



# Private Infrastructure: The Energy Transition Opportunity

**The evolution of how we consume and generate energy is underway and in the coming decades will touch every sector and impact our way of life. This energy transition will cost trillions of dollars and will require the expansion of our infrastructure to support our global needs.**

While government policy on climate change is capturing headlines, we believe this trend goes beyond government intervention. Technology advances, as well as business and consumer preferences, have been equally powerful forces to drive change over the past decade and will accelerate change in the coming decades.

The energy transition is expected to represent the single largest opportunity in the private infrastructure market. After a period of significant central bank intervention, capital is abundant and driving returns down across all asset classes. Infrastructure assets continue to provide some of the most attractive spreads above fixed income and offer inflation protection through growing, contracted cash flow. However, the vast amount of capital being allocated to private infrastructure will mean that investors will have to be selective to continue to outperform. We believe access to the growth driven by the energy transition will represent the best opportunity to continue to outperform the broader private infrastructure market.

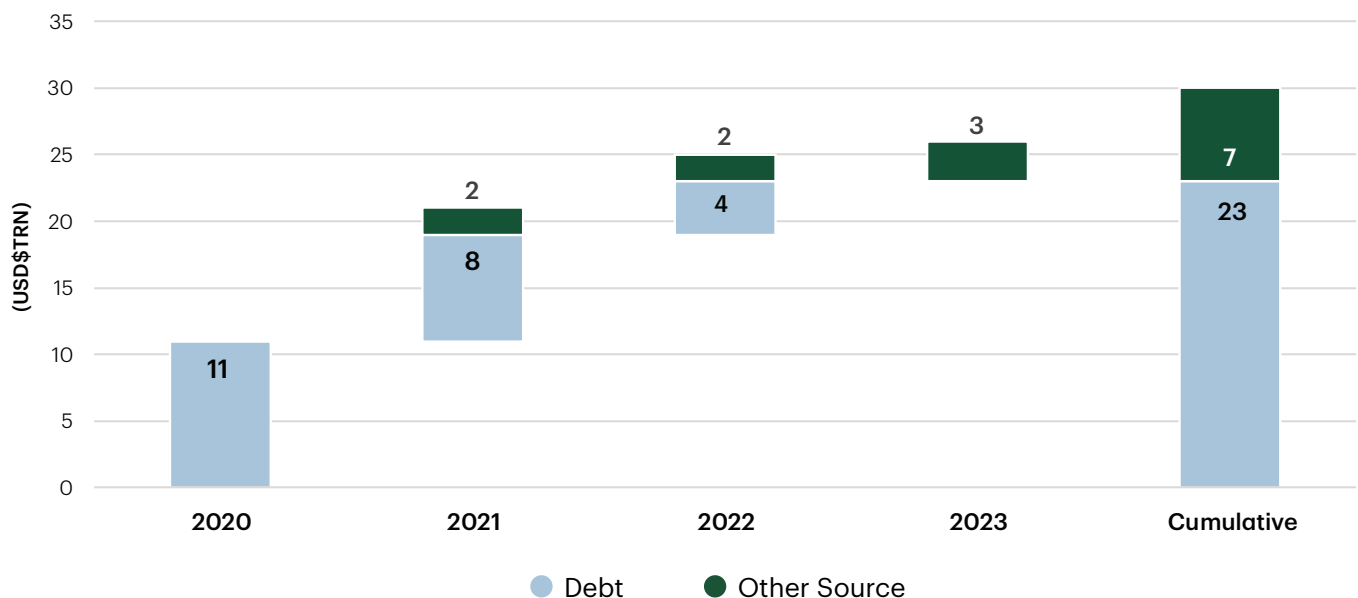
## Government Policy Driving Change

While not the only factor, government policy around the world is accelerating not only the energy transition but infrastructure investment needs broadly.

The G20 initiative, Global Infrastructure Hub, estimates that approximately \$80 trillion in infrastructure funding will be required over the next 20 years, and current spending is expected to cover only \$65 trillion with \$15 trillion representing a spending gap that will need to be filled. In addition, governments are now looking to infrastructure investment and existing assets to accelerate economies and balance budgets. Sovereign debt is expected to increase by \$30 trillion from 2020 to

2023 and selling government owned assets will be a key source of liquidity. McKinsey estimates that of the \$30 trillion of deficits in the next three years, approximately \$7 trillion will come from sources other than new sovereign debt, such as infrastructure sales and new taxes. One example of this would be Canadian International Airports, as these assets have been under pressure due to depressed passenger traffic and the government has considered their sale in the past. As the Canadian government looks to manage a \$400 billion deficit from 2020, private investment is likely to play a key part in the growth of these assets or even through an outright sale.

