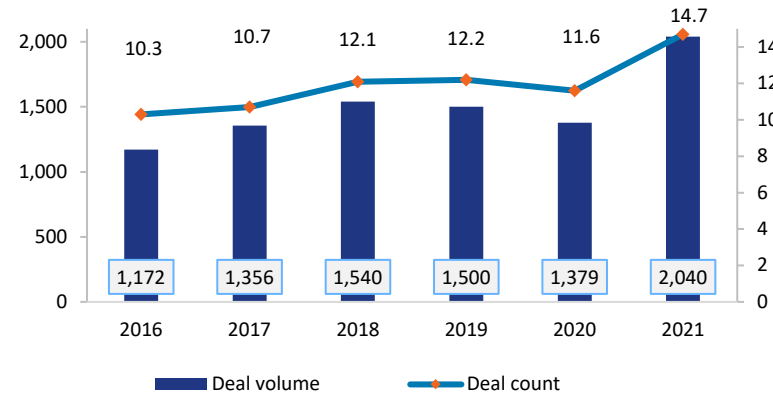


Note: AUM = dry powder + unrealized value
Source: Preqin

- During the period 2016 – Q1 2021, the North American, Asian and European private equity AUM increased at a CAGR of 20.2%, 34.5% and 15.7% respectively. Asia focused private equities saw a notable highlight since 2018 when its assets under management surpassed Europe. As of Q2 end 2021, Asia's AUM stood at \$1.7 trillion, compared with Europe's \$1.1 trillion
- Approach to PE in Asia differs substantially from Europe and North America. In Asia, the focus has more been on funding earlier-stage ventures with an eye to the future, rather than to structure well-established enterprises. Therefore, VC and growth equity account for over three-quarters of PE AUM in Asia against 34% in North America and 22% in Europe. Notably, Asia-focused funds made up 45% of global AUM for VC and over half of global AUM for growth equity

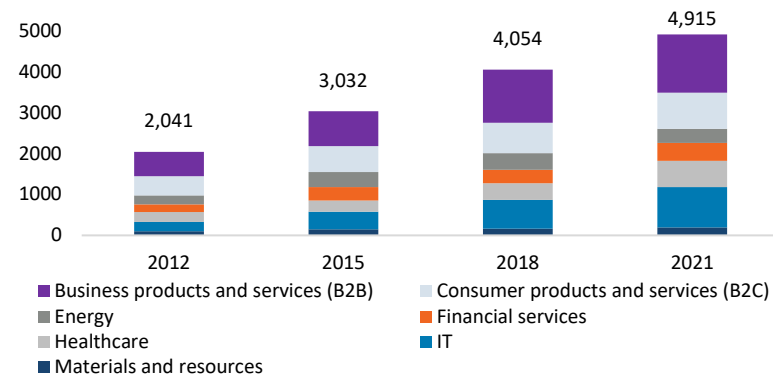
Global Private Equity Deal Activity

Global private equity deal volume and deal count 2016 - 2021, \$ billion



Note: Deal volume in \$ billion, Deal count in thousands
Source: PitchBook

Global private equity deal volume by sector trailing 3 years, \$ billion

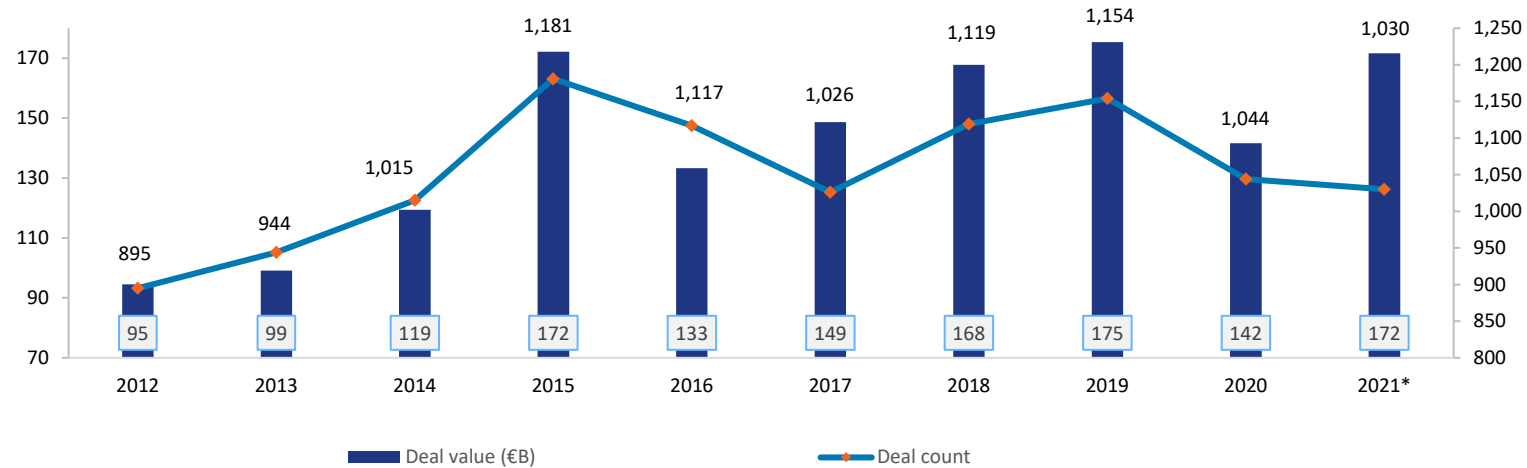


Note: Deal volumes by sector are calculated on a trailing three-year basis to smooth the impact of year-to-year volatility
Source: PitchBook

