



January 2021 / Research Report

INFRASTRUCTURE STRATEGIC OUTLOOK 2021

The brand DWS represents DWS Group GmbH & Co. KGaA and any of its subsidiaries, such as DWS Distributors, Inc., which offers investment products, or DWS Investment Management Americas, Inc. and RREEF America L.L.C., which offer advisory services. There may be references in this document which do not yet reflect the DWS Brand.

Please note certain information in this presentation constitutes forward-looking statements. Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered by this presentation report may differ materially from those described. The information herein reflects our current views only, is subject to change, and is not intended to be promissory or relied upon by the reader. There can be no certainty that events will turn out as we have opined herein.

For Professional Clients (MiFID Directive 2014/65/EU Annex II) only. For Qualified Investors (Art. 10 Para. 3 of the Swiss Federal Collective Investment Schemes Act (CISA)). For Qualified Clients (Israeli Regulation of Investment Advice, Investment Marketing and Portfolio Management Law 5755-1995). Outside the U.S. for Institutional investors only. In the United States and Canada, for institutional client and registered representative use only. Not for retail distribution. Further distribution of this material is strictly prohibited. In APAC for institutional investors only. Australia and New Zealand: For Wholesale Investors only. *For investors in Bermuda: This is not an offering of securities or interests in any product. Such securities may be offered or sold in Bermuda only in compliance with the provisions of the Investment Business Act of 2003 of Bermuda which regulates the sale of securities in Bermuda.

Table of Contents

1 / Executive Summary	3
2 / Strategic Themes.....	4
3 / Macroeconomic Outlook	5
4 / Infrastructure Market Outlook.....	7
4.1 Fundraising Update.....	7
4.2 Historical Transactions Overview	8
4.3 Valuation Trends	9
4.4 Historical Performance Overview	10
4.5 Performance Outlook.....	11
5 / European Infrastructure Market Outlook.....	13
5.1 Transportation	13
5.2 Energy Transition, Utilities and Circular Economy.....	20
5.3 Digital Infrastructure	28
5.4 Social Infrastructure.....	31
6 / North American Infrastructure Market	32
7 / APAC Infrastructure Market	34
8 / Appendix.....	36
Research & Strategy— Alternatives.....	37
Important Information.....	38

The opinions and forecasts expressed are those of Infrastructure Strategic Outlook and not necessarily those of DWS. All opinions and claims are based upon data at the time of publication of this article (January 2021) and may not come to pass. This information is subject to change at any time, based upon economic, market and other conditions and should not be construed as a recommendation.

1 / Executive Summary¹

- In 2020, Covid-19 pushed the global economy into a deep recession. With the recent vaccine announcement, we expect a progressive recovery in 2021, but risks are skewed to the downside. The global economy today appears in a more precarious position than it was twelve months ago and the economic effects of Covid-19 may take time to fully emerge. We saw an unprecedented fiscal and monetary stimulus in support of the economy during the pandemic. Higher leverage and near-zero interest rates are likely to shape the long-term investment environment well beyond 2021 and probably point to a sluggish growth environment ahead of us.
- Despite the negative economic impact of Covid-19, in 2020, infrastructure has proven comparatively resilient. Power demand and prices have largely recovered following the initial downturn, with energy networks and utilities supported by the regulated or contracted nature of their cash flows. Digital infrastructure has demonstrated its essential nature, supported by rising data traffic. Trade has continued to support ports and rail freight operations, with global supply chains and industry operating through the pandemic, albeit at lower capacity. Nevertheless, the weaker economic environment should still weigh on global trade volumes, with an expected contraction of 20% in 2020.
- Private vehicle mobility has largely resumed, but we expect a full recovery to extend into the medium term alongside the gradual economic recovery. Passenger transportation – including airports and public transport – have experienced unprecedented demand contractions in excess of 50%, with a recovery expected only in the medium term and dividend payments and asset valuations materially affected. We continue to see supportive liquidity and financing conditions for high quality infrastructure assets impacted by the pandemic, as lenders assume a gradual convergence of earnings to original business plans over the medium term.²
- Despite Covid-19, 2020 is expected to be a record year for private infrastructure fundraising with over USD 100 billion capital expected to be raised. Fundraising was supported by the increased interest of investors in the 2020/2021 fund vintage, based on expectations for better entry prices and higher potential for long-term returns. European and North American strategies continue to lead fundraising, but APAC is slowly accelerating. In 2020, we observed a partial shift in allocations from value added to core³ and core plus⁴ strategies⁵, with investors seeking dividend yields typical of core and core plus strategies. However, in the current macroeconomic environment, they appear cautious on the likelihood of capital appreciation typically associated with value added strategies.
- After a slowdown in the first half of 2020, infrastructure transaction activity has resumed, but we expect 2020 to see a lower volume of activity compared with 2019. In fact, despite the strong underlying pipeline of investment opportunities, we anticipate that pre-Covid-19 volumes may not be reached in 2021.⁶ We believe that private infrastructure is proving comparatively resilient, but witness an adjustment in average entry valuations compared with 2019, particularly in the core plus market segment; however, prices in the core segment seem to have already exceeded 2019 levels on the back of lower government bond yields.⁷ We anticipate that, as clearer prospects for economic recovery emerge, valuations may gradually rebound also in the core plus segment. For 2021, we forecast levered entry returns for core assets in mature European markets to be in the range of 7% to 9% (IRR⁸). While entry return assumptions for core infrastructure appear to have compressed compared with last year, our 2021 return forecast for core plus strategies indicates an average increase of about 50 basis points compared with 2020, with levered entry IRR assumptions expected to be in the range of 10.5% to 13%.⁹
- The pandemic is acting as a catalyst for some megatrends, particularly digitalisation and energy transition, but also across renewables, energy efficiency and transport decarbonisation. These trends may offer fertile ground for infrastructure platform strategies, particularly if supported by regulation such as the European push for energy transition. Following the expected change in administration, energy transition may also emerge as an investment topic in the United States, in the context of the expected renewed focus on climate change.

¹ Any forecasts provided herein are based on DWS's opinion at time of publication and are subject to change.

² Based on a number of sources, including Bloomberg, InfraNews, Moody's Investor Service, as at November 2020.

³ Core Infrastructure includes brownfield assets in geographically mature markets, with a significant component of income yield, predictable and regulated revenues, a long-term investment horizon, and an investment grade rating profile.

⁴ Core plus infrastructure includes brownfield assets in mature markets with some development risk, a long-term investment horizon, relatively predictable revenues supporting income return and potential for capital appreciation.

⁵ Based on Preqin database, as at October 2020.

⁶ Based on InfraNews database, as at November 2020.

⁷ DWS proprietary database of European private infrastructure deals, based on publicly available information from InfraJournal, InfraNews, as at November 2020.

⁸ IRR=Internal Rate of Return.

⁹ Based on DWS proprietary methodology, as at November 2020. There is no guarantee the forecast shown will materialise.

2 / Strategic Themes

Strategic Themes for Unlisted Infrastructure Investment and Portfolio Management

Strategic Themes ¹⁰	1	Megatrends: Target sectors that are favourably positioned to capitalise on long-term industry trends, including digitalisation, energy transition and transport decarbonisation. With an uncertain macroeconomic outlook ahead of us, these trends may provide a source for alpha and long-term growth. Some trends, including the expansion of global aviation, may be impacted by Covid-19 but may still remain viable long-term investment assumptions.
	2	Yield and Mid-Cap Platforms: Target brownfield assets offering a platform for growth. Operational assets with solid infrastructure characteristics may support yield through regulated or contracted profiles. Platform strategies, reinforced by resilient underlying industry trends, may offer potential for growth and capital appreciation, supporting alpha generation and returns. Mid-cap and small-cap assets may outperform large-cap assets in a low growth, low interest rate long-term economic environment.
	3	Sustainability: Sustainability is increasingly at the centre of the investment agenda, and Covid-19 is accelerating policymakers' sustainable infrastructure targets, to support decarbonisation and economic recovery. Acquiring and managing assets that comply with rigorous ESG ¹¹ criteria and responsible investment guidelines may provide a source of long-term value creation, risk mitigation, and offer a wider pipeline of investment opportunities.
Risk Awareness	1	Covid-19: Assess and sensitise the impact of the pandemic on business plans and return expectations. The direct impact of Covid-19 may be fading in 2021, but the economic impact may only fully emerge over time. In an uncertain economic environment, medium-term business plan assumptions may not materialise as quickly as expected and a prudent approach may support a more through-the-cycle view on valuations.
	2	Mature Markets: An uncertain macroeconomic environment may be a source of policy divergence, rising country risk and volatile exchange rates, particularly across emerging markets. Focus on OECD markets with a comparatively predictable institutional framework, stable regulation and a transparent investment environment, such as the Eurozone, the United Kingdom, the Nordics, the United States, and Canada. ¹²
	3	Interest Rates: Assess the impact of potential interest rate movements on asset valuations and cost of debt. Central banks have reacted to Covid-19 with unprecedented monetary stimulus. Interest rates have reduced further and are expected to remain lower for longer. ¹³ Nevertheless, in case of a faster than expected economic recovery, inflation may surprise policymakers on the upside and trigger interest rate increases sooner than currently anticipated.
Portfolio Optimisation ¹⁴	1	Diversification: Aim for portfolio diversification across OECD markets, sectors, and contract structures. An adequate exposure to regulated infrastructure may be key to balance systemic risk in a portfolio. Exposure to contracted assets may provide additional flexibility to adjust cash flows in a changing economic environment, and support business growth when a more favourable economic environment materialises. ¹⁵
	2	Greenfield: Selective greenfield opportunities may represent a valuable strategy in mature markets. Such opportunities may offer potential to generate alpha and complement a portfolio with higher returns, while incremental risks may be largely mitigated, particularly across assets with relatively standardised technologies, such as renewables, including PV and onshore wind.
	3	Middle Market: The middle market may offer opportunities to acquire assets in a less competitive space than the large-cap market, where dry powder remains high. ¹⁶ Middle-market assets supporting platform strategies driving long-term growth, and opportunities requiring structuring, may enable value creation through operational, strategic and financial expertise and support valuations at exit.

¹⁰ No assurance can be given that investment objectives will be achieved.

¹¹ ESG = Environmental, Social, and Governance (ESG) refers to the three key factors in measuring the sustainability and societal impact of an investment.

¹² DWS proprietary methodology for ranking unlisted infrastructure markets, as at November 2020.

¹³ Based on Oxford Economics database, as at November 2020. There is no guarantee the forecast shown will materialise.

¹⁴ No assurance can be given that investment objectives will be achieved.

¹⁵ Based on DWS, "Private Infrastructure and the Macro Environment", as at September 2019.

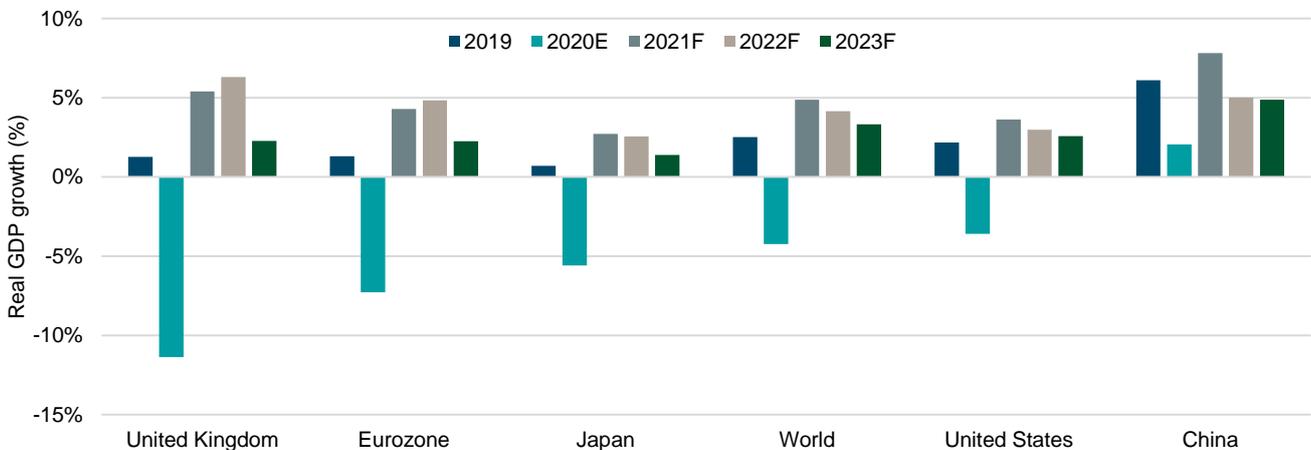
¹⁶ Based on InfraNews database transactions, as at June 2019.

3 / Macroeconomic Outlook

Global Economy: In 2020, Covid-19 pushed the global economy into a deep recession: we now expect a 4.2% contraction in global GDP for 2020.¹⁷ In the first half of the year, mobility and energy demand dropped to unprecedented lows due to the sudden cessation of economic activity. We observed a recovery in the third quarter of the year with global trade continuing to prove resilient also in the fourth quarter of the year. In 2021, two developments are likely to shape the growth outlook for the year. Firstly, a second pandemic wave is leading to new lockdowns across several countries, and this may prompt a reduction in growth in the first quarter of 2021. Secondly, news of a number of effective vaccines coming to the market may represent a significant boost to the outlook for the second half of 2021, mitigating the risk of renewed, extreme downside risks.

For 2021, we now expect global GDP to grow by 5%. Nevertheless, downside risks to the short-term outlook remain, as the global economy today appears in a significantly more precarious position compared to only twelve months ago and the recovery may require sustained policy support to strengthen in the medium term.¹⁸ We saw an unprecedented fiscal and monetary stimulus in support of the economy during the pandemic. Higher leverage and lower interest rates for longer are likely to shape the long-term economic environment well beyond 2021, and increasingly indicate that a more uncertain growth environment may be ahead of us.

REAL GDP GROWTH (%, 2019 – 2023F)



Source: Oxford Economics, as at 10 November 2020. Notes: F = forecast, E = expected. Past performance is not a guide for future results. There is no guarantee the forecast shown will materialise. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Europe: We expect GDP to fall by 7.3% in 2020, and then to pick-up by 4.3% in 2021. We anticipate that the outlook may continue to be dominated by the evolution of the pandemic and the policy responses to contain it, at least for the first half of 2021. Therefore, we expect economic output to recover only in the medium term, with the hardest hit countries seeing slower recoveries. The U.K. economy is expected to shrink by 10.3% in 2020, more than the Eurozone average, but growth should resume with a 6.7% rebound in 2021. Uncertainty on the new trade relationship with the E.U., expected to become operational from January 2021, poses some downside risks to the forecast.¹⁹

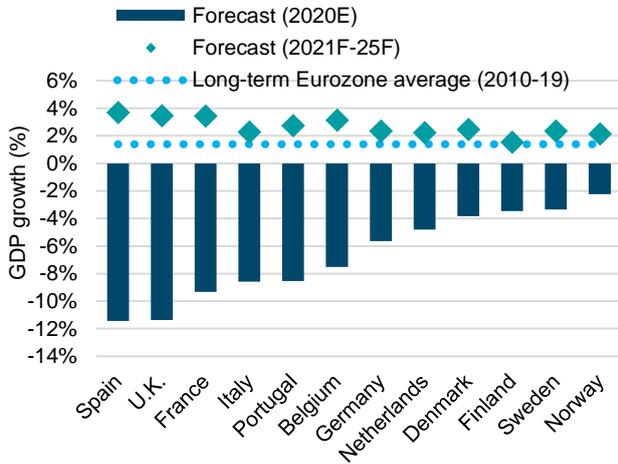
¹⁷ Based on Oxford Economics, as at November 2020. There is no guarantee the forecast shown will materialise.

¹⁸ Based on Oxford Economics, as at November 2020. There is no guarantee the forecast shown will materialise.

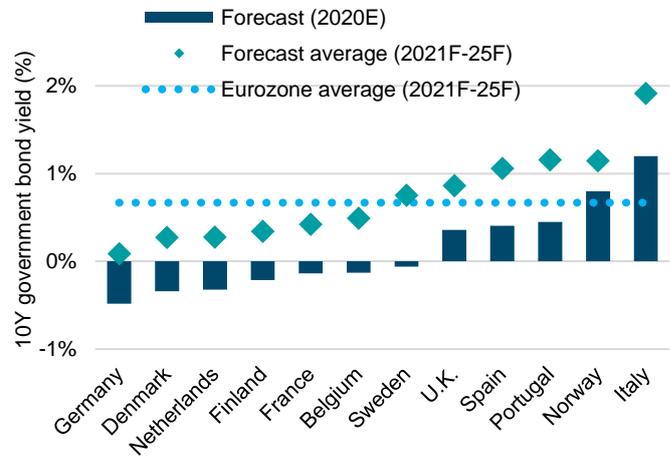
¹⁹ Based on Oxford Economics, as at November 2020. There is no guarantee the forecast shown will materialise.

The European Union agreed to a EUR 1.8 trillion package to support the post Covid-19 recovery, in a coordinated policy response, with the EUR 750 billion recovery fund expected to provide access to capital to Eurozone members, in addition to the European Stability Mechanism (ESM).²⁰ The policy measures are also expected to strengthen the existing E.U. policy framework for decarbonisation, with the E.U. Green Deal representing a roadmap for infrastructure investment in a resilient, carbon-neutral E.U. by 2050 to support economic growth. The ECB's pandemic asset purchase programme (PEPP) and the targeted longer-term refinancing operations (TLTRO) programme should support liquidity conditions until at least June 2021²¹ and should allow governments to have increased debt capacity, mitigating credit spreads in peripheral Eurozone countries.

EUROPEAN REAL GDP GROWTH (% , 2010-2025F)



EUROPEAN SOVEREIGN BOND YIELDS (10Y, %, 2021F-2025F)



Source: Oxford Economics, as at 9 November 2020. Notes: F = forecast, E = expected. Past performance is not a guide for future results. There is no guarantee the forecast shown will materialise. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

North America: In the United States, we expect GDP to contract by 3.6% in 2020, as the health situation and the economy appear to be deteriorating in the fourth quarter of 2020. Support from the Fed may continue well into 2021, alongside additional fiscal relief measures, and we expect GDP growth to be at 3.6% in 2021.²²

Biden appears now to be the next U.S. president, and re-joining the Paris Agreement's goal of limiting global warming to 1.5°C may represent one of the key policy agenda items in 2021. Climate may increasingly be at the centre of the U.S. economic policy, with the President-elect supporting a USD 1.7 trillion investment in clean energy and green jobs, and a progressive transition from fossil energy, such as with potential bans on new oil and gas permits on public lands, to reach net-zero greenhouse gas emissions by 2050.

APAC: With the pandemic appearing now largely under control, China's GDP growth is forecast at 2% for 2020, while we expect growth to reach 7.6% in 2021. Australian GDP is expected to contract by 3.4% in 2020 followed by a modest increase in 2021, at 2.4%, while Japan should experience a stronger contraction in 2020, with GDP falling by 5.6%, and a rebound at 2.7% in 2021.²³ Across Asian emerging markets, the fiscal policy response to the pandemic has been generally timid given relatively bigger output declines, and this may entrench a path of weak demand and low inflation, keeping bond yields lower and easing funding conditions, something that may weigh on medium-term growth given emerging markets' considerable funding needs, particularly for infrastructure.

