Global Infrastructure Annual Assets Report

2024 Edition

EY
Building a better working world

GIIA Global Infrastructure Investor Association

$2tn
AUM

68
Countries

2,869
Assets

70
Members

Foreword

Across the world, private investors in infrastructure are increasingly bridging the gap between what governments and the public purse can afford, and what global citizens now demand.

The Global Infrastructure Investor Association is the world's leading advocacy body for the role of private capital in infrastructure. Our membership continues to grow, passing the 100-member mark in early 2024 and now standing at more than 110 of the world's foremost infrastructure investors and specialist advisors to the sector.

Our members include fund managers, public pension funds, sovereign wealth funds, corporates and insurers, who are based in the Americas, Europe, the Middle East, Asia and Australasia, and for whom the collective value of their assets under management now tops US$ 2 trillion. This growth reflects the ever-increasing use of private capital to modernise our digital, energy, transport and water networks, and the continuing expansion of infrastructure as an investment asset class.

Our members are at the forefront of ambitions to achieve net zero, including the transition to cleaner energy, decarbonisation of transport, the digital revolution and desire for resilient water networks. Private investors increasingly play a leading role in delivering society's infrastructure expectations, as governments recognise they cannot do it alone.

Working in partnership with governments and regulators builds dialogue and understanding, creating opportunities for investors to deliver the infrastructure that creates jobs and economic growth, and protects and improves the environment.

This year we have refreshed and enlarged our annual infrastructure assets report, where you can explore the geographic breadth and financial scale of the assets which our members manage, by sector and by global market. For the first time, we also track the remarkable growth in our members' investments and total asset values since 2017 when this report was launched.

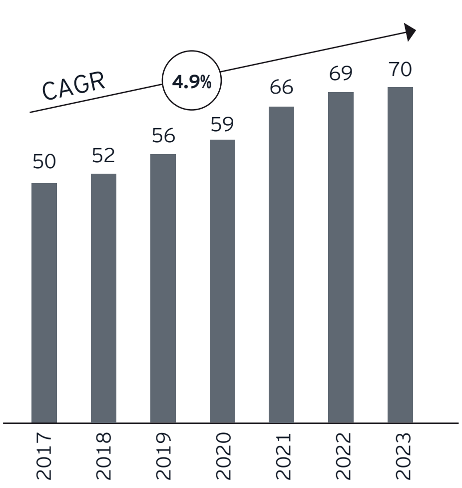
The use of private capital to modernise infrastructure has matured over 30 years and continues to spread around the world. Our members lead the way in developing sustainable, efficient and innovative ways of financing, managing and operating infrastructure assets. I am confident they will play an ever-larger role in meeting the evolving needs of society.

We are grateful to colleagues at EY who have assisted in collating and analyzing this report since 2017.

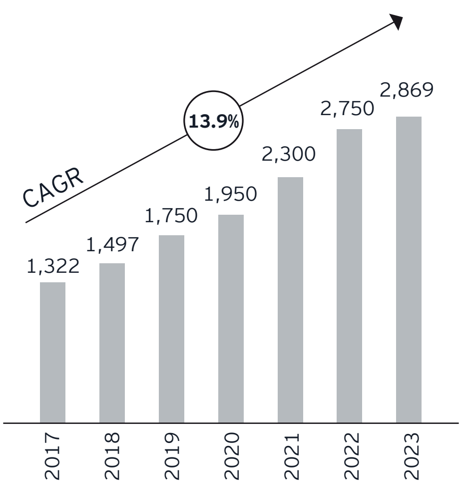
Jon Phillips
Chief Executive Officer
Global Infrastructure Investor Association

Summary charts showing the development of the investor member base over the last seven years.