- In 2021, private equity deal activity picked up as investor optimism was uplifted due to post covid economic recovery in part brought about by capital infusions across major economies, sanctioned by respective central banks. This surge in deal activity has resulted in increased deal volume in 2021 post an 8.2% drop in 2020 owing to the pandemic. Annual deal volume increased by 48.6% in 2021 to reach \$2.04 trillion globally, and the number of deals exceeded 14,000 for the very first time. With fundraising near record levels and dry powder continuing to grow (17.5% annualized growth since 2016), investors are deploying capital at historic rates
- The increased deal volume is reflected across regions. North America is leading with \$1.1 trillion in total deal volume, a 50% increase from 2020 with nearly 25% increase in deal count. Europe also recorded substantial increase, reaching \$720 billion in total deal volume with nearly a third more deals than 2020
- B2B, B2C and IT sectors together accounted for approximately two-thirds of global deal volume in 2020. While share of B2B and B2C in the total deal volume have marginally decreased in the last decade, share of IT has increased substantially from 11% in 2011 to 20% in 2021. Healthcare is another rapidly expanding sector, with the fastest deal-volume growth globally since 2016
- Private equity firms accelerated activity in IT and healthcare throughout the pandemic. Out of 2021's ten largest deals, four were in IT and three were in the healthcare sector. Even the largest deal in 2020 involved a manufacturer and distributor of healthcare supplies
- Conversely, deal activity in traditional energy investments continued to decline, perpetuating a four-year downward trend that correlates with limited partners increasing their ESG commitments

Private Equity Carveout Activity

Private equity carveout activity



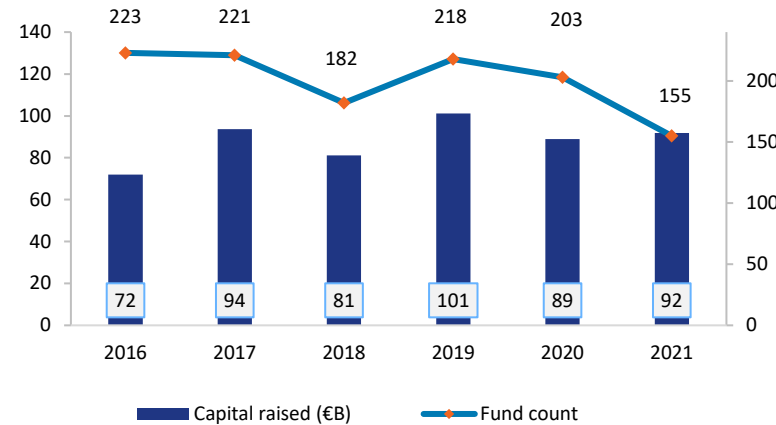
Note: * Data as of November 22, 2021

Source: Pitchbook

- The year 2020 proved to be a relatively dull for private equity carveouts deals, which is not the case in 2021. As of November 2021, global carveout deal value stood at €172 billion, the second highest figure on record after €175 billion in 2019. Carveout is expected to maintain its growth trend in 2022, pushing the year to a new record of €200 million. This is attributed to multiple factors;
- Firstly, pandemic-related stock underperformance, reducing stimulus and the prospect of further lockdowns are forcing corporates to intensely re-evaluate their core competencies and exit non-core assets to pay down debt accumulated during the COVID-19 crisis. Corporates will aim to sell business units to align the core of the organization more closely with changing consumer and employee behaviors, supply chains and ESG matters, most notably in the climate and sustainability spaces which should foster a growing supply of carveout targets
- Secondly, M&A provides the most viable path to outsize growth for corporates in the current zero-rate environment. The EU, UK and US governments have enhanced their abilities to review mergers in 2021, increasing the potential for forced divestitures
- Lastly, sponsors are under pressure from limited partners to deploy their record dry powder quickly and drive higher risk-adjusted returns. The inherent complex and less-trodden path of carveouts could prove a fertile hunting ground for sponsors to deploy capital and augment internal rate of returns

Regional Overview: Europe (1)

PE fundraising activity



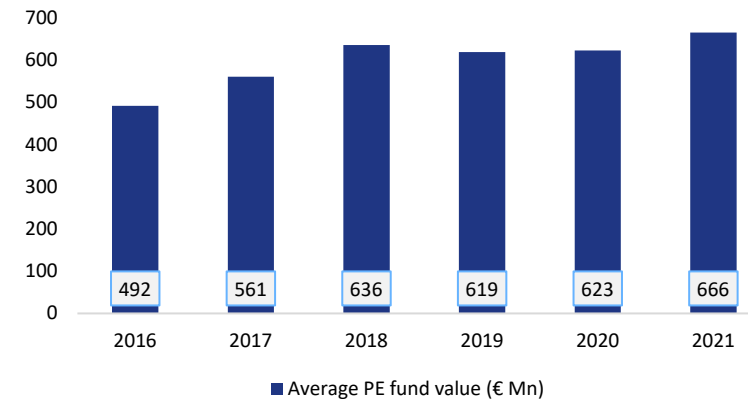
Source: PitchBook

Largest Europe-focused private equity funds in market

Firm	Fund Name	Target Size (Billion)
Permira	Permira VIII	\$15
BC Partners	BC Partners Fund XI	€8.5
Goldman Sachs	West Street Capital Partners VIII	\$8
Montagu Private Equity	Montagu VI	€3.5
Partners Group	Partners Group Secondary 2020	\$4
Rhône Group	Rhone Partners VI	€3
Charterhouse Capital	CCP XI	€2.5
Charterhouse Capital	Inflexion Buyout Fund VI	£2
Permira	Permira Growth Opportunities II	\$2.5

Source: Preqin Pro. Data as of July 2021

Average PE fund value (€ Mn)