Risks: The economic effects of Covid-19 may take some time to fully emerge, weighing on the economy beyond what is currently expected. In a world of near-zero interest rates, lower growth and higher unemployment, there may be an increased likelihood of geopolitical uncertainty, diverging policy and more volatile exchange rates. Although unlikely in the short term, inflation may surprise on the upside, particularly in the medium term.

²⁰ European Commission, as at November 2020. There is no guarantee the forecast shown will materialise.

²¹ ECB, Monetary policy decisions, as at October 2020. There is no guarantee the forecast shown will materialise.

²² Based on Oxford Economics, as at November 2020. There is no guarantee the forecast shown will materialise.

²³ Based on Oxford Economics, as at November 2020. There is no guarantee the forecast shown will materialise.

4 / Infrastructure Market Outlook²⁴

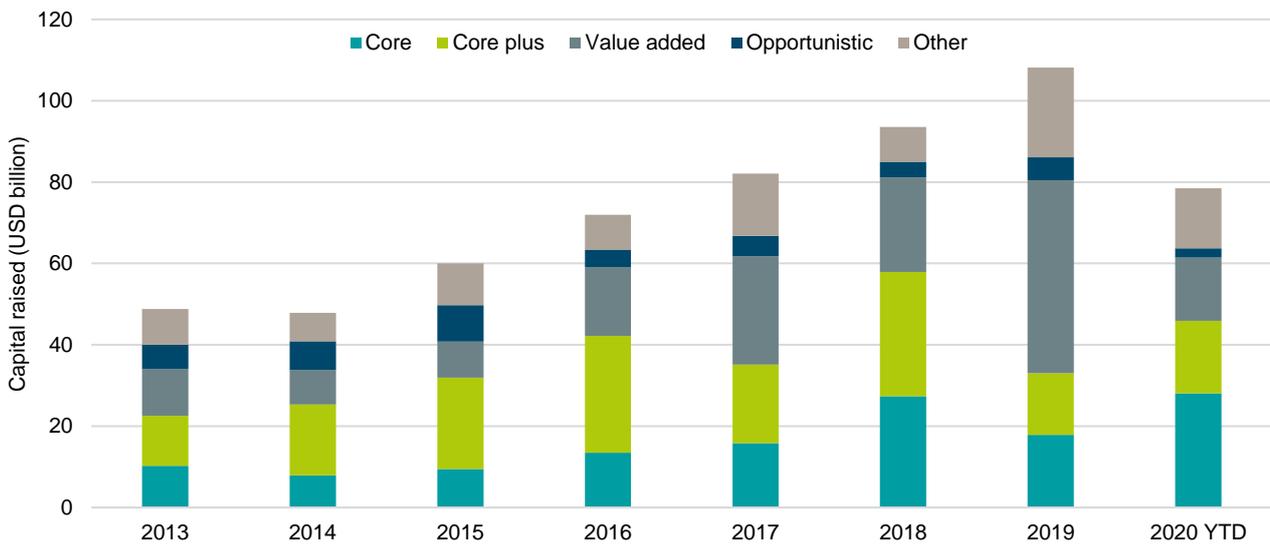
4.1 Fundraising Update²⁵

In 2020, infrastructure fundraising remained strong despite Covid-19. As at October 2020, the infrastructure market raised over USD 77 billion since the beginning of the year, collectively secured by seventy funds globally.²⁶ 2020 may be a record year for the asset class, with capital raised potentially exceeding USD 100 billion. Established fund managers attracted a considerable proportion of investor commitments.²⁷

So far, in 2020, twenty-three North America focused funds secured USD 44.7 billion, thirty Europe focused funds secured USD 24 billion and seventeen funds focusing on the rest of the world secured USD 8.6 billion. Europe focused funds led the market in the second half of 2020, as investors increasingly focused on the region to access strategies supported by diversification and long-term cash flow visibility.²⁸

This year we witnessed a shift from value added infrastructure, a market segment that had accelerated over the previous year, back to core/core plus strategies supported by a considerable dividend yield component, which are perceived as more defensive in an uncertain economic environment. From the beginning of 2020, funds focusing on core and core plus strategies secured over USD 45 billion of capital, corresponding to around 59% of total capital raised in 2020 to date, up from 31% in 2019.²⁹

UNLISTED INFRASTRUCTURE FUNDRAISING (Global, USD Billion, 2013 - 2020 YTD)



Source: DWS, Preqin database, as at 23 October 2020. For illustrative purpose only. Past performance is not a guide for future results.

²⁴ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

²⁵ No assurance can be given that investment objectives will be achieved.

²⁶ Based on Preqin database, as at October 2020. There is no guarantee the forecast shown will materialise.

²⁷ Preqin, "Preqin Quarterly Update: Infrastructure, Q3 2020", as at October 2020.

²⁸ Based on Preqin database, as at October 2020.

²⁹ Based on Preqin database, as at October 2020.

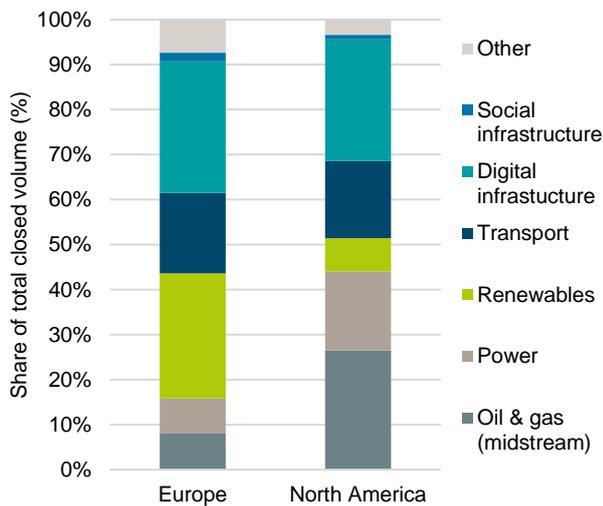
4.2 Historical Transactions Overview³⁰

After an initial slowdown in March and April driven by Covid-19, deal activity started to resume in May and accelerated significantly in the second half of 2020. As at November 2020, global private infrastructure equity transactions reached a volume of EUR 260 billion, a value below the average of the last three years. To date, European equity transactions led the market with almost EUR 100 billion in volume, followed by North America and APAC at approximately EUR 74 billion and EUR 43 billion respectively.³¹

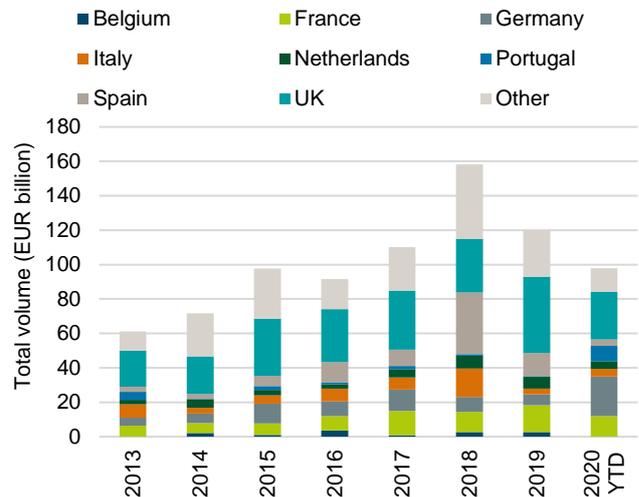
In 2020, Europe continued to provide access to a diversified private infrastructure equity market by both country and sector. We observed that transaction activity concentrated in markets with relatively low country risk or established infrastructure regulation, such as Germany, France and the United Kingdom. Mature European countries have historically offered an established investment environment, a transparent legal and regulatory framework, and a history of private infrastructure ownership.³² In terms of sectors, we observed a more active digital infrastructure market and a wide range of renewable energy projects supported by Europe’s policy framework for energy transition. We have also seen large transactions in core assets space, such as regulated networks.³³

In North America, the private infrastructure equity market continued to be skewed towards midstream Oil & Gas and Power projects. Given the market disruption that Covid-19 caused in the first half of the year, transaction volumes have slowed down compared to historical volumes. Nevertheless, we have also observed an acceleration in digital infrastructure transactions in North America, as the sector proved particularly robust during the Covid-19 crisis.³⁴

PRIVATE INFRASTRUCTURE EQUITY DEALS
(Europe, U.S., By Sector, %, 2020 YTD)



PRIVATE INFRASTRUCTURE EQUITY DEALS
(Europe, By Country, EUR Billion, 2013-2020 YTD)



Source: DWS, InfraNews, as at 9 November 2020. For illustrative purpose only. Figures include all greenfield and brownfield European projects in the database that have been listed with the status “Financial Close”. Past performance is not a guide for future results.

³⁰ No assurance can be given that investment objectives will be achieved.

³¹ Based on InfraNews database, as at November 2020. Figures include all greenfield and brownfield European projects in the database that have been listed with the status “Financial Close”.

³² Based on DWS proprietary methodology for ranking unlisted infrastructure markets, as at September 2020.

³³ Based on InfraNews database, as at November 2020. Figures include all greenfield and brownfield European projects in the database that have been listed with the status “Financial Close”.

³⁴ Based on InfraNews database, as at November 2020.

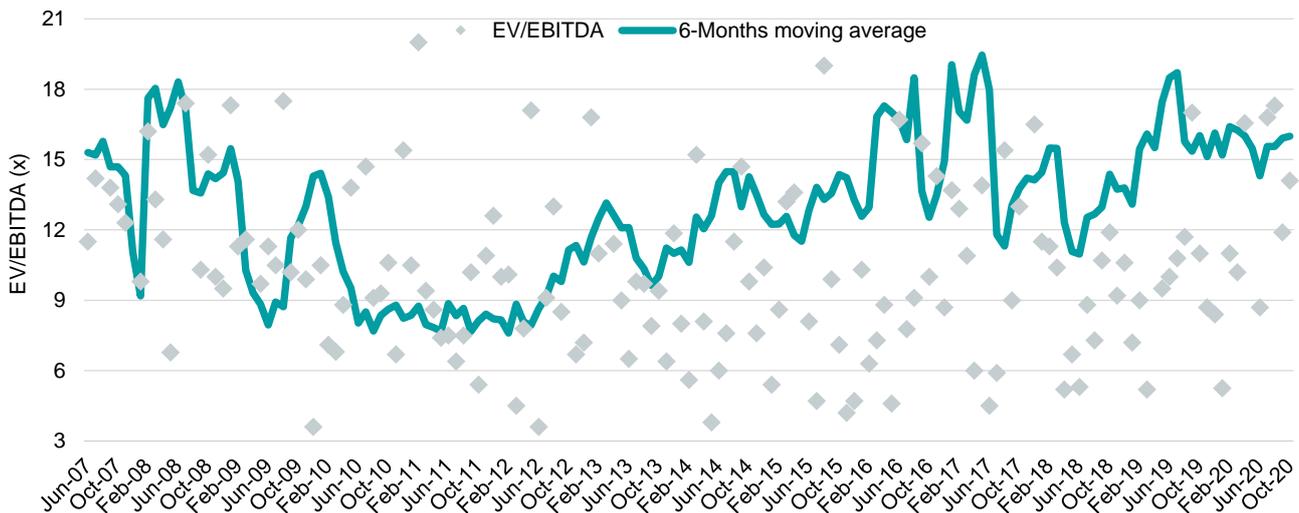
4.3 Valuation Trends³⁵

In the first half of 2020, we witnessed a decrease in average valuations for private infrastructure transactions in Europe due to the market disruption caused by Covid-19. Transaction multiples (EV/EBITDA) reached a level of ca. 14.5x compared to an average of ca. 16x in 2019, and we witnessed a significant slowdown in transaction activity.³⁶ In the second half of 2020 deal activity resumed, and we observed a rebound in EV/EBITDA transaction multiples, averaging ca. 15x for 2020 to date, mainly driven by a renewed compression in government bond yields and despite the persistent macroeconomic uncertainty.³⁷

Large-cap, core transactions continued to trade at a premium over market average, and we noted an increase in valuations for digital infrastructure assets, driven by rising demand during Covid-19 for data centres and fibre assets. At the same time, we observed that assets in the middle market continued to trade at an average discount over market average. In 2020, we noted a downward adjustment for valuations of midstream assets in the Oil & Gas sector. We expect valuations in the Oil & Gas sector to be increasingly exposed to the risk of investors taking conservative views on the long-term sustainability profile of the sector, despite the strategic role that some assets, particularly gas midstream, may play in the long-term energy transition process.³⁸

We believe that 2021 may continue to offer an opportunity to acquire some private infrastructure assets providing long-term cash flow visibility at a discount compared with recent historical peaks. Nevertheless, we assume that valuations may progressively accelerate in 2021, on the back of expectations of interest rates, government bond yields and corporate credit spreads remaining lower for longer. Although unlikely in 2021, a reduction in monetary policy support may represent the most important downside risk to valuations.

EV/EBITDA MULTIPLES FOR UNLISTED INFRASTRUCTURE TRANSACTIONS IN EUROPE (2007 - 2020 YTD)



Source: DWS proprietary database of European unlisted infrastructure deals, based on publicly available transaction information from various sources, including Infrastructure Journal, InfraNews, as at November 2020. For illustrative purpose only. Past performance is not a guide for future results.

³⁵ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns. Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described.

³⁶ Based on DWS proprietary database of European unlisted infrastructure deals, based on publicly available transaction information from various sources, including Infrastructure Journal, InfraNews, as at May 2020. Past performance is not a reliable indicator of future returns.

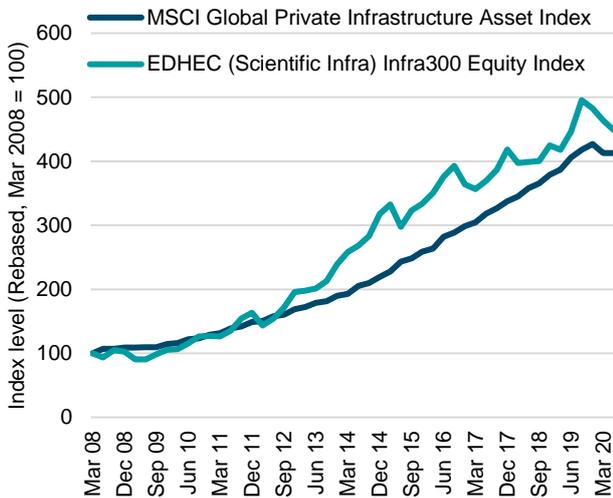
³⁷ Based on DWS proprietary database of European unlisted infrastructure deals, based on publicly available transaction information from various sources, including Infrastructure Journal, InfraNews, as at November 2020. Past performance is not a reliable indicator of future returns.

³⁸ Based on DWS proprietary database of European unlisted infrastructure deals, based on publicly available transaction information from various sources, including Infrastructure Journal, InfraNews, as at November 2020. Past performance is not a reliable indicator of future returns.

4.4 Historical Performance Overview³⁹

Historical Performance: Private infrastructure has demonstrated a resilient historical performance over the past decade, with an annualised return estimated in the range of 13% to 14.6%.⁴⁰ Nevertheless, Covid-19 is having a negative impact on financial performance across several infrastructure sectors, and we are yet to observe the full impact of the crisis over the coming quarters, as data for private assets are typically published with a delay.

PRIVATE INFRASTRUCTURE EQUITY INDICES (Quarterly, Rebased, Mar 2008 = 100)



PRIVATE INFRASTRUCTURE EQUITY INDICES (Key Characteristics, as at June 2020)

	MSCI Global Private Infrastructure Asset Index	EDHEC (Scientific Infra) Infra300 Equity Index
Index performance YTD	-3.3%	-7.0%
Annualised return 3Y	9.1%	6.7%
Annualised return 5Y	11.2%	8.6%
Annualised return 10Y	13.0%	14.6%
Annualised income return 10Y	4.6%	n/a
Annualised volatility 10Y	4.0%	12.6%

Source: DWS, MSCI, Bloomberg, EDHECinfra (Scientific Infra), as at June 2020. The Infra300 Index used in the present document are the intellectual property (including registered trademarks) of Scientific Infra and/or its licensors, which is used under license within the framework of the Scientific Infra activity. Scientific Infra is not responsible for the moral or material consequences of their use. Past performance is not indicative of future returns.

As at June 2020, the MSCI Global Private Infrastructure Asset Index indicated a decline of -3.3% in total returns from the beginning of 2020. Income return continued to prove resilient, with a rolling annual return of 5.9% as at June 2020, in line with historical average. The MSCI Global Private Infrastructure Asset Index is a valuation-based index, tracking performance of infrastructure assets using audited, fair value appraisals provided by asset owners and based on the CAPM. Indices based on fair value may underestimate the impact of short-term market volatility on valuations and returns.⁴¹

As at June 2020, EDHEC (Scientific Infra) Infra300 Equity Index indicated a decline of -7% in total returns from the beginning of 2020.⁴² The EDHEC Infra300 Equity Index uses information available from public financial statements to perform proprietary cash flow projections and estimate asset valuations. Valuations are adjusted by incorporating quarterly market data, such as transaction prices, to calculate returns. Therefore, the index may be more reflective of short-term market conditions and return volatility compared with the MSCI Global Private Infrastructure Asset Index. Both indices are diversified by sector, strategy and country, which highlights the importance of portfolio diversification in supporting returns during economic and market distress. We expect the asset class to continue offering diversification benefits with the potential to generate stable total returns. Going forward, we expect income return for private infrastructure to improve in line with the expected economic recovery and expectations around interest rates remaining lower for longer supporting valuations and capital growth.⁴³

³⁹ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns. Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described.

⁴⁰ Based on a number of sources, including MSCI (10Y annualised return of 13% as at June 2020), EDHECinfra (Scientific Infra) (10Y annualised return of 14.6% as at June 2020). Past performance is not a reliable indicator of future returns.

⁴¹ Based on MSCI, as at June 2020. Past performance is not a reliable indicator of future returns.

⁴² Based on Bloomberg, EDHEC (Scientific Infra), as at June 2020. The Infra300 Index used in the present document are the intellectual property (including registered trademarks) of Scientific Infra and/or its licensors, which is used under license within the framework of the Scientific Infra activity. Scientific Infra is not responsible for the moral or material consequences of their use. Past performance is not a reliable indicator of future returns.

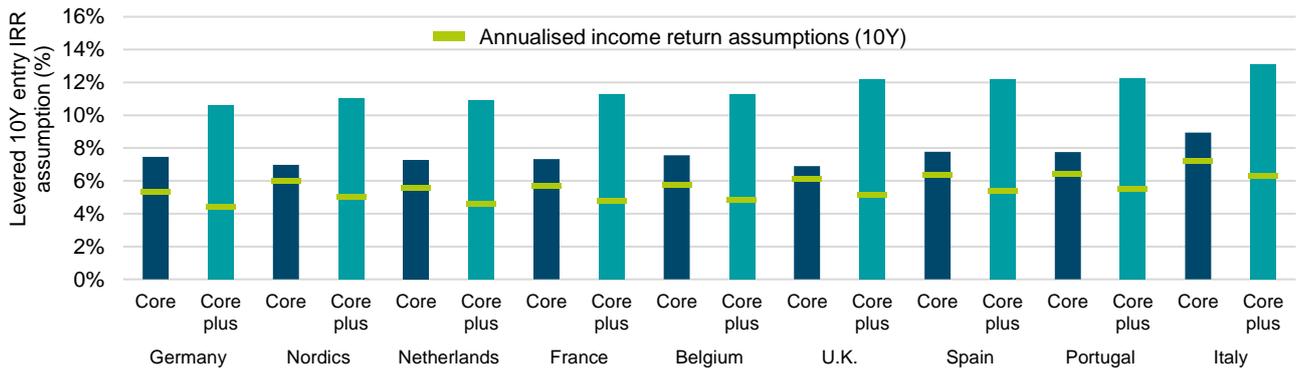
⁴³ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns. Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described.