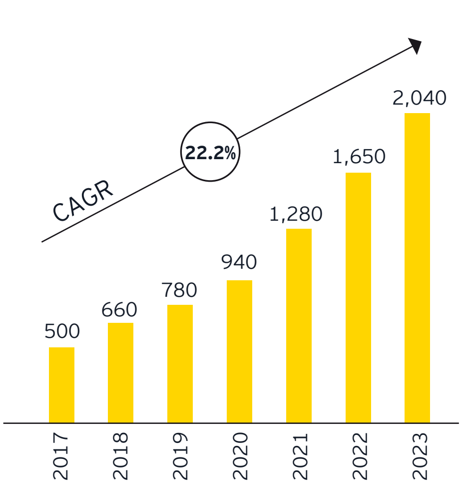
GIIA investor members



GIIA member investments



AUM of the GIIA membership ($m)



CAGR – Compound annual growth rate since asset reporting started in 2017.

Scale of member assets by sector

Utilities

Water customers
121m (1% ▲)

Gas pipeline
1.1m Km (3% ▲)

Elec. Capacity
100,000MW (4% ▼)

Cable
3.0mKm (28% ▲)

Social

Education facilities
2,400 (42% ▲)

Students
235,000 (2% ▲)

Hospitals/healthcare
6,500 (139% ▲)

Hospital beds
95,000 (6% ▲)

Renewables

Solar
67,000MW (5% ▲)

Wind – Onshore
110,000MW (20% ▲)

Wind – Offshore
55,000MW (6% ▲)

Hydro, biomass, EfW
19,000MW (11% ▲)

Ports

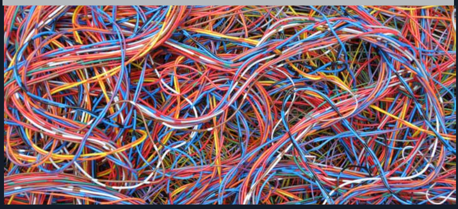
Ports
396 (6% ▲)

Countries
21 (11% ▲)

TEU
153m (6% ▲)

Tonnes
1,065bn (3% ▼)

Telco/Digital



Towers
670,000 (21% ▲)

Customers served
69m

Datacentres
785 (4% ▲)

Airports

Airports
101 (1% ▲)

Countries
16

Passengers
970m (12% ▲)

EV

Charging stations
45,000 (226% ▲)

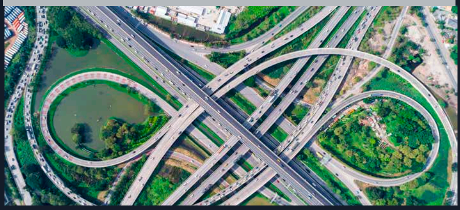
Countries
8 (14% ▲)

Rail

Rail
72,000km (4% ▲)

Rolling stock
34,000 units (1% ▲)

Roads



Roads
82,000km

Annual average daily traffic
20m

Keys: ▲ Increase ▼ Decrease (Compared to 2023)