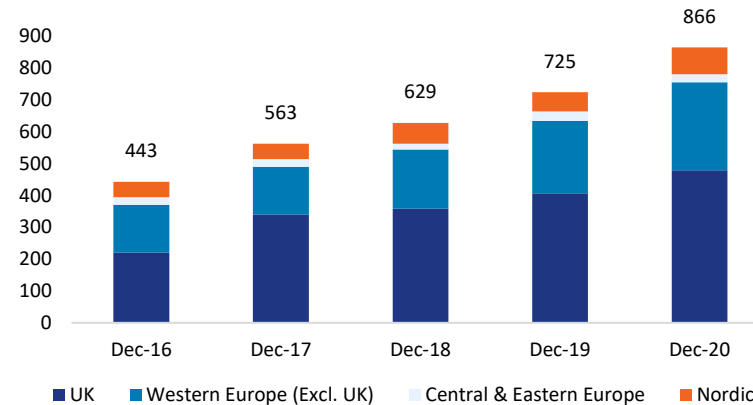


Source: PitchBook

- Over the last five years, while the PE fund count in Europe is on a declining trend, the average fund size is on the rise. Fund sizes are growing as deployment explodes and allocators stay on course with their pacing plans. Many of the key fundraising trends remain intact, including stock market volatility, low interest rates & PE outperformance
- Buyouts were the standout strategy, while the core middle market (funds sized between €250 million and €500 million) contributed the bulk of fund counts
- The fundraising market is becoming increasingly competitive and crowded as more funds are returning to market more quickly. The fundraising cycle of raise, deploy, exit, and return capital back to limited partners is running more smoothly for reputed big-name managers, which is creating a tough fundraising environment for managers that do not have a clear differentiated strategy

Regional Overview: Europe (2)

Europe-based private equity & venture capital assets under management by region, 2016 – 2020, \$ billion



Source: Preqin Pro

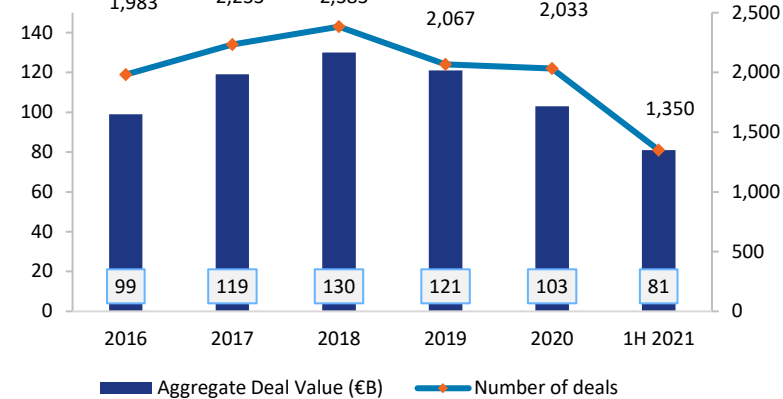
Largest Europe-based fund managers by private equity AUM

Firm	HQ	AUM (€B)	AUM Date
SB Investment Advisers	UK	133.3	31 March 2021
CVC	UK	73.4	31 March 2021
Ardian	France	71.2	25 June 2021
Partners Group	Switzerland	49.4	30 June 2021
AlpInvest Partners	Netherlands	45.5	24 June 2021
Permira	UK	44.0	12 May 2021
LGT Capital Partners	Switzerland	37.9	30 June 2021
EQT*	Sweden	32.6	30 June 2021
Hg	UK	31.6	31 March 2021

Note: *EQT PE AUM has been calculated based on the deduction of Public Value AUM from Private Capital AUM present in the EQT 2021 Half-Year Report

Source: Preqin Pro

Private equity backed buyout deals in Europe, 2016 – 1H 2021

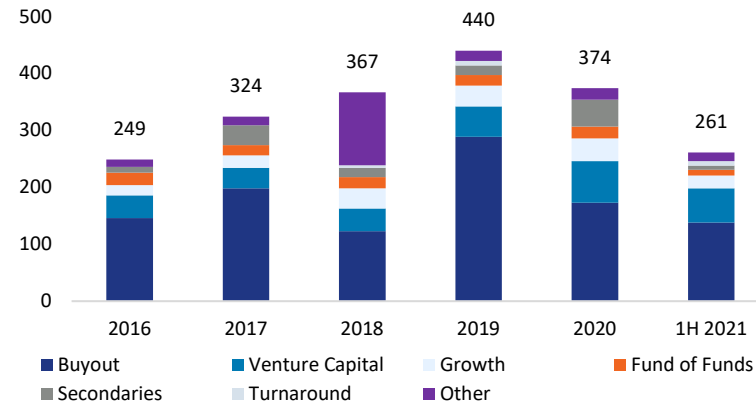


Source: Preqin Pro

- Despite a market unrest in 2020, the European private equity and venture capital market managed to climb to \$866 billion in AUM as of December 2020, which is a rise of 19% compared with 2019. United Kingdom continues to be the leader, followed by Western Europe, Nordic, Central & Eastern Europe
- In the face of decline in buyout deal numbers, several large fund closures have ensured that the total amount of capital secured by private equity funds continued to climb in Europe. Mega buyout funds, aiming to raise \$1 billion or more in commitments, remained popular with institutional investors and played a pivotal role in the growth phase
- United Kingdom based fund managers held €282 billion in AUM, which is more than half of the total AUM from the top 9 fund managers in Europe who together held €519 billion in AUM

Regional Overview: North America (1)

Aggregate capital raised by North America-focused private equity funds closed by fund type, 2016 – 1H 2021, \$ billion