4.5 Performance Outlook⁴⁴

Evaluating the outlook for private infrastructure performance requires consideration of the complex interaction of several factors varying by sector, contract structure and strategy. This includes entry valuations, dividends, leverage, and particularly cost of debt and discount rates. Competitive environment and assumptions around exit valuations play an important role.⁴⁵

Performance Outlook by Strategy: For 2021, we forecast levered entry returns for core assets in mature European markets to be in the range of 7% to 9% (IRR). Following the outbreak of Covid-19, we observed a reduction in transaction volumes and a downward adjustment in pricing. Nevertheless, recent data indicate a substantial rebound of valuations in the second half of 2020 in the core sector. In an uncertain economic environment, core assets supported by regulated returns appear valued higher by investors. Core assets' entry valuations may increase further in 2021, driven by the record amount of dry powder in the core space.⁴⁶ We expect dividend yields of core assets to remain capped by low inflation and government bond yields.

ENTRY IRR RETURN ASSUMPTIONS BY STRATEGY AND COUNTRY (%, 2021F, Estimate, Levered, 10Y, Average)



Source: DWS, MSCI, based on DWS proprietary methodology, as at November 2020. There is no guarantee the forecast shown will materialise. Past performance is not a guide for future returns. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Data indicate that Covid-19 may be leading to a divergence of return expectations between core and core plus strategies. While entry return assumptions for core infrastructure appear to have compressed on average compared with last year, for core plus strategies our 2021 return forecast indicates an average increase of about 50 basis points compared with 2020, with levered entry IRR assumptions expected to be in the range of 10.5% to 13%.⁴⁷ This reflects mainly lower entry valuation assumptions for assets that may be comparatively more exposed to short-term dividend reductions, and increased uncertainty around medium-term volume, price and business growth assumptions. Nevertheless, the increase in core plus return expectations appears to be concentrated in more mature core European markets. Our 2021 entry return forecast indicates a reduction across peripheral core infrastructure markets — such as Italy, Spain and Portugal — driven mainly by a compression in government bond yields assumptions compared to last year, on the back of the ECB's supportive monetary policy stimulus.⁴⁸

⁴⁴ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

⁴⁵ Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described.

⁴⁶ DWS, based on DWS proprietary methodology, as at November 2020. There is no guarantee the forecast shown will materialise. Past performance is not a guide for future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

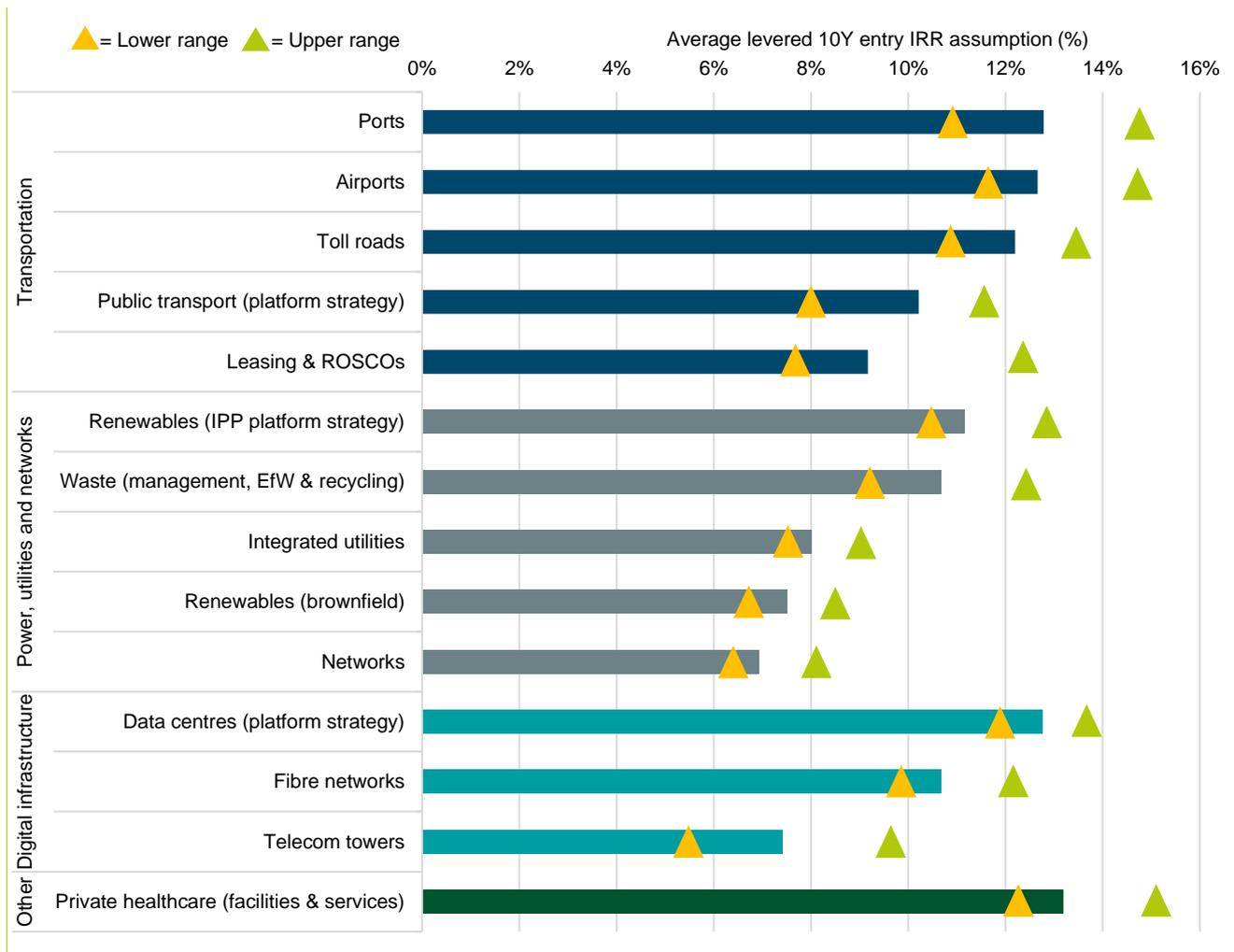
⁴⁷ DWS, based on DWS proprietary methodology, as at November 2020. There is no guarantee the forecast shown will materialise. Past performance is not a guide for future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

⁴⁸ There is no guarantee the forecast shown will materialise. Past performance is not a guide for future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Performance Outlook by Sector: For 2021, we expect average, levered entry IRR assumptions in the Transportation sector to be in the range of 9.2% to 12.8%. Entry returns appear supported by the reduction in valuations driven by the short-term uncertainty determined by Covid-19, particularly across passenger transportation assets. In the Power, Utilities & Networks sector, we expect Independent Power Producer (IPP) strategies focusing on renewables to display the strongest entry IRR potential at ca. 11%, with tight returns across brownfield assets compensated by the ability to focus on project development to support returns, and a progressively deeper Purchasing Power Agreement (PPA) market providing increased cash flow visibility. Regulated networks, including gas, water and electricity grids display the lowest entry IRR assumptions at around 7%, according to our forecast.⁴⁹

In the Digital infrastructure sector, we expect entry IRR assumptions to be at ca 7.4% for telecom towers, a mature core sector. For fibre networks we expect returns to be at ca. 11%, as the sector supports strategies focusing on brownfield assets, with an additional greenfield development component driven by underlying market growth. For data centres, we expect returns to be at ca. 13% for platform strategies combining an existing base of brownfield assets with a greenfield and M&A component.⁵⁰

AVERAGE ENTRY IRR RETURN ASSUMPTIONS BY SECTOR IN EUROPE
 (% , 2021F, Estimate, Levered, 10Y, Average)



Source: DWS proprietary methodology, as at November 2020. There is no guarantee the forecast shown will materialise. Past performance is not a guide for future returns. Forecasts are not a reliable indicator of future returns.

⁴⁹ Based on DWS proprietary methodology, as at November 2020. There is no guarantee the forecast shown will materialise. Past performance is not a guide for future returns. Forecasts are not a reliable indicator of future returns.

⁵⁰ Based on DWS proprietary methodology, as at November 2020. There is no guarantee the forecast shown will materialise. Past performance is not a guide for future returns. Forecasts are not a reliable indicator of future returns.

5 / European Infrastructure Market Outlook⁵¹

5.1 Transportation⁵²

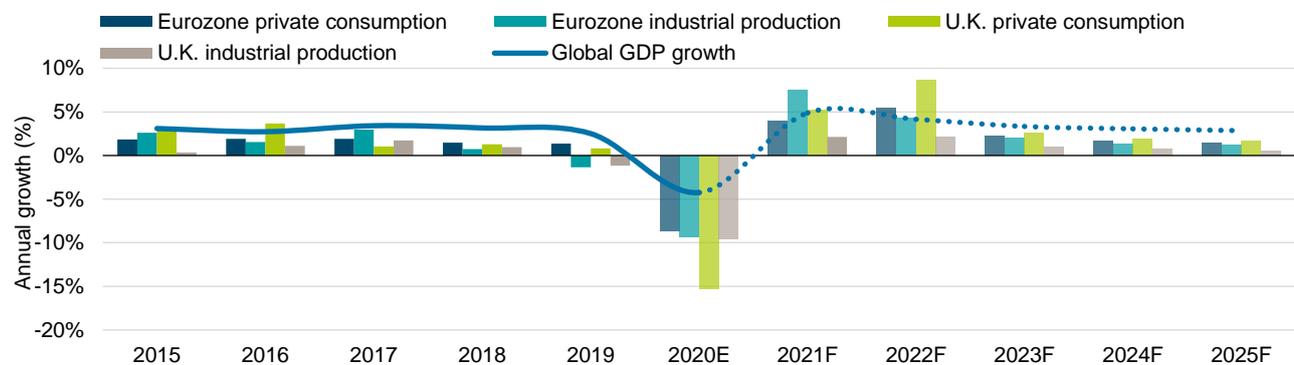
In 2020, Covid-19 caused an unprecedented disruption to passenger travel, particularly aviation and public transport. Global supply chains proved relatively resilient, but freight still experienced a contraction due to lower industrial production and lockdown measures. In the third quarter of 2020, we observed a recovery, but — in the context of the second Covid-19 wave and new travel restrictions — we expect mobility levels to be sluggish into the first quarter of 2021. We anticipate the recovery to vary by sector, but generally to protract into the medium term.⁵³

Transportation is exposed to structural changes and megatrends that may shape demand and performance over the coming decade, and represent sources of both opportunity and risk for investors. While Covid-19 may have structural consequences on future passenger volumes in the aviation and public transportation sectors, we still expect these sectors to expand in the long term on the back of solid demographic trends and supportive policy. Liberalisations are ongoing across rail and public transportation, and we continue to anticipate a gradual shift from road to rail for freight, driven by more robust sustainability targets. Moreover, technology may continue to drive changes across freight logistics and passenger transportation via urban micro mobility, car sharing and ride hailing platforms.

Decarbonisation represents a growing topic for the transportation sector and the policy agenda, particularly in Europe, following its commitment to achieve full carbon neutrality by 2050. While we expect electrification to represent a long-term solution for decarbonisation of smaller road vehicles, we recognise that there are still limited technological alternatives for the decarbonisation of heavier road vehicles, shipping and aviation via electrification. Nevertheless, policy can play an important role in this regard with regulation helping to curb emissions. For example, in Europe, RED II imposes stringent regulation up to 2030 for the reduction of CO₂ emission in vehicle fuels via the adoption of biofuels blending, to achieve the 2030 target of at least 14% of renewable energy in transportation.⁵⁴ E.U. policy may increasingly focus on alternative fuels for transport decarbonisation over the coming years, particularly for heavy duty vehicles and aviation, where electrification may provide limited technological solutions in the medium term. In shipping, the International Maritime Organization (IMO) imposed greater restrictions on sulphur oxide emissions in 2020, with important environmental benefits.⁵⁵ In the long term, we expect green hydrogen to potentially represent a solution for the decarbonisation of transport sectors with limited electrification potential.

KEY MACROECONOMIC TRANSPORTATION VOLUME DRIVERS

(%, 2015-2025F)



Source: Oxford Economics, as at 13 November 2020. Notes: F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

⁵¹ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

⁵² Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described.

⁵³ Based on number of sources, including Moody's Investor Service, Bloomberg, as at June 2020.

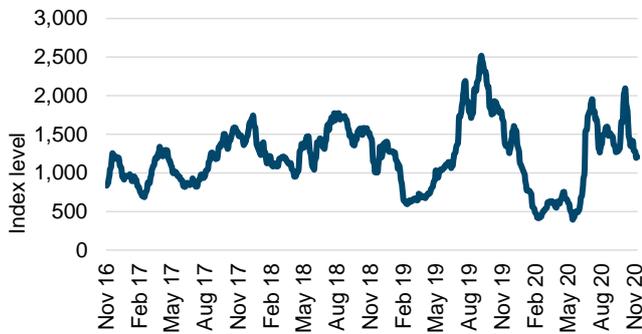
⁵⁴ European Commission, "Renewable Energy – Recast to 2030 (RED II)", as at July 2019.

⁵⁵ International Maritime Organisation, "IMO 2020 - cleaner shipping for cleaner air", as at December 2019.

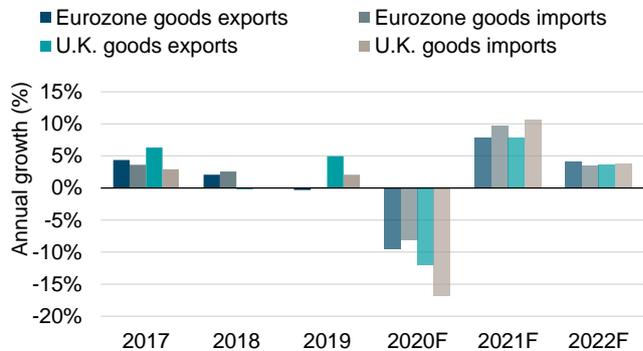
Ports⁵⁶

2021 Operating Performance (EBITDA) Outlook	Stable/Negative
Strategic Outlook (Long-term industry trend)	Stable
2021 Entry IRR Assumptions (avg. Europe, 10Y, estimate)	12.8%

BALTIC DRY INDEX (BDI)
(2016 – 2020 YTD)



EXPORTS AND IMPORTS
(%, Real Growth, 2017-2022F)



Source: DWS, Oxford Economics, Bloomberg, as at 10 November 2020. Notes: E = expected, F = forecast. The Baltic Dry Index (BDI) is issued daily by the London-based Baltic Exchange. The BDI is a composite of the Capesize, Panamax and Supramax Timecharter averages. It is reported around the world as a proxy for dry bulk shipping stocks as well as a general shipping market indicator. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Short-term outlook (12-18 months)	<p>In the first half of 2020, Covid-19 led to a contraction in trade volumes. The recovery of freight transport in the second half of 2020 was stronger than for passenger transport. As at November 2020, the Baltic Dry Index (BDI)⁵⁷ returned to the pre-Covid levels, indicating a healthy state of the dry bulk shipping industry.</p> <p>For 2020, we expect a contraction of trade volumes of ca. 20% across Europe⁵⁸ and EBITDA margins to moderately contract. In 2021, we believe that the global economic recovery should boost global trade, particularly in the second half of the year, supporting EBITDA margins. However, we expect the recovery of trade volumes to protract well into 2022. Therefore, we keep our performance outlook for 2021 as stable/negative, despite the expected recovery next year. The performance of ports may differ significantly from one port to another. European ports with a focus on freight transport may prove more resilient than ports with a large exposure to the cruise business. Privately owned ports in strategic locations with a focus on freight transportation should prove more resilient and be better placed for a gradual recovery.</p> <p>We believe that ports with exposure to container liners and dry-bulk operators may be better positioned to benefit from the recovery in global trade as opposed to ports with a focus on crude tankers, as demand for oil and fuels (e.g. jet fuels) may still be sluggish in 2021.⁵⁹</p>
Strategic Outlook (long-term industry trend)	<p>Containerisation is a maturing trend and we expect trade volumes to grow more in line with GDP, rather than outperforming economic growth in the long term, as observed in the past. Covid-19 and a trend towards deglobalisation may lead to changes in trade routes, with production reshoring to Europe from Asia supporting European regional ports.</p>
ESG	<p>The decarbonisation of maritime transport may play a more important role over the coming years. In 2020, the International Maritime Organisation (IMO) adopted more stringent energy efficiency measures that are legally binding and apply to all countries. By 2025, all new ships are expected to be 30% more energy efficient than ships built in 2014.⁶⁰ In the long term, we see ports with a focus on crude tankers and dry bulk carriers of thermal coal to be exposed to the long-term decline of the fossil fuel demand.</p>
Risks	<p>The medium-term economic impact of Covid-19 may be yet to fully materialise on domestic consumption, and may expose trade volumes to additional weakness ahead.</p>

⁵⁶ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

⁵⁷ The Baltic Dry Index (BDI) is issued daily by the London-based Baltic Exchange. The BDI is a composite of the Capesize, Panamax and Supramax timecharter averages. It is reported around the world as a proxy for dry bulk shipping stocks as well as a general shipping market indicator.

⁵⁸ Based on a number of sources, including Oxford Economics, as at October 2020. There is no guarantee the forecast shown will materialise.

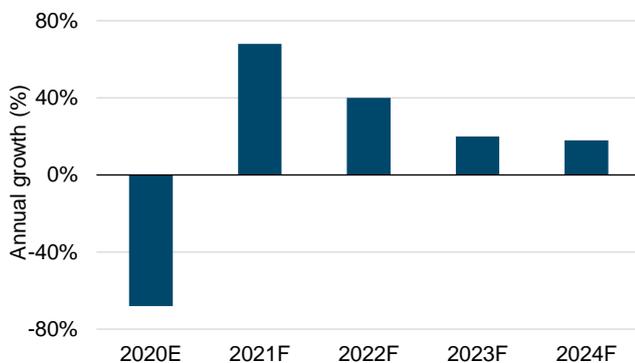
⁵⁹ Based on Bloomberg, as at November 2020. There is no guarantee the forecast shown will materialise.

⁶⁰ International Maritime Organization (IMO), "Reducing greenhouse gas emissions from ships", as at November 2020.