**Figure 1: Estimated Government Deficit Funding Sources**



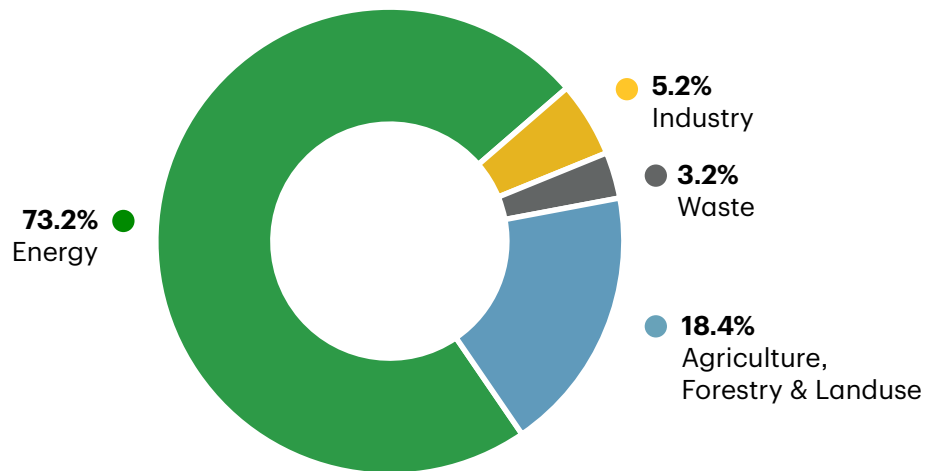
Source: McKinsey & Company: Closing the \$30 trillion gap: Acting now to manage fiscal deficits during and beyond the COVID-19 crisis. As at July 2020.

# Funding

Decarbonizing our economies has become a key policy initiative for governments around the world. In 2015, the Paris Agreement was signed by 196 countries (almost every country on Earth) with a commitment to reach net zero carbon emissions and keep global warming below 2.0°C by 2050. Recently, governments have renewed their commitment to the Paris Agreement, and we believe this landmark agreement is already impacting policy. It is estimated by the International Energy Agency (“IEA”) that approximately \$140 trillion will be required by 2050 to meet the Paris Agreement commitments.

Policies such as carbon taxes and limiting fossil fuels in transportation will drive investment opportunity in renewable energy and power infrastructure. Driving this investment further is the fact that **73% of Green House Gas emissions are produced by energy consumption**, much of which is expected to decarbonize through the use of renewable energy, energy efficiency technologies, carbon capture technologies, and transitioning away from fossil fuels.

**Figure 2: Global Greenhouse Gas Emissions by Source**



Source: Hannah Ritchie and Max Roser (2020) - “CO<sub>2</sub> and Greenhouse Gas Emissions”. Published online at OurWorldInData.org. Retrieved from: ‘<https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>’. As at 2020.

After a period of significant central bank intervention, capital is abundant and driving returns down across asset classes broadly. Real assets continue to provide some of the most attractive spreads above fixed income, and offer inflation protection through growing, contracted income. Investors with access to these markets may not only see enhanced risk-adjusted returns from the asset class but

also likely a portfolio benefit from potential returns that are uncorrelated with fixed income and equities. These attributes, combined with the expected global growth, will continue to make real assets such as global real estate and infrastructure an essential and growing component of institutional investment portfolios.