Source: Preqin Pro

- In North America, the aggregate capital raised by PE funds shows a growing trend starting in 2016 and peaking in 2019. The year 2020 proved to be a rather slower year due to the pandemic, but the market seems to be picking up considering that the first half of 2021 raised \$261 billion of aggregate capital compared to a total of \$374 billion being raised in 2020
- Over the years, buyouts have accounted for the largest share of capital followed by venture capital. Share of venture capital in the total fundraising is on the rise. In the first half of 2021, \$61 billion in venture capital commitments was raised, representing 24% of total fundraising across private equity & venture capital
- The North American PE & VC AUM reached \$2.81 trillion at the end of 2020, expanding at an annualized rate of 9.5% over the past decade. Persistently low long-term government bond yields proved to be a key driver of this growth

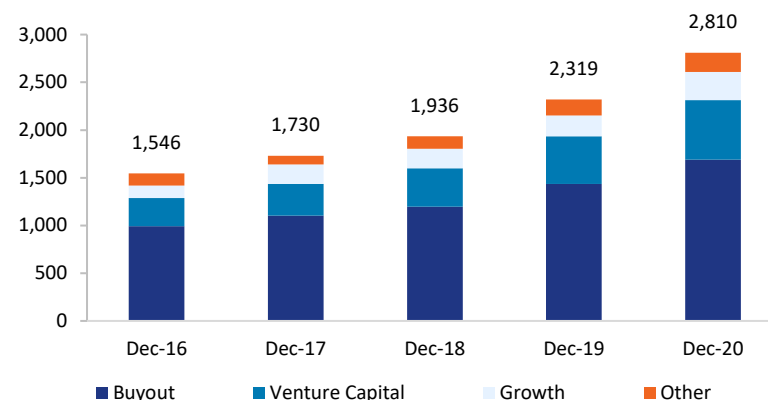
Largest North America-focused private equity funds closed in 2020 – 1H 2021

Firm	Fund	HQ	Fund Size (\$B)	Fund Type	Final Close Date
Hellman & Friedman	Hellman & Friedman Capital Partners X	US	23	Buyout	May 21
Silver Lake	Silver Lake Partners VI	US	20	Buyout	Dec 20
Thoma Bravo	Thoma Bravo Fund XIV	US	17.9	Buyout	October 20
Clayton Dubilier & Rice	Clayton, Dubilier & Rice Fund XI	US	16	Buyout	March 21
Lexington Partners	Lexington Capital Partners IX	US	14	Secondaries	January 20
TA Associates	TA XIV	US	12.5	Buyout	June 21
AlpInvest Partners	AlpInvest Secondaries Program VII	Netherlands	10.2	Secondaries	December 20
Genstar Capital Partners	Genstar Capital Partners X	US	10.2	Buyout	April 21
Goldman Sachs AIMS Group	Vintage Fund VIII	US	10	Secondaries	November 20
Bain Capital	Bain Capital Fund XIII	US	10	Buyout	April 21

Source: Preqin Pro

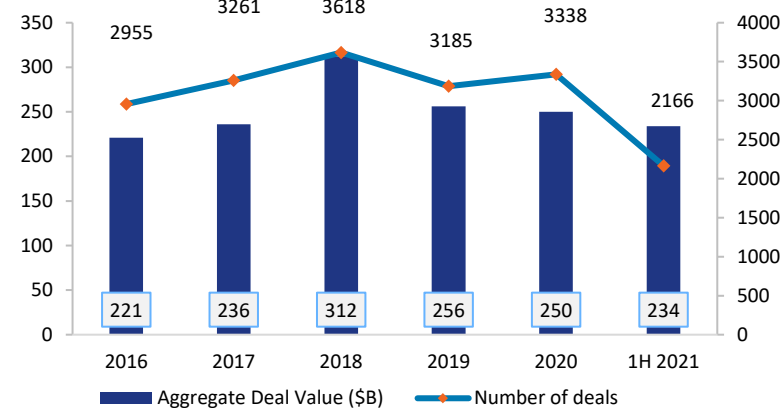
Regional Overview: North America (2)

North America based private equity & venture capital AUM by fund type, 2016 – 2020, \$ billion



Source: Preqin Pro

Private equity backed buyout deals in North America, 2016 - 1H 2021



Source: Preqin Pro

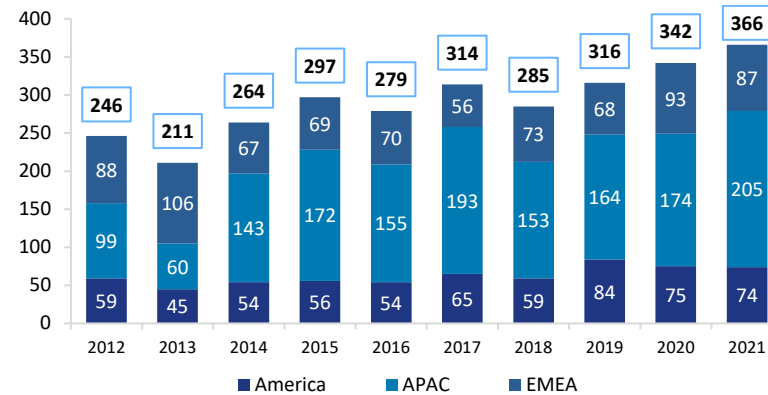
Largest North America-focused private equity funds in market

Firm	Fund	Target Size (\$ Bn)	Fund Type	Geographic Focus
Carlyle Group	Carlyle Partners VIII	22	Buyout	North America
Insight Partners	Insight Partners XII	12	Growth	North America
Neuberger Berman	Dyal Capital Partners V	9	Growth	North America
Ares Management	Ares Corporate Opportunities Fund VI	8	Buyout	North America
Berkshire Partners	Berkshire Fund X	6.5	Buyout	North America
Centerbridge Partners	Centerbridge Capital Partners IV	6	Buyout	North America
Apollo Global Management	Apollo Hybrid Value Fund II	5	Hybrid	North America
Carlyle Group	Carlyle Global Partners II	5	Buyout	North America
General Atlantic	General Atlantic Investment Partners 2021	5	Growth	US
Roark Capital Group	Roark Capital Partners VI	5	Buyout	North America

