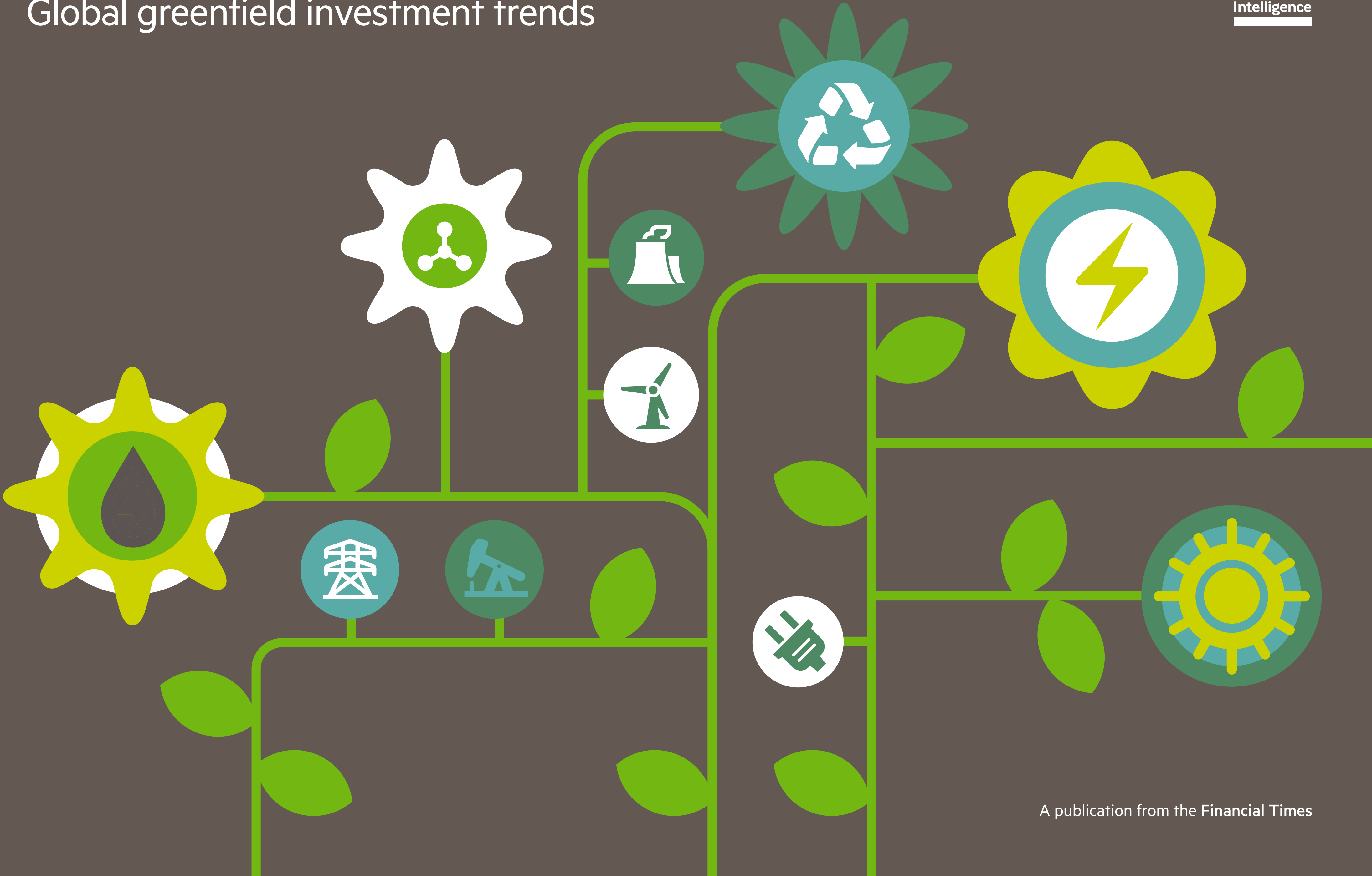
THE fDi REPORT 2024

Global greenfield investment trends

fDi Intelligence



A publication from the **Financial Times**

FDI recovery? The devil is in the data details

The saying goes: there are lies, damned lies and statistics. The latest figures on greenfield foreign direct investment (FDI) worldwide are a case in point. While headline FDI figures point to a resilient landscape, we shouldn't get carried away. The disruption engendered by the pandemic and the global financial crisis before that still lingers. As a result, that seemingly resilient landscape is also a very nuanced one. The details featured in this report, which is based on data from our proprietary database **fDi** Markets, help make sense of it all.

Foreign investors announced 16,427 cross-border projects worth $1,337bn in 2023, **fDi** Markets figures show. That represents a 1.1% decline and a 4.4% increase from a year earlier, respectively.

At first glance, these are historically high levels of investment. The number of announced projects is not far from the pre-pandemic peak of 2019 (17,078), while committed capital expenditure (capex) has been the strongest since the global financial crisis even when we adjust figures for inflation.

The 2023 sector matrix (see page 6) helps understand the record capex levels. Capital-intensive sectors such as renewables, batteries, oil and gas, communications and semiconductors continue to dominate the top 10. They all need plenty of capital and relatively low amounts of labour, which is a distinctive trait of many FDI projects in the new paradigm.

Besides, the bigger the project ticket, the higher its development risks. Multi-billion dollar projects seldom live up to original expectations, which creates additional noise for a dataset based on investment announcements. Look no further than FDI projects in green hydrogen or even large-scale offshore wind projects. Their feasibility is often on the line, and while the latter is a tested and scalable technology, green hydrogen has yet to prove its worth (see page 24).

Beyond sectors, global FDI was spread unevenly across geographies in 2023. Overall FDI activity, as measured by the number of announced projects, fell in Europe and North America when compared with 2022, while it soared in the Asia-Pacific region and the Middle East. The Asia-Pacific, in particular, posted a very strong year as China and other major economies in the region lifted the harsh restrictions introduced to contain the pandemic and finally rejigged the FDI deal flow.

That also allowed the region to reclaim its role as a major source of capital. Chinese outbound FDI reached record highs last year, but here too it's a nuanced story. Unlike in the past, most of the Chinese outbound FDI went to the developing world as Chinese companies pivot away from the West to set up shop in more aligned countries (see page 12) and nearshoring hubs serving the big markets in North America and Europe (see page 20).

> Overall FDI activity, as measured by the number of announced projects, fell in Europe and North America when compared with 2022, while it soared in the Asia-Pacific region and the Middle East

Ultimately, China's FDI trajectory mirrors that of its economic development. For years, China has been the factory of the world, absorbing billions of dollars in FDI by manufacturers looking for a cost-convenient base to produce goods bound for exports at scale. That exports-led model is now transforming into a model driven by domestic consumption. As such, the country may need less inbound capital, while its domestic companies are looking abroad to invest the capital they have accumulated over the years. No wonder that its outbound-to-inbound FDI ratio touched a new high in 2023, at 82.13%.

The Middle East is another region that is increasingly deploying the capital it has accumulated over the past decades. Outbound investment flows from Saudi Arabia, the UAE and Qatar skyrocketed in 2022 and 2023, with sovereign investors such as Abu Dhabi-based Mubadala standing out as the world's biggest foreign investor in 2023 by capital investment (see page 29).

The investment landscape has evolved dramatically in the past few years. Geopolitics, the sustainability imperative and digital transformation have redesigned the FDI map. With many sectors undergoing a deep transformation, divestment is the natural trade-off of new investment — that applies to energy, manufacturing and trade, too. Companies and policymakers alike face many challenges in navigating these choppy waters and informing their decision. This report, and its data evidence, is a good place to start.

Jacopo Dettoni is editor-in-chief of ***fDi*** *Intelligence, the Financial Times' specialist unit dedicated to foreign direct investment*

Global overview

Foreign companies announced more than 16,400 FDI projects in 2023, according to **fDi** Markets, the greenfield investment monitor of the Financial Times. These projects represent an estimated cumulative value of $1.3tn, with 2.8 million jobs created.

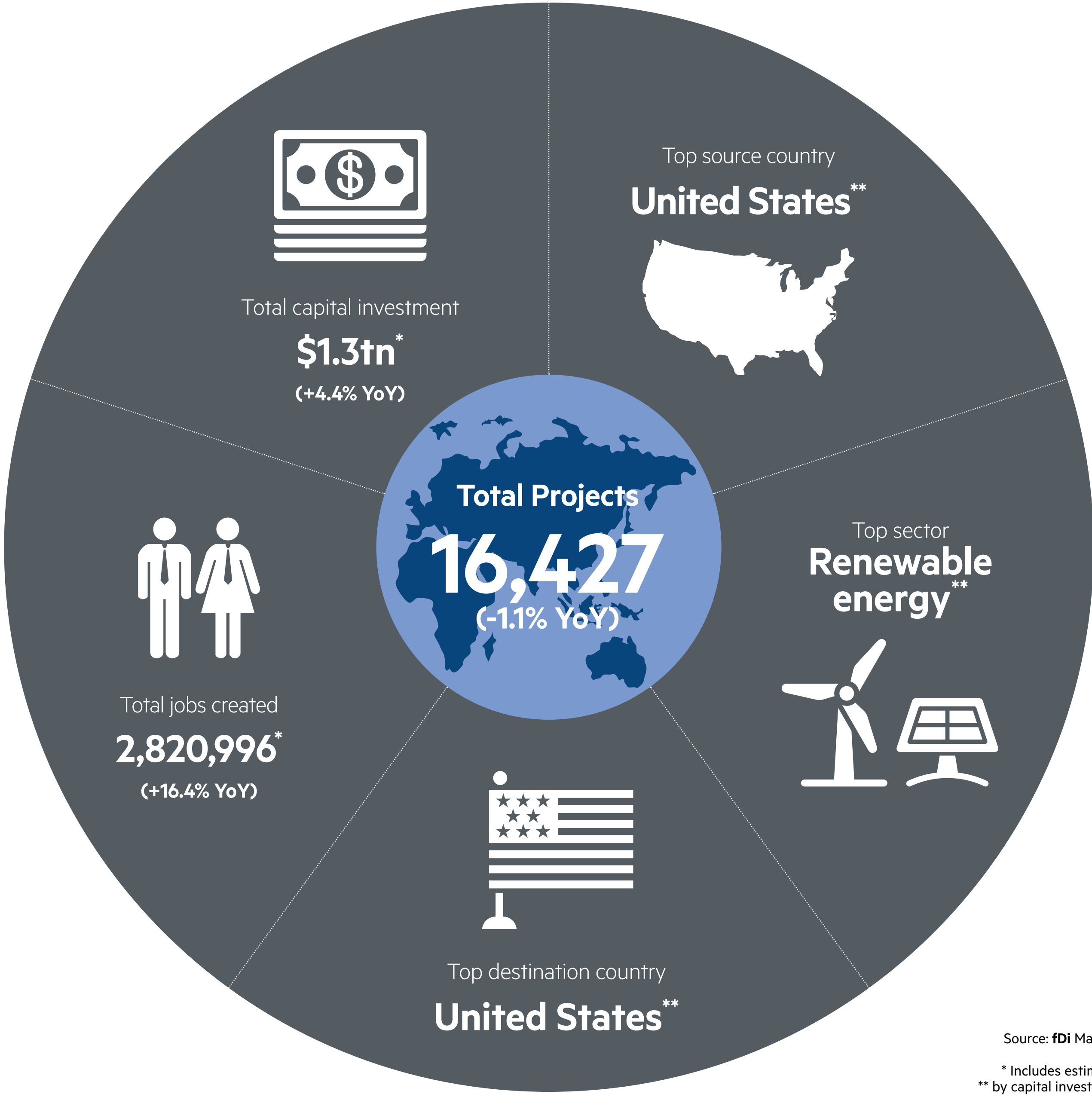
While the number of FDI projects remained relatively stable between 2022 and 2023, the value of capital investment increased by 4.4% in the period. The value of FDI projects has shown year-on-year growth since 2021, suggesting that the momentum of capital-intensive projects has remained strong for another year.

Once again, mega investments — projects worth at least $1bn of capital investment — were a key theme in 2023, with 179 such announcements. These projects were spread across many industries, but fell primarily in energy, electronics, metals and automotive areas. The US was the top overall destination for mega projects, with 20 such investments.

Regionally, western Europe attracted the highest number of FDI projects in 2023 with more than 4700 projects — up by 15.6% from a year earlier. However, Asia-Pacific was the leading destination for capital investment with the value increasing from $330bn in 2022 to $450bn in 2023.

The US remained the top source of FDI capital in 2023, but China followed on its heels as Chinese companies went on an international investment spree after Beijing finally lifted Covid-19 restrictions.

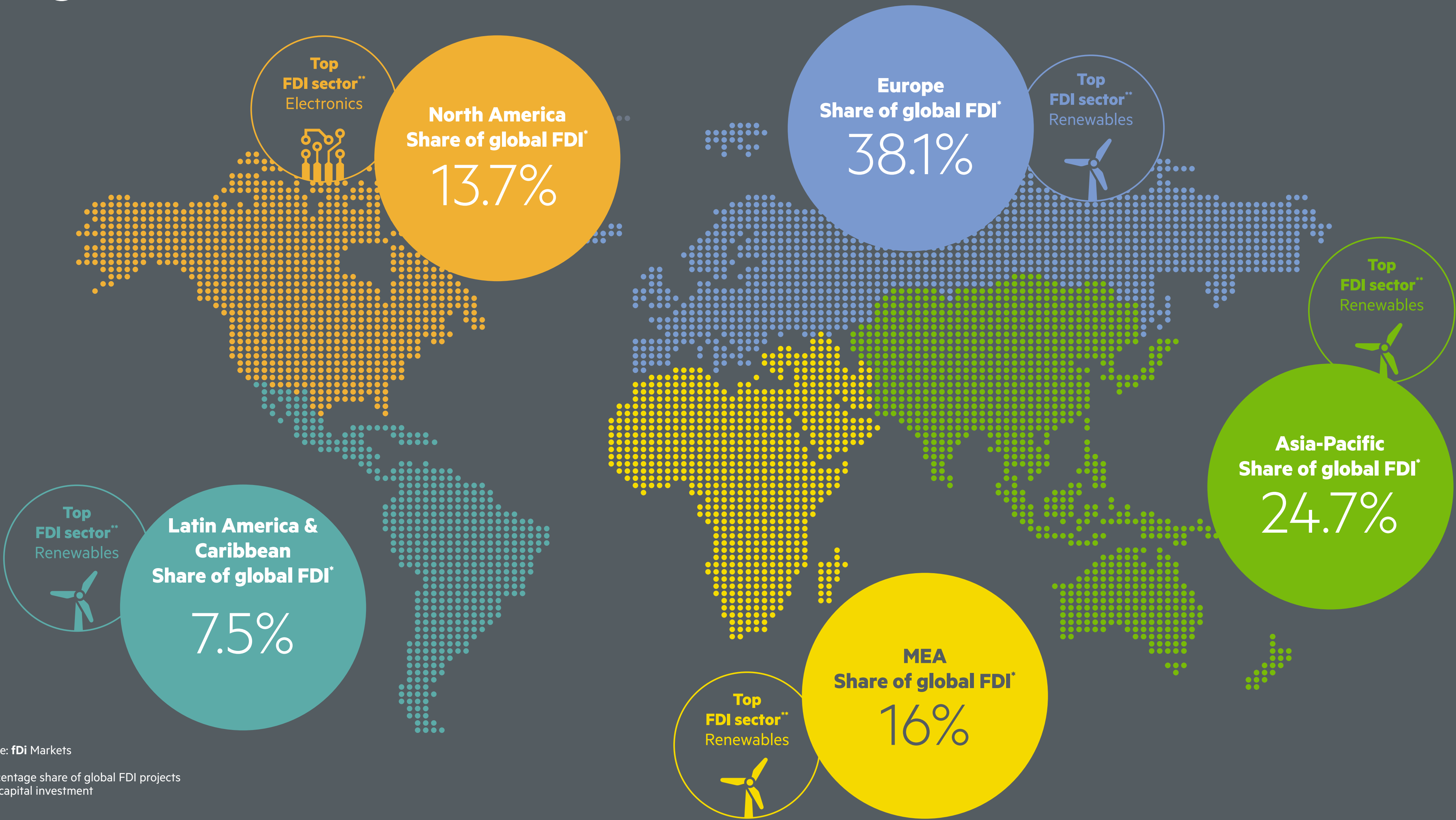
The US was also the largest destination for global FDI in 2023 as it continues to lure foreign companies with generous incentives and strong macroeconomic growth. India came in second as the south Asian country posted another record year for foreign investment. The UK followed in third place.