# Emissions

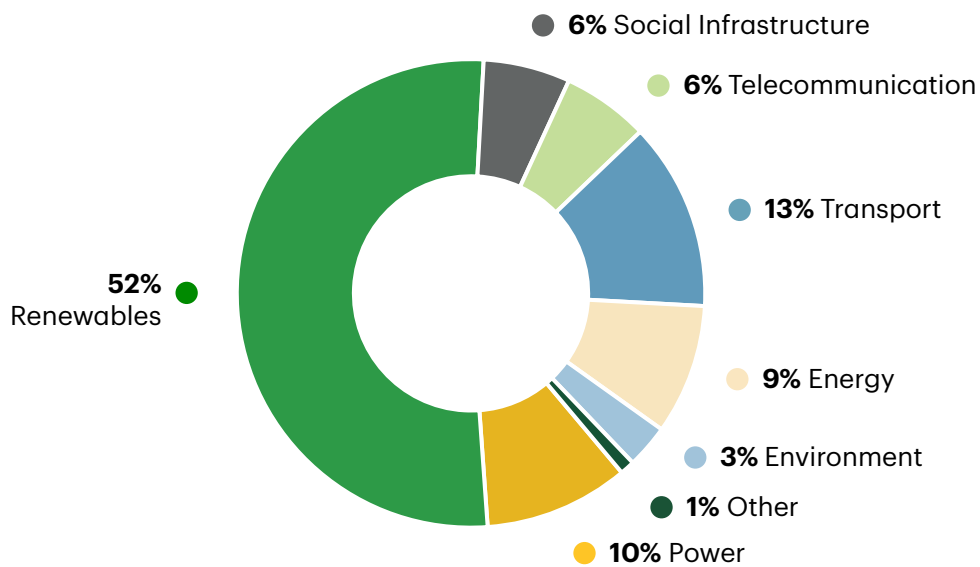
## Change is Already Well Underway

While climate change is currently dominating headlines, the technology advances over the past decade have driven a tipping point in the cost of renewable energy, driving significant investment in the space. Support for renewable energy and investment spans the political spectrum, regardless of views on climate change. The opportunity to drive investment in an economy, create jobs and lower the cost of power has reached a tipping point.

In the decade from 2010-19 renewable capacity expanded 400% from 414 Gigawatt (“GW”) to 1,650 GW, driving renewable energy to represent 12.9% of global electricity according to the UN Environment Program. This has driven annual investment in new renewable energy capacity to over \$250 billion per year.<sup>1</sup>

This growth has played out in the infrastructure market, where renewable energy and power infrastructure has represented 62% of the transactions completed over the past five years.

**Figure 3: Infrastructure Transactions 2015-2020**



Source: Inframation News. As at March 2021.

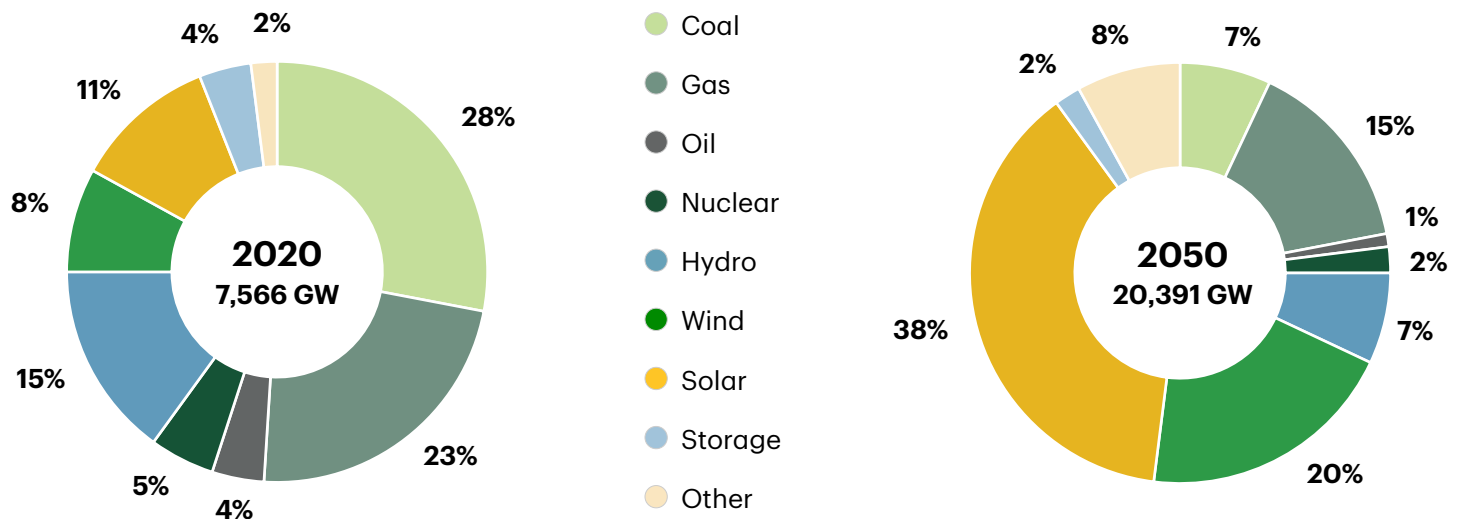
<sup>1</sup><https://www.unep.org/news-and-stories/press-release/decade-renewable-energy-investment-led-solar-tops-usd-25-trillion>