Summary of assets by region

Canada

Assets: 114 | Investments: 120

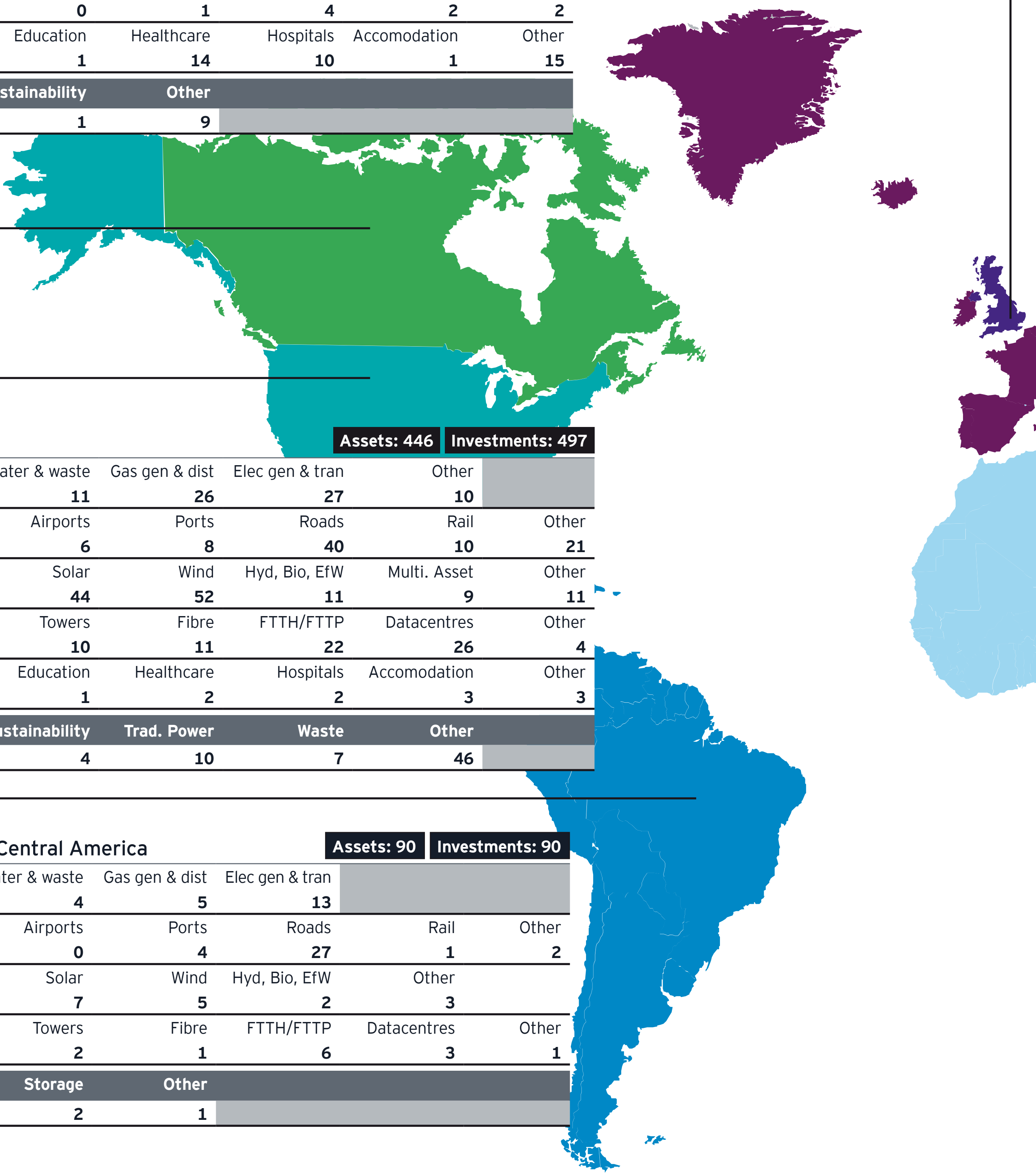
Utilities	Water & waste 0	Gas gen & dist 7	Elec gen & tran 4	Others 1	
Transport	Airports 4	Ports 4	Roads 8	Rail 4	Other 5
Renewables	Solar 3	Wind 3	Hyd, Bio, EfW 8	Other 3	
Telco	Towers 0	Fibre 1	FTTH/FTTP 4	Datacentres 2	Other 2
Social	Education 1	Healthcare 14	Hospitals 10	Accomodation 1	Other 15

Storage	Sustainability	Other
0	1	9

UK

Utilities	Water & waste 18	Gas gen & dist 11
Transport	Airports 9	Ports 8
Renewables	Solar 48	Wind 89
Telco	Towers 4	Fibre 5
Social	Education 133	Healthcare 51