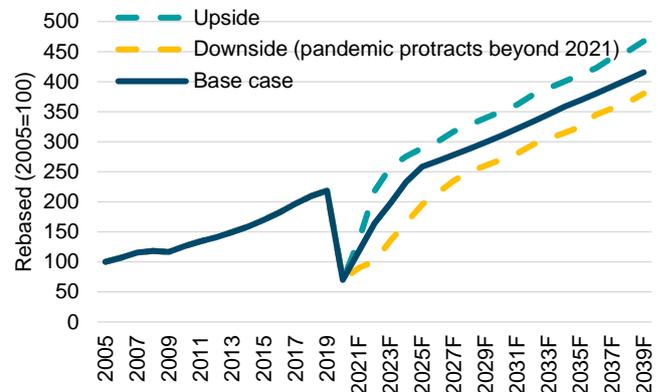
Airports⁶¹

2021 Operating Performance (EBITDA) Outlook	Negative
Strategic Outlook (Long-term industry trend)	Stable/Positive
2021 Entry IRR Assumptions (avg. Europe, 10Y, estimate)	12.7%

AIR PASSENGER TRAFFIC RECOVERY OUTLOOK
(%, Global, 2020-2024F)



AIR PASSENGER TRAFFIC SCENARIOS
(Global, 2005-2039F)



Source: DWS, based on a number of sources, including International Air Transport Association, Oxford Economics, as at October 2020. Notes: F = Forecast. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns. There is no guarantee that forecasts highlighted will materialise.

Short-term outlook (12-18 months)	<p>Covid-19, a weakened global economic environment, dividend write-offs, and asset price declines are creating a severe and extensive shock in the airport industry. Airports continue to have swift access to liquidity, notwithstanding the weaker credit profile, with lenders generally providing waivers to existing loan agreements and taking the view that passenger volumes may converge to original business plan assumptions in the medium term.</p> <p>European air passenger travel demand improved during the summer holiday season, supported by an acceleration in domestic flights across most European countries, but passenger volumes were down by 75.8% year-on-year in September 2020. Overall, IATA now forecasts global passenger volumes to be down by 68% in 2020. Given the second Covid-19 wave, the short-term outlook for air passenger travel looks fragile, and we expect a recovery to only start towards the end of the first quarter of 2021, and a full recovery to pre-Covid levels only in 2024.⁶²</p> <p>Air cargo demand proved significantly more resilient than air passenger travel. Global air cargo volumes decreased by 8% year-on-year in September 2020 and the ongoing recovery in manufacturing continues to prove supportive. However, the rebound in 2021 may be capped by insufficient air cargo capacity.⁶³</p>
Strategic Outlook (long-term industry trend)	<p>Despite the short-term uncertainty driven by Covid-19, our strategic view of the airport sector remains constructive. We cannot exclude that business travel may experience a structural change driven by Covid-19, as we may observe a partial substitution of physical travel with virtual meetings driven by sustainability objectives. However, we still expect global tourist air passenger demand to grow in the long term, driven by the substantial expansion of Asian markets. European hubs with exposure to key growth markets may outperform regional airports in the long term.</p>
ESG	<p>We expect sustainability requirements for business travel to accelerate. In the long term, technological innovation reducing aircraft emissions, and airline business models evolving, such as with the potential introduction of point-to-point flying may support industry competitiveness and traffic volumes, despite more stringent emission standards.</p>
Risks	<p>In 2021, risks are skewed to the downside. Weaker domestic consumption driven by the weak economic environment may cap air travel demand beyond what is currently anticipated. Limited airline capacity may constrain the recovery in flight numbers for 2021.</p>

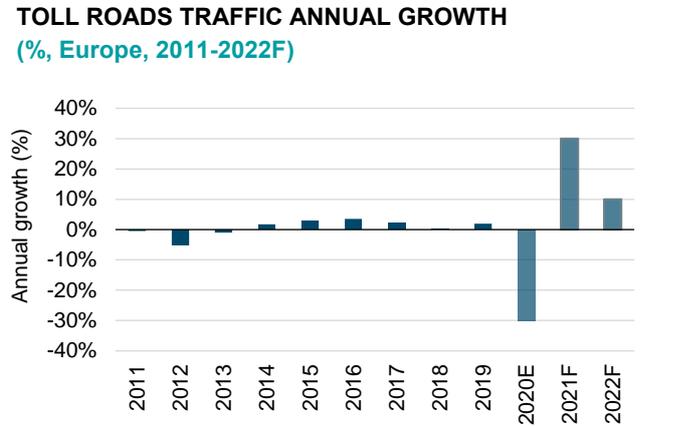
⁶¹ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

⁶² International Air Transportation Association, as at September 2020. Past performance is not a reliable indicator of future returns.

⁶³ International Air Transportation Association, "Air Cargo Market Analysis", as at September 2020.

Toll roads⁶⁴

2021 Operating Performance (EBITDA) Outlook	Stable/Negative
Strategic Outlook (long-term industry trend)	Stable/Negative
2021 Entry IRR Assumptions (avg. Europe, 10Y, estimate)	12.2%



Source: DWS, Oxford Economics, Moody's Investor Service, Fitch as at 16 November 2020. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Short-term outlook (12-18 months)	<p>In 2020, we observed an improvement in private vehicle mobility between April and July across Europe, supported by the summer holiday season, lower gasoline prices, and the general avoidance of public transportation. However, private vehicle mobility appears to have peaked around August and declined gradually in the second half of 2020, following new restrictions in response to the second Covid-19 wave.⁶⁵</p> <p>At the same time, freight traffic on toll roads appeared resilient and supply chains continued to operate at high capacity, supporting toll roads. We expect traffic volumes on European toll roads to decline by up to 30% in 2020, affecting earnings expectations and leading to a decline in EBITDA margins in the range of 5% to 7%, on average.⁶⁶ Toll roads with exposure to heavy goods vehicles (HGV) are likely to remain comparatively resilient, due to industrial production continuing to prove supportive despite Covid-19.</p> <p>Although highly dependent on the evolution of the pandemic and travel restrictions, traffic on toll roads may rebound quickly in the second half of 2021. However, commuter passenger traffic may see a delayed recovery on urban toll roads as remote working may become a more structural feature. Toll road tariffs may not benefit from substantial increases, as inflation is expected to be subdued across Europe in 2021.⁶⁷ Overall, we see a full recovery of traffic in 2022, but it is likely to be fragmented across regions, and follow the broader underlying local economic environment.</p>
Strategic Outlook (long-term industry trend)	<p>Toll roads in European markets with weaker economic growth potential may only experience a full recovery to pre Covid-19 traffic levels in the medium term, as also observed following the GFC in the past decade for example across Italy and Spain. Our strategic long-term view of the toll road sector remains stable.</p>
ESG	<p>European RED II fuel blending regulation supports decarbonisation of road transport via biofuels until 2030 and fleet electrification may accelerate in the medium term. In the long term, we believe that technology, including sensors, automated tolling and demand-based pricing, may increase operating efficiency in the toll road sector, supporting higher safety levels, lower congestion and emissions.⁶⁸</p>
Risks	<p>A protracted economic downturn may delay the recovery in the sector. We continue to see an intermodal shift from long-distance HGV to rail and to container ships, capping toll roads traffic growth.</p>

⁶⁴ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

⁶⁵ Based on Apple route requests data, as at November 2020.

⁶⁶ Based on a number sources, including Bloomberg, Fitch and S&P, as at November 2020.

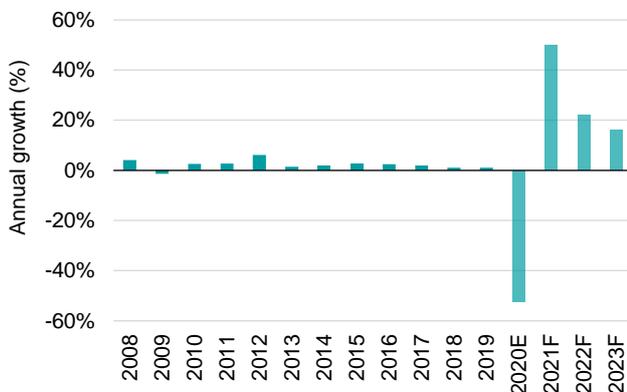
⁶⁷ Based on Oxford Economics, as at November 2020.

⁶⁸ Roland Berger, July 2018.

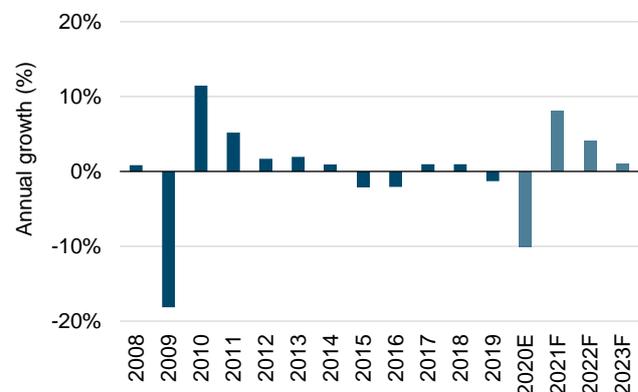
Rail (Freight Rail and Long-Distance Passenger Rail)⁶⁹

2021 Operating Performance (EBITDA) Outlook	Stable/Negative
Strategic Outlook (long-term industry trend)	Stable/Positive
2021 Entry IRR Assumptions for Leasing & ROSCOs (avg. Europe, 10Y, estimate)	9.2%

RAIL PASSENGER ANNUAL TRAFFIC GROWTH
(%, YoY, Europe, 2008-2023F)



RAIL FREIGHT ANNUAL TRAFFIC GROWTH
(%, YoY, Europe, 2008-2023F)



Source: DWS, Eurostat, Moody's, S&P, as at October 2020. Notes: E = expected, F = forecast. Includes Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, and United Kingdom. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Short-term outlook (12-18 months)	<p>Historically, rail passenger traffic in Europe has been resilient to economic downturns, while rail freight has been more exposed to the economic cycle.⁷⁰ However, during Covid-19, rail freight has proven substantially more resilient than passenger rail.</p> <p>In 2020, we expect rail freight volumes in Europe to contract by about 10%, with the sector partially supported by the intermodal shift from road to rail during the pandemic as long-distance rail involves less human participation per volume of goods transported compared to the road mode. We expect a gradual recovery in 2021, on the back of supportive industrial production and trade, notwithstanding Covid-19.⁷¹</p> <p>We expect rail passenger traffic to drop by 45-60% in 2020, due to lockdown measures limiting the movement of people and the preference of private vehicles over public transportation. Earnings, dividends and asset prices may be impacted in 2020. The recovery in 2021 may strengthen only in the second half of the year, and rail passenger traffic is not expected to recover to pre-Covid levels before 2023.⁷² In some cases, governments have implemented extraordinary measures to support operations of passenger rail.</p>
Strategic Outlook (long-term industry trend)	<p>We expect the European rail industry to gradually expand, supported by long-term demographic trends and capacity improvements. We expect the growth of the rolling stock market to be increasingly supported by the ongoing liberalisation process of rail networks across Europe, and by the relatively old age of the existing fleets requiring new investment.</p>
ESG	<p>The European rail industry is expected to steadily grow in the long term, also driven by policies supporting the decarbonisation of transport. We expect a long-term shift from road to rail freight, driven by tighter regulation around diesel trucking capacity.⁷³ We believe that digitalisation including sensors and 5G may improve the operational efficiency of rail operators, increasing capacity and safety.⁷⁴</p>
Risks	<p>New lockdown measures may lead to a further decline of rail passenger and freight volumes, while a weaker economic environment may weigh on freight volumes beyond what currently expected.⁷⁵</p>

⁶⁹ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

⁷⁰ Based on Eurostat, Oxford Economics, as at May 2020.

⁷¹ Rail Journal, "Intermodal operators urge action in face of coronavirus downturn", as at March 2020.

⁷² S&P, "European Rail Operators Are On A Slow Train To Recovery", as at October 2020.

⁷³ Based on a number of sources, including Bloomberg and Moody's Investors Service data, as at November 2019.

⁷⁴ Global Railway Review, "Exploring the advantages of 5G for the railway sector", as at March 2020.

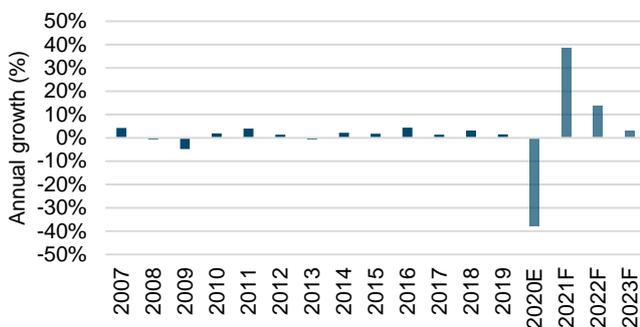
⁷⁵ Based on Rail Journal, as at May 2020.

Past performance is not a reliable indicator of future returns.

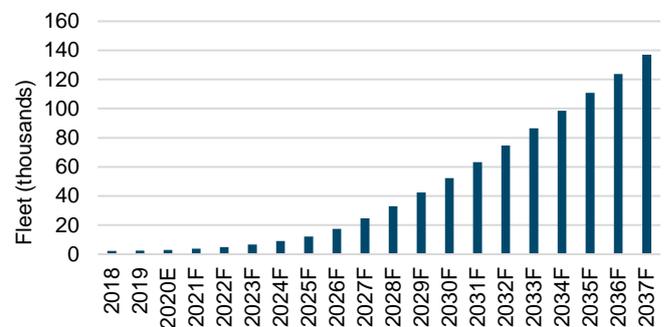
Public Transportation (Bus Transportation and Regional Rail)⁷⁶

2021 Operating Performance (EBITDA) Outlook	Negative
Strategic Outlook (long-term industry trend)	Stable/Positive
2021 Entry IRR Assumptions for Public Transportation Platform Strategy (avg. Europe, 10Y, estimate)	10.2%

PUBLIC TRANSPORT PASSENGER VOLUMES (Europe, Estimate, 2001-2023F)



PROJECTED ELECTRIC BUS FLEET IN EUROPE (Europe, Estimate, 2018-2037F)



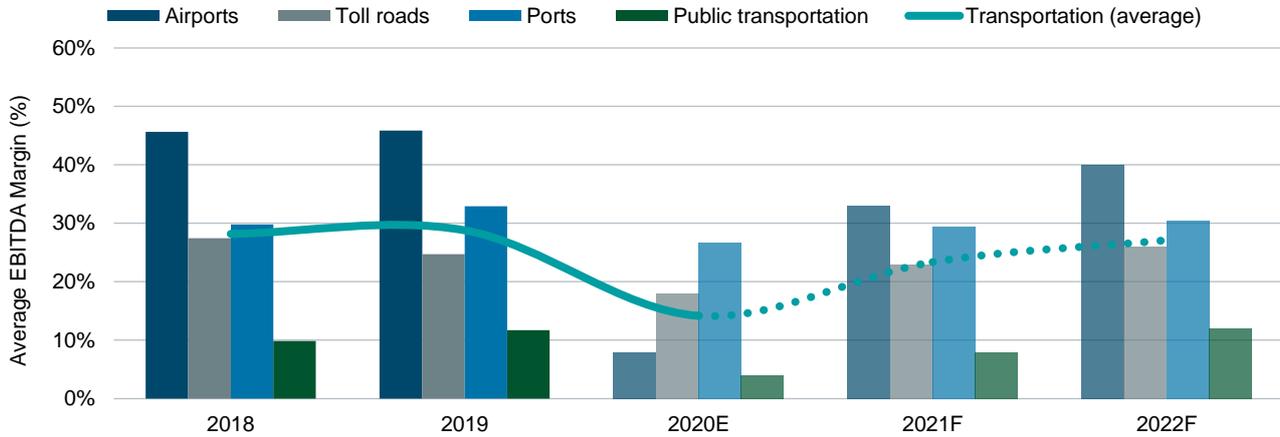
Sources: DWS, Oxford Economics, Bloomberg, as at November 2020. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns.

<p>Short-term outlook (12-18 months)</p>	<p>Historically, European public transportation has demonstrated resilience to macroeconomic cycles and a slow, albeit steady, growth in passenger volumes driven by demographics, urbanisation, and a supportive policy framework. Lockdown measures led to an unprecedented decrease in passenger volumes in the first half of 2020, with social distancing capping capacity to about 40% of previous volumes. With lockdown measures limiting urban mobility, reduced commuting due to a preference for remote working and passengers preferring personal vehicles to minimise the risk of contagion, we expect demand volumes to contract over 38% in 2020. We expect a progressive recovery of passenger volumes starting in the second half of 2021. Nevertheless, we acknowledge that a full recovery may take time, and extend to 2023.⁷⁷</p> <p>The impact on financial performance, earnings and dividend expectations varies by country and regulatory system. Some operators have withstood to the impact of the sudden decrease in passenger volumes while other operators have been more heavily exposed experiencing a material contraction in EBITDA, an increase in leverage and substantial cuts to dividend expectations weighing on valuations. Some concession frameworks are availability-based and less exposed to volume fluctuations, supporting revenue visibility and valuations despite the contraction in passenger volumes. In Europe, such as in the U.K.,⁷⁸ some governments have provided extraordinary support to public transportation networks to warrant the continuation of operations during the lockdown.</p> <p>In the U.K., the rail franchising model reportedly ended after 24 years with the Department for Transport (DfT) providing extraordinary support to operators during the pandemic. The system is expected to gradually move to an alternative, more integrated regulatory system, presumably still under a form of long-term fee concession model. We expect more clarity to emerge over the course of 2021.⁷⁹</p>
<p>Strategic Outlook (long-term industry trend)</p>	<p>We expect the fundamentals of the European public transport sector to remain strong, as policy continues to promote liberalisations and competition, supporting the pipeline of investment opportunities. We expect more opportunities for rolling stock electrification.</p> <p>We also expect business models of urban public transport operators to progressively adjust to technological change and digitalisation, integrating micro mobility and multimodal transport solutions, and providing an opportunity for investment in urban transport platforms.</p>
<p>ESG</p>	<p>Public transport remains a focus of the European Commission on the path towards a climate-neutral Europe by 2050. We expect bus fleet electrification to represent an important trend towards the reduction of emissions and public transport to play an increasingly pivotal role in supporting urban mobility and reducing congestion, as municipalities continue to restrict city centres to private vehicle access.⁸⁰</p>
<p>Risks</p>	<p>New lockdown measures may jeopardise the recovery of public transportation. Covid-19 may accelerate a trend towards remote working, and we may observe more people relocating outside of the urban areas, leading to a change in traffic flows and a structural reduction in commuter passenger volumes.</p>

Transportation Financial Performance⁸¹

AVERAGE TRANSPORTATION EBITDA MARGIN BY SECTOR

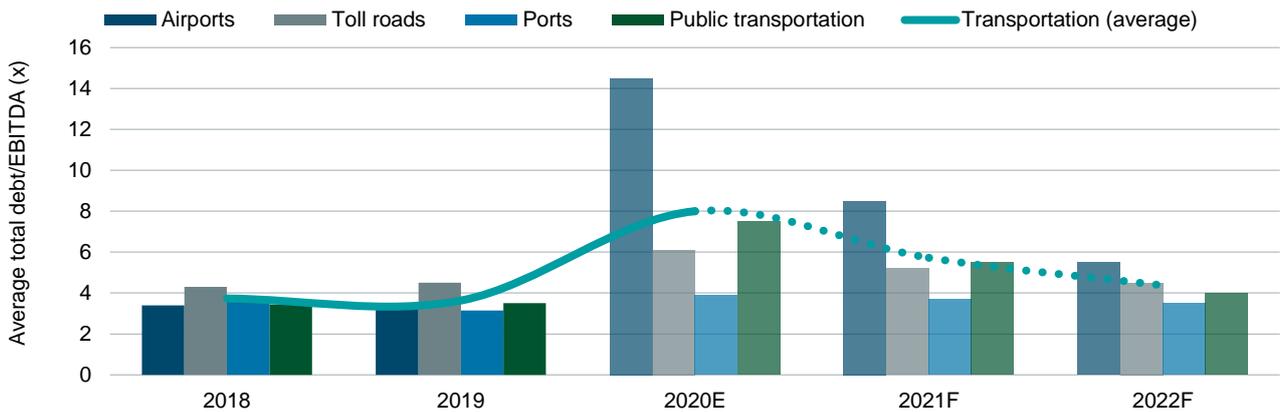
(Estimate, %, Europe, 2018-2022F)



Source: Based on a number of sources, including Bloomberg, S&P, Fitch, as at October 2020. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

AVERAGE TRANSPORTATION LEVERAGE BY SECTOR

(Estimate, x, Europe, 2018-2022F)



Source: Based on a number of sources, including Bloomberg, S&P, Fitch, as at October 2020. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

⁷⁶ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

⁷⁷ Based on a number of sources, including Moody's Investor Service and Oxford Economics, as at November 2020.