The scale of this change can be seen in the expected growth of our global generation capacity. Today, taking all power plants globally, there is 7,566 GW of capacity. Over the next three decades, we expect to nearly triple that number, bringing global capacity to 20,391 GW by 2050. To put that into context, a GW is 1 thousand Megawatts, and each Megawatt of installed capacity

costs approximately \$500,000 to \$1 million. This increase will require \$6.4 trillion to \$12.8 trillion of new investment, and wind and solar generation alone will account for 81% of this investment. This investment in generation doesn't account for further upgrades of supporting infrastructure such as transmission and distribution and other end-uses for renewable energy.

**Figure 4: Global Capacity 2020 vs. 2050**



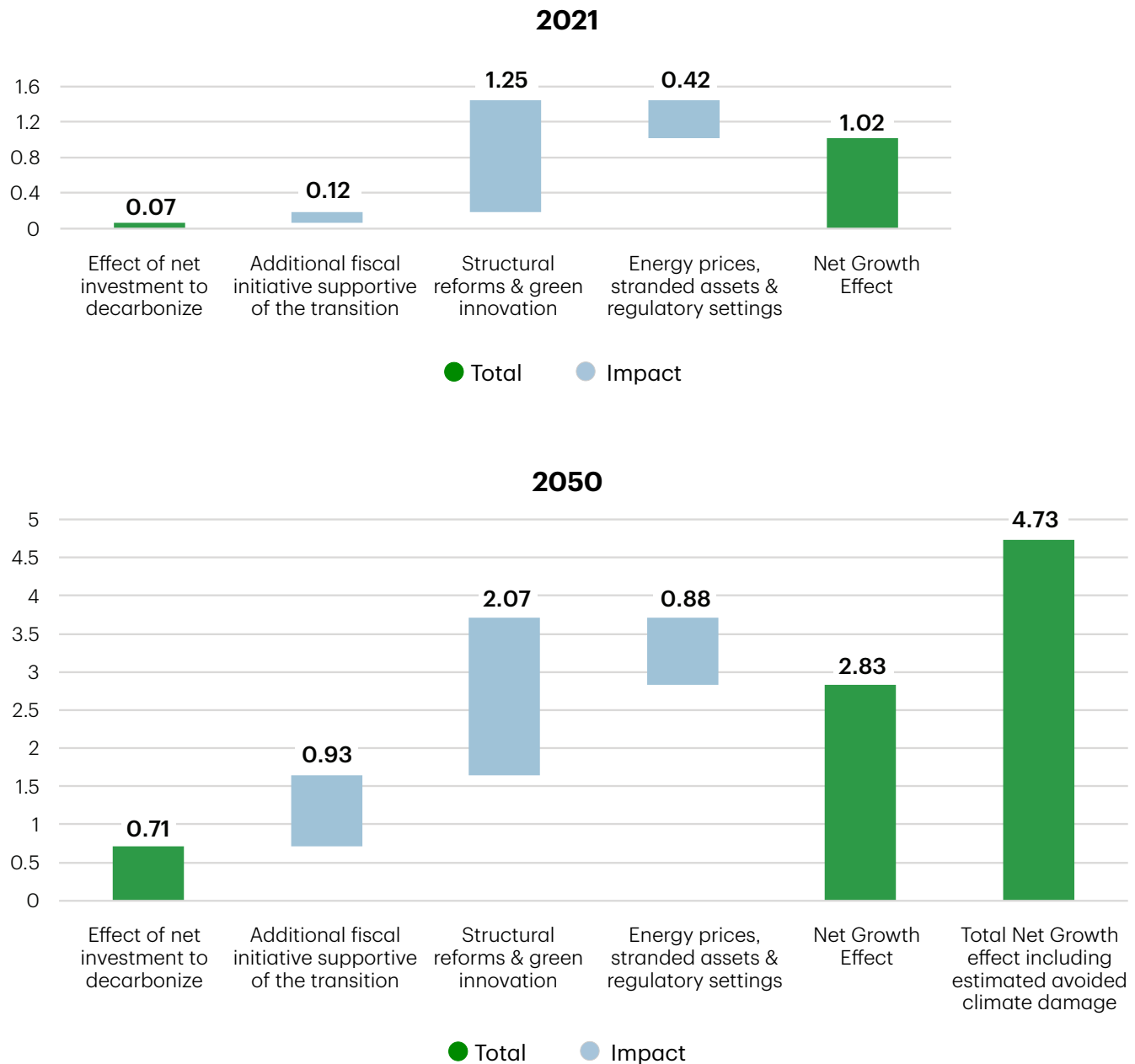
Source: Bloomberg New Energy Finance. As at October 2020.