Storage	Sustainability	Waste
6	3	4



US

Assets: 446 | Investments: 497

Utilities	Water & waste 11	Gas gen & dist 26	Elec gen & tran 27	Other 10	
Transport	Airports 6	Ports 8	Roads 40	Rail 10	Other 21
Renewables	Solar 44	Wind 52	Hyd, Bio, EfW 11	Multi. Asset 9	Other 11
Telco	Towers 10	Fibre 11	FTTH/FTTP 22	Datacentres 26	Other 4
Social	Education 1	Healthcare 2	Hospitals 2	Accomodation 3	Other 3

Storage	Sustainability	Trad. Power	Waste	Other
9	4	10	7	46

South and Central America

Assets: 90 | Investments: 90

Utilities	Water & waste 4	Gas gen & dist 5	Elec gen & tran 13		
Transport	Airports 0	Ports 4	Roads 27	Rail 1	Other 2
Renewables	Solar 7	Wind 5	Hyd, Bio, EfW 2	Other 3	
Telco	Towers 2	Fibre 1	FTTH/FTTP 6	Datacentres 3	Other 1

Social	Storage	Other
1	2	1

Assets: 773	Investments: 877	
Elec gen & tran 16	Metering/last mile 6	Other 11
Roads 30	Rail 23	Other 15
Hyd, Bio, EfW 39	Other 16	
FTTH/FTTP 17	Datacentres 6	Other 5
Hospitals 65	Accomodation 41	Other 72
Other 22		