Source: **fDi** Markets

* Includes estimates
** by capital investment

Regional breakdown



Source: **fDi** Markets

* Percentage share of global FDI projects
** by capital investment

The 2023 investment matrix

• The renewable energy sector retained its position as the sector with the highest capital investment for the fourth year in a row, despite a 6.6% decline from $372.5bn in 2022 to $348bn in 2023. The total investment in 2023 was spread between 856 projects, up 53% from the previous year. The three largest subsectors in terms of capital investment were also tied to the renewable energy industry, with 'other electric power generation'* having captured $150.3bn worth of FDI, followed by solar electric power at $95.5bn and wind electric power at $75.8bn.

• The electronic components sector ranked second by FDI capital investment in 2023 and saw a 24% increase from $92.9bn in 2022 to $114.8bn in 2023. This growth was largely driven by significant investments in batteries and 'all other electrical equipment & components'** subsectors, amounting to $69.7bn and $33.3bn in 2023 respectively. The electronic components sector saw a 37% increase in FDI project numbers from 501 to 688 between 2022 and 2023. That same sector overtook the software and IT services sector as the top creator of FDI jobs, jumping from approximately 131,700 in 2022 to 335,000 in 2023 — a 154% increase.

• The coal, oil and gas sector ranked third for capital investment last year despite a 19% decline from $115.8bn to $93.9bn between 2022 and 2023. The sector saw a 13% increase in projects over the period, from 125 to 141, and a 34% fall in job creation from approximately 42,100 to 27,800. Petroleum refineries and oil and gas extraction were the largest contributors to the sector's capital investment, seeing investment pledges of $36.6bn and $22.7bn respectively.

• The semiconductor sector experienced a large decline in capital investment between 2022 and 2023, falling 50% from $109.5bn to $55.2bn. In the same period, semiconductor projects fell by only 2.8%, showing that the average capital investment per project has reduced by 48% from an average of $771m per project in 2022 to £399.7m per project in 2023. Conversely, the sector saw a 13% increase in job creation from approximately 47,700 in 2022 to 53,800 in 2023, perhaps marking a shift to more labour-intensive projects in countries with cheaper labour costs such as India, Vietnam and Mexico.

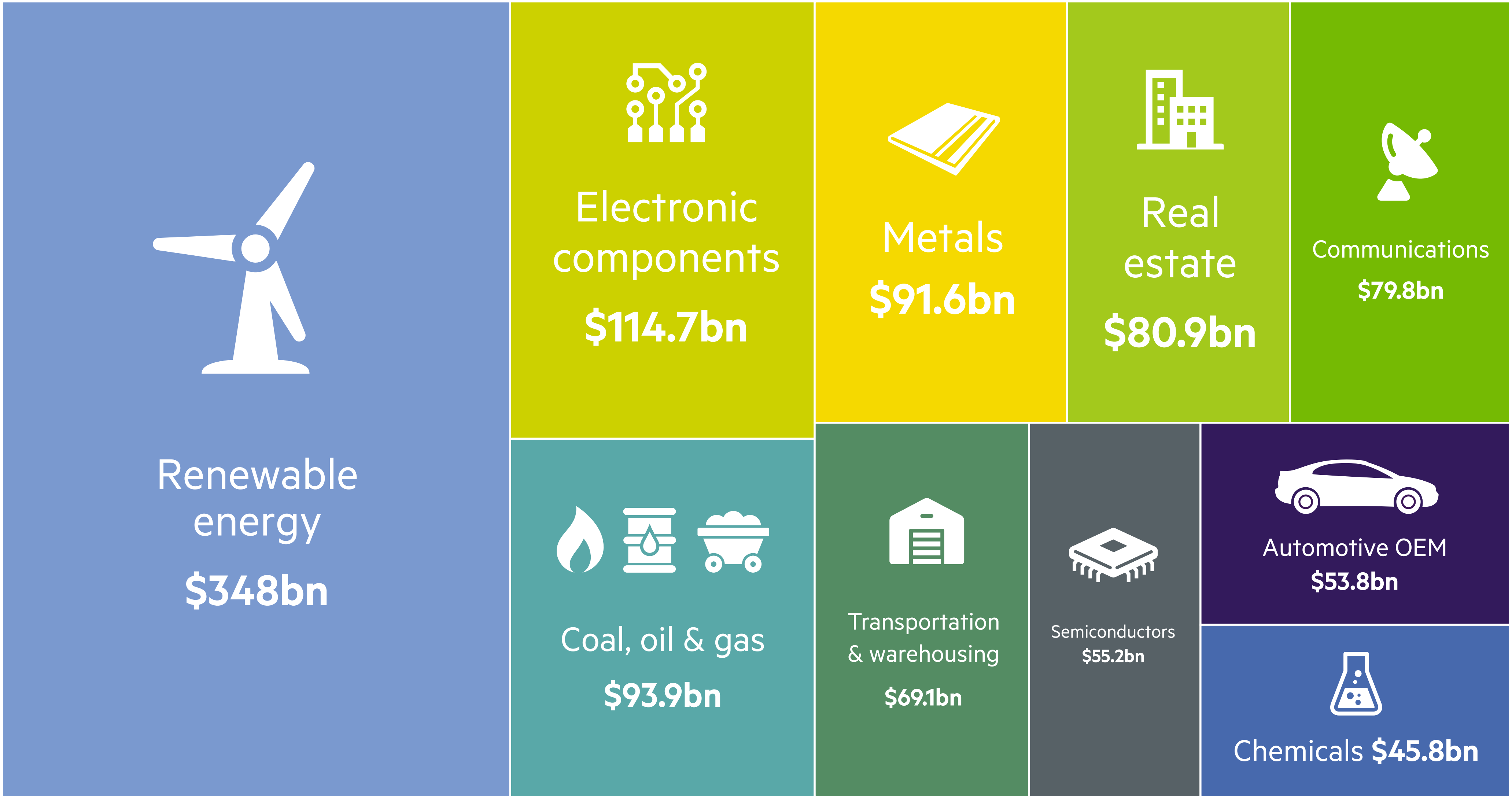
• In 2023, the software and IT services sector maintained its lead as the top sector by FDI project numbers, despite a 38% decrease in projects between 2022 and 2023 from 4576 to 2833 — the largest decline of any sector. In the same period, capital investment in the sector fell by 46% from $68.5bn to $36.9bn, and job creation fell by 45% from approximately 598,600 to 329,300.

• The real estate sector witnessed the largest surge in projects between 2022 and 2023, growing by 74% from 535 to 930. This was accompanied by a 6% increase in real estate capital investment from $70.2bn in 2022 to $80.8bn in 2023.

• Capital investment in the combined metals and minerals sector grew by 81% between 2022 and 2023, from $68.7bn to $124.4bn. In the same period, the number of projects in the sector grew by 41% with job creation increasing by 73%. The key subsectors leading this growth were nonferrous metal production and processing, other metals, other non-metallic mineral products, and nonmetallic mineral mining and quarrying. Many projects within these subsectors focus on extracting and processing rare earth elements, critical metals and minerals. These materials are used in the manufacture of batteries, components used in solar power, wind power, other renewable sources (including green hydrogen and battery storage systems), as well as data processing and hosting centres, semiconductors and automobiles. As a group, these seven manufacturing areas attracted investment pledges for as much as $550.9bn.

* Other electric power generation includes green hydrogen and emerging cleantech technologies.
** All other electrical equipment and components includes photovoltaic technologies, printed circuit boards, thermal management components and custom electronics solutions.

TOP 10 FDI SECTORS BY CAPITAL INVESTMENT IN 2023



Source: **fDi** Markets
Note: Includes estimates

Investment screening: remaining open but safe

Ana Novik, head of the investment division, OECD

The international investment landscape has transformed significantly, with security becoming a focal point for policymakers around the globe.

The integration of FDI into national economies has long been a cornerstone of economic prosperity and development. Countries across the world have opened their markets to FDI to spur growth and societal wellbeing. However, recent years have marked a pivot as geopolitical and geo-economic shifts have prompted a reassessment of the security risks associated with certain international investments.

This recalibration has led to the implementation and modernisation of investment review mechanisms, reflective of a broader spectrum of security concerns, which are influenced by the diversification of investing countries, the strategic intents of state-guided investments and transformative technological advancements.

Governments have long been cognisant of the potential security risks posed by foreign investment, employing a variety of mechanisms to mitigate them. However, the recent trend is a pronounced shift towards investment screening — a process that scrutinises individual transactions against predefined criteria to assess and manage potential security risks.

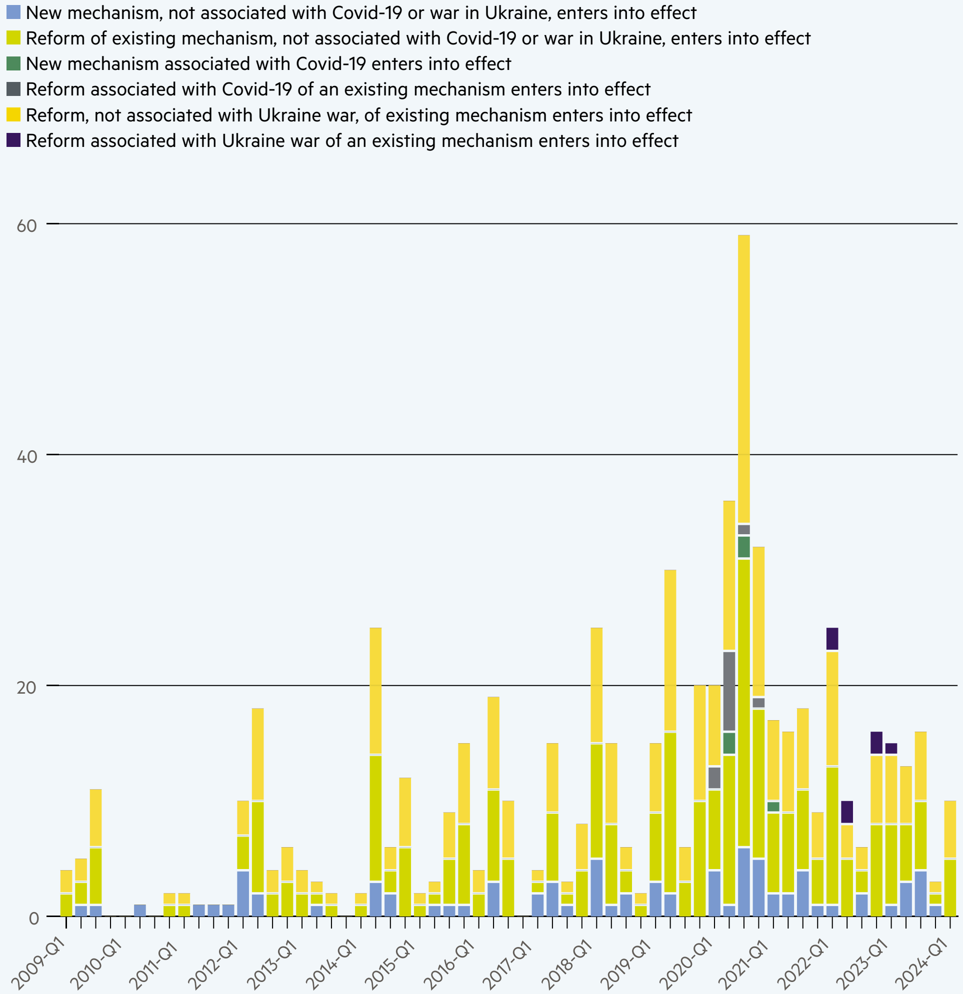
Crises have shaped the developments in this policy area to varying degrees. While the global financial crisis of 2008/09 had little discernible immediate impact, the Covid-19 pandemic and, to a lesser extent, Russia's invasion of Ukraine have left a visible mark on policy making in 2020 and 2022.

The reasons why policy responses have varied in the face of the deep economic disruptions caused by these crises have not been fully assessed.

Unlike the 2008/09 crisis, when many countries chose to open further to foreign capital, the pandemic has prompted governments to tighten their scrutiny of FDI to align with the new geopolitical order characterised by the US–China dualism.