However, the transition to renewable energy is only part of the story. Significant investment opportunities are expected to keep emerging thanks to trends such as electrical grids continuing to evolve, transportation moving away from combustion engines, agriculture seeking low-carbon alternatives, and building materials

advancing. The Organisation for Economic Co-operation and Development (“OECD”) estimates that these investments will drive growth and add 2.83% to annual GDP growth by 2050, and 4.73% when considering avoided climate damage.

**Figure 5: Positive Effects for Growth in the G20 2021 vs. 2050**



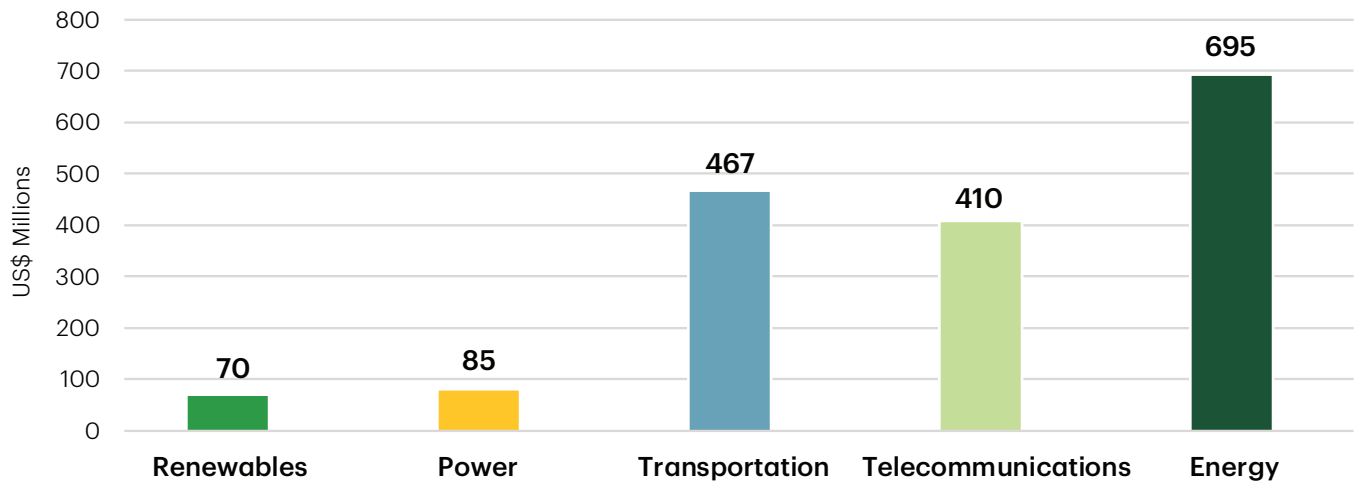
Source: OECD. “Investing in Climate, Investing in Growth A SYNTHESIS.” As at May 2017.

# The Mismatch in Private Infrastructure and the Energy Transition

Renewable energy and power infrastructure investments skew less than the average investment in the infrastructure market, and so there is currently a mismatch between the largest global investors that are aggregating capital and the investment needs.

Renewables and power also dominate smaller mid-market transactions. Over the last five years, average transaction sizes for renewables and power were \$70 million and \$85 million respectively, while average transaction sizes for transportation, telecommunications and energy were \$467 million, \$410 million and \$695 million, respectively.