Europe

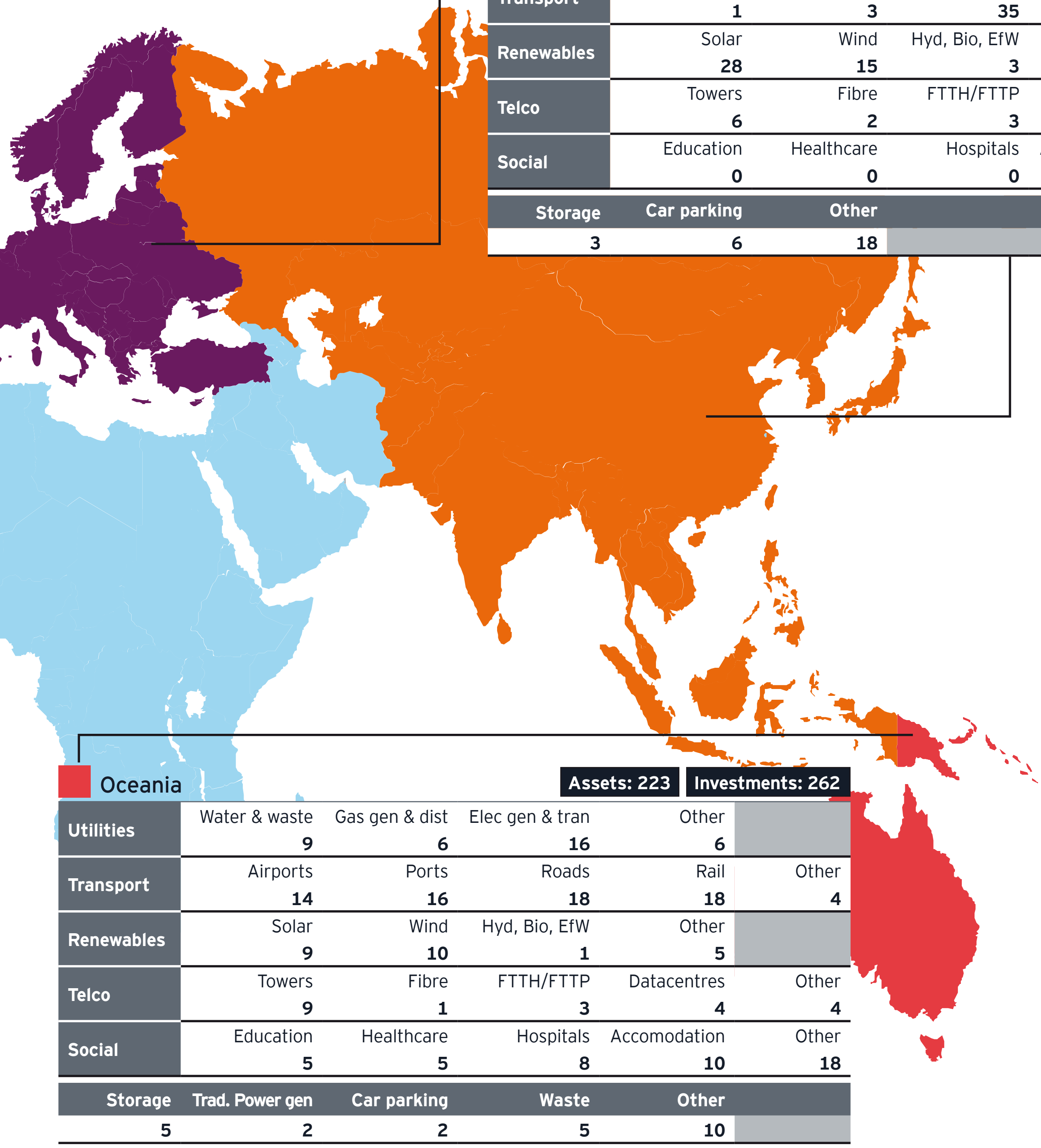
Assets: 731 | Investments: 805

Utilities	Water & waste 8	Gas gen & dist 28	Elec gen & tran 18	Other 13	
Transport	Airports 12	Ports 17	Roads 81	Rail 31	Other 36
Renewables	Solar 63	Wind 181	Hyd, Bio, EfW 26	Batt.Storage 2	Other 8
Telco	Towers 24	Fibre 16	FTTH/FTTP 33	Datacentres 8	Other 4
Social	Education 14	Healthcare 10	Hospitals 12	Accomodation 3	Other 25
Storage 13	**Sustainability** 10	**Car parking** 7	**Waste** 4	**Others** 24	

Asia

Assets: 180 | Investments: 189

Utilities	Water & waste 8	Gas gen & dist 9	Elec gen & tran 4	Other 2	
Transport	Airports 1	Ports 3	Roads 35	Rail 2	Other 14
Renewables	Solar 28	Wind 15	Hyd, Bio, EfW 3	Other 10	
Telco	Towers 6	Fibre 2	FTTH/FTTP 3	Datacentres 8	
Social	Education 0	Healthcare 0	Hospitals 0	Accomodation 0	
Storage 3	**Car parking** 6	**Other** 18			



Oceania

Assets: 223 | Investments: 262

Utilities	Water & waste 9	Gas gen & dist 6	Elec gen & tran 16	Other 6	
Transport	Airports 14	Ports 16	Roads 18	Rail 18	Other 4
Renewables	Solar 9	Wind 10	Hyd, Bio, EfW 1	Other 5	
Telco	Towers 9	Fibre 1	FTTH/FTTP 3	Datacentres 4	Other 4
Social	Education 5	Healthcare 5	Hospitals 8	Accomodation 10	Other 18
Storage 5	**Trad. Power gen** 2	**Car parking** 2	**Waste** 5	**Other** 10	