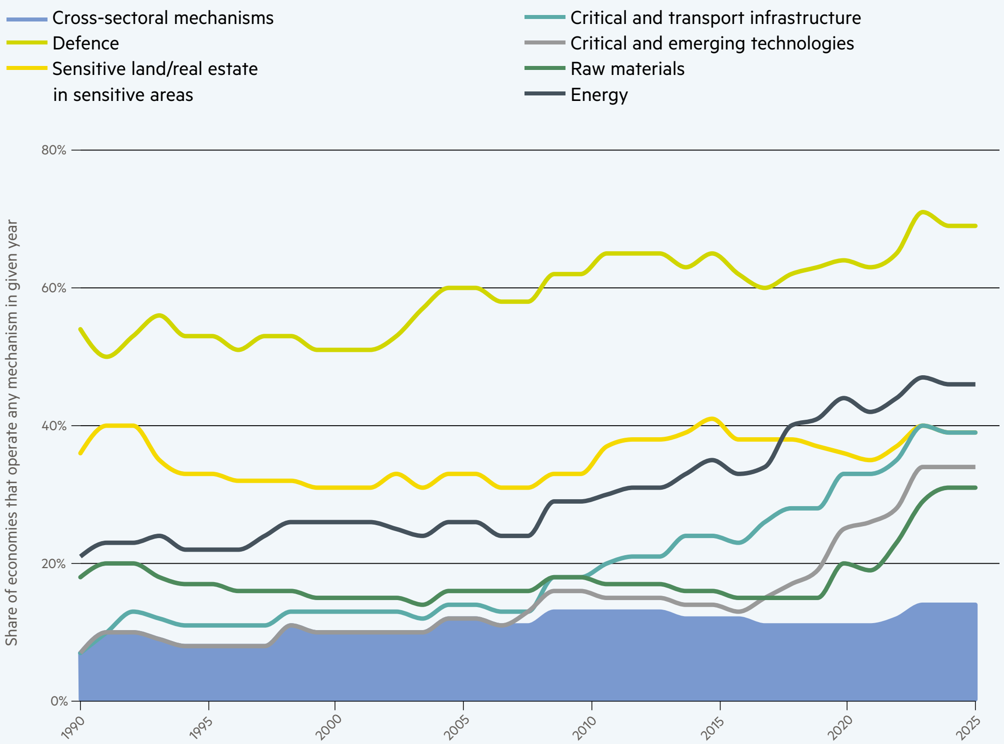
The relatively limited policy response in light of the war in Ukraine is likely because policies had been newly strengthened after the Covid-19 crisis, and sectors associated with military conflict were already covered by most countries'

SOME CRISES HAVE LEFT A VISIBLE MARK ON INVESTMENT POLICIES: ASSOCIATION OF POLICY MEASURES TO SPECIFIC EVENTS



Source: OECD
Note: Sample includes 61 economies that participate in the OECD-hosted Freedom of Investment Roundtable (FOI)

SECTOR COVERAGE OF FDI SCREENING POLICIES BASED ON NATIONAL SECURITY



Source: OECD
Note: Graphs show aggregate occurrence of coverage of the indicated sector in investment policies related to national security interests in a given year in the subset of the 61 Freedom of Investment Roundtable economies that have any such policy in that year. Legislation may frame these sectors in different terms and aggregations were made to enhance readability. The blue area shows the proportion of economy-wide mechanisms which cover the indicated sectors but do not mention them specifically.

screening regimes.

A notable evolution in investment policies related to national security is the diversification and broadening of their scope of application. While previous policies were typically sector-specific or limited to a few sectors, a greater share of economies now operate cross- or multi-sectoral investment screening mechanisms. Multi-sectoral investment screening regimes also encompass a wider array of industries deemed to be sensitive or critical to national security. This expansion reflects the changes in industries and sectors that are sensitive to foreign ownership, moving beyond traditional sectors such as defence to include advanced technologies and critical infrastructure.

Critical and emerging technologies (CETs) and the resilience of supply chains are areas that have garnered increased attention in the wake of recent global crises. The inclusion of CETs under the umbrella of investment screening mechanisms underscores the importance of these sectors to national security. Similarly, the focus on supply chain resilience, intensified by the Covid-19 pandemic, has led to an expanded scope of review mechanisms to include industries critical to the supply of essential goods and services.

Despite a progressive convergence in views on the merits of investment-screening mechanisms, at least in advanced economies, the global policy landscape remains heterogeneous. This diversity in approaches and mechanisms reflects variances in risk perception, policy priorities and economic contexts among different jurisdictions. Yet, there is an emerging consensus on the need for international cooperation and dialogue to harmonise approaches, share best practices and ensure that investment policies both safeguard national security and promote a stable, open investment environment.

Frequent reforms and adjustments of screening mechanisms – beyond their simple expansion – testify to sustained efforts to incorporate good policy practices in the administration of their investment screening regimes. Detailed provisions, such as assessment criteria, procedural rules and responsibilities are adopted, leading to a higher degree of regulatory clarity and predictability. Annual reporting has become more systematic and extensive — both in terms of the number of reporting countries and the depth of information made available, thereby enhancing transparency and accountability. Data on implementation also reveals that actual interventions in transactions remain relatively rare.

Good policy practices are crucial to ensure that investment screening regimes remain effective tools to address legitimate security concerns without obstructing investment flows. The international investment policy community has been guided in this endeavour by the Guidelines for Recipient Country Investment Policies relating to National Security, a recommendation by the OECD Council that enshrines principles for the design of security-based investment policies.

The guidelines provide generally that governments should be guided by the principles of non-discrimination, transparency, predictability, proportionality and accountability when they consider or introduce policies or measures designed to safeguard national security.

There is a delicate balance between fostering open economic environments and addressing legitimate security concerns — a challenge that will continue to evolve in response to the dynamic interplay of global political, economic and technological forces.

As the world grapples with these complexities, international standards and cooperation will undoubtedly play a critical role in shaping future policy directions, with a view towards achieving sustainable growth, security, and prosperity in an interconnected global economy.

Asia-Pacific

Key trends in 2023:

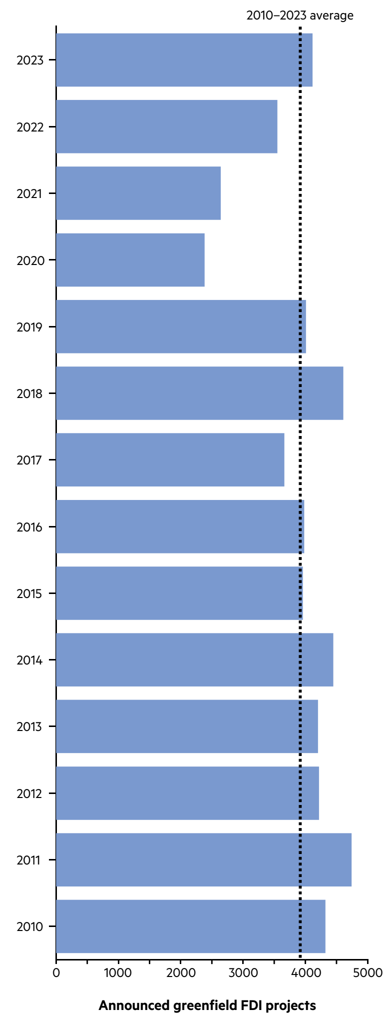
• **The FDI landscape:** Maintaining its position as the leading destination region for FDI, the Asia-Pacific (APAC) region performed well in 2023. Capital investment into the region increased by 37% from 2022 to $449.9bn in 2023. The number of announced FDI projects rose by 16% from 3551 in 2022 to 4115 in 2023, demonstrating a robust recovery from the effects of the Covid-19 pandemic.

• **Country in the spotlight:** In 2023, India retained its position as the most attractive destination country for FDI in APAC. The country attracted estimated capital investment pledges of more than $83.7bn across 1006 announced FDI projects in 2023, posting a year-on-year increase of 2.1% and 1.1%, respectively. India's inbound capital investment accounted for 18% of the total into the whole APAC region in 2023.

• **Sector in the spotlight:** Renewable energy FDI accounted for 17% of announced capital investment in the APAC region in 2023. With 1% growth compared to 2022, capital investment into APAC from renewable energy FDI reached more than $77.8bn in 2023. This follows a broader trend in APAC between 2019 and 2023, when capital investment from FDI shifted towards projects supporting the green transition as part of the region's post-pandemic recovery.

Chart 1

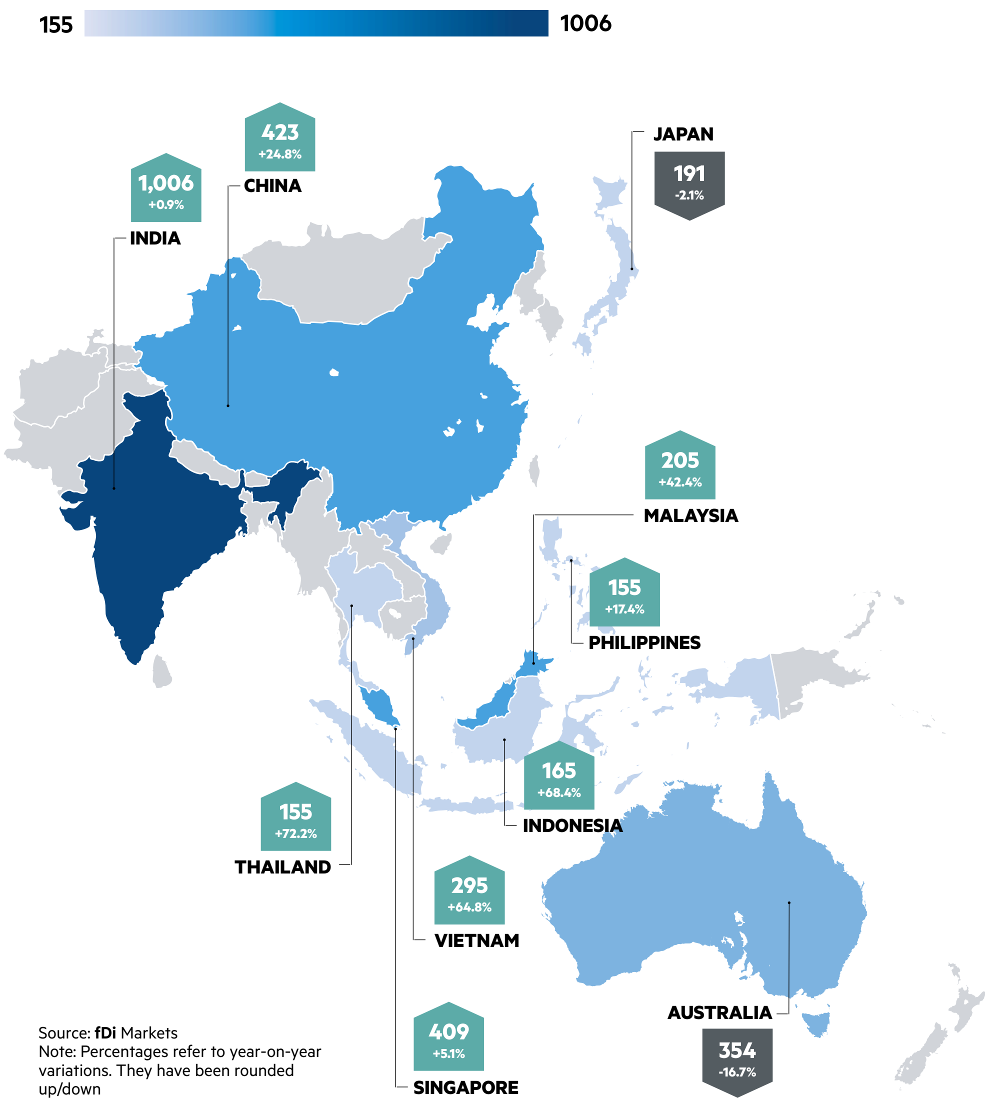
FDI INTO ASIA-PACIFIC (2010-2023)



Source: **fDi** Markets

Chart 2

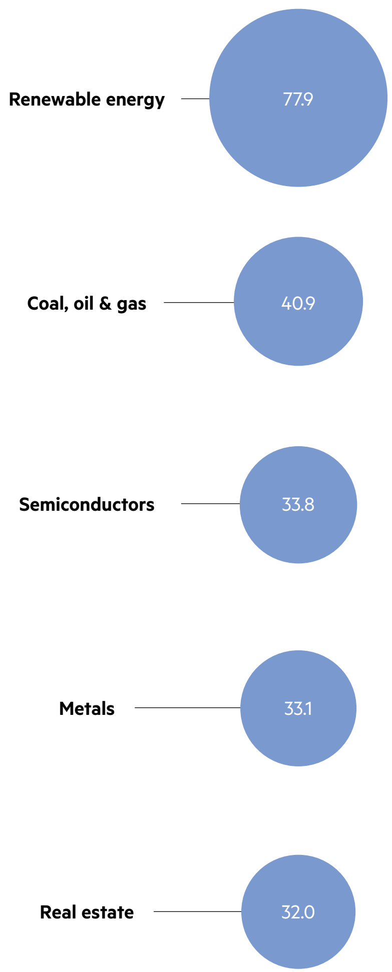
TOP ASIA-PACIFIC DESTINATIONS IN 2023 BY PROJECT NUMBER



Source: **fDi** Markets
Note: Percentages refer to year-on-year variations. They have been rounded up/down

Chart 3

TOP 5 FDI SECTORS IN ASIA-PACIFIC IN 2023 ($BN)



Source: **fDi** Markets
Note: Includes estimates

Table 1

TOP 10 SOURCES FROM OUTSIDE THE REGION IN 2023

Country	Capex ($bn)*
United States	87.3
Germany	27.3
United Kingdom	19.8
Saudi Arabia	16.8
United Arab Emirates	14.5
Canada	14.3
Switzerland	13.1
Denmark	12.7
France	10.4
Netherlands	4.8

Source: **fDi** Markets
Note: Includes estimates

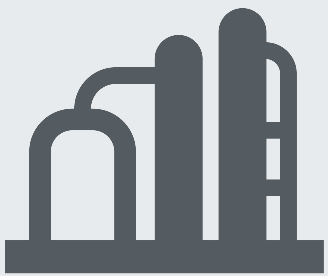
Table 2

TOP 5 INVESTORS IN 2023

ExxonMobil	Exxon Mobil **Announced capex: $15bn**
أرامكو السعودية saudi aramco	Saudi Aramco **Announced capex: $13.5bn**
Sinopec	Sinopec **Announced capex: $12.2bn**
XYG	Xinyi Glass **Announced capex: $11.5bn**
tsmc	TSMC **Announced capex: $10.4bn**

Source: **fDi** Markets
Note: Includes estimates

KEY TREND



In 2023, Asia-Pacific FDI surged as US, Chinese, and Saudi investors announced major refineries in multiple countries.

Recent major projects

- US-based **ExxonMobil** is planning to invest up to $15bn to build a green petrochemical refinery and carbon capture storage facility in Indonesia. The storage facility is expected to be the largest of its kind in south-east Asia.
- China-based automotive giant **Geely** is to invest $10bn to establish a car making hub in Tanjung Malim, Malaysia. The hub will serve as the headquarters of Proton, a local manufacturer of which Geely owns 49.9%.
- Japan-based **Tokyo Gas** and **Kyuden International Corporation** have partnered to develop a 1500 megawatt LNG thermal power plant project in Thai Do, Vietnam. Alongside their local partner Truong Thanh Group, the companies will invest $2bn.
- **Japan Advanced Semiconductor Manufacturing**, a subsidiary of Taiwan-based Taiwan Semiconductor Manufacturing, will build a second facility in Kumamoto, Japan. It is scheduled to begin operation in 2024 and, combined with its first facility, will bringing overall investment to more than $20bn.

Outbound China FDI enters new cycle

Jonathan Wildsmith, production manager, **fDi** Markets

Chinese outbound greenfield FDI reached a new high in 2023. Announced outward capital investment by China-based companies was propelled to an estimated $162.7bn last year, according to **fDi** Markets. This is the highest amount tracked by China in a single year since our records began in 2003. The last time Chinese outbound FDI exceeded $100bn was in 2016, when China-based multinational enterprises (MNEs) recorded their second-largest volume of outward FDI, investing an estimated $108.3bn in overseas operations, according to **fDi** Markets data, which tracks cross-border investment in new physical projects, or expansions of an existing investment that create new jobs and capital investment.

Strategic shift to capital exporter

The single largest outbound Chinese project tracked by **fDi** Markets in 2023 was a $10bn investment by automotive giant Zhejiang Geely, which announced plans in July last year to establish a hub in Tanjung Malim, Malaysia. Sinopec Group, China's state-owned energy conglomerate, was also amongst the largest investors, announcing a $4.5bn refinery in Hambantota, Sri Lanka and a $7.7bn chemicals facility in Atyrau, Kazakhstan.