⁷⁸ U.K. Government, "Rail emergency measures during the COVID-19 pandemic", as at March 2020.

⁷⁹ U.K. Government, "Ministers today ended rail franchising after 24 years as the first step in bringing Britain's fragmented network back together", as at September 2020.

⁸⁰ Based on European Commission press release, as at May 2020. Past performance is not a reliable indicator of future returns.

⁸¹ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

5.2 Energy Transition, Utilities and Circular Economy⁸²

5.2.1 Energy Transition⁸³

Sustainability and CO₂ Emission Policies

The E.U. has a robust policy framework with clear targets within member states supporting renewables, transport decarbonisation and energy efficiency to 2030, and requiring substantial infrastructure investment over the coming decade. Policy targets are designed to further the objective of the Paris agreement to control global warming and keep the global average temperature below 2 degrees Celsius over pre-industrial levels. The Paris agreement is legally binding and was ratified by the E.U. in 2016. In 2021, the U.S. is expected to re-join the Paris agreement, thereby substantially boosting infrastructure investment opportunities in energy transition in the medium term. Covid-19 has resulted in a sharp contraction in global energy demand and a decline of global CO₂ emissions, now expected to decrease by 8% in 2020. In Europe, CO₂ emission prices dropped substantially, before stabilising at about 20 EUR/tonne, and are now forecast to progressively stabilise at over 35 EUR/tonne in the medium term. These price levels continue to support energy transition and renewables, pushing coal generation out of the merit order, while largely preserving gas generators across most European countries. We expect this trend to continue in 2021.⁸⁴

In the E.U., Covid-19 has also resulted in an acceleration of decarbonisation policies, with energy transition becoming pivotal to support the recovery and to transform the European Union into a sustainable and competitive economy. In 2020, the E.U. committed to be climate neutral by 2050, achieving net zero greenhouse gas emissions. Member states are collectively bound to take the necessary measures at E.U. and national levels to meet the target. The European Green deal adopted in 2020 provides an action plan to support the achievement of this goal, outlining investments needed and financing tools available. Regulation is expected to increasingly support low-carbon and clean energy technologies, and drive individual governments' policies, resulting in an acceleration of infrastructure investment opportunities over the coming decade.⁸⁵

Technological Innovation

In the past decade, renewable energy has expanded rapidly, supported by subsidy schemes and causing a shift in the business model of utilities. The resilience of renewables' growth was highlighted by the Covid-19 pandemic, with renewables expected to be the only energy source expected to grow in 2020 despite the contraction in energy demand.⁸⁶ We expect renewables growth to accelerate in the coming years, as they continue to reach grid parity, pushing thermal generation out of the merit order. In our view, the next decade may be characterised by an acceleration of small-scale renewables, particularly PV. We also expect the acceleration of behind-the-metre and energy efficiency services at industrial, commercial and domestic level, and we may see the gradual introduction of demand response services and the emergence of smarter electricity grids. Despite the slowdown in the deployment of battery storage caused by Covid-19, storage costs are expected to continue to decrease in the coming decade. We expect renewable energy projects to increasingly contemplate the installation of electric storage — for example, via retrofit of existing brownfield projects — as a solution to optimise project cash flows and hedge from the power price volatility that a growing renewable base may bring to the power markets.

Over the coming years, transport electrification may represent a source of growth for utilities. We expect utilities to be at the centre of a new energy system, driving investment in distributed renewables plants, storage solutions, charging stations and electric vehicles recharging stations, with digital platforms increasingly essential to manage the increased platform complexity. Transport electrification represents a threat to the Oil & Gas sector, where companies may increasingly focus on the development of biofuels, carbon storage, renewables and the provision of energy efficiency services. In the long term, we expect green hydrogen to emerge as a scalable technological solution for the storage of renewable electricity via electrolysis. Green hydrogen may increasingly be considered as a fuel source where batteries may have limited applicability, such as industrial production, heavy vehicles and shipping, and may represent an area of focus for the Oil & Gas sector, requiring substantial investment in related infrastructure.

⁸² Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

⁸³ Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described.

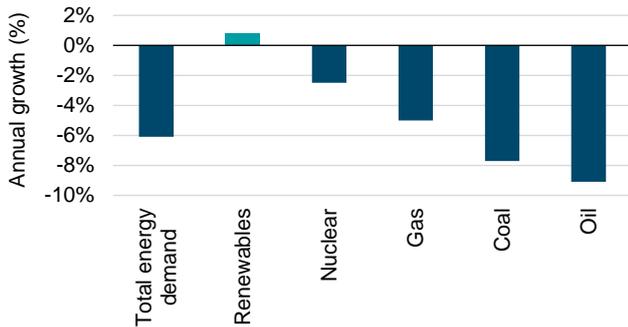
⁸⁴ Based on a number of sources, including International Energy Agency, Bloomberg, and S&P, as at November 2020.

⁸⁵ European Commission, "Committing to climate-neutrality by 2050: Commission proposes European Climate Law and consults on the European Climate Pact", as at 4 March 2020.

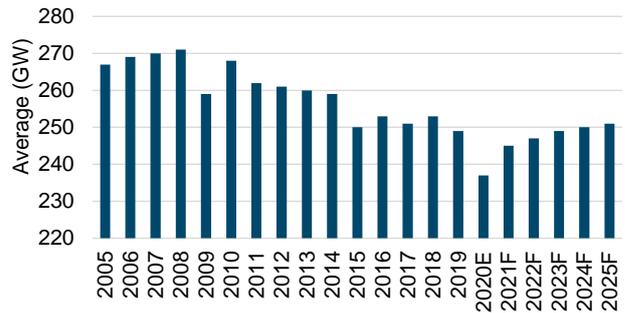
⁸⁶ Based on International Energy Agency, "Global Energy Review 2020", as at April 2020.

Past performance is not a reliable indicator of future returns.

CHANGE IN GLOBAL ENERGY DEMAND IN 2020
 (Global Primary Energy Demand Change vs. 2019)

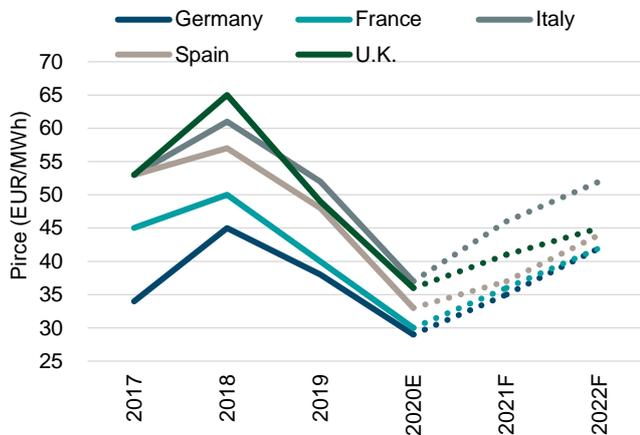


EUROPEAN (EU-10) ENERGY DEMAND
 (Average GW)

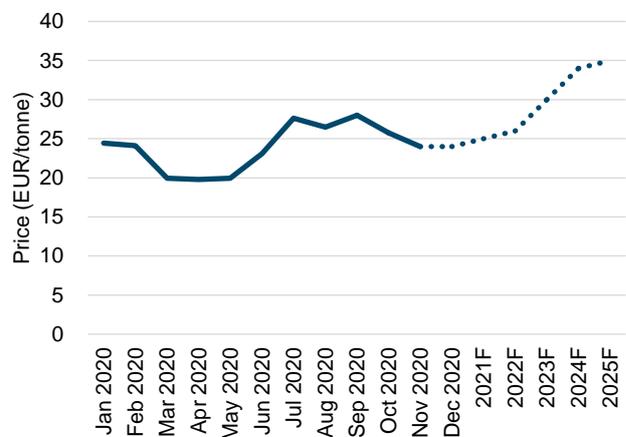


Source: DWS, International Energy Agency, S&P, as at October 2020. Notes: F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

EUROPEAN ELECTRICITY PRICES
 (EUR/MWh, Baseload)



CARBON EMISSION FRAMEWORK PRICE
 (CO₂, EUR/tonne, Average)



Source: DWS, Bloomberg, S&P, as at November 2020. Notes: F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Power Generation⁸⁷

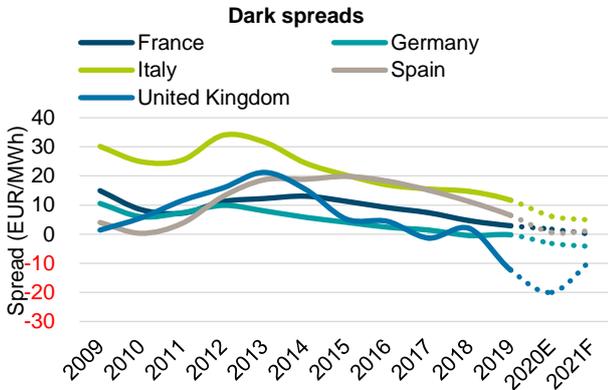
2021 Operating Performance (EBITDA) Outlook

Coal: **Negative** - Gas: **Stable/Negative** - Nuclear: **Stable**

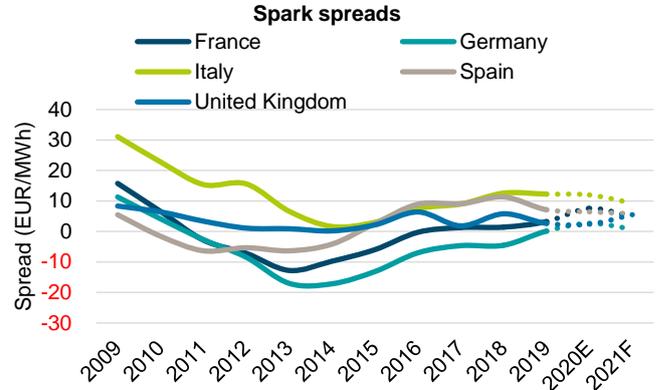
Strategic Outlook (long-term industry trend)

Coal: **Negative** - Gas: **Stable/Negative** - Nuclear: **Stable/Negative**

AVERAGE BASELOAD DARK SPREADS BY COUNTRY (EUR/MWh, 2009-2021F)



AVERAGE BASELOAD SPARK SPREADS BY COUNTRY (EUR/MWh, 2009-2021F)



Source: Bloomberg, as at 18 November 2020. Notes: E = expected, F = forecast. The dark spread is the theoretical gross margin of a coal-fired power plant from selling a unit of electricity, having bought the fuel required to produce this unit of electricity. The spark spread is the theoretical gross margin of a gas-fired power plant from selling a unit of electricity, having bought the fuel required to produce this unit of electricity. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

<p>Short-term outlook (12-18 months)</p>	<p>Demand: Covid-19 is expected to cause a power demand contraction of 4-5% in 2020 across Europe,⁸⁸ driven mainly by lower industrial and commercial power demand. We expect power demand to continue to recover gradually throughout 2021, but to regain pre-Covid levels only in the medium term.</p> <p>Supply: Lower energy demand resulted in a substantial contraction of power prices in the first half of 2020, but prices recovered largely in the second half of the year and are expected to fully recover in 2021. Countries characterised by an inflexible generation fleet — such as France (with nuclear) and Germany (with renewables) — experienced negative power prices at times of lower demand, a trend that we expect to continue in the medium term, highlighting the importance of PPA contracts to stabilise cash flows.⁸⁹ The liberalisation of the electricity retail market in 2022 may increase competitive pressure on margins, particularly for retail providers. Resilient CO₂ emission prices are expected to continue pushing coal generation out of the merit order, while largely preserving spark spreads and more efficient gas generators. Nevertheless, we acknowledge that in 2021 rising gas prices, driven by a recovery of global power demand, and comparatively slower recovery of supply, may put pressure on spark spreads. Efficient Combined Cycle Gas Turbines (CCGTs) are increasingly supported by capacity markets across Europe to ensure power supply safety, as the share of intermittent renewables continues to grow. In Italy, the 2020 national plan may drive a decline in coal capacity in the short term, and a material increase in renewables may require capacity auctions and additional gas generation capacity to ensure security of supply.</p>
<p>Strategic Outlook (long-term industry trend)</p>	<p>In the long term, several drivers may boost power demand, including the electrification of transportation and heating.⁹⁰ Energy transition and decarbonisation may continue to drive the closure of thermal generation capacity. Germany plans to stop nuclear generation by 2023, becoming a net power importer, while France, Spain, and Sweden are positioned for a more gradual phase out. A reduction in thermal power, driven by climate change policies, may lead to a decline in reserve margins across Europe, supporting power prices. However, the growing interconnection of European grids should partially offset this trend.</p>
<p>ESG</p>	<p>Although essential to balance the grid, thermal power generation assets are CO₂ intensive, and may be increasingly exposed to the risk of being stranded. While this is particularly true for coal generation, we expect the outlook for gas to remain more stable in the long term, while green hydrogen may become an economical fuel solution for CCGTs in the long term, as the technology matures.</p>
<p>Risks</p>	<p>As the share of renewables is set to increase materially, power prices may become more volatile in the medium term, suggesting the need for PPAs to stabilise cash flows. A rising share of energy storage may provide some stability to prices in the long term, but also drive a reduction of peak power prices.</p>

⁸⁷ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

⁸⁸ Moody's Investor Services, "Europe's electricity markets", as at October 2020.

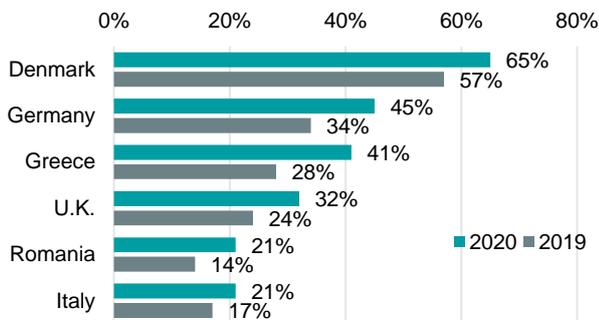
⁸⁹ Based on Bloomberg, as at November 2020.

⁹⁰ Based on a number of sources, including Moody's Investor Service, Bloomberg, as at May 2020.

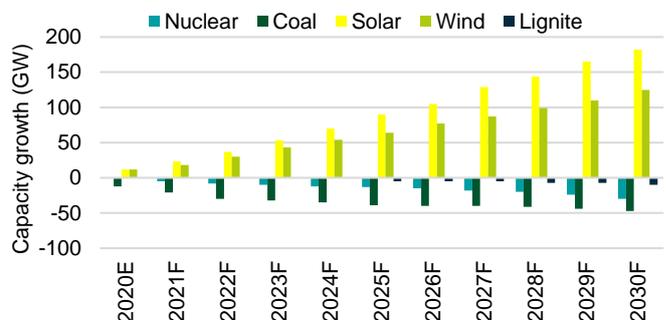
Renewable Generation⁹¹

2021 Operating Performance (EBITDA) Outlook	Stable
Strategic Outlook (long-term industry trend)	Positive
2021 Entry IRR Assumptions Brownfield Renewables (avg. Europe, 10Y, estimate)	7.5%
2021 Entry IRR Assumptions IPP Platform Strategy (avg. Europe, 10Y, estimate)	11.2%

SHARE OF POWER DEMAND FROM WIND AND SOLAR (2020E vs. 2019, by country)



RENEWABLES CAPACITY GROWTH BY SOURCE (Europe, GW, 2020E-2030F)



Source: DWS, International Energy Agency, S&P, as at November 2020. Notes: F = Forecast. Past performance is not a guide for future returns. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

<p>Short-term outlook (12-18 months)</p>	<p>In the first half of 2020, the pace of greenfield renewable projects slowed down, driven by delays in the delivery of essential components and lockdown measures jeopardising construction activity. In addition, the volume of brownfield transactions decelerated, with investors generally deciding to take a “wait-and-see” approach during lockdown. In the second half of the year, we observed an acceleration in transaction volumes and greenfield projects, particularly for wind and photovoltaic (PV) assets. The reduction in power prices observed in the first half of the year had a limited impact on the profitability of brownfield renewable projects, as the contracted or regulated nature of revenues limited merchant exposure.</p> <p>The sector continues to move from feed-in-tariff mechanisms to more competitive auction or contract-for-difference frameworks, providing a floor to power prices but somewhat capping profitability and reducing long-term cash flow visibility. We continue to witness a gradual development of the European PPA market. With growing shares of renewables weighing on power price volatility in the medium term, at least until more storage capacity provides more stability to the system, we believe that investors may want to focus on projects supported by contracts providing long-term cash flow stability. We expect the PPA market to accelerate in the medium term.</p> <p>The gradual full recovery of power prices in the medium term may weigh on grid parity assumptions for new capacity coming to market in 2021. We expect France, the Benelux, and Germany to be particularly active markets for new capacity additions in 2021. In particular, Germany energy transition policies are expected to lead to a material retirement of thermal capacity in the medium term, requiring substantial renewable capacity for replacement. We believe that the sector may be favourably positioned to support investors with strategies that combine existing brownfield assets with greenfield capacity additions to support returns.</p>
<p>Strategic Outlook (long-term industry trend)</p>	<p>The European Green Deal, E.U. 2030 renewables targets and falling technology costs, particularly for PV, should support renewables in the long term. We expect the market for small-scale renewables to accelerate over the coming decade, but large-scale renewable projects may continue to offer a solid pipeline of investment opportunities. As technology costs reduce, we continue to expect battery storage to complement greenfield projects, or to be retrofitted to brownfield projects to optimise the revenue generation profile.</p>
<p>ESG</p>	<p>Renewables continue to grow at a fast pace, with policy increasingly supporting decarbonisation. Renewables also represent a key area of policy response to Covid-19, with the U.S. expected to re-join the Paris agreement and accelerate on renewables projects in the medium term.</p>
<p>Risks</p>	<p>Fading subsidies may expose projects to power price volatility in the absence of PPAs. A growing share of battery storage may cap peak prices in the medium term but also contribute to reduce price volatility.</p>