Growth of member assets by sector

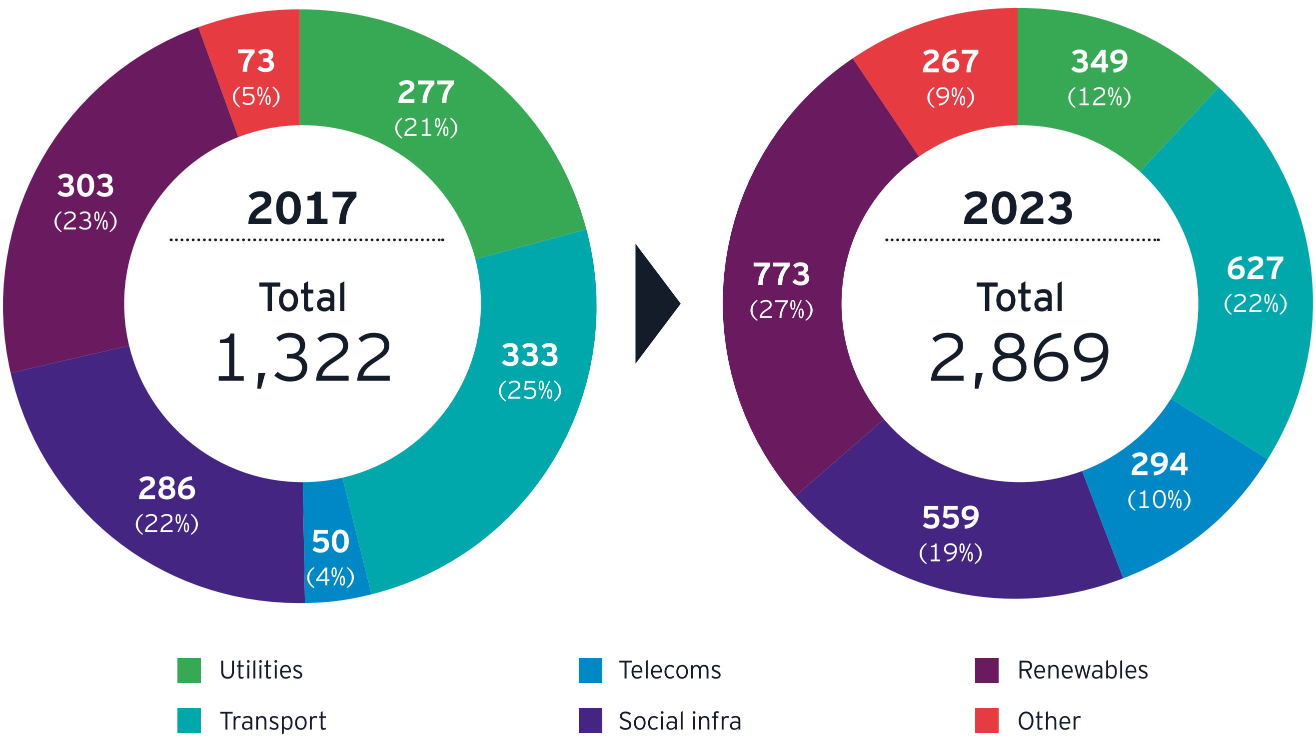
GIIA's increasing influence with governments and policy makers is underpinned by the growing numbers of members and assets that we represent.

The total assets of GIIA members has more than doubled since 2017, from around 1,300 to nearly 2,900 through a combination of gaining new investor members (up from 50 to 70) and increased investment in infrastructure.

The distribution of assets between sectors has remained broadly stable, with the largest proportions being renewables (increasing to 27%) and transport (easing to 22%).

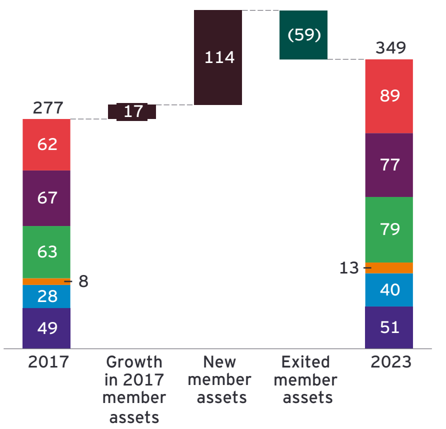
More notable is a decline in more traditionally 'core' areas such as utilities in favour of newer but still established technologies such as telecoms, and other 'core plus' assets that still demonstrate most of the typical infrastructure characteristics.

Overall, the mix of GIIA members' investments by geography has fallen marginally in Oceania and risen in the US, which is now the world's most attractive investment destination according to GIIA's six-monthly pulse surveys, thanks to an increasing openness to private investment in assets historically managed by the state or federal levels.