China's FDI profile thus appears to be undergoing a significant shift, from capital importer to capital exporter. For decades, China's economic growth strategy relied heavily on attracting inward FDI to leverage foreign capital and technology. As the Chinese economy evolves and develops its own national champions, its need for FDI — particularly in manufacturing — diminishes. Meanwhile, attracting FDI into high-added-value services, which has been prioritised by the government, is proving harder than expected.

Based on the balance-of-payments statistics released by the State Administration of Foreign Exchange, net direct investments posted a deficit of $142.6bn in 2023 — the second time China has ever recorded a deficit in direct investment since records began. Direct investment includes unpaid and unremitted profits, retained earnings, shareholders' loans, foreign capital utilised by financial institutions, and real estate purchases by non-residents. This underscores a pivotal shift in China's position within the global investment landscape, indicating that, for this period, the outflows of Chinese investments abroad have substantially exceeded the inflows of FDI into China.

Geopolitical arbitrage and market access

Chinese companies entered 2023 faced with a challenging local and global outlook. Confronted by overcapacity across several sectors at home, Chinese multinationals have increasingly started to deploy their amassed capital abroad, spurred by a government push to expand internationally and the easing of pandemic restrictions.

"Chinese enterprises have entered a new phase of global expansion, with China's technology and brands accelerating, expanding their presence overseas and delving into fresh growth opportunities," says Loletta Chow, global leader of EY China Overseas Investment Network.

This transition is further influenced by China's apparent strategy of geopolitical arbitrage, which aims to leverage investments in allied countries to navigate global trade patterns and secure sustainable value chains. Data from **fDi** Markets indicates a large chunk of outbound greenfield FDI from China in 2023 was spread across multiple manufacturing destinations. Saudi Arabia was the largest recipient of Chinese FDI in 2023, with a 10% share of the country's total outbound capital investment. In Asia, 8.4% of Chinese global outflows were directed towards Malaysia, 7.5% in Vietnam, 5.2% in Kazakhstan and 5% in Indonesia. In Africa, Morocco and Egypt attracted 6% and 5.1% respectively. In Latin America, China invested 4.8% of its global outflows in Argentina and 3.7% in Mexico. Meanwhile in Europe, Serbia was the main beneficiary with a 4% market share of global outward China FDI.

The global spread of Chinese investment across a selection of regions and countries may indicate a strategy of geopolitical arbitrage to leverage trade diversion, where trade is diverted from a more efficient exporter towards a less efficient one to allow Chinese MNEs to circumvent tariffs and sanctions. With government support from Beijing, some Chinese firms are looking to foreign markets, making strategic cross-border investments in critical minerals, energy transition technologies and electric vehicles (EVs).

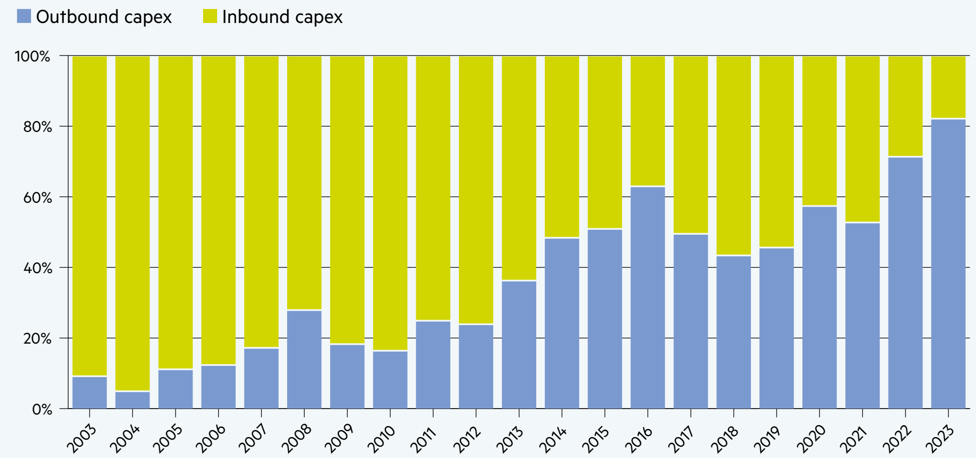
Chinese FDI in Mexico has been on an upward trajectory in recent years, seeing a 57% increase from 2022 to a record $6bn in 2023. This aligns with Mexico overtaking China as the leading source of goods imported by the US last year — the first time that it has happened in more than two decades.

Beiqi Foton Motor, a China-based automobile manufacturer, is one such company seeking to leverage Mexico's strategic position in the North American market. The company has earmarked a $1bn investment for a new EV manufacturing facility in the country, with potential sites being considered in the states of Jalisco and Aguascalientes.

Vietnam also saw record levels of Chinese FDI in 2023, and stands out for its trade relationship with both the US and the EU. A

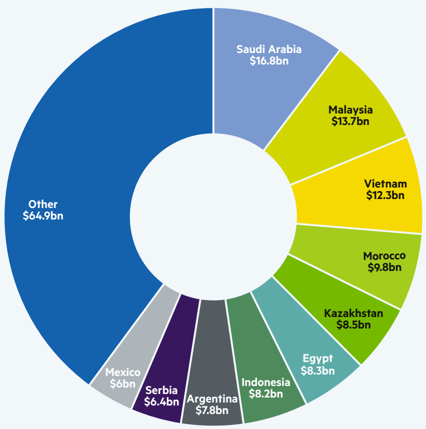
CHINA'S FDI TRAJECTORY: FROM CAPITAL IMPORTER TO CAPITAL EXPORTER

INBOUND TO OUTBOUND GREENFIELD FOREIGN DIRECT INVESTMENT RATIO



Source: **fDi** Markets

TOP DESTINATIONS OF CHINESE FDI IN 2023



Source: **fDi** Markets
Note: includes estimates

"The global spread of Chinese investment across a selection of regions and countries may indicate a strategy of geopolitical arbitrage

$400m announcement by photovoltaic (PV) module supplier Trina Solar, which plans to open a third manufacturing plant in the province of Thai Nguyen, is one of the country's most noteworthy projects. According to Reuters, the plant will support the company's efforts to increase its exports to the US while at the same time circumventing tariffs.

In July 2023, Roger Luo, director of Alibaba in Asia-Pacific, said that the company announced plans to launch teams across Vietnam's emerging manufacturing centres because "compared to China, Vietnamese-made goods have an advantage ... the US–China trade war has a big influence on Chinese goods, while Vietnamese goods are not affected", according to Vietnamese press reports.

In 2023, outward greenfield FDI from China in the metals and minerals sectors reached $37.8bn, representing the largest combined total of any year on record and more than twice the previous largest total tracked in 2018, data from **fDi** Markets shows. It is significant that China has stepped up its commitment to securing vital resources, given its strategic position in the global supply chain for essential metals and minerals and the importance of these sectors to the development of technologies behind EVs, PVs, wind energy and energy storage.

Chinese outbound greenfield FDI in the electronic components, renewable energy, automotive original equipment manufacturing and chemicals sectors also peaked last year, worth a combined $78.3bn.

This aligns with China's broader strategy to leverage natural resources and energy transition technologies for economic growth and international influence.

China's growing global presence

While companies operating in manufacturing sectors make up the vast majority of outbound Chinese FDI capital investment, online Chinese brands such as Alibaba, TikTok, and JD.com are also going global to tap into new markets and audiences.

Bytedance, TikTok's parent company, was the fifth-most active Chinese investor last year, announcing nine FDI projects. Among them were new offices in Argentina, Colombia, Denmark and Kenya; a research and development centre in Sydney, Australia; and a $1.3bn pledge to build three new data hubs in the EU to comply with EU data transfer laws. The digital platform's international expansion is another indicator of China's ambition to assert its influence on the global economic landscape.

As China's outbound FDI enters a new cycle, the far-reaching effects on foreign countries, governments, and economies are becoming clearer. The country's transition from net inflows to a surge in outflows of capital marks a pivotal moment in China's economic history which will impact global trade, diplomacy and economic development strategies.

On the one hand, Chinese MNEs are making strategic investments in allied countries and resource-focused sectors, as a means of not only circumventing trade barriers but also securing resources crucial for manufacturing and technological advancements.

On the other hand, the international expansion of Chinese digital brands represents a softer, more cultural and technological approach to growing China's international influence.

Europe

Key trends in 2023:

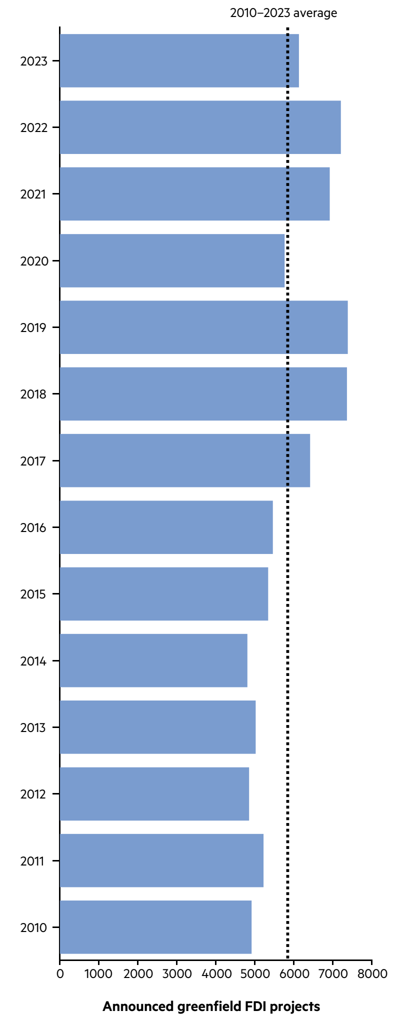
• **The FDI landscape:** Europe retained high levels of capital investment in 2023, with an estimated $347.6bn in announced FDI — down from $382.9bn a year earlier, but still the third-best performance since records began in 2003. Overall, the region attracted 6,244 FDI projects in 2023, down by 13.6% from 2022. Between 2019 and 2023, western Europe drew 77% of all projects and 75% of all capital investment in the region.

• **Country in the spotlight:** Poland remained the leading destination country in emerging Europe, attracting 416 announced FDI projects (down 16% from 2022) worth an estimated $21.4bn (up 22%) in 2023. The country's increase in capital investment was driven by the announcement of Intel's $4.6bn semiconductor assembly and test facility near Wrocław.

• **Sector in the spotlight:** Renewable energy was the leading sector for capital investment in Europe in 2023, generating a total $108.5bn across 445 projects. Software & IT services was the most active sector by number of FDI projects, with 1058 announced projects.

Chart 1

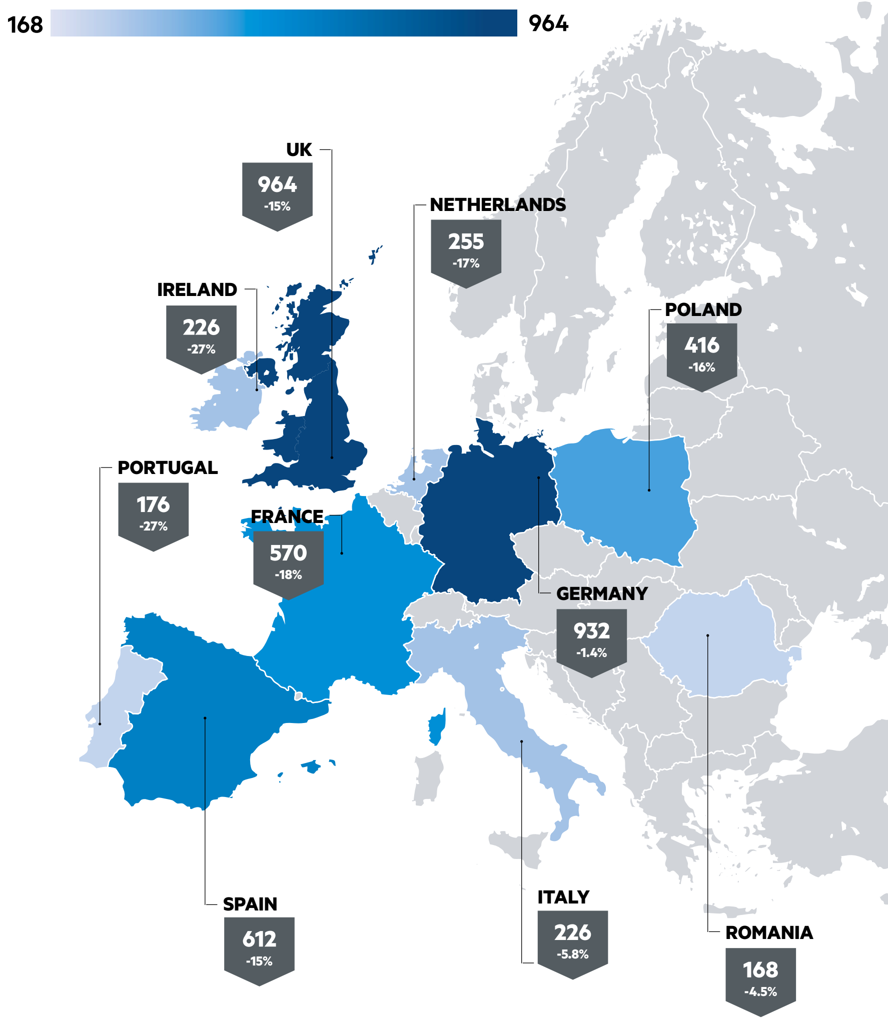
FDI INTO EUROPE (2010-2023)



Source: **fDi** Markets

Chart 2

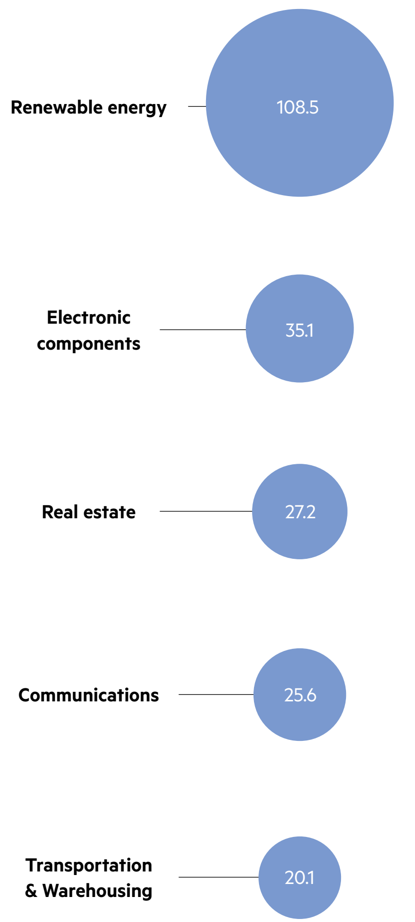
TOP EUROPE DESTINATIONS IN 2023 BY PROJECT NUMBER



Source: **fDi** Markets
Note: Percentages refer to year-on-year variations. They have been rounded up/down

Chart 3

TOP 5 FDI SECTORS IN EUROPE IN 2023 ($BN)



Source: **fDi** Markets
Note: Includes estimates

Table 1

TOP 10 SOURCES FROM OUTSIDE THE REGION IN 2023

Country	Capex ($bn)*
United States	56.1
China	25.7
Japan	9.4
India	7.0
Taiwan	6.0
Canada	5.8
Singapore	5.7
Israel	3.3
South Korea	2.8
Australia	2.6

Source: **fDi** Markets
Note: Includes estimates

Table 2

TOP 5 INVESTORS IN 2023

bp	BP **Announced capex: $10.6bn**
RWE	RWE **Announced capex: $7.8bn**
Qualitas energy	Qualitas Energy **Announced capex: $6.9bn**
eni	Eni SpA **Announced capex: $6.8bn**
ZiJin	Zijin Mining Group **Announced capex: $6.1bn**

Source: **fDi** Markets
Note: Includes estimates

KEY TREND

63.2%

In 2023, intra-European FDI peaked at 63.2% of total capex, the highest since the global financial crisis.