**Figure 6: Average Transaction Size of Infrastructure Transactions by Sector 2016-2020**



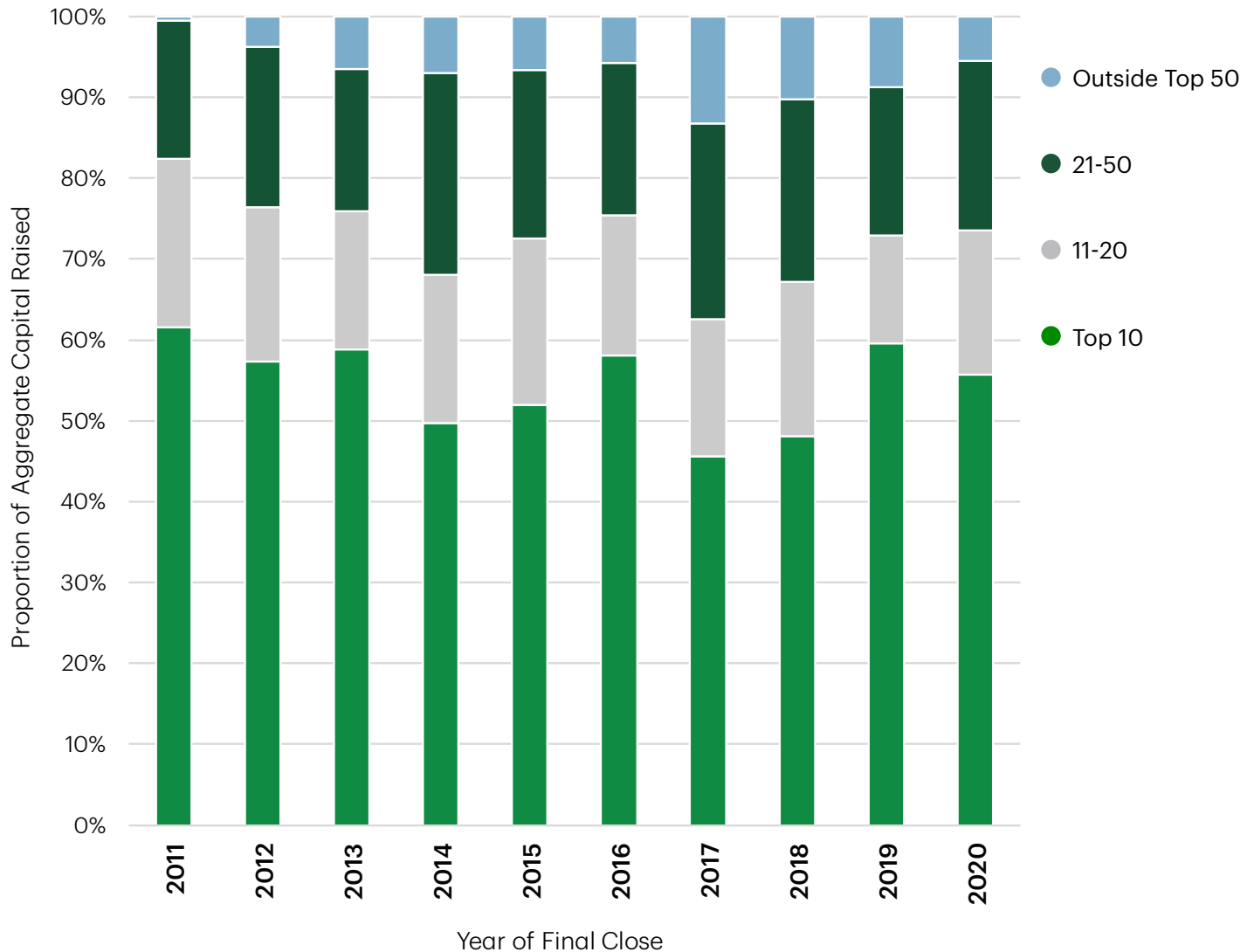
Source: Inframation News. As at March 2021.



This mismatch is highlighted when looking at how infrastructure funds have been raised over the past decade. There is currently a trend towards mega managers in infrastructure. According to Preqin, the four largest funds currently in the market are \$10 billion or above. This is a figure only achieved by five other funds

in the past and would represent 40% of the typical ~\$100 billion raised each year, creating further competition at the largest end of the infrastructure market. The chart below shows how capital has aggregated to the largest managers, with the top ten managers raising 50-60% of all capital over the last ten years.

**Figure 7: Capital Raised by the Largest Infrastructure Funds Closed, 2011 - 2020**



Source: Preqin. As at March 2021.

# Capital



Overall, we see the energy transition as the most important macro-economic trend for infrastructure in the coming years. However, as investment opportunities continue to increase, investors should consider how an

investment is best positioned. A manager with a proven track-record and a portfolio that can continue to drive growth in the mid-market will be well positioned to participate in this growth. ■

# Energy

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