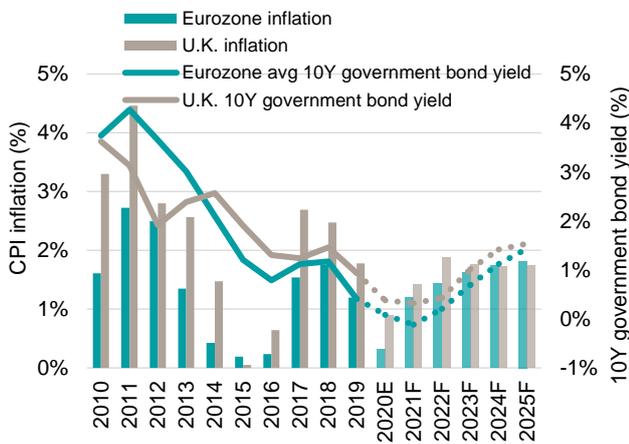
⁹¹ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

5.2.2 Networks & Utilities ⁹²

Regulated Networks⁹³

2021 Operating Performance (EBITDA) Outlook	Stable/Negative
Strategic Outlook (long-term industry trend)	Stable
2021 Entry IRR Assumptions (avg. Europe, 10Y, estimate)	6.9%

INFLATION AND 10Y GOVERNMENT BOND YIELD (% , 2010-2025F)



NETWORKS REGULATORY REVIEW DATES (2021F-2023F, Europe)

Jan 2021	Czech Republic	Electricity distribution and transmission
Mar 2021	France	Electricity transmission
Apr 2021	U.K.	Gas distribution and transmission
Apr 2021	U.K.	Electricity transmission
Jan 2022	Netherlands	Gas distribution and transmission
Jan 2022	Slovakia	Electricity distribution and transmission
Sep 2022	Ireland	Gas distribution and transmission
Jan 2023	Austria	Gas distribution and transmission
Jan 2023	Germany	Gas distribution and transmission
Apr 2023	U.K.	Electricity distribution
Dec 2023	Italy	Electricity distribution and transmission

Source: Based on a number of sources, including Oxford Economics, S&P, as at November 2020. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

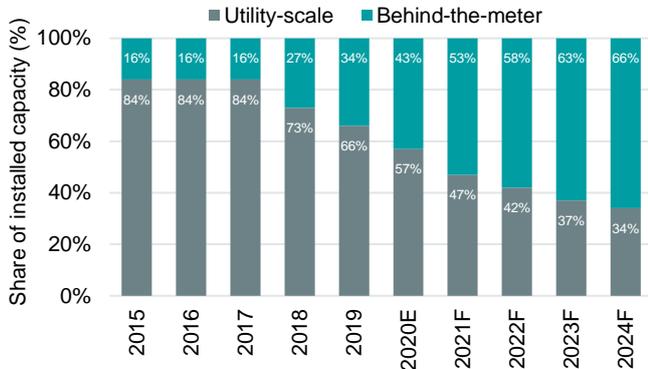
Short-term outlook (12-18 months)	Regulated networks were generally not impacted by Covid-19, as they are mostly supported by RAB ⁹⁴ regulation, providing regulated returns that are neutral to volume and price fluctuations. In some countries, such as in the case of the Italian regulator ARERA, regulators introduced support measures enabling network operators to recover revenues lost during the pandemic. ⁹⁵ In 2021, we see a number of regulatory reviews scheduled for gas and electricity networks across Europe. As we expect inflation and interest rates to remain low over the next years, regulated returns may observe a further compression compared to the previous regulated periods, particularly for new regulatory periods expected to start in 2021 and 2022.
Strategic Outlook (long-term industry trend)	In the long term, we expect regulated networks to continue to expand, albeit mostly at a growth rate below GDP growth for water and gas networks. At the same time, a growing share of renewables may require substantial investment in power grids. For example, it is estimated that German electricity transmission system operators need to invest around EUR 19 billion in power networks over 2021-2023. ⁹⁶
ESG	Efficient energy transmission and distribution networks play an essential role in the integration of more sustainable electricity generation in the European electricity markets. Regulators are increasingly embedding more stringent sustainability targets within incentive mechanisms, and appear to increasingly focus on affordability, which may translate into remuneration pressure for regulated networks, in countries with comparatively higher energy bills. ⁹⁷ Regulation in the water networks sector may be increasingly essential to tackle water risk, ensuring adequate investment to support resilience of networks to climate change and continued supply of drinkable water across both developed and emerging markets.
Risks	In 2020, we continued to observe a particularly competitive environment for core infrastructure assets and particularly for regulated networks, with valuations and pricing providing limited alpha potential for infrastructure investors pursuing a core plus strategy in our view. ⁹⁸

⁹² Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described.
⁹³ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.
⁹⁴ RAB = Regulated Asset Base.
⁹⁵ Moody's Investor Service, "Europe's electricity markets –Italy", as at October 2020.
⁹⁶ Moody's Investor Service, "Europe's electricity markets –Germany", as at October 2020.
⁹⁷ Based on S&P, as at June 2020.
⁹⁸ Based on Inframation Deals database, as at November 2020.

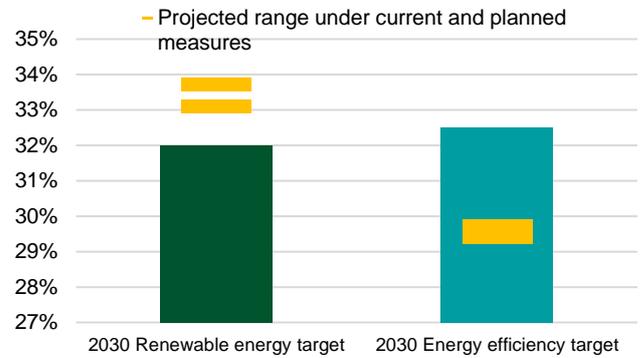
Integrated Utilities, Energy Services & Energy Efficiency⁹⁹

2021 Operating Performance (EBITDA) Outlook	Stable
Strategic Outlook (long-term industry trend)	Stable
2021 Entry IRR Assumptions for Integrated Utilities (avg. Europe, 10Y, estimate)	8.0%

GLOBAL SHARE OF UTILITY-SCALE AND BEHIND-THE-METER ENERGY STORAGE CAPACITY (% , 2015-2024F)



E.U.'S GREEN TARGETS AND PROJECTIONS (% , Renewables and Energy Efficiency)



Source: Bloomberg New Energy Finance as at February 2020, European Commission as at September 2020. Notes: E = expected, F = forecast. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Short-term outlook (12-18 months)	The business profile of European integrated utilities includes a combination of regulated networks, power generation, renewables and energy services. In 2020, the impact of Covid-19 was largely concentrated on the power generation segment. Based on capacity mix and geographical location, utilities may have experienced a reduction in load factors and electricity sale margins. Nevertheless, hedging generally in place for 12-18 months provided a buffer, and — with power demand and prices gradually rebounding in the second half of 2020 — profitability was largely preserved. In a market environment characterised by increased power price volatility, some utilities may have benefitted from trading, supporting EBITDA margins. ¹⁰⁰ Given the slowdown in development of greenfield renewables and energy services, representing a material part of capex plans, we may expect a deviation from business plan targets in the short term.
Strategic Outlook (long-term industry trend)	Integrated utilities appear to be increasingly focusing on consolidating their positions on regulated networks and renewables. Covid-19 may accelerate the transformation process of integrated utilities in response to the growing trends of digitalisation, energy efficiency and transport electrification. We expect utilities to increasingly tap into energy services, with energy efficiency, small-scale renewables, behind-the-metre technology, battery storage and transport electrification representing potential growth segments. We expect private investors to increasingly seek ways to tap into this growing market, contributing to closing the investment gap alongside utilities.
ESG	Utilities are responsible for a considerable share of greenhouse gas emissions and we expect the sector to play a central role in decarbonisation, evolving from traditional large-scale fossil-based centralised business models, to a decentralised, sustainable customer-centric system. We increasingly see a range of diverging business models emerging in the utilities sector, and believe that utilities focusing on sustainable strategies may provide stronger alpha generation potential to investors.
Risks	As the business model of integrated utilities evolves towards new business segments, such as energy services, we may observe an increase in their risk profile and in the volatility of their financial performance.

⁹⁹ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

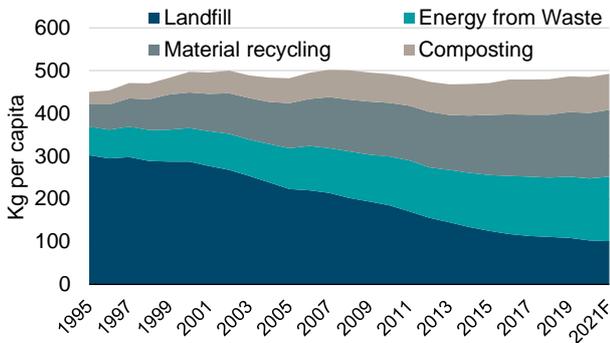
¹⁰⁰ Based on a number of sources, including Moody's Investor Service and Bloomberg, as at November 2020.

5.2.3 Circular Economy¹⁰¹

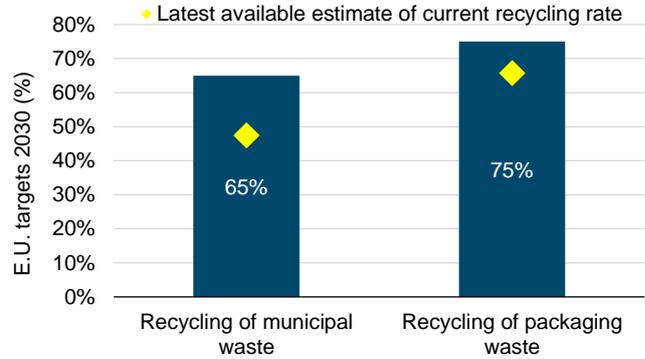
Waste Management, EfW and Recycling¹⁰²

2021 Operating Performance (EBITDA) Outlook	Stable
Strategic Outlook (long-term industry trend)	Stable
2021 Entry IRR Assumptions (avg. Europe, 10Y, estimate)	10.7%

MUNICIPAL WASTE TREATMENT EU-28 (Kg per Capita)



E.U. RECYCLING TARGETS 2030 (%)



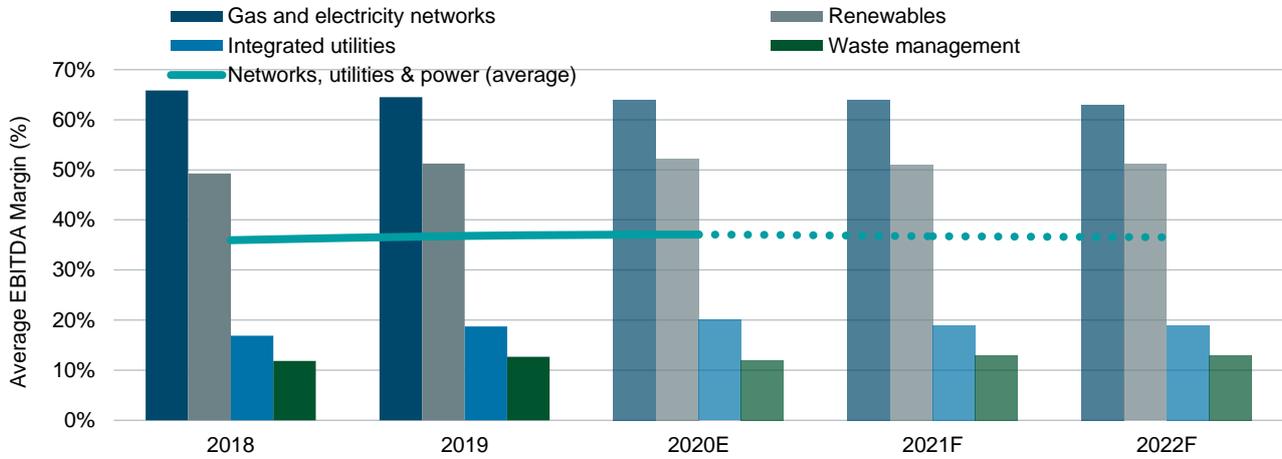
Source: Eurostat, European Commission, "Review of Waste Policy and Legislation", as at December 2019.. Notes: F = Forecast. Past performance is not a guide for future returns. Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described.

<p>Short-term outlook (12-18 months)</p>	<p>Energy-from-Waste (EfW): Covid-19 led to an increase in residential waste volumes of approximately 20% during lockdown, while industrial waste volumes contracted over the same period for a comparable amount. In 2020, we expect waste volumes to increase despite the economic downturn, driven by stronger domestic waste generation. EfW revenues continued to be supported by stable municipal gate fees with local authorities and contracted electricity and steam revenues.</p> <p>In 2021, we expect waste volumes to be sluggish, as per the economic environment. We believe that EfW plants supported by a diversified profile of waste supply contracts and plants located strategically to benefit from waste imports should be better positioned for a sluggish economic environment in the medium term.</p> <p>Recycling: Covid-19 led to increased volumes of packaging and unrecyclable domestic waste across most European markets. As several local authorities were forced to limit waste collection operations and close recycling centres during lockdown, recycling activity dropped substantially across Europe in the first half of the year.</p> <p>In 2021, we expect recycling activity to strengthen, with under-capacity of recycling facilities providing opportunities for investors in the medium-term.</p>
<p>Strategic Outlook (long-term industry trend)</p>	<p>Energy-from Waste: The European Commission aims to reduce landfills to a maximum of 10% for municipal waste by 2030.¹⁰³ Policy continues to drive a closure of landfill sites or the introduction of landfill taxes across Europe, providing sustainable waste flows towards EfW projects in the long term.</p> <p>The E.U. aims to treat waste produced in the region domestically, limiting exports and generating material investment needs in waste treatment facilities in the long term, particularly across European countries with EfW under capacity.</p> <p>Recycling: The European Union has specific targets for 2030, including recycling 65% of municipal waste and 75% of packaging waste.¹⁰⁴ Most European countries have an under capacity of recycling facilities compared with 2030 targets, and we expect a growing set of investment opportunities for recycling facilities.</p>
<p>ESG</p>	<p>In 2020, the European Commission adopted a new Circular Economy Action Plan, one of the main blocks of the European Green Deal. The Action Plan announced initiatives along the entire life cycle of products, fostering sustainable consumption and promoting circular economy processes in sectors such as electronics, batteries, vehicles, packaging, plastics, textiles and construction.</p>
<p>Risks</p>	<p>A fragile macroeconomic environment may cap domestic consumption, industrial production and waste volumes growth in the medium term.</p>

Power, Utilities & Networks Financial Performance¹⁰⁵

AVERAGE POWER, UTILITIES & NETWORKS EBITDA MARGIN BY SECTOR

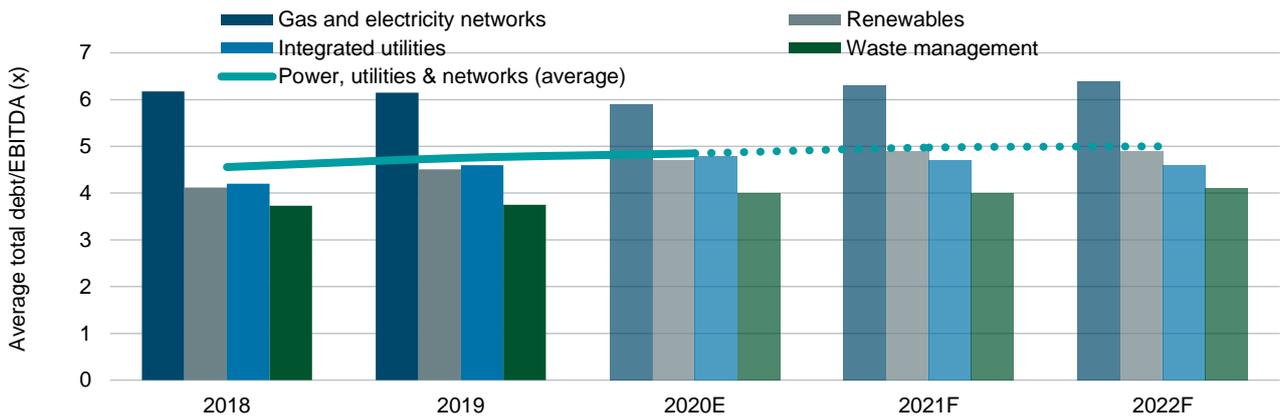
(Estimate, %, Europe, 2017-2022F)



Source: Based on a number of sources, including Bloomberg, S&P, Fitch, as at October 2020. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise.

AVERAGE POWER, UTILITIES & NETWORKS LEVERAGE BY SECTOR

(Estimate, x, Europe, 2017-2022F)



Source: Based on a number of sources, including Bloomberg, S&P, Fitch, as at October 2020. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise.

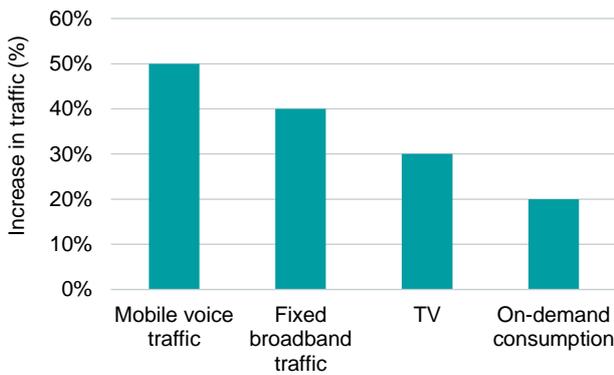
¹⁰⁵ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

5.3 Digital Infrastructure¹⁰⁶

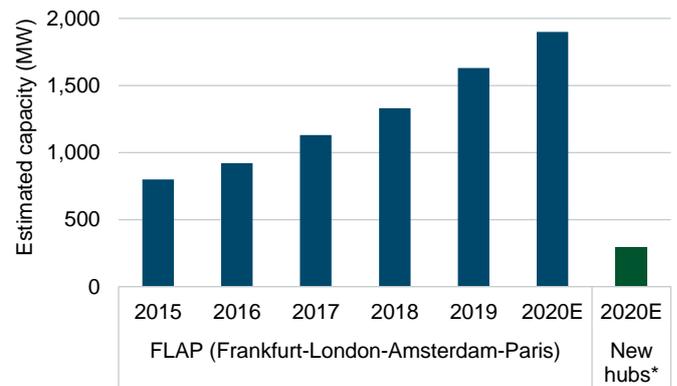
Data centres¹⁰⁷

2021 Operating Performance (EBITDA) Outlook	Positive
Strategic Outlook (long-term industry trend)	Positive
2021 Entry IRR Assumptions (avg. Europe, 10Y, estimate)	12.8%

AVERAGE TRAFFIC INCREASE SINCE COVID-19
(%, Estimate)



ESTIMATED EUROPEAN COLOCATION CAPACITY
(MW, 2015-2020E, By Location)



Source: DWS, Moody's Investor Service, as at April 2020, CBRE Research, as at October 2020. Notes: E = expected, F = forecast, *New hubs refer to emerging data centre hub locations including Dublin, Milan, Zurich, Madrid, and Stockholm. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Short-term outlook (12-18 months)	<p>Covid-19 has accelerated the transition of enterprises towards digitalisation, with remote working and video conferencing driving a surge in data traffic of up to 50%, and increasing demand for data centre facilities. Enterprises require greater operational flexibility, data storage and processing capacity to support business continuity. Recent data suggest that enterprises tend to prefer hybrid IT solutions, including a combination of private and public cloud, a trend that we anticipate to continue in 2021.¹⁰⁸ We expect demand for data centres facilities to continue growing in 2021 and anticipate an increase in demand for colocation data centres offering connectivity solutions.</p> <p>In 2020, data centres capacity continued to expand across FLAP¹⁰⁹ markets, led by Frankfurt and London hubs. Greenfield projects experienced delays in 2020 due to Covid-19, but we expect an acceleration in data centre capacity coming to the market in 2021, as the pandemic gradually fades.</p>
Strategic Outlook (long-term industry trend)	<p>The sector should continue expanding, particularly with regard to small-scale edge data centres due to the increased demand for low latency connectivity driven by Internet-of-Things (IoT) technologies. In addition, over the coming years, we may see more opportunities in emerging locations, such as Dublin and Milan.</p>
ESG	<p>Data centres use around 1% of global energy, and CO₂ emissions may be substantial if not powered by renewable energy sources.¹¹⁰ Acquiring and managing assets that use renewable energy and manage efficiently their power usage effectiveness (PUE) may be preferable.</p>
Risks	<p>Today, the growth of colocation providers is driven by their ability to facilitate hybrid and multi-cloud solutions for enterprises. Although unlikely in the medium term, if enterprises were to transit their data computing directly to hyperscaler cloud providers, this may jeopardise the business model of colocation data centres.¹¹¹ Therefore, diversification across strategies, locations and customers is key.</p>

¹⁰⁶ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

¹⁰⁷ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

¹⁰⁸ S&P, "Pandemic drives more enterprise to the cloud, data centers", June 2020.