Recent major projects

- **Profine Energy**, a subsidiary of Germany-based Profine Group and Wirth Group, will install a 450-megawatt (MW) solar plant across more than 800 hectares in between Novi Sad and Belgrade in Serbia to supply the factories in a nearby industrial park. Together with a 100MW solar plant in Bosnia and Herzegovina, the company is investing €2bn.

- **China-based Putailai**, will invest $1.3bn in a new anode factory in Sundsvall, Sweden. The facility will produce anodes for electric vehicle batteries produced in Europe, with an initial capacity of around 50,000 tonnes of anode material. It will create 1900 new jobs once fully operational.

- **Norway-based Blastr Green Steel** will invest €4bn to establish a green steel plant with an integrated hydrogen production facility in Inkoo, Finland. Production at the plant is expected to begin by the end of 2026, when it will produce 2.5 million tonnes of hot- and cold-rolled green steel annually. The plant is expected to create up to 1200 direct new jobs and serve markets in Europe.

E-commerce: the changing look of online shopping

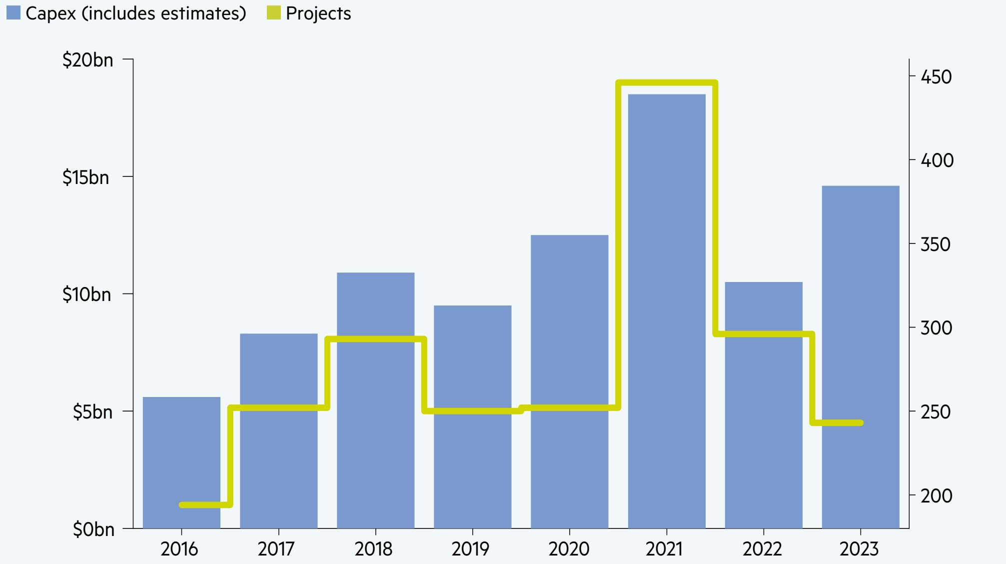
Geraldine Ewing, head, **fDi** Markets

Accelerated by the sudden spike in demand for online services during the Covid-19 pandemic, the e-commerce sector has seen marked and sustained growth as consumers continue to lean on online platforms for both essential and non-essential goods. Businesses have also pivoted to digital channels to stay afloat amid the constraints on physical retail and growing expectations for online services. Looking forward, e-commerce sales are projected to total more than $1.2tn in 2024, a 9% increase from 2023, according to Mintel. The research firm also anticipates a 36% increase between 2023 and 2028. Against this backdrop, FDI is expected to become more concentrated in technology-based support for e-commerce firms and experience continued growth in non-traditional online spending.

Cross-border investment monitor **fDi** Markets recorded 2226 FDI projects relating to the e-commerce sector between 2016 and 2023, with a marked peak in investments in 2021 as companies rushed to bolster their digital infrastructure following the initial impact of the pandemic. In 2021, the number of announced e-commerce projects increased to 446 — a jump of 77% compared to 2020 — with the related capital investment increasing to an estimated $18.5bn and job creation increasing to almost 116,000.

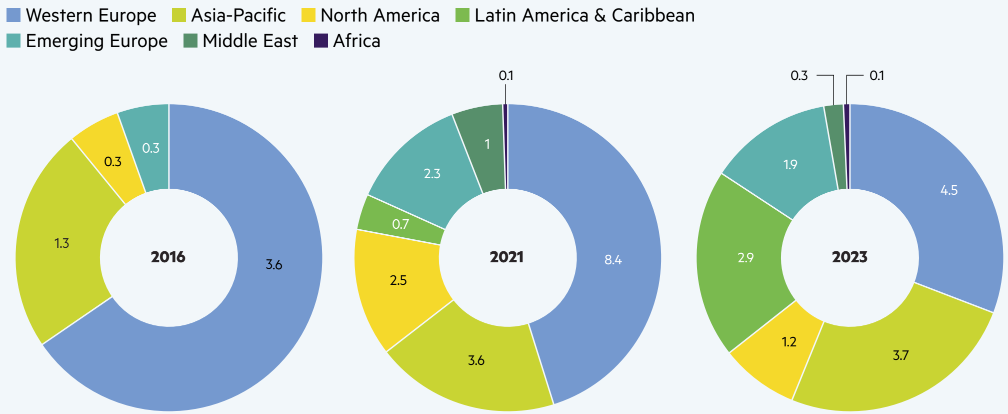
While this growth slowed in 2022 and 2023,

THE GROWTH OF E-COMMERCE FDI



Source: **fDi** Markets

E-COMMERCE FDI ($BN)* BY DESTINATION REGION



Source: **fDi** Markets Note: *Announced foreign direct investment capex; includes estimates the nature of these projects has changed to reflect the diversification of the e-commerce industry to see an increase in the variety of companies and activities being established overseas.

Consumer goods

In 2016, customer facing e-commerce companies selling consumer goods, such as Amazon and Alibaba, accounted for 30% of announced e-commerce FDI projects. While the sector continued to account for an average of one-third of the projects in 2023, its overall investment share peaked in 2020, when 78% of capital investment into e-commerce projects were related to the consumer products sector.

Consumer goods' share of e-commerce FDI decreased to between 50% and 60% in the following three years as other sectors took up a greater share of projects. In 2021, e-commerce operations for the sale of food and beverages was the second-most active sector for e-commerce projects as on-demand food ordering apps such as Gorillas Technologies and Ocado announced investments. In 2023, investments in the food and beverage sector totalled $1bn, capturing about 7% of total FDI in e-commerce.

Back-end services supporting the e-commerce industry have also thrived in the past few years, with companies in software and IT services, transportation and warehousing, and business services sectors accounting for 45% of announcements in 2023, up from just 25% in 2020. Companies supporting growing expectations for online fulfilment are also expanding abroad — site-builder Shopline and DHL's e-commerce division collectively invested an estimated $819m internationally in 2023.

> There's a growing need for platforms and software capable of identifying an optimal combination of traditional logistics providers and last-mile delivery services

In 2016, e-commerce projects falling into logistics, warehousing and storage accounted for 29% of all announced projects. However, between 2021 and 2023, these made up an average of 43% of projects. This reflects the infrastructure expansions needed to meet the fulfilment of a growing number of online orders.

As sector diversification in e-commerce continues, companies are growing in a wider variety of ways to support their international operations. As such, **fDi** Markets has also recorded an increase in the number of research and development offices as well as business services operations. Business services projects accounted for less than 2% of all e-commerce projects between 2016 and 2022; this increased to 7.4% in 2023.

Lion's share

Western Europe has consistently attracted the lion's share of e-commerce FDI, with an estimated $36bn invested between 2016 and 2023 across 1009 projects. Of this, $4.5bn was invested across western Europe in 2023 alone — its peak year for such investments.

Asia-Pacific ranked as the second-most active destination for such investments in the 2016–2023 period, whereas North America ranked third by number of projects (260 between 2016 and 2023) and fifth by capital investment ($12.6bn in the same period). It is worth noting, however, that major e-commerce firms such as Amazon and Walmart are headquartered in the US and domestic investments do not qualify for this analysis.

In 2022 and 2023, e-commerce firms turned their attention to underserved markets, such as Latin America and the Caribbean. The number of e-commerce investments into this region has seen year-on-year growth from 2019 onwards, but the pace of investments has increased markedly in recent years, with a total capital investment in e-commerce projects increasing by 125% from $1.3bn in 2022 to $2.9bn in 2023. The number of e-commerce projects destined for the region has increased from six projects in 2016 to a peak of 40 in 2022.

Future growth

fDi Markets' investor signals database, which monitors early indications by companies considering future investment in foreign markets, shows that software companies are expected to be the leading driver of growth in e-commerce FDI going forward, with 56% of related investor signals falling into this category in 2023.

Tech companies with investor signals are meeting the needs of retailers to retain customers and streamline their processes. As retailers aim to streamline expenses amid an evolving delivery ecosystem, there's a growing need for platforms and software capable of identifying an optimal combination of traditional logistics providers and last-mile delivery services and, as such, e-commerce projects are increasingly aligning with freight tech investments.

Alongside practical fulfilment solutions, technology companies are also working with retailers to embed artificial intelligence (AI) solutions to make the online shopping experience more personalised and retain customers. UK-based Upp (which uses AI and machine learning to maximise the return on ad spending) raised $10m in 2023 to expand overseas and Japan-based start-up Gigalogy (which provides AI-based personalisation with blockchain-based reward management for e-commerce businesses) has expressed interest in expanding to the UK.

According to Euromonitor, in 2024, twice as many worldwide consumers are now online and they spend double the amount on goods and services compared with 10 years ago, reflecting consumers' entrenchment in the e-commerce space and an online-first approach to shopping. As a result, FDI in the e-commerce sector is likely to grow in novel ways as retailers adapt to serve a more globalised customer base, but also a more highly congested market.

North America

Key trends in 2023:

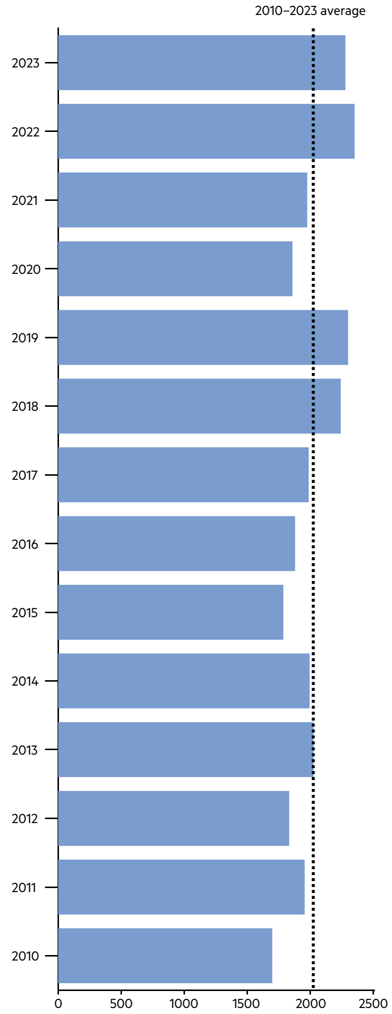
• **The FDI landscape:** The number of announced FDI projects in North America declined 3.1% from a peak of 2351 in 2022 to 2278 in 2023. Capital investment in the region decreased by 12% from 2022 to an estimated $168.3bn in 2023. Despite a decrease in 2023, it was still the second-largest year for capital investment into North America since records began in 2003.

• **State in the spotlight:** Texas was the leading destination state for FDI projects in 2023 with an estimated $20.3bn in capital investment across 235 announced projects. While the number of projects remained steady in 2023, capital inflows increased by 12%, from $18bn in 2022 to $20.3bn in 2023. Since 2019, Texas has attracted an estimated $90.5bn worth of FDI, equating to 13% of North America's total inbound investment.

• **Sector in the spotlight:** An estimated $42.8bn was invested in North America's electronic components sector by foreign companies in 2023. The sector, which includes nascent sub-industries such as battery manufacturing and solar cell development, contributed an estimated $115.3bn to the total value of FDI in North America during the same period. Approximately 94% of the sector's total value of FDI in North America between 2019 and 2023 was accumulated since 2021.