Source: Preqin Pro. Data as of July 2021

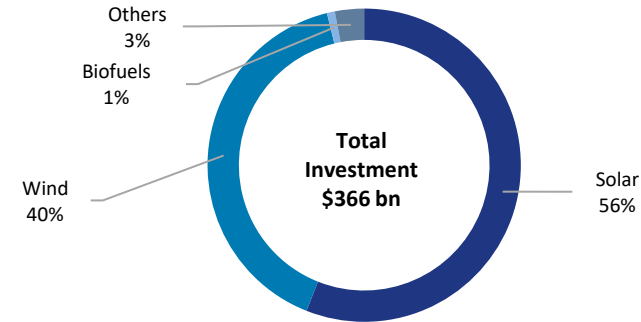
Investment Activity in Renewable Energy

Global investment in clean energy (\$ Bn)



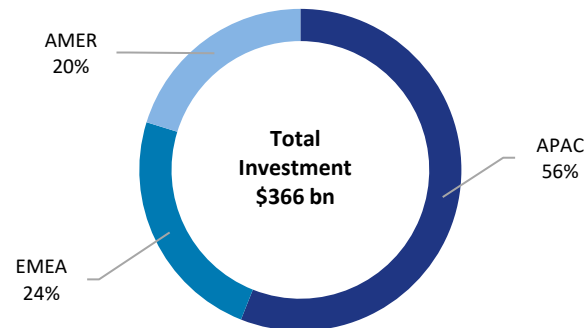
Source: BNEF Energy Transition Investment Trends 2022

Global investment in clean energy by technology (2021)



Source: BNEF Energy Transition Investment Trends 2022

Global Investment in Clean Energy by Region (2021)

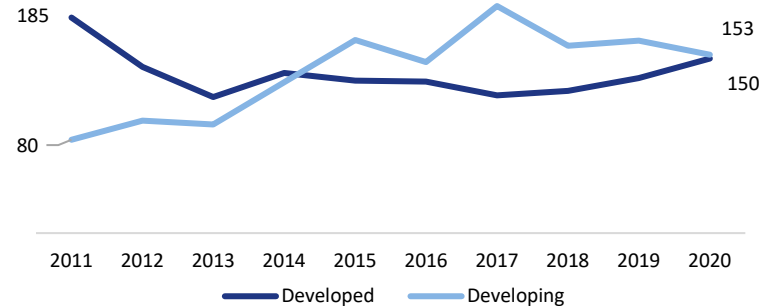


Source: BNEF Energy Transition Investment Trends 2022

- Investment in clean energy increased by nearly 8% in 2020 compared to 2019. The easing covid restrictions and growing energy demand helped maintain the positive investment momentum through 2021, which registered a further 7% increase in investment value over 2020
- In terms of technology, majority of the investments in clean energy was driven by solar (\$205 bn) and wind (\$147 bn), followed by others low carbon technologies like small hydro, geothermal and offshore etc., which combinedly bagged \$11 bn, while biofuels, biomass & waste accounted for \$3 bn in new investments globally
- In terms of region, APAC maintained its lead over other regions, accounting for 56% of the global investments in clean energy in 2021, injecting \$205 bn, followed by EMEA, contributing \$87 bn and Americas, contributing \$74 bn in new investments

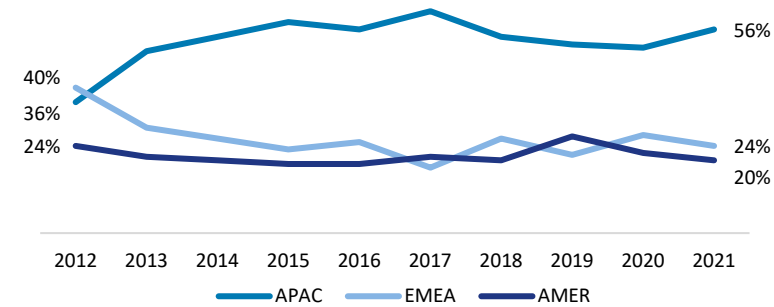
Changing Global Market Share of Renewable Investment

New investment in renewable energy in developing vs developed countries (\$ Bn)



Source: Renewables 2021 – Global Status Report by REN21

Global investment in renewable energy – contrasting APAC, EMEA, AMER (\$ Bn)