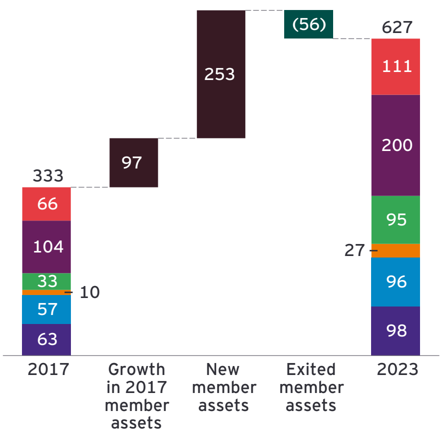


GIIA member assets growth by region

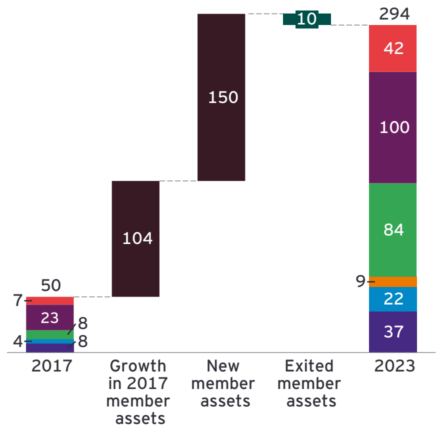
Utilities



Transport



Telecoms



Utilities principally reflect 'Core' infrastructure assets, typically in well established markets to support private infrastructure investment, with investment across the US, UK and Europe.

Members who have been part of GIIA's membership since 2017 have increased investments by 8% of the last seven years (c.1% CAGR).

The increase in GIIA member Utility assets, has come from the addition of new members, many of whom already held Utility stakes as well as some new entrants to the sector.

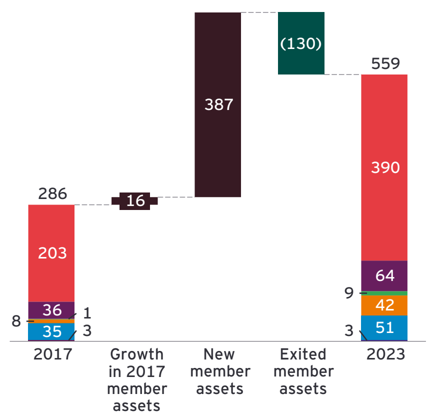
Transport assets held by GIIA's members have almost doubled since 2017, driven by new members who are more heavily involved in road and rail assets (including toll roads and metros) particularly in Europe and Oceania.

There has been significant investment by members who have been with GIIA since 2017. This is seen across a range of geographies with a focus on the US and Europe and, post-COVID, with less new investment in more passenger-sensitive subsectors like airports.

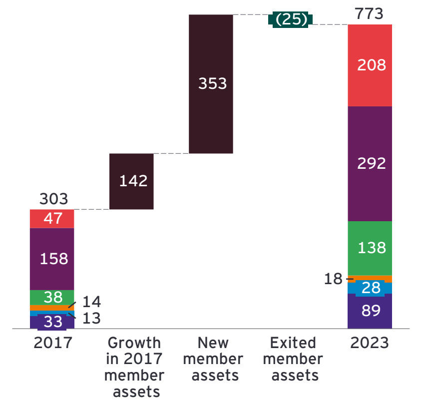
Telecoms investment has been the principal growth area for members, with significant increases in assets across all geographies, particularly among markets where private investment is most encouraged (US, UK and Europe).

Growth has been driven by newer but proven technologies such as the roll out of full fibre networks, new datacentres, and more towers and masts to support 4G and 5G coverage.

Social Infra



Renewables



- UK
- Europe
- US
- Canada
- Oceania
- Other

Investment in social infrastructure (such as hospital, schools, social housing projects, courts, prisons, etc) is largely centred on the UK.