Chart 1

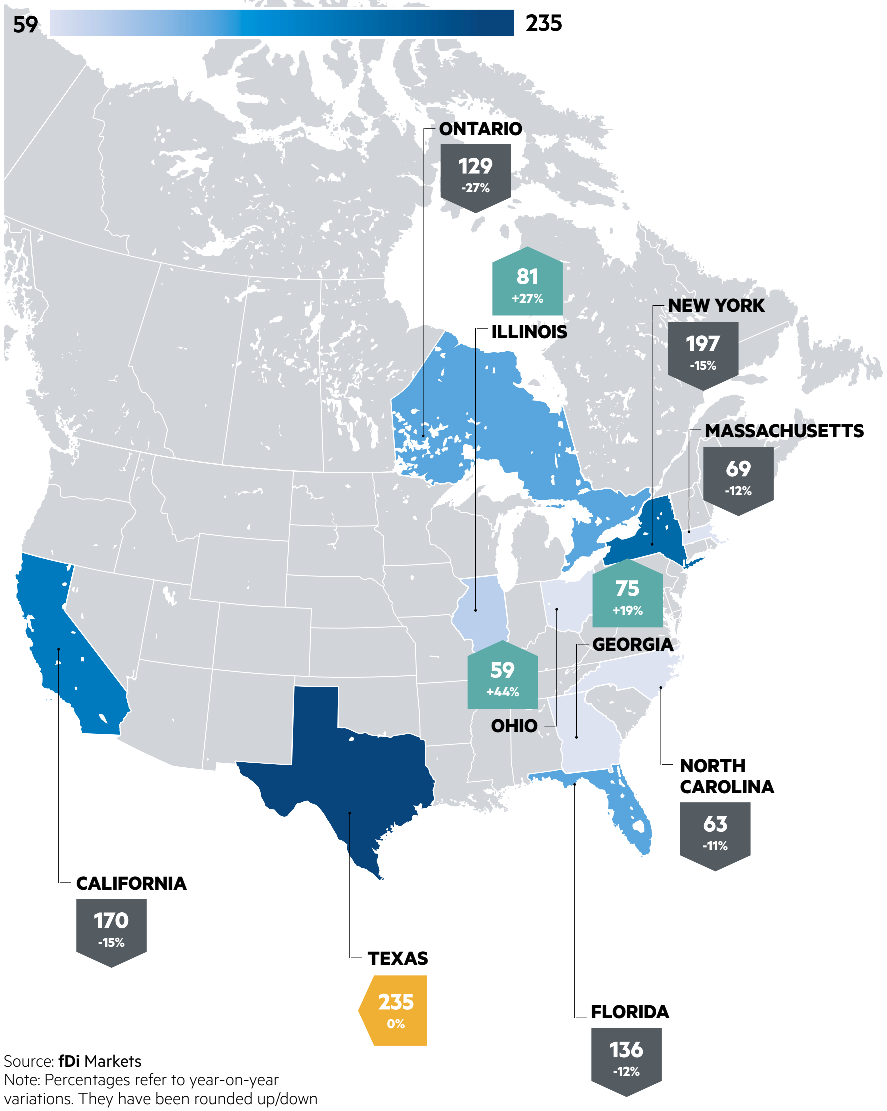
FDI INTO NORTH AMERICA (2010-2023)



Source: **fDi** Markets

Chart 2

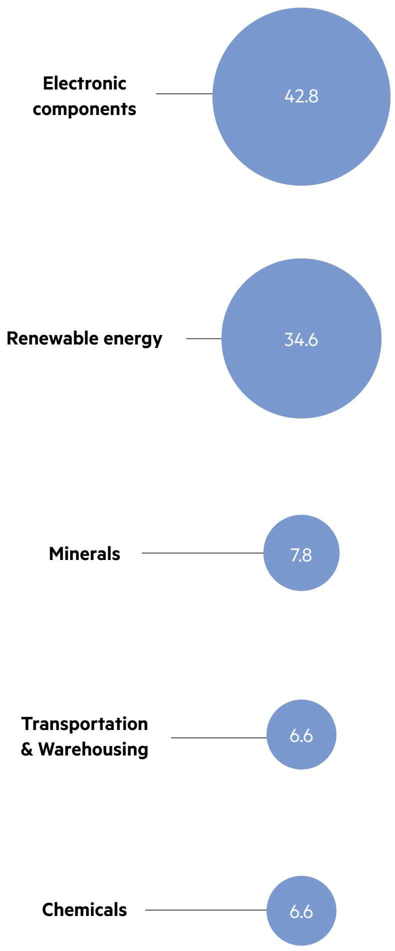
TOP NORTH AMERICA DESINATIONS IN 2023 BY PROJECT NUMBER



Source: **fDi** Markets
Note: Percentages refer to year-on-year variations. They have been rounded up/down

Chart 3

TOP 5 FDI SECTORS IN NORTH AMERICA IN 2023 ($BN)



Source: **fDi** Markets
Note: Includes estimates

Table 1

TOP 10 SOURCES FROM OUTSIDE THE REGION IN 2023

Country	Capex ($bn)*
Germany	22.4
South Korea	21.7
United Kingdom	16.2
Japan	10.5
Australia	9.7
Netherlands	8.3
Sweden	6.5
China	5.8
France	5.5
Belgium	5.3

Source: **fDi** Markets
Note: Includes estimates

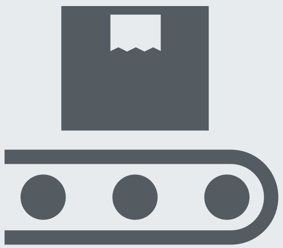
Table 2

TOP 5 INVESTORS IN 2023

CPP Investments	Canada Pension Plan Investment Board **Announced capex: $8bn**
	Volkswagen **Announced capex: $7.6bn**
northvolt	Northvolt **Announced capex: $5bn**
BHP	BHP Group **Announced capex: $4.9bn**
HYUNDAI	Hyundai Motor **Announced capex: $4.7bn**

Source: **fDi** Markets
Note: Includes estimates

KEY TREND



In 2023, manufacturing attracted 56.6% of North America's FDI capital expenditure.

Recent major projects

- **PowerCo**, a manufacturer of car batteries and a subsidiary of Germany-based Volkswagen, has announced that it will build a $5.4bn battery cell gigafactory in St Thomas, Canada. The factory will focus on the production of sustainable unified cells for electric vehicles and is set to begin operations in 2027, creating up to 3000 jobs.

- **Tree Energy Solutions** has announced it will build a $4bn green hydrogen production facility in Quebec, Canada. The Mauricie Project is set to open in 2028 and will produce 70,000 tonnes of green hydrogen.

- **Pattern Energy Group**, a wind power company and a subsidiary of Canada-based CPP, is to build a $3bn SunZia Transmission project in the US state of New Mexico. SunZia Transmission is a 550-mile, high-voltage direct current transmission line with the capacity to transport 3000 MW of clean electricity to three million households across the western US.

Global nearshoring FDI proliferates

Alex Irwin-Hunt, global markets editor, **fDi** Intelligence

Nearshoring, the movement of production closer to end-consumers, is not new, but it is on the rise. More companies mentioned nearshoring in 2022 earnings calls than any previous year since 2010, when data collection began, according to HSBC analyst Mark McDonald.

A smaller sample of firms in 2023 showed another strong year of these nearshoring hints. This is not just by companies listed in the US, mentions by firms from Asia and Europe have also both accelerated.

But do these trends translate into investment in new locations? The short answer is yes. An analysis of **fDi** Markets data shows that in 2023 foreign companies pledged a record $245bn of capital to manufacturing activities in 40 nearshoring destinations, an increase of 45% on the previous year.

To be included, the 40 destination countries needed to have attracted at least five FDI manufacturing projects in 2023 across all industries except energy, where large, capital-intensive projects can skew FDI figures. The analysis focused on the build out of production lines close to the world's three major regional economic centres: North America, China and western Europe.

There are differing motivations behind this rise in manufacturing FDI. The Covid-19 pandemic laid bare the risks of global value chains being overly dependent on China. Nearshoring and shorter supply chains are a way for companies to build more resilience. Supply chain managers have shifted from just-in-time to just-in-case approaches to their inventory strategies. This means they have given themselves more options to source the goods they sell, rather than just focusing on producing in the cheapest factory locations.

Manufacturing FDI into nearshoring destinations can also target the locations in themselves, such as India, Mexico and the Association of Southeast Asian Nations (Asean), where there are growing domestic markets and middle classes. Many of these nearshoring destinations can offer opportunities for labour arbitrage compared to China, where minimum wages have steadily risen over time.

Companies can be driven to nearshore production to bypass the kind of tariffs that the likes of the EU and the US have increasingly leveraged over the past few years as they pass protectionist industrial policies, particularly targeted at strategic sectors such as electric vehicles (EVs), batteries and semiconductors. It differs from reshoring as firms refrain from a full retreat into their domestic markets if they can find cheaper manufacturing hubs in their neighbourhood.

Target North America

In recent years, Mexico is the undisputed winner of nearshoring FDI targeting North America. In 2023, an all-time high of $25.5bn was pledged to manufacturing FDI in the country, according to **fDi** Markets. This was slightly up from the previous high of $24.8bn set in 2022.

Trade data supports the rise of Mexico as a nearshoring destination. In 2023, Mexico overtook China as the leading source of goods imported to the US, according to the US Department of Commerce. Mexico has benefited from the upheaval in global supply chains caused by the Covid-19 pandemic and the US–China trade war. Its offer of cheap, skilled labour and access to the United States–Mexico–Canada Agreement make it an ideal location to set up factories.

The country's proximity to the US is a clear advantage for companies targeting the world's largest economy, enabling them to reduce manufacturing time and cost, and mitigate supply chain disruptions compared to producing in east Asia.

A large part of this nearshoring FDI to Mexico has been made by Chinese companies. Three of the country's largest car makers — MG, BYD and Cherry — are investing billions of dollars to build factories in Mexico. This reflects a more aggressive strategy from Chinese manufacturers to grow revenues in markets outside of China and avoid the strategic competition with the West.

Tier 1 and 2 automotive suppliers have invested in Mexico to support these factories and supply the North American market. This includes aluminium part maker Ningbo Xusheng Group, tyre manufacturer Jinyu Group and Bethel Automotive Safety Systems, a China-based braking specialist.

Several other Latin American countries have benefited from the reconfiguration of multinational factory footprints and higher investment into strategic supply chains, such as critical minerals. This includes Chile, which attracted $4.7bn of manufacturing FDI in 2023, as well as Argentina ($3.5bn), Brazil ($3bn), Costa Rica ($981m), Colombia ($678m) and Uruguay ($217m).

European reconfiguration

For western Europe, there is a dispersal of nearshoring FDI in countries with close proximity. Major economies in central and eastern Europe (CEE) have been the main beneficiaries from the move to build out strategic supply chains.

Hungary attracted $18.8bn worth of FDI into manufacturing in 2022 and 2023, up by 141% from the 2018 and 2019 period. More than half of this came from mega projects in batteries and their requisite metals, including by China's CATL and South Korea's SK Innovation.

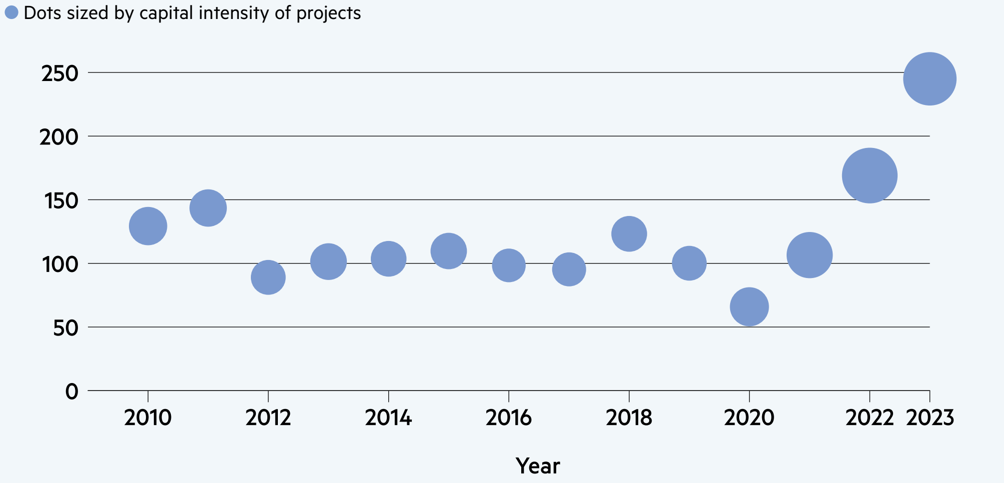
Poland's manufacturing FDI has jumped 45% in the past two years, compared to before the pandemic, largely due to US chipmaker Intel's plans to build a new fabrication facility. Due to rising labour costs in 'traditional' CEE markets, such as Poland and Hungary, companies are increasingly looking at alternative locations to set up new plants, says Guy Douetil, the managing director for Europe, the Middle East and Africa at advisory firm Hickey & Associates. "Companies need to build in some more resilience, but it doesn't mean they will exit locations where they have established plants," he adds.

Manufacturing FDI into Romania, Slovakia and North Macedonia all more than doubled in the latest two-year period, compared to 2018/19. Other countries, such as Serbia, the Czech Republic and Bulgaria, attracted more than $1.5bn of foreign manufacturing investment.

Cheap and available labour have drawn companies towards northern African markets like Morocco and Egypt. "There's a decent population of talent that [companies] can tap into. It's a balance between stability and the size of the market," explains Mr Douetil.

In 2023, Egypt attracted $13.2bn worth of manufacturing FDI in industries excluding energy, up from $2.6bn in 2022, according to **fDi** Markets. Meanwhile Morocco magnetised $8.6bn of FDI pledges, up from $1.8bn in 2022, thanks in large part to major investments in the EV supply chain.

MORE FOREIGN CAPITAL WAS PLEDGED TO MANUFACTURING PROJECTS IN 40 NEARSHORING DESTINATIONS IN 2023 THAN EVER BEFORE



Source: **fDi** Markets *All manufacturing FDI excluding energy industries. To be included in the analysis, nearshoring destinations needed to have attracted at least 5 manufacturing FDI projects in 2023.

China alternatives

The nature of nearshoring FDI close to China is once again different from other parts of the world. It can broadly be separated into those targeting south Asia and Asean.

More than $124bn was pledged to greenfield FDI manufacturing projects in Asean in 2022 and 2023, according to **fDi** Markets, as countries in the region turned the page on pandemic restrictions and became natural destinations for projects that in the past would have likely been located within China.

The five largest Asean economies — Indonesia, Thailand, Singapore, Vietnam and Malaysia — accounted for 96.5% of manufacturing FDI pledged to the region in 2022 and 2023. The Philippines attracted about $2.6bn in those two years, while the four other Asean members — Cambodia, Laos, Myanmar and Brunei — made up the remainder.

The Asean region has recently overtaken China as the destination of choice for manufacturing investment for investors from OECD countries. More than $55bn was pledged by OECD-headquartered companies to build factories in Asean in 2022 and 2023 — well over double the $21bn announced in China — according to **fDi** Markets. This is in stark contrast to 2018, when China attracted $56.8bn of manufacturing, which was more than twice the amount pledged to Asean.

"During Covid, supply chains that were overly reliant on manufacturing in China were completely left in the lurch," says Andrew Keable, the Malaysia-based managing partner of advisory firm KW Group. "Over the past five years, Asean has stood on its own as an alternative to China."

India rising

India is the other key target for multinationals seeking to serve the country's large domestic market and diversify their supply chains away from China. Almost $30bn was pledged to manufacturing FDI projects outside the energy industry in India during 2023, according to **fDi** Markets. This was down from the record of $34.7bn set in 2022, but still higher than any other previous year since the database started tracking FDI in 2003.

India has a fast-growing domestic market and expanding middle class, similar to China's economic development, but is fundamentally different in how it will develop as a manufacturing hub. "There's a lot of claims that India is the next China — it's not," says John Evans, the Bangkok-based managing director of advisory firm Tractus Asia. But there are lots of multinationals looking at India and saying "we need to be nearshored to the subcontinent with some exports going to other places, mainly Europe," he adds.

Taiwanese contract electronics manufacturer Foxconn is a perfect example of the nuance associated with these China+1 strategies playing out in India. While the Apple iPhone maker is building new plants in states like Karnataka, it still relies on China for 75% of its global operations.

Multinationals in this new paradigm are investing to have production networks in multiple centres of the world to improve their resilience and avoid being caught in the geopolitical headwinds of the day.