¹⁰⁹ FLAP markets = Frankfurt, London, Amsterdam, Paris.

¹¹⁰ IEA, "Data centres and data transmission networks", May 2019.

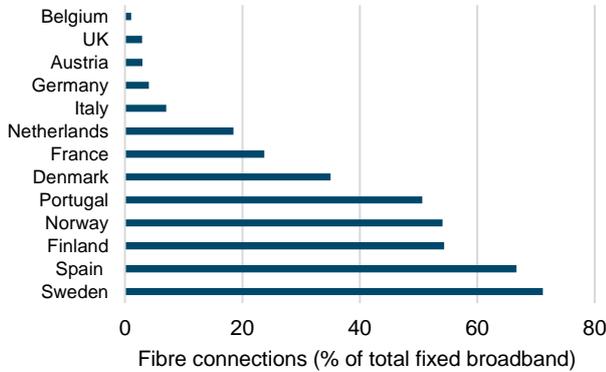
¹¹¹ Based on Moody's Investor Services, January 2019.

Fibre networks¹¹²

2021 Operating Performance (EBITDA) Outlook	Positive
Strategic Outlook (long-term industry trend)	Positive
2021 Entry IRR Assumptions (avg. Europe, 10Y, estimate)	10.7%

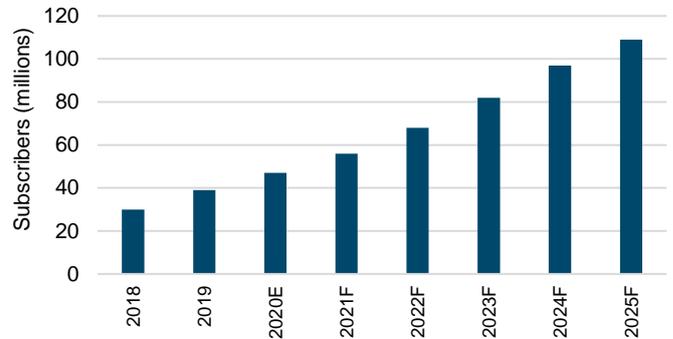
FIBRE CONNECTIONS

(2019, % of Total Fixed Broadband)



FTTH/B SUBSCRIBERS FORECAST IN EU-28

(2018-2025F)



Source: OECD, FTTH Council EUROPE, as at December 2019. Notes: Fibre subscriptions data includes FTTH, FTTP and FTTB and excludes FTTC and FTTN. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Short-term outlook (12-18 months)	Covid-19 generated a surge in data volumes in 2020, increasing demand for a fast and reliable internet connection, and leading to an acceleration in demand for Fibre-to-the-Home (FTTH) installations. In 2021, the pandemic may gradually fade, but we expect demand for fast connectivity to remain high as Covid-19 may drive a structural increase in working from home and corporates moving to the cloud. Therefore, we anticipate demand for FTTH installations to continue to be strong in 2021, supporting the flow of greenfield fibre projects across Europe, particularly across smaller urban centres and rural areas where fibre connectivity is currently more limited.
Strategic Outlook (long-term industry trend)	We expect accelerating demand, and policy to drive the deployment of fibre networks in the medium term across Europe, and expect a solid pipeline of greenfield fibre infrastructure projects and opportunities for M&A in fibre networks space. One of the key objectives of the European Commission is to achieve connectivity of at least 100 Mbps for all European households by 2025. ¹¹³ FTTH is one of the most reliable long-term technological solutions to achieve this objective, and we acknowledge that there is a material fibre capacity gap across countries like Belgium, the U.K., Austria and Germany that may require substantial investment. We expect the recent deployment of 5G technology to contribute to this objective, representing a particularly efficient solution to support connectivity across rural areas, and to support increased data flow driven by technological evolution. In our view, the progressive growth of 5G may be a key driver of increased fibre connectivity needs, up to Fibre-to-the-Cabinet (FTTC).
ESG	Fibre is 85% more energy-efficient than copper networks, ¹¹⁴ and plays a pivotal role in providing the digital connectivity necessary to enable an efficient functioning of the existing infrastructure platform, from energy, to networks and transportation. Going forward, fibre connectivity may increasingly support the reduction of mobility related CO ₂ emissions.
Risks	In our view, some greenfield fibre projects today may rely on overly optimistic growth assumptions, particularly for FTTH in rural areas. In addition, 5G may increasingly compete with FTTH broadband services, limiting the growth expected in this market segment. ¹¹⁵

¹¹² Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

¹¹³ European Commission, "Broadband Europe", as at September 2020.

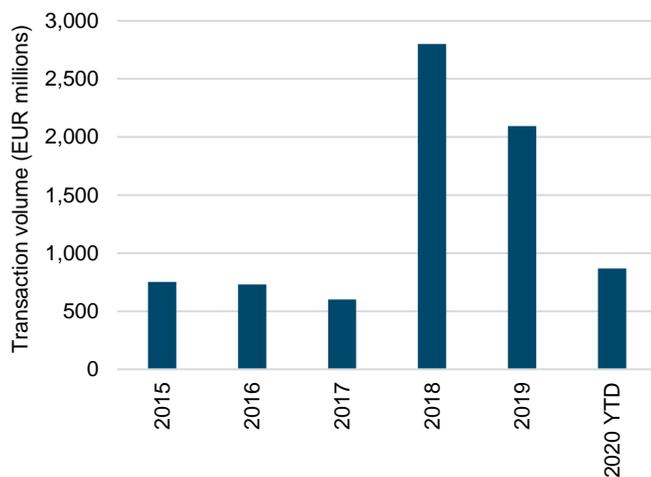
¹¹⁴ Based on S&P, as at May 2019.

¹¹⁵ Fitch, "Global Development of High-Speed Broadband Infrastructure", as at September 2020.

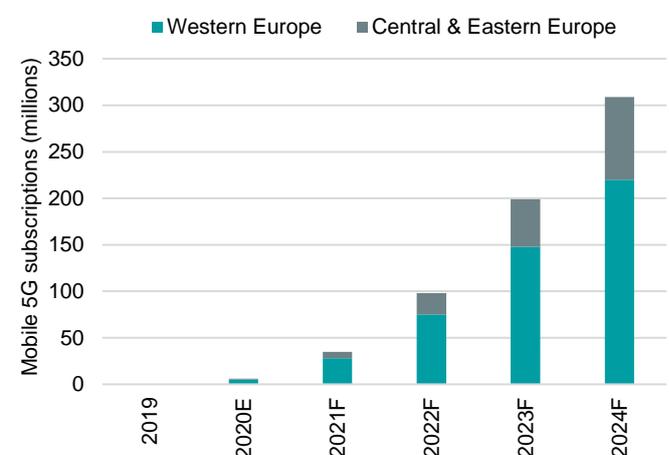
Telecom towers¹¹⁶

2021 Operating Performance (EBITDA) Outlook	Stable
Strategic Outlook (long-term industry trend)	Stable/Positive
2021 Entry IRR Assumptions (avg. Europe, 10Y, estimate)	7.4%

PRIVATE TELECOM TOWER DEALS IN EUROPE (2015-2020 YTD)



PROJECTED MOBILE 5G SUBSCRIPTIONS IN EUROPE (2019-2024F)



Source: Based on a number of sources, including InframationDeals, as at November 2020, Ericsson, as at June 2019. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Short-term outlook (12-18 months)	<p>In 2020, telecom towers remained largely unaffected by Covid-19, as long-term contracts with tenants (such as telecom, mobile and media operators) continued to provide revenue visibility. Nevertheless, the economic downturn led to some mobile operators deciding to adjust business plans and reduce expansionary capex on new tower capacity.</p> <p>For 2021, we expect growth in the telecom sector to remain supportive, and we expect new tower capacity to come to the market, driven by 5G accelerating across Europe, and as mobile operators may resume densification of their networks to improve network coverage.¹¹⁷</p>
Strategic Outlook (long-term industry trend)	<p>Our long-term outlook on the telecom tower sector is stable/positive. Telecom towers are supported by very long leasing contracts (10-20 years), often with inflation-linkage and high potential of contract renewal with existing customer.¹¹⁸ Nevertheless, we expect continued growth in the sector, mainly driven by the deployment of 5G, which requires higher density of towers due to shorter wavelength.¹¹⁹</p>
ESG	<p>In our view, 5G towers may represent an essential component of the digital backbone to power future infrastructure needs and may play an instrumental role in supporting a range of sustainable development objectives (SDGs), promoting inclusive digitalisation and fostering innovation, industrial automation, smart cities' and remote healthcare applications.</p>
Risks	<p>We continue to see the telecom tower sector as a competitive market environment driven by high pricing and ongoing consolidation, and we believe that telecom towers may provide limited alpha potential for infrastructure investors.</p>

¹¹⁶ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

¹¹⁷ Fitch Ratings, as at April 2020.

¹¹⁸ Fitch Ratings, as at April 2020.

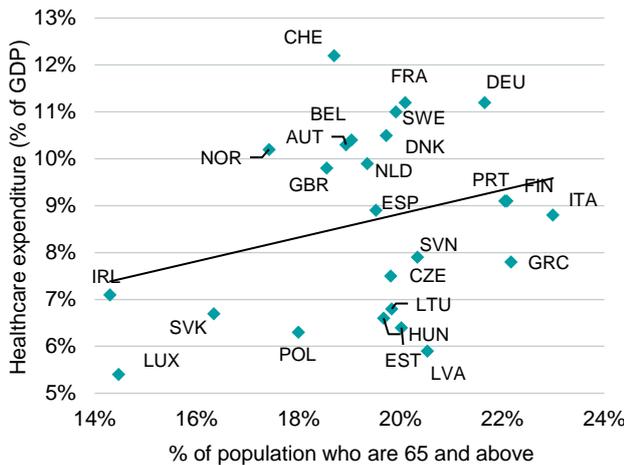
¹¹⁹ Based on Moody's Investors Service data, as at November 2019.

5.4 Social Infrastructure¹²⁰

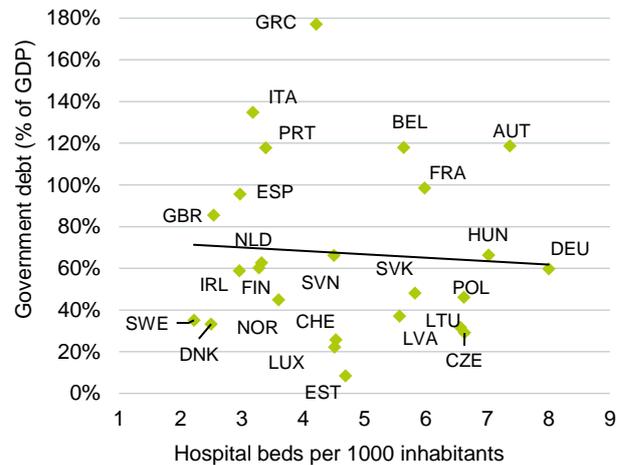
Private healthcare¹²¹

2021 Operating Performance (EBITDA) Outlook	Stable
Strategic Outlook (long-term industry trend)	Stable/Positive
2021 Entry IRR Assumptions (avg. Europe, 10Y, estimate)	13.2%

HEALTHCARE EXPENDITURE AND % OF 65+ (Expenditure as % of GDP, 65+ as % of Population)



GOVERNMENT DEBT AND HOSPITAL BEDS (Debt as % of GDP, Beds per 1000 Inhabitants)



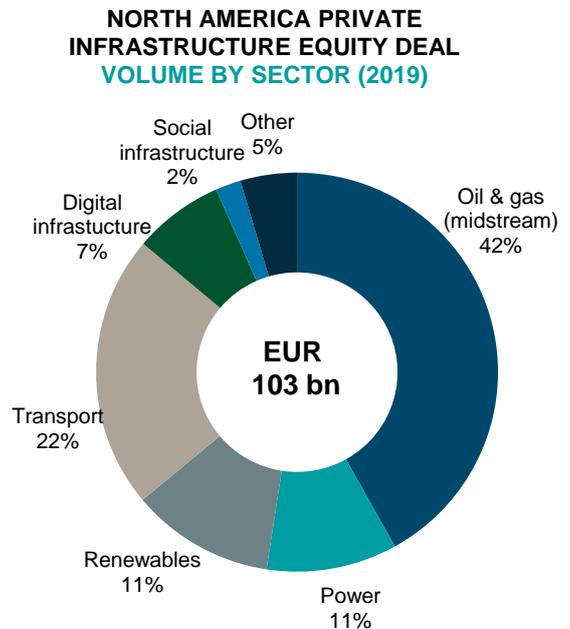
Source: DWS, OECD, Oxford Economics, as at May 2020. Notes: E = expected, F = forecast. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

Short-term outlook (12-18 months)	<p>In 2020, we saw an unprecedented fiscal policy response from European governments due to Covid-19 and this may lead to a substantial widening of fiscal deficits over coming years. We recognise that healthcare is high on governments' expenditure priorities, and anticipate increased public investment and E.U. funding in the short term.</p> <p>Historically, government funding for the provision of essential healthcare services via the national healthcare services budget has proven to be relatively stable and predictable across Europe. Regulation and tariff mechanisms vary by country, but are generally relatively predictable and transparent. At the same time, healthcare services more exposed to the social services budgets of individual local governments, such as the provision of elderly care services have historically experienced more cyclicity, and may be exposed to increased volatility in the short term, as local governments may need to reduce expenditure.</p>
Strategic Outlook (long-term industry trend)	<p>In the long term, we expect that healthcare expenditure may continue to grow above inflation, driven by an ageing population. Private healthcare services can be funded by a combination of public and private resources: services are paid directly by the government when offering essential levels of care guaranteed to all citizens, while additional healthcare services are paid out-of-pocket by private patients.</p> <p>Healthcare may increasingly weigh on government budgets, and governments with high levels of public debt may increasingly rely on private facilities for the provision of healthcare services. We therefore anticipate the pipeline for potential private healthcare opportunities and healthcare PPPs and concessions to grow over time. We expect the European market to grow in the long term with increasing involvement of private investors in the healthcare sector. We also expect the digitalisation of healthcare services to be a potential driver of investment opportunities.</p>
ESG	In Europe, governments support and regulate the provision of universal healthcare services to the population via public or private providers, ensuring an essential service to society.
Risks	Regulatory fragmentation may represent a barrier to cross-country consolidation of individual healthcare businesses for platform strategies.

¹²⁰ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

¹²¹ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

6 / North American Infrastructure Market¹²²



Source: DWS, InfracoreDeals, as at November 2020. Notes: Core markets are underpinned by comparatively low levels of country risk, a supportive institutional framework and a liquid capital markets, supportive of core and core plus investment strategies focusing on yield. Past performance is not indicative of future returns. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

With a USD 758 billion deal volume in private infrastructure (equity) over the last decade, North America represents the largest global market in terms of transaction volumes. Historically, transactions in North America have been concentrated in energy-related sectors. Renewables, oil & gas midstream and power generation projects accounted for about 80% of the total number of transactions achieving financial close between 2009 and 2019, with the majority of these projects in the greenfield space.¹²³

At the same time, investment opportunities in other sectors, such as transportation or social infrastructure, were historically more limited. However, the medium-term deal pipeline appears more diversified, with renewables and digital infrastructure expected to accelerate, and PPPs increasingly emerging as a policy tool to support infrastructure investment.¹²⁴

United States (Tier 1):¹²⁵ The United States represent the largest global private infrastructure market by historical transaction volumes over the last decade, supported by a stable institutional framework, low country risk, a large domestic market of institutional investors providing private capital. We see a solid pipeline of deals, concentrated in the power, and midstream energy sub-sectors. When compared with Europe, U.S. private infrastructure investment falls short with respect to

¹²² Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

¹²³ Based on Infrastructure Journal database over the period from 2009 to 2019. Past performance is not indicative of future returns.

¹²⁴ Based on Infrastructure Journal, as at July 2019. Past performance is not indicative of future results.

¹²⁵ Source: DWS, as at October 2020. Notes: DWS Infrastructure Market Qualifier methodology is based on a number of indicators that are publicly available. These are standardised and equally weighted, contributing to the calculation of a final score. Tiers are assigned based on the final score. Tier 1 to Tier 3 are Core infrastructure markets supportive of core and core plus investment strategies focusing on yield, Tier 4 are Opportunistic markets that may be supportive of core and core plus investment strategies focusing on yield for a limited portion of the portfolio. Tier 5 are Speculative, and Tier 6 are High Risk markets and do not represent in our view markets suitable for long-term core and core plus infrastructure investors. For illustrative purposes only. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

transportation opportunities, such as airports and toll roads, but also for social infrastructure, all sectors that have historically relied on financing from Federal, state, local governments, and a deep municipal bonds market.¹²⁶ Nevertheless, in recent years we have observed an acceleration in transportation deals, particularly with regard to port and rail infrastructure. The recent change of administration is expected to drive an acceleration in infrastructure investment across traditional sectors, digital infrastructure, sustainable infrastructure and renewables. Investment in renewables is likely to be driven by a stronger policy focus on climate change, with the U.S. expected to re-join the Paris agreement, and introduce a CO₂ emission framework in the medium term. Therefore, we anticipate the U.S. to attract more attention from international investors focusing on these sectors in the medium-term.