Most of the rise in the number of GIIA members' assets since 2017 has been driven by membership growth, although most of these assets were acquired before 2017.

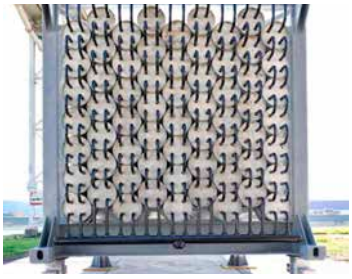
The number of renewables assets held by investors who have been GIIA members since 2017 has grown by nearly 50%, along with newer members contributing a further 350 new assets to the current total.

Investment has been centred around the key markets for private investment, with strong growth in the US, UK and western Europe. Renewables continue to be a mainstay of private infrastructure portfolios.

Case study: Advancing new battery solutions for net zero

EnergyNest: Avery Dennison Solar Project

Infracapital's Strategic Investment



In April 2021, Infracapital Greenfield Partners II acquired a majority stake in EnergyNest, a crucial investment to scale up the development of its ThermalBattery technology.

EnergyNest's ThermalBattery is a modular, scalable system that integrates with on-site applications, using thermal oil or steam to store and discharge green energy on demand.

The system works with temperatures up to 400°C and can handle energy storage from 5 to 1000 MWh with varying charge/discharge durations.

EnergyNest, uses this technology to recover electricity and heat from industrial processes, enhancing energy efficiency and reducing waste. Infracapital's investment has been instrumental in making the Avery Dennison project a reality, enabling the deployment and scaling of thermal batteries to meet industrial energy needs.

Avery Dennison Solar Project

Avery Dennison in Belgium is transitioning from natural gas to Concentrated Solar Thermal (CST) energy, using parabolic mirrors to heat thermal oil up to 400°C. This CST installation, the largest of its kind in Europe, will power drying ovens for adhesive products in various industries.

Benefits of the system

The introduction of thermal batteries into industrial processes brings substantial benefits to society and contributes significantly to decarbonisation efforts. By storing surplus energy from renewable sources like solar and wind, thermal batteries facilitate the continuous, 24/7 utilization of these energy forms, reducing dependence on fossil fuels. This leads to a considerable decrease in CO_2 emissions; for instance, the use of thermal batteries in industrial settings has been shown to reduce CO_2 emissions by up to 30% annually.

This reduction not only mitigates environmental impact but also supports global climate goals by promoting cleaner energy practices. The increased energy efficiency and reliability provided by thermal batteries not only lower greenhouse gas emissions but also reduce energy costs for industries, potentially leading to lower consumer prices and a more sustainable economy. Additionally, the implementation of thermal batteries supports local economies by fostering green job creation in manufacturing, installation, and maintenance sectors.

Benefit to Infracapital

EnergyNest's commitment to R&D aims to enhance energy efficiency by optimising production processes and improving the performance of materials used in their thermal batteries. This includes increasing local production and reducing international transportation, which further minimises the carbon footprint. Infracapital stands to benefit significantly from EnergyNest's advancements and substantial ESG outcomes.

The inclusion of thermal battery solutions in Infracapital's portfolio enhances their ESG credentials by promoting the use of renewable energy and contributing to the circular economy. The ability to store and reuse waste heat not only improves the sustainability of carbon-intensive industrial practices but also aligns with global decarbonisation targets. As a result, Infracapital can offer more sustainable and resilient investments, appealing to environmentally conscious investors and enhancing the long-term value and impact of their portfolio.

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GIIA is the membership body for the world's leading investors in infrastructure, and advisors to the sector, who collectively represent USD 2 trillion of infrastructure assets under management across 70 countries. Our members are investing today to provide the smart, sustainable and innovative infrastructure needed for our communities and economies to thrive. GIIA was established in 2016 to improve engagement between members, politicians, policymakers and regulators with the aim of increasing much needed investment in infrastructure. Learn more at giia.net