Middle East and Africa

Key trends in 2023:

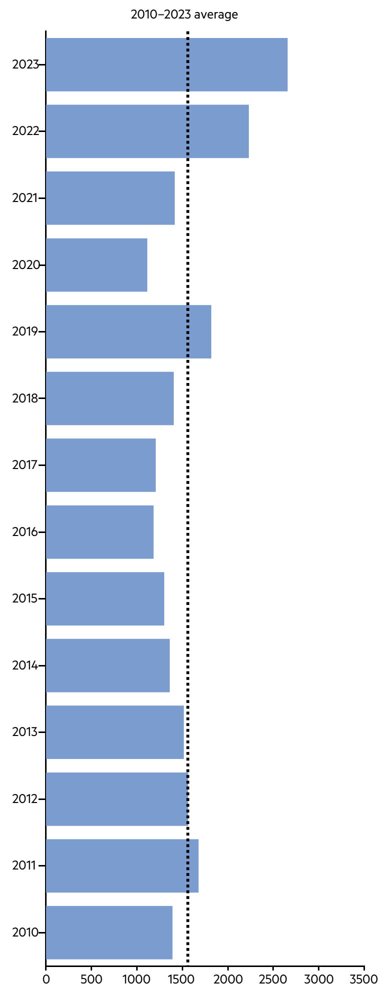
• **The FDI landscape:** The Middle East and Africa (MEA) region saw a 19% annual rise in FDI projects, from 2231 recorded in 2022 to 2658 in 2023. Projects proved to be less capital-intensive as overall capital investment declined 6% between 2022 and 2023 to $249.8bn. Growth in project numbers continued an ongoing trend; MEA saw a 46% increase in projects and a 111% jump in capital investment between 2019 and 2023.

• **Country in the spotlight:** FDI capital investment into Saudi Arabia increased by 111% from 2022 to $28.8bn in 2023, ranking the nation third behind Egypt and Mauritania. Approximately one-fifth of Saudi Arabia's capital inflows in 2023 can be attributed to the automotive original equipment manufacturing sector, with notable investments including the announcement of China-based Human Horizons's EV research, development, manufacturing and sales joint venture facility.

• **Sector in the spotlight:** Between 2019 and 2023, the region attracted an estimated $289.6bn in renewable energy investments and $93.2bn worth of FDI in the coal, oil and gas industry. Despite a 21% decline in the sector from 2022 to 2023, capital investment in the renewables sector is growing overall, with the 2022 figure of $127.2bn being bolstered by an unprecedented number of green hydrogen announcements in the region.

Chart 1

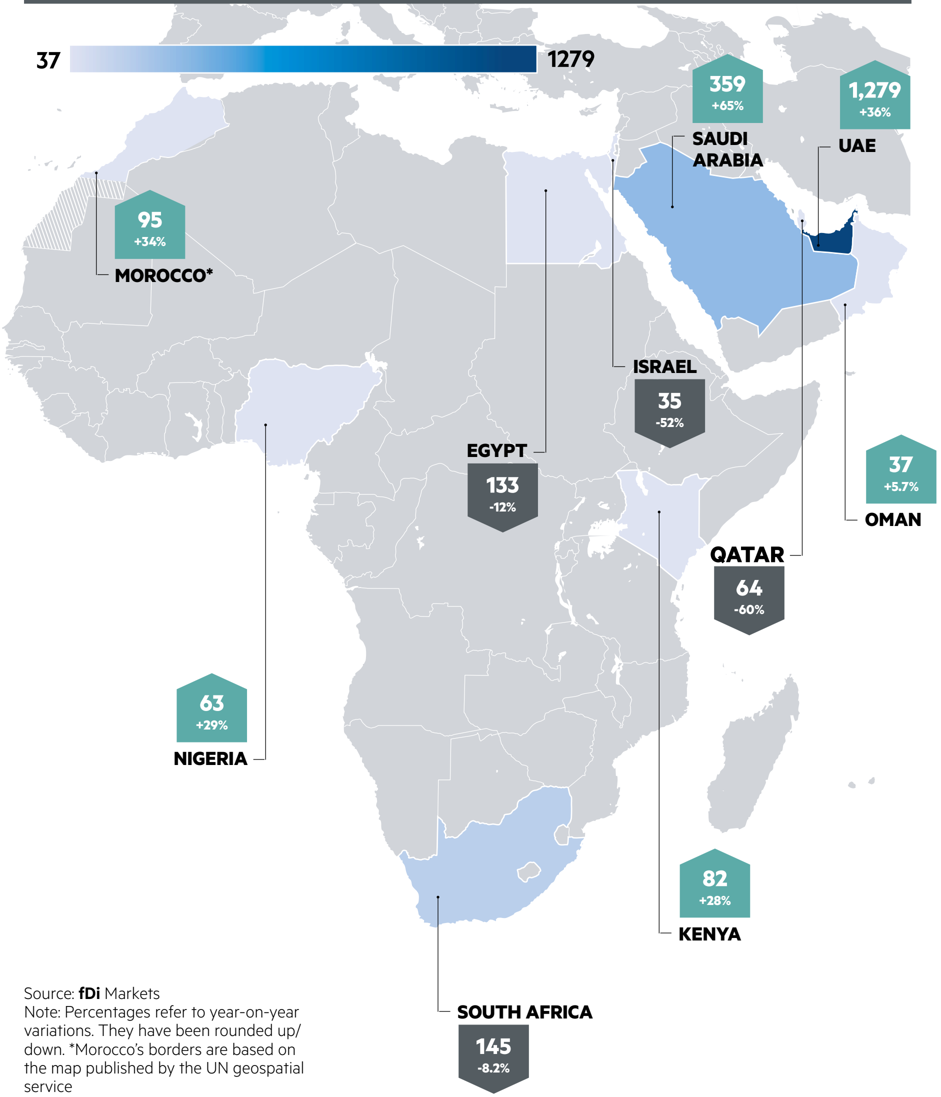
FDI INTO MIDDLE EAST AND AFRICA (2010-2023)



Source: **fDi** Markets
Note: Includes estimates

Chart 2

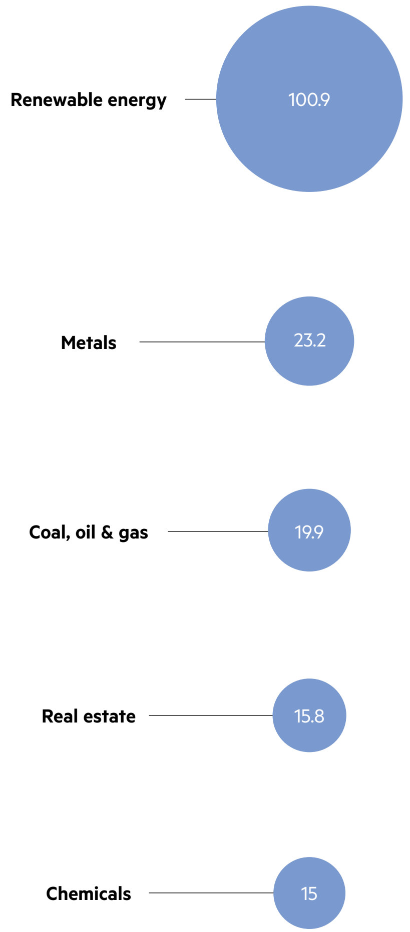
TOP MIDDLE EAST AND AFRICA DESINATIONS IN 2023 BY PROJECT NUMBER



Source: **fDi** Markets
Note: Percentages refer to year-on-year variations. They have been rounded up/down. *Morocco's borders are based on the map published by the UN geospatial service

Chart 3

TOP 5 FDI SECTORS IN MIDDLE EAST AND AFRICA IN 2023 ($BN)



Source: **fDi** Markets
Note: Includes estimates

Table 1

TOP 10 SOURCES FROM OUTSIDE THE REGION IN 2023

Country	Capex ($bn)*
China	42.1
United Kingdom	24.8
Hong Kong	19.9
United States	16.9
Ireland	12.8
India	7.7
France	7.4
Germany	4.6
Italy	4.1
Canada	3.5

Source: **fDi** Markets
Note: Includes estimates

Table 2

TOP 5 INVESTORS IN 2023

MUBADALA	Mubadala Investment Company **Announced capex: $35.8bn**
UEG	United Energy Group **Announced capex: $17.7bn**
AMARENCO	Amarenco **Announced capex: $9.8bn**
RioTinto	Rio Tinto Group **Announced capex: $8.6bn**
POWER INTERNATIONAL HOLDING	Power International Holding (PIH) **Announced capex: $7.5bn**

Source: **fDi** Markets
Note: Includes estimates

KEY TREND

Saudi Arabia was the top destination for Chinese FDI in 2023.

Recent major projects

- China-based **Baowu Steel Group**, is to invest SR15bn ($4bn) to establish a metal plate manufacturing facility in the new Ras Al-Khair Special Economic Zone in Ras Al-Khair, Saudi Arabia.
- **Infinity Power**, a joint venture between Infinity and Masdar, is to develop a $34bn green hydrogen project near the north-east of Nouakchott, Mauritania. The project will have a production capacity of up to eight million tonnes of green hydrogen with an electrolyser capacity of up to 10 gigawatts.
- UK-based **Rio Tinto** plans to develop the Simfer iron ore mine in the Nzérékoré region of Guinea. The mine forms part of the Simandou iron ore project and represents an investment of $5.1bn. The first production from the Simfer mine is expected in 2025, ramping up over 30 months to an annualised capacity of 60 million tonnes per year with a mine life of 26 years.

Green hydrogen's temperature check

Joshua Crawford, production manager, **fDi** Markets

Renewable energy remained the top sector for drawing foreign capital investment in 2023, with companies announcing an estimated $348bn in related projects globally. While sub-industries, such as solar energy and biomass power, attracted their highest-ever capital investment flows in 2023, the outstanding driver for sectoral capital investment was green hydrogen — an area earmarked by major investments.

These major projects involve immense figures, with questions being raised over their cost and the available support provided, as well as the actual benefits going to developing countries that are hosting production.

Green hydrogen is a clean energy source, produced by electrolysis of water. The end product has a range of application areas, including fertiliser manufacturing and transportation.

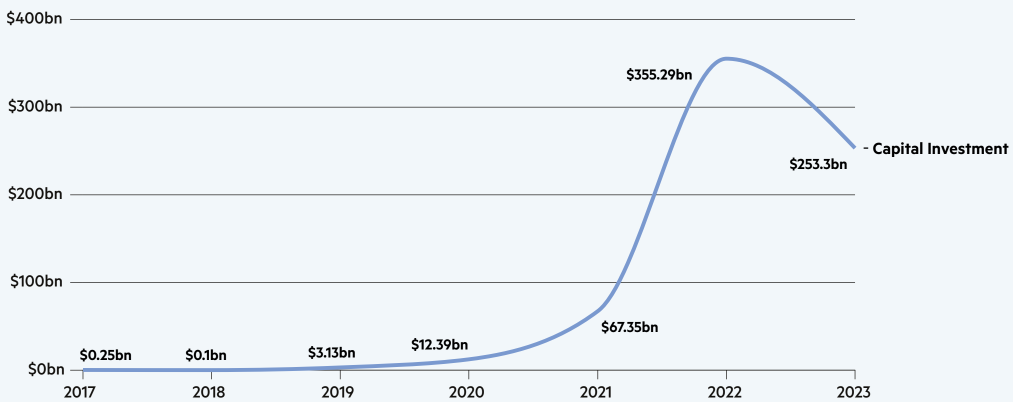
Major green hydrogen investments, involving minimum capital investments of $500m, were dispersed globally in 2023, but stand out for prominence in various world regions, including Africa.

One of the forefront African nations in this respect during 2023 was Egypt, which garnered three major green hydrogen projects across the year, representing a cumulative investment of $17.4bn. These projects are a microcosm for the wider flood of green hydrogen investment announced for Egypt since 2021, as tracked by **fDi** Markets, with an estimated $215.5bn of sectoral projects recorded.

Several of the developments are destined for the Suez Canal Economic Zone, created in 2015 as part of Egypt Vision 2030 and spanning an area of 460.6 sq km.

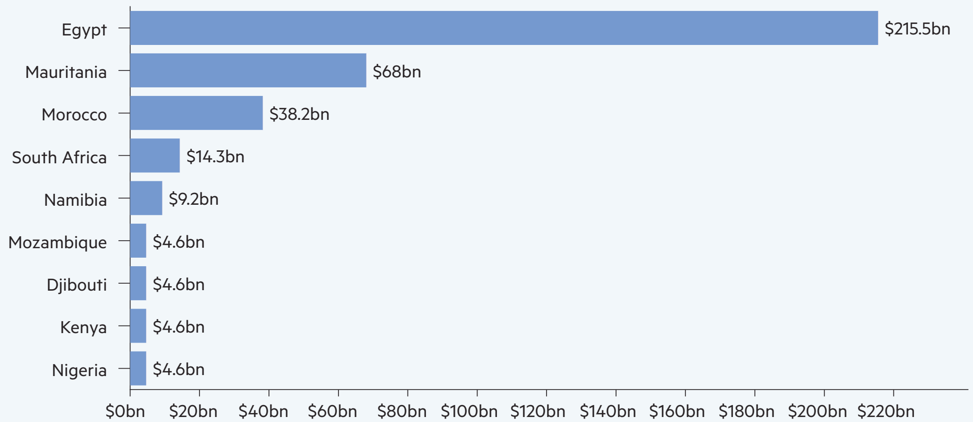
Another African country courting attention is Mauritania, located in the north-west of the continent. Infinity Power, a joint venture between UAE-based Masdar and Egypt-based Infinity, announced in March 2023 a memorandum of understanding with the country's government and Germany-based Conjuncta to develop a $34bn green hydrogen site near the capital of Nouakchott. The investment set to create 1000 operational jobs.

GLOBAL GREEN HYDROGEN FDI: ANNOUNCED GREENFIELD FOREIGN DIRECT INVESTMENT IN THE SECTOR BETWEEN 2017 AND 2023



Source: **fDi** Markets
*includes estimates

GREEN HYDROGEN FDI INTO AFRICA: ANNOUNCED GREENFIELD FOREIGN DIRECT INVESTMENT IN THE SECTOR ACROSS THE CONTINENT 2021-2023



Source: **fDi** Markets
*includes estimates

The Infinity Power announcement follows on from the Aman project, representing an investment of $40bn and being developed by CP Power of Australia. The project, located in the Dakhlet Nouadhibou and Inchiri regions, will produce green hydrogen through a 30 gigawatt hybrid of solar and wind energy, with the investment originally formulated at COP26 in Glasgow back in 2021.

Fast forward to 2023, and a spate of green hydrogen resolutions were adopted at the COP28 conference in Dubai. Masdar, involved in the major Infinity Power project in Mauritania, announced a €15bn partnership with Spanish renewables firm Iberdrola, with the two companies set to evaluate the prospect of green hydrogen and other investments in Germany, the UK and the US.

The state-owned firm signed a separate agreement with Hy24 to install green hydrogen projects on a large scale globally, while a trilateral agreement was forged with agencies in Abu Dhabi to support the local hydrogen economy and forward the UAE as one of the key destinations for hydrogen production and export.

Feasibility doubts

Hydrogen investment is being conducted on a huge scale and set up for future investment opportunities. These facts do not mask question marks over the industry, with cost representing one of the chief areas of concern.

Speaking at the Investing in Green Hydrogen conference in London in September 2023, business development and commercial director at Masdar, Andreas Bieringer, said that the "costs are rather getting up."

Hydrogen investment is being conducted on a huge scale and set up for future investment opportunities. These facts do not mask question marks over the industry

More recently, in March 2024, various sceptical voices were raised on cost at the CERAWeek energy conference held in Houston, Texas. The CEO of Exxon, Darren Woods, suggested "nobody wants to pay" to reduce emissions. Amin Nasser, CEO of Saudi Aramco, focused on the cost comparison between green hydrogen and oil, stating that "the fantasy of phasing out oil and gas" needs to be dropped and that green hydrogen can only be genuinely affordable if the sector receives a "significant amount of government incentives and offtake agreements of at least 15 years".