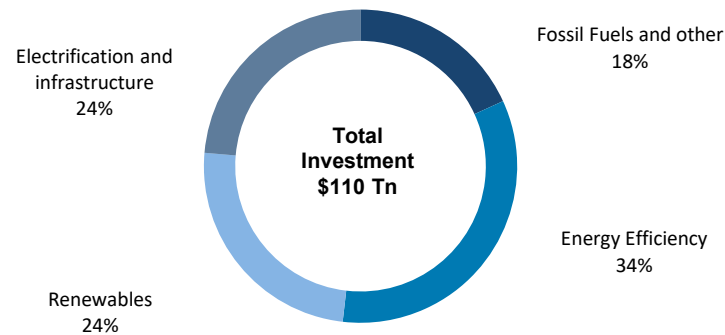


Source: BNEF Energy Transition Investment Trends 2022

- Incremental investments by developing and emerging countries outpaced those of developed countries, albeit by a narrower margin than in 2019, accounting for 50.5% of the total in 2020. In developed countries, investments increased by 13% and fell by 7% in developing and emerging markets. The decline in investment in developing countries was primarily due to lower capacity investment in China (down 12%), India (down 36%), and developing countries in the Americas (down 33%). Furthermore, investment fell 14% in Sub-Saharan Africa, exacerbating the region's low investment in new renewable capacity (USD2.8 billion). In contrast, investment growth continued in other developing countries including the Middle East and North Africa (up 22%), Brazil (up 23%) etc. Among developed countries, Europe was the main driver of increased renewable energy investment in 2020, totaling USD 69.4 billion, led by the United Kingdom and the Netherlands (due to investments in large offshore wind energy projects), followed by Spain.
- A clearer picture can be illustrated by comparing the global share of new investments between APAC, EMEA, and AMER. APAC holds an emerging share in the market globally. In 2020 for the first time, China's foreign investments in solar PV, wind power, and hydropower represented more than half of the country's total overseas energy investments under the Belt and Road Initiative (China's main international co-operation and economic strategy). EMEA witnessing its investment level reducing steadily since 2012. Though an uptick was observed in 2020 with \$93 bn investments, it again declined in 2021 to cumulative investment of \$83 billion. AMER also represents a gradual drop since peaking in 2019, with \$74 billion invested in 2021

PE / VC Investment Requirement in Clean Technology - Outlook

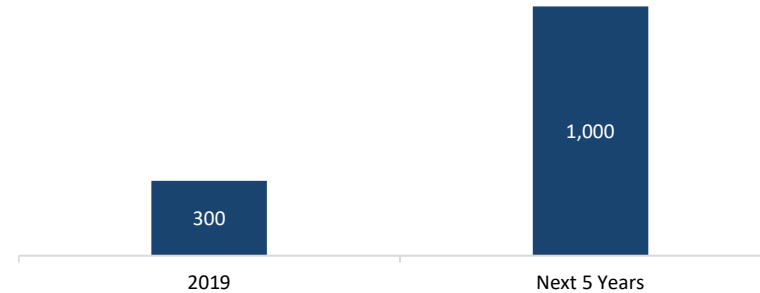
Cumulative investment need to meet sustainability goal 2016 - 2050 (\$ Tn)



Source: IRENA

- It is estimated that cumulative investment of \$110 Tn will be needed to be invested in energy systems by 2050 to meet the goals of the Paris Agreement
- IRENA expects a massive market worth \$90 Tn to be developed across renewable energy, electrification technologies and energy efficiency sub-sectors
- Given the massive amount of capital requirement, private investment is expected to play a major role, roughly estimated to account for three-quarters of overall capital needs, with the remaining 25% being sourced from public sources

Expected annual investment by PE / VC in clean technology (\$ Bn)



Source: World Economic Forum

- The clean technology industry is seen to reach a stage of maturity, following a decade of failures which saw energy related VCs lose around \$12.5 bn
- As clean technology becomes more economically viable, new business models have emerged attracting private investments into the sector. Consequently, annual investment into the sector is expected to grow more than 3x to \$1 Tn annually in the next five years from \$300 Bn currently
- A combination of factors such as favourable regulatory environment, immense growth potential of specific technologies such as electric mobility and energy storage are catalysing private investment into the clean technology sector

Recent Developments in Sustainable Infrastructure

Select climate focused infrastructure fund raise in 2021

FIRM	DATE	FUND SIZE	FUND TYPE	GEOGRAPHIC FOCUS
KKR	Mar-22	\$17.0 Bn	Infrastructure Core	North America & Western Europe
Ares Management Corp.	Dec-21	\$2.2 Bn	Infrastructure Value Added	North America & Europe
BlackRock Inc. (Climate Finance Partnership)	Nov-21	\$673 Mn	Infrastructure Opportunistic	Emerging Economies
Generate Capital	July-21	\$2.0 Bn	Infrastructure Opportunistic	North America & Europe
BlackRock Inc. (Global Renewable Power Fund III)	Apr-21	\$4.8 Bn	Infrastructure Core	Europe, Asia
Macquarie Infrastructure and Real Assets ("MGREF2")	Feb-21	€1.6 Bn	Infrastructure Core	Global