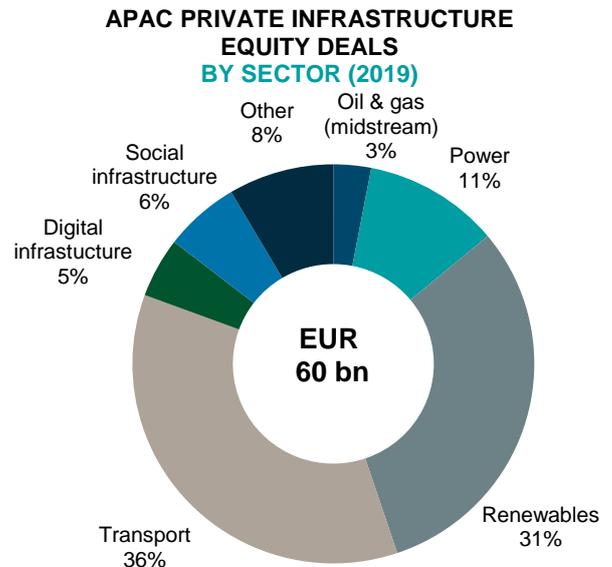
Canada (Tier 2):¹²⁷ Canada is perceived to have a low level of country risk, a strong domestic institutional investor base and one of the most developed PPP frameworks globally, which has been the key driver behind the development of a solid infrastructure market. However, with greenfield social infrastructure projects accounting for the majority of the pipeline, and most PPP projects in the hands of buy-and-hold investors, the secondary market for infrastructure assets is more limited compared to Europe. Historical transaction volumes have also fallen behind compared with both Europe and the U.S. The Canadian energy market is particularly large, with power generation and renewables accounting for a substantial part of the deal flow. Transportation has accounted for 11% of transaction volumes, while digital infrastructure has accounted for a limited 3%. Going forward we expect a solid pipeline of infrastructure investment opportunities, with digital infrastructure accelerating, and renewables continuing to represent a growing share of the investment pipeline.¹²⁸

¹²⁶ S&P Global, 'Developing U.S. Infrastructure', March 2017.

¹²⁷ Source: DWS, as at October 2020. Notes: DWS Infrastructure Market Qualifier methodology is based on a number of indicators that are publicly available. These are standardised and equally weighted, contributing to the calculation of a final score. Tiers are assigned based on the final score. Tier 1 to Tier 3 are Core infrastructure markets supportive of core and core plus investment strategies focusing on yield, Tier 4 are Opportunistic markets that may be supportive of core and core plus investment strategies focusing on yield for a limited portion of the portfolio. Tier 5 are Speculative, and Tier 6 are High Risk markets and do not represent in our view markets suitable for long-term core and core plus infrastructure investors. Core illustrative purposes only. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

¹²⁸ Based on Infrastructure Journal, as at July 2019. Past performance is not indicative of future results.

7 / APAC Infrastructure Market¹²⁹



Source: DWS, InframationDeals, as at November 2020. Notes: Core markets are underpinned by comparatively low levels of country risk, a supportive institutional framework and a liquid capital markets, supporting diversified pipeline of opportunities suitable for core and core plus long-term infrastructure investment strategies. There is no guarantee the forecast shown will materialise. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect.

APAC is the region with the largest infrastructure investment gap globally, estimated at over USD 5 trillion over the next two decades.¹³⁰ Notwithstanding the widening infrastructure investment gap, historical transaction volumes and fundraising for private infrastructure in the APAC region are materially below those seen in Europe and North America. The reason for lower infrastructure investment volumes is related to the fact that, from the perspective of long-term core/ core plus infrastructure investors, the APAC region is effectively fragmented in two sub-markets: mature OECD markets and emerging markets.

Core APAC infrastructure markets: The APAC region offers exposure to mature OECD markets, including Australia, Japan, New Zealand, and South Korea. These markets are, in our view, core infrastructure markets from a fundamental perspective and are underpinned by comparatively low levels of country risk, a supportive institutional framework and liquid capital markets, supporting diversified core and core plus long-term infrastructure investment strategies.

Looking at historical transaction volumes, we acknowledge that Australia has historically represented the largest market for private infrastructure in the APAC region, supported by a favourable regulatory framework, and a large domestic base of institutional investors with a long track record in private infrastructure investment. Historically, the Australian market has mainly exposed investors to transaction opportunities in energy (51% of the total number of transactions achieving financial close between 2009 and 2019) and transportation (22%).¹³¹ We expect the Australian market to evolve in the medium term, proving more supportive for diversified infrastructure investment strategies, particularly with regard to digital infrastructure, while we acknowledge that the policy framework seems today less conducive for strategies focusing on renewables and energy transition compared with Europe, for instance.

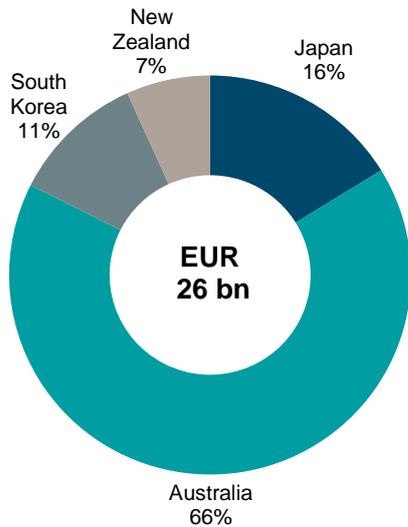
At the same time, markets like South Korea and Japan, while displaying a mature institutional and legislative framework for long-term private infrastructure investment, have also seen more limited infrastructure transaction opportunities to date, mainly due to a more prominent role of public investment.

¹²⁹ Forecasts are based on assumptions, estimates, views and hypothetical models or analyses, which might prove inaccurate or incorrect. Past performance is not indicative of future returns.

¹³⁰ Based on World Economic Forum, as at April 2019.

¹³¹ Based on InframationDeals database over the period from 2009 to 2019. Past performance is not indicative of future returns.

MATURE APAC PRIVATE INFRASTRUCTURE EQUITY DEALS BY COUNTRY (2019)

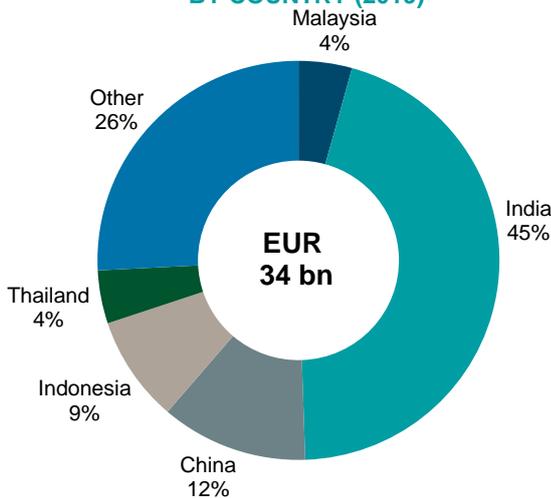


Source: DWS, InframationDeals, as at November 2020. Past performance is not indicative of future returns.

Emerging APAC Markets: The bulk of the substantial infrastructure investment gap of the APAC region is concentrated in emerging markets, driven by strong economic growth rates, leading to material investment needs in new infrastructure across different sectors, ranging from toll roads, to rail, to energy generation, grids, water networks and telecommunications.

Despite the material investment gap, from a fundraising perspective, emerging APAC represents on average less than 10% of the global market. While funds seem to have a more limited role in the market, domestic direct investors do play an important role. Emerging APAC markets generally display a higher perceived level of country risk and a stronger vulnerability to exogenous macroeconomic factors weighing on return predictability, thereby limiting their attractiveness for international investors and funds focusing on core and core plus infrastructure. Moreover, some sectors are not directly accessible to private investors, and regulatory frameworks, although rapidly evolving, are often today still perceived to be in a maturing phase from the perspective of long-term infrastructure investors focusing on yield predictability.

EMERGING APAC PRIVATE INFRASTRUCTURE EQUITY DEALS BY COUNTRY (2019)



Source: DWS, InframationDeals, as at November 2020. Past performance is not indicative of future returns.

Nevertheless, we recognise that the APAC region is gradually maturing, and anticipate investors' interest to increase over time. We already notice a growing investment flow in renewables, and we expect this trend to accelerate. In particular, in 2020 year to date, renewables deals in APAC had a volume of EUR 11 billion, accounting for almost a third of the total deal volume. Although country risk may be perceived as higher, and institutional frameworks may still be in a maturing phase, renewable energy technology is relatively standardised. This factor is effectively contributing to the partial de-risking of greenfield projects in this region.

Moreover, we recognise that, given their large size, emerging markets in the APAC region may play an essential role in the acceleration of the deployment of sustainable infrastructure, something we have more recently observed for the electrification of public transport in 2020.

8 / Appendix

Calendar Annual Performance

Index	2015	2016	2017	2018	2019	YTD Jun-2020
MSCI Global Private Infrastructure Asset Index	18.0%	15.3%	13.1%	12.3%	12.6%	-3.3%
EDHEC (Scientific Infra) Infra300 Equity Index	5.0%	9.1%	15.0%	1.6%	13.6%	-7.0%

Source: Bloomberg, MSCI, EDHECinfra (Scientific Infra), as at June 2020. The Infra300 Index used in the present document are the intellectual property (including registered trademarks) of Scientific Infra and/or its licensors, which is used under license within the framework of the Scientific Infra activity. Scientific Infra is not responsible for the moral or material consequences of their use. Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described. Past performance is not a reliable indicator of future returns.

Rolling Annual Performance

Index	Jun-2015	Jun-2016	Jun-2017	Jun-2018	Jun-2019	Jun-2020
MSCI Global Private Infrastructure Asset Index	18.6%	16.0%	12.6%	12.6%	13.4%	1.7%
EDHEC (Scientific Infra) Infra300 Equity Index	11.1%	26.3%	-1.7%	8.0%	11.9%	0.5%

Source: Bloomberg, MSCI, EDHECinfra (Scientific Infra), as at June 2020. The Infra300 Index used in the present document are the intellectual property (including registered trademarks) of Scientific Infra and/or its licensors, which is used under license within the framework of the Scientific Infra activity. Scientific Infra is not responsible for the moral or material consequences of their use. Due to various risks, uncertainties and assumptions made in our analysis, actual events or results or the actual performance of the markets covered may differ materially from those described. Past performance is not a reliable indicator of future returns.

Research & Strategy— Alternatives

OFFICE LOCATIONS:

Chicago

222 South Riverside Plaza
34th Floor
Chicago
IL 60606-1901
United States
Tel: +1 312 537 7000

Frankfurt

Mainzer Landstrasse 11-17
60329 Frankfurt am Main
Germany
Tel: +49 69 71909 0

London

Winchester House
1 Great Winchester Street
London EC2N 2DB
United Kingdom
Tel: +44 20 754 58000

New York

875 Third Avenue
26th Floor
New York
NY 10022-6225
United States
Tel: +1 212 454 3414

San Francisco

101 California Street
24th Floor
San Francisco
CA 94111
United States
Tel: +1 415 781 3300

Singapore

One Raffles Quay
South Tower
20th Floor
Singapore 048583
Tel: +65 6538 7011

Tokyo

Sanno Park Tower
2-11-1 Nagata-cho
Chiyoda-Ku
18th Floor
Tokyo
Japan
Tel: +81 3 5156 6000

TEAM:

Global

Kevin White, CFA

Co-Head of Research & Strategy
kevin.white@dws.com

Simon Wallace

Co-Head of Research & Strategy
simon.wallace@dws.com

Gianluca Minella

Head of Infrastructure Research
gianluca.minella@dws.com

Americas

Brooks Wells

Head of Research, Americas
brooks.wells@dws.com

Liliana Diaconu, CFA

Office Research
liliana.diaconu@dws.com

Ross Adams

Industrial Research
ross.adams@dws.com

Ryan DeFeo

Property Market Research
ryan-c.defeo@dws.com

Ana Leon

Retail Research
ana.leon@dws.com

Joseph Pecora, CFA

Apartment Research
joseph.pecora@dws.com

Europe

Tom Francis

Property Market Research
tom.francis@dws.com

Siena Golan

Property Market Research
siena.golan@dws.com

Rosie Hunt

Property Market Research
rosie.hunt@dws.com

Martin Lippmann

Property Market Research
martin.lippmann@dws.com

Florian van-Kann

Property Market Research
florian.van-kann@dws.com

Aizhan Meldebek

Infrastructure Research
aizhan.meldebek@dws.com

Asia Pacific

Koichiro Obu

Head of Research & Strategy, Asia Pacific
koichiro-a.obu@dws.com

Natasha Lee

Property Market Research
natasha-j.lee@dws.com

Seng-Hong Teng

Property Market Research
seng-hong.teng@dws.com

Hyunwoo Kim

Property Market Research
hyunwoo.kim@dws.com

Important Information

The brand DWS represents DWS Group GmbH & Co. KGaA and any of its subsidiaries, such as DWS Distributors, Inc., which offers investment products, or DWS Investment Management Americas, Inc. and RREEF America L.L.C., which offer advisory services.

This material was prepared without regard to the specific objectives, financial situation or needs of any particular person who may receive it. It is intended for informational purposes only. It does not constitute investment advice, a recommendation, an offer, solicitation, the basis for any contract to purchase or sell any security or other instrument, or for DWS or its affiliates to enter into or arrange any type of transaction as a consequence of any information contained herein. Neither DWS nor any of its affiliates gives any warranty as to the accuracy, reliability or completeness of information which is contained in this document. Except insofar as liability under any statute cannot be excluded, no member of the DWS, the Issuer or any office, employee or associate of them accepts any liability (whether arising in contract, in tort or negligence or otherwise) for any error or omission in this document or for any resulting loss or damage whether direct, indirect, consequential or otherwise suffered by the recipient of this document or any other person.

The views expressed in this document constitute DWS Group's judgment at the time of issue and are subject to change. This document is only for professional investors. This document was prepared without regard to the specific objectives, financial situation or needs of any particular person who may receive it. No further distribution is allowed without prior written consent of the Issuer.

Investments are subject to risk, including market fluctuations, regulatory change, possible delays in repayment and loss of income and principal invested. The value of investments can fall as well as rise and you might not get back the amount originally invested at any point in time.

An investment in infrastructure involves a high degree of risk, including possible loss of principal amount invested, and is suitable only for sophisticated investors who can bear such losses. The value of shares/ units and their derived income may fall or rise.

War, terrorism, economic uncertainty, trade disputes, public health crises (including the recent pandemic spread of the novel coronavirus) and related geopolitical events could lead to increased market volatility, disruption to US and world economies and markets and may have significant adverse effects on the fund and its investments.

This marketing communication is intended for professional clients only.

DWS is the brand name of DWS Group GmbH & Co. KGaA and its subsidiaries under which they operate their business activities. The respective legal entities offering products or services under the DWS brand are specified in the respective contracts, sales materials and other product information documents. DWS, through DWS Group GmbH & Co. KGaA, its affiliated companies and its officers and employees (collectively "DWS") are communicating this document in good faith and on the following basis.

This document has been prepared without consideration of the investment needs, objectives or financial circumstances of any investor. Before making an investment decision, investors need to consider, with or without the assistance of an investment adviser, whether the investments and strategies described or provided by DWS Group, are appropriate, in light of their particular investment needs, objectives and financial circumstances. Furthermore, this document is for information/discussion purposes only and does not constitute an offer, recommendation or solicitation to conclude a transaction and should not be treated as giving investment advice.

The document was not produced, reviewed or edited by any research department within DWS and is not investment research. Therefore, laws and regulations relating to investment research do not apply to it. Any opinions expressed herein may differ from the opinions expressed by other legal entities of DWS or their departments including research departments.

The information contained in this document does not constitute a financial analysis but qualifies as marketing communication. This marketing communication is neither subject to all legal provisions ensuring the impartiality of financial analysis nor to any prohibition on trading prior to the publication of financial analyses.

This document contains forward looking statements. Forward looking statements include, but are not limited to assumptions, estimates, projections, opinions, models and hypothetical performance analysis. The forward looking statements expressed constitute the author's judgment as of the date of this document. Forward looking statements involve significant elements of subjective judgments and analyses and changes thereto and/ or consideration of different or additional factors could have a material impact on the results indicated. Therefore, actual results may vary, perhaps materially, from the results contained herein. No representation or warranty is made by DWS as to the reasonableness or completeness of such forward looking statements or to any other financial information contained in this document. Past performance is not guarantee of future results.

We have gathered the information contained in this document from sources we believe to be reliable; but we do not guarantee the accuracy, completeness or fairness of such information. All third party data are copyrighted by and proprietary to the provider. DWS has no obligation to update, modify or amend this document or to otherwise notify the recipient in the event that any matter stated herein, or any opinion, projection, forecast or estimate set forth herein, changes or subsequently becomes inaccurate.

Investments are subject to various risks, including market fluctuations, regulatory change, possible delays in repayment and loss of income and principal invested. The value of investments can fall as well as rise and you might not get back the amount originally invested at any point in time. Furthermore, substantial fluctuations of the value of any investment are possible even over short periods of time. The terms of any investment will be exclusively subject to the detailed provisions, including risk considerations, contained in the offering documents. When making an investment decision, you should rely on the final documentation relating to any transaction.

No liability for any error or omission is accepted by DWS. Opinions and estimates may be changed without notice and involve a number of assumptions which may not prove valid. DWS or persons associated with it may (i) maintain a long or short position in securities referred to herein, or in related futures or options, and (ii) purchase or sell, make a market in, or engage in any other transaction involving such securities, and earn brokerage or other compensation.

DWS does not give taxation or legal advice. Prospective investors should seek advice from their own taxation agents and lawyers regarding the tax consequences on the purchase, ownership, disposal, redemption or transfer of the investments and strategies suggested by DWS. The relevant tax laws or regulations of the tax authorities may change at any time. DWS is not responsible for and has no obligation with respect to any tax implications on the investment suggested.

This document may not be reproduced or circulated without DWS written authority. The manner of circulation and distribution of this document may be restricted by law or regulation in certain countries, including the United States.

This document is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction, including the United States, where such distribution, publication, availability or use would be contrary to law or regulation or which would subject DWS to any registration or licensing requirement within such jurisdiction not currently met within such jurisdiction. Persons into whose possession this document may come are required to inform themselves of, and to observe, such restrictions.

© 2020 DWS International GmbH

Issued in the UK by DWS Investments UK Limited which is authorised and regulated by the Financial Conduct Authority (Reference number 429806).

© 2020 DWS Investments UK Limited

In Hong Kong, this document is issued by DWS Investments Hong Kong Limited and the content of this document has not been reviewed by the Securities and Futures Commission.

© 2020 DWS Investments Hong Kong Limited

In Singapore, this document is issued by DWS Investments Singapore Limited and the content of this document has not been reviewed by the Monetary Authority of Singapore.

© 2020 DWS Investments Singapore Limited

In Australia, this document is issued by DWS Investments Australia Limited (ABN: 52 074 599 401) (AFSL 499640) and the content of this document has not been reviewed by the Australian Securities Investment Commission.

© 2020 DWS Investments Australia Limited

For investors in Bermuda: This is not an offering of securities or interests in any product. Such securities may be offered or sold in Bermuda only in compliance with the provisions of the Investment Business Act of 2003 of Bermuda which regulates the sale of securities in Bermuda. Additionally, non-Bermudian persons (including companies) may not carry on or engage in any trade or business in Bermuda unless such persons are permitted to do so under applicable Bermuda legislation.

© 2020 DWS Group GmbH & Co. KGaA. All rights reserved. (12/20) I-076766_2.1