Policy support is seen elsewhere as a prerequisite for success. Lord Adair Turner, chair of the UK-based Energy Transitions Commission think tank, remarked that green hydrogen is essential as a means of activating net zero but, without "strong policy support, it will not scale up in the timescale required."

A report by Wood MacKenzie also mulls over the issue of major projects going into countries like Mauritania, claiming that "very large announcements in less developed markets should be treated with caution". The report emphasises how these markets, with an export focus, act as hosts for a small number of large investments, "inflating the total announced capacity of the region." These countries will face myriad other issues getting projects off the ground, "due to issues securing financing, a lack of policy support [mentioned by Lord Adair Turner], challenges in securing offtakers and underdeveloped supporting infrastructure."

Jean-Paul Adam, director of technology, climate change and natural resource management at the UN Economic Commission for Africa says that "members of the Green Hydrogen Alliance," which includes Mauritania and Egypt, are "actually quite far" into their advancements when it comes to regulatory frameworks. Yet he adds the following caveat: "Renewable energy is Africa's superpower, financing is not."

Social risks

The EU and Germany are also contributors to Africa initiatives, pledging billions of euros to various schemes and projects, including developments in Kenya. Namibia is also emerging as an early African success story for green hydrogen. Locally based Hyphen Hydrogen Energy, partly owned by Germany-based Enertrag, was announced in 2021 as the successful bidder of the country's first major-scale green hydrogen development. This development is worth an estimated $9.4bn and acts as the linchpin for a wider market in development, as memorandums of understanding have been signed with Germany, the Netherlands and EU for exporting green hydrogen. Despite contributions from and relations with Europe, more needs to be done to ensure development is not limited to just projects, but also creates lasting benefits for local people.

As African countries attempt to become hydrogen-exporting nations, all competing over the same product and creating that product at the lowest cost, a fear arises that this competition will result in a "disastrous race to the bottom", according to Bitsat Yohannes-Kassahun, cluster lead for energy and climate at the UN Office of the Special Adviser on Africa. This fear is only exacerbated when considering the plethora of other countries also staking bets in green hydrogen, such as Chile.

Since the end of 2022, **fDi** Markets has noted four major green hydrogen investments into Chile, a country that aims to be carbon-neutral by 2050 and aims to close or repurpose all coal-fired power plants by 2040.

A national strategy for green hydrogen was outlined in November 2020 and while there is no green hydrogen produced yet domestically on an industrial scale, the promise is indicated by foreign investment activity there and the support of the government.

Latin America and the Caribbean

Key trends in 2023:

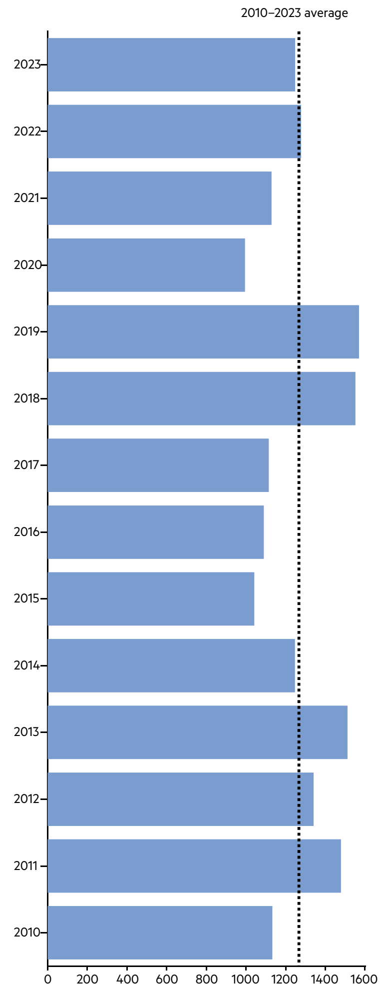
• **The FDI landscape:** Total FDI capital investment into Latin America increased by 10% between 2022 and 2023, despite slight decreases in both the number of announced projects and the number of jobs created. Between 2019 and 2023, Latin America and the Caribbean attracted 6220 FDI projects, worth an estimated $480.4bn. Following a decline in 2020, the region saw year-on-year increases from 2020 to 2022.

• **Country in the spotlight:** Between 2019 and 2023, Mexico was at the forefront of the Latin America and Caribbean region's manufacturing scene, which is bolstered by the region's strategic location, competitive labour costs and trade agreements. Mexico accounted for 40% of related capital investment during these years and $138.9bn of total regional inflows for the same period, with more than 50% of these inflows captured in 2022 and 2023.

• **Sector in the spotlight:** Software and IT services and business services were the top two sectors in the Latin America and Caribbean region from 2019 to 2023 by the number of FDI projects, with Mexico, Brazil, Colombia and Costa Rica featuring among the major target markets. Capital-intensive sections in the region included renewable energy and minerals, which saw capital investment increase by 103% ($26.2bn) and 689% ($9.5bn) respectively between 2022 and 2023.

Chart 1

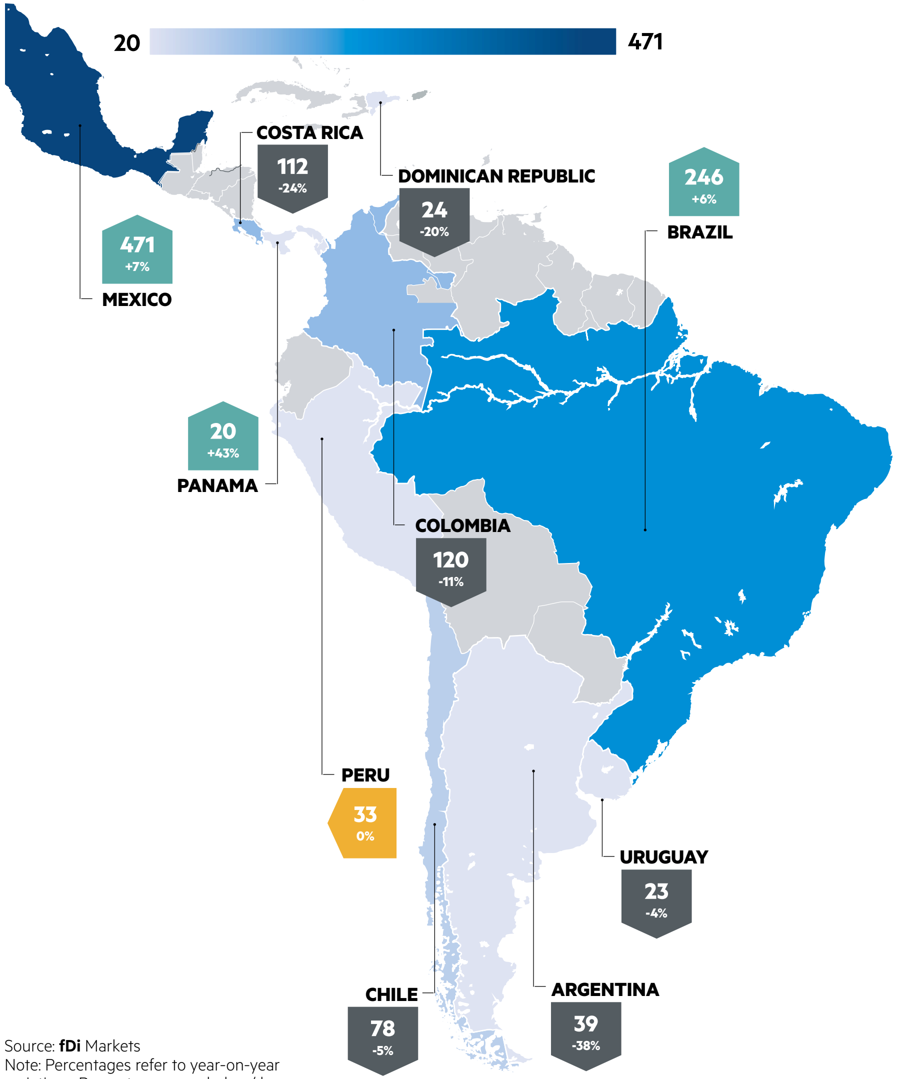
FDI INTO LATAM AND THE CARIBBEAN (2010-2023)



Source: **fDi** Markets

Chart 2

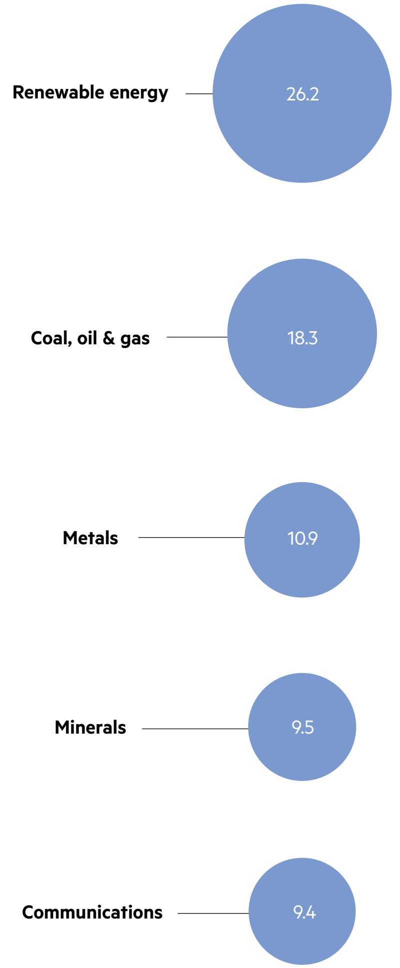
TOP LATIN AMERICA AND THE CARIBBEAN DESINATIONS IN 2023 BY PROJECT NUMBER



Source: **fDi** Markets
Note: Percentages refer to year-on-year variations. Percentages rounded up/down

Chart 3

TOP 5 FDI SECTORS IN LATAM AND THE CARIBBEAN (2010-2023)



Source: **fDi** Markets
Note: Includes estimates

Table 1

TOP 10 SOURCES FROM OUTSIDE THE REGION IN 2023

Country	Capex ($bn)*
China	20.4
United States	17.3
United Kingdom	15.8
Norway	9.0
Germany	8.6
Spain	5.0
Canada	4.8
France	4.4
Italy	4.1
UAE	2.8

Source: **fDi** Markets
Note: Includes estimates

Table 2

TOP 5 INVESTORS 2023

equinor	Equinor (Statoil) **Announced capex: $9bn**
HIVE ENERGY	Hive Energy **Announced capex: $8bn**
	China Potassium Chemical Group (CPCG) **Announced capex: $7.8bn**
ANTOFAGASTA MINERALS	Antofagasta **Announced capex: $4.4bn**
HIF	HIF Global **Announced capex: $4bn**

Source: **fDi** Markets
Note: Includes estimates

KEY TREND

In 2023, Latin America drew record FDI of almost $10bn in critical minerals, led by Canadian and Chinese firms.

Recent major projects

- Norway-based **Equinor** has announced a $9bn investment in an oil and gas project in the Campos Basin offshore Brazil. The project will be developed in partnership with Repsol Sinopec Brasil, a subsidiary of Spain-based Repsol, and Brazil-based Petrobras. The start-up of the BM-C-33 project is planned for 2028.
- **Ningbo Tuopu Group**, a subsidiary of Hong Kong-based Mecca International Holdings, is investing $710m to open an automobile parts factory and product development laboratory at the Hofusan Industrial Park in Salinas Victoria, Mexico. The project will create 10,000 new jobs and is set to begin production by the end of 2023.
- US-based **Johnson & Johnson**, a medical device and pharmaceutical specialist, is investing $600m to establish medtech manufacturing operations at the Evolution Free Zone business park in Costa Rica. The 19,000 sq m facility will create 3000 new jobs by 2028 and is set to begin operations in 2027.

Top foreign investors in 2023 by project

TOP 10 INVESTORS BY PROJECT NUMBERS

Country	No of Projects	Capex ($bn) *	Sum of Jobs created *
International Workplace Group (Regus)	397	0.8	4066
Deutsche Post	60	3.8	11,981
Amazon.com	38	11.3	23,093
AP Moller - Maersk	35	3.7	7982
Stellantis	32	10.1	14,502
TotalEnergies (Total)	29	10.1	2521
RWE	29	10.0	1373
Nova Poshta	28	0.3	301
Dubai World	27	4.7	15,073
Panattoni	26	4.7	13,972

Source: **fDi** Markets; * includes estimates

International Workplace Group provides flexible workspace solutions, including serviced offices, coworking spaces, and business support services.

Deutsche Post is a global logistics company specialising in mail delivery and express shipping services.

Amazon is an e-commerce giant that also offers cloud computing services, streaming, and artificial intelligence products.

AP Moller - Maersk provides global shipping, logistics, and container services, facilitating international trade and supply chain management.

Stellantis is a global automaker and mobility provider formed by the merger of Fiat Chrysler and PSA Group.

TotalEnergies is a global energy company that produces and markets oil, natural gas, and low-carbon electricity.

RWE is a leading energy company, focusing on renewable energy, conventional power generation, and energy trading

Nova Poshta is a Ukrainian logistics company offering parcel delivery services, warehousing, and related logistics solutions

Dubai World is a global investment company managing a diverse portfolio of assets in sectors like transport, logistics, and real estate.

Panattoni develops industrial real estate and warehouses internationally, focusing on large-scale projects across the US, Canada, and Europe.

Top foreign investors in 2023 by capex

TOP 10 INVESTORS BY CAPEX

Country	Capex ($bn) *	No of projects	Sum of Jobs created *
Mubadala Investment Company	41.8	22	3967
United Energy Group	17.7	3	5931
Exxon Mobil	15.7	3	3102
Saudi Aramco	13.9	8	4231
Zhejiang Geely Holding Group (Geely Holding Group)	12.7	14	8813
China Petrochemical Corporation (Sinopec Group)	12.2	2	4517
BP (British Petroleum)	12.1	21	4080
Volkswagen	12.1	23	17,622
Xinyi Glass	11.5	1	3000
Amazon.com	11.3	38	23,093

Source: **fDi** Markets; * includes estimates

Mubadala Investment Company is a global investment firm focused on diverse sectors including aerospace, ICT, semiconductors, metals, and energy.

United Energy Group engages in the exploration, development, production, and sale of crude oil and natural gas

Exxon Mobil is an American multinational oil and gas corporation, engaged in exploration, production, refining, and marketing.

Saudi Aramco is a global energy and chemicals company, focusing on oil exploration, production, refining, and distribution

Zhejiang Geely Holding Group is a Chinese multinational automotive company that manufactures and sells automobiles and related products.

Sinopec is a Chinese oil and gas company engaged in exploration, refining, production, and sales of petrochemical products.

BP is a global energy company focusing on oil, gas, renewables, and low-carbon energy solutions.

Volkswagen designs, manufactures, and sells vehicles and automotive components worldwide, also offering financial services.

Xinyi Glass is a manufacturer specialising in float glass, automotive glass, and construction glass.

Amazon is an e-commerce giant that also offers cloud computing services, streaming, and artificial intelligence products.

About fDi Intelligence

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