Source: CNBC, Reuters, Macquarie, Bloomberg

Key Strategic Developments in 2021

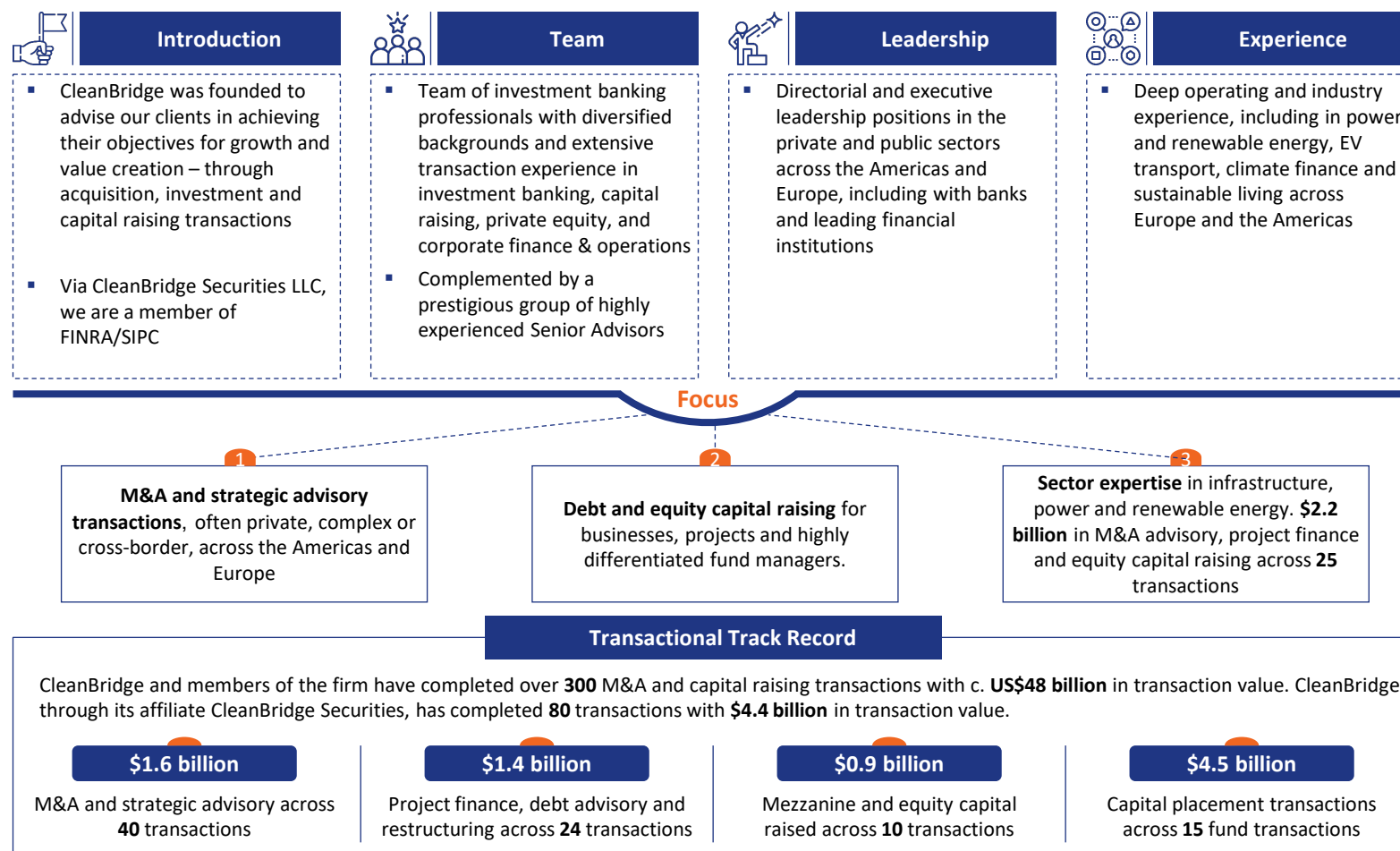
- In January 2022, Blackstone Infrastructure Partners entered into a definitive agreement with Caisse de dépôt et placement du Québec (CDPQ) and Invenergy for an approximately \$3 billion equity investment in Invenergy Renewables Holdings LLC to accelerate Invenergy's renewables development activities
- In December 2021, Apollo funds made a first close on a \$816 million convertible equity portfolio financing agreement with NextEra Energy Partners, LP (NYSE: NEP) in a 2.5GW contracted renewable energy generation portfolio
- In July 2021, Private-equity giant Carlyle Group Inc. launched a company named Copia Power to develop renewable-power-generation and storage projects in a push to reorient its energy business towards sustainable investments. Carlyle funds would inject a capital of \$700 million in the new venture
- In April 2021, Norway's \$1.3 trillion sovereign wealth fund made its first investment in renewable energy infrastructure. The fund has agreed to acquire a 50% stake in the Borssele offshore wind farm in the Netherlands from Danish energy firm Ørsted A/S for c.€1.4 billion
- In January 2021, MPC Capital AG launched a new entity named MPC Energy Solutions after raising \$100 million in a private placement to capitalize on the growing demand for sustainable and cost-competitive low-carbon energy infrastructure by developing and operating renewable energy assets

Source: Forbes, CNBC News- 2021

3. CleanBridge OVERVIEW

CleanBridge Overview

CleanBridge provides high quality, independent strategic advisory, capital raising, and M&A services to businesses and their owners across the Americas and Europe



Investment & Merchant Banking (Core Sectors)

We partner and guide industry-leading companies who have unique visions for building successful Sustainable Investment businesses within core infrastructure sectors of energy, water, and transport, alongside the climate finance, and sustainable living sectors

New Energy Infrastructure	▪ CleanBridge's focus on the onshore wind, solar PV, waste-to-energy, and energy storage covers the transition to a low carbon energy system. Across every market globally, climate change policy is being drawn down into government policy, asset owner and investor policy, and ultimately into power companies business strategy. We continue to operate at the central point of capital formation and investment into new energy across each of our core markets in Europe & Americas
Water Infrastructure	▪ Water desalination represents an increasingly important element in the world economy. Desalination plants will continue to become more efficient and membranes will be more fouling resistant. As well, solar powered desalination may provide massive change for the developing nations in providing both drinking water and water for irrigation and agriculture use ▪ Water infrastructure is a highly sought after investment for large infrastructure and strategic investors given its utility like nature and quality long term investment cash flows
Climate Finance	▪ Within the global economy, the commitment to a net-zero 2050 carbon environment is now set across all governments, investors, and sectors. With that commitment comes a material change in finance, and movement to climate based financings (both equity and debt) ▪ We advise governments, financial institutions, and investors on their transition towards financing and investing in a net-zero 2050 future
Sustainable Transportation	▪ The "third leg" of the low carbon economy is the electrification of transportation. Globally governments are applying a similar approach taken to the energy sector in regulating transportation towards being electrified – covering both public and private sector transportation ▪ The challenge and opportunity is a \$Tn dollar opportunity over the next 25 years as all forms of transport move to electrification
Sustainable Living	▪ As part of transitioning to a low carbon, net-zero economy over the next 30 years, the world is moving to a more sustainable approach to living in that transition. From developing new agriculture technologies and techniques that will feed an estimated 8.5 billion people by 2030, to innovation in healthcare, fitness, nutrition, and vitality, people are looking to new sustainable ways of supporting a long and vital life ▪ We work to be at the heart of the sustainable living movement in advising and financing some of the best companies supporting the life transition that is underway in the world

Investment & Merchant Banking (Core Services)

CleanBridge is a leading specialist advisor on strategic advisory, capital advisory (equity and debt), mergers, acquisitions, and related strategic matters within sustainable investment markets. Our Strategic Advisory, Capital Advisory, and M&A practice is distinguished by senior banker involvement, deep industry sector expertise and global reach. We are regularly involved in large, complex and industry-defining transactions, often across national borders

Equity & Capital Advisory	▪ Our capital advisory services leverage our expertise on capital structure, capital formation and capital raising. Our professionals work closely to source and advice on corporate finance options, in helping tailor financing strategies to clients' unique situations, with an especially well established track record of finding innovative solutions for challenging market conditions ▪ We advise clients on a broad range of strategic and tactical issues, including capital structure optimization, capital allocation, equity and debt positioning and issuance ▪ We leverage our ecosystem of specialist investment counterparties including large asset owners, sponsors, corporates, and strategics in bringing best execution forward for our mandates
Debt Advisory	▪ Our team of senior bankers advises and negotiates on behalf of clients regarding alternatives for existing debt and the issuance of new debt. We also provide guidance on all aspects of the credit and non-recourse project finance process, including interactions with the ratings agencies, assembly of credit memos, financial modelling, and due diligence support ▪ We retain key relationships with over 20+ global non-recourse project finance banks in ensuring best execution on arranging non-recourse project finance for our clients and their projects ▪ Support project developers in structuring and arranging non recourse debt for their projects, and provide transaction support for greenfield, brownfield, acquisition financing and refinancing
M&A & Strategic Advisory	▪ We evaluate potential targets or merger partners as well as financial and strategic alternatives. We advise on strategy, timing, structure, financing, pricing, and we assist in negotiating and closing transactions. ▪ Complete suite of M&A advisory services including modelling and valuations, transaction services and due-diligence relating to acquisition or divestment of stakes in infrastructure projects
Private Capital Advisory	▪ Our group is a leader in raising capital, and providing capital solutions for private investment funds. Members of our team have been involved in over 50 private capital raising assignments, aggregating more than \$20 billion. Our group has built one of the broadest institutional investor coverage networks in the industry and has cultivated relationships with over 150 investing institutions globally. Our practice is consistent with CleanBridge approach of delivering highly experienced, senior-level execution capabilities, with senior professionals managing all aspects of the capital raising process

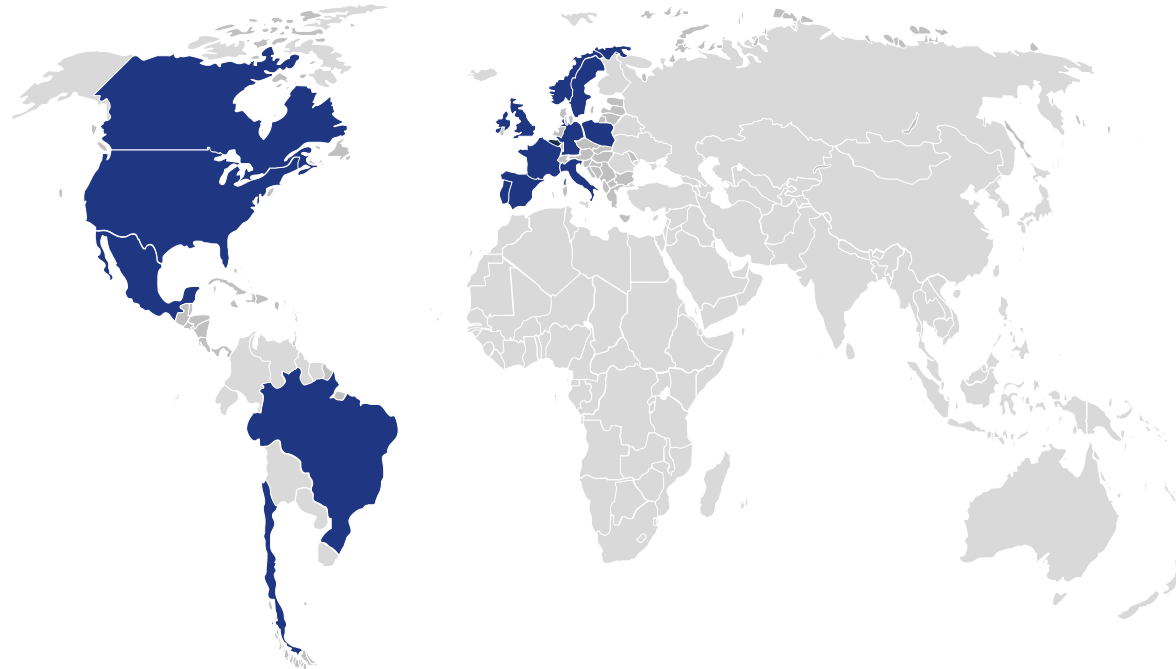
CleanBridge – Key Global Infrastructure Markets

Energy, water, sustainable transportation, climate finance, and sustainable living are global themes, within investment flows covering multiple world markets.

CleanBridge covers key European and Americas markets where its institutional investment clients are active.

The group's sector and product specialization, and "one team" platform with global P&L, global performance compensation pool, and global client and institutional investor coverage, ensures we bring the full resources of our group forward to clients across markets, including:

- Europe
- Americas



Contact us

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