



Avon Pension Fund

Infrastructure concept report



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Guy Hopgood

Analyst

The St Botolph Building, 138 Houndsditch,
London, EC3A 7AW

Phone: +44 207 895 7716

Email: guy_hopgood@jltgroup.com

John Finch

Director

7 Charlotte Street, Manchester, M1 4DZ

Phone: +44 161 253 1168

Email: john_finch@jltgroup.com

1 Introduction

This report has been provided for the Avon Pension Fund ('the Fund') by JLT Employee Benefits ('JLT') following the investment strategy review earlier in 2013 which resulted in the agreement that an investment in infrastructure should be made, targeting 5% of the Fund's overall portfolio. The purpose of this report is to restate the rationale for including infrastructure within the Fund's investments, and explain the characteristics of the various options available within the infrastructure universe.

We believe that infrastructure assets are a genuine alternative to global equities and diversified growth funds ('DGFs') as part of a pension scheme's growth strategy, and should be embraced in a disciplined framework to form a core part of a pension scheme's overall investment strategy. The diversification away from typical equity markets and the predictable, index-linked cashflows that are available from infrastructure investments have attracted inflows from institutional investors. The return profile is also particularly attractive to those defined benefit pension schemes which have/are expected to become cashflow negative in the near future, such as many of the Local Government Pension Schemes ('LGPS').

The Fund does not currently invest in infrastructure and so an allocation will diversify its growth assets from current holdings in UK and overseas equity funds as well as fund of hedge funds and property alongside the new allocation to DGF's. Infrastructure is evolving as an asset class and will continue to evolve over time and any approach taken by the Fund will need to take this into account. We would also refer you to our glossary of terms that are specific to infrastructure investing in section 7.

Throughout this report, we will be referring to infrastructure equity – the real assets; infrastructure debt – the bonds that are issued to finance the purchasing of the real assets; and, listed equity – the assets available for purchase on stock markets. For the avoidance of doubt, when equity is referred to throughout the report, it will be pre-fixed with either infrastructure or listed.

Summary of conclusions

During the investment strategy review that was conducted in 2012 and 2013, the following extracts from the Fund's Statement of Investment Principles ('SIP') were highlighted:

1. Investment objective

The investment objective is to achieve a return on the assets, consistent with an acceptable level of risk that will enable the Fund to meet its pension liabilities over time, that is, to achieve 100% funding in line with the funding strategy. The investment strategy must therefore generate returns that will help stabilise and minimise employer contribution rates in the long term as well as reflect the balance between maximising returns consistent with an appropriate level of risk, protecting asset values and matching liabilities. The investment strategy will reflect the Fund's appetite for risk and its willingness to accept short term volatility within a longer term strategy.

3. Asset allocation and expected long term returns on investment

The Committee is responsible for setting the strategic asset allocation for the Fund which in turn must be consistent with the investment return assumed in the funding strategy.

The investment strategy reflects the medium to long term nature of the liabilities but must also provide flexibility to manage short term volatility in markets. In addition, the investment strategy must take account of possible changes to cash flows as the membership profile of the Fund or the benefits structure changes.

The investment strategy reflects the differing return and risk profiles of each asset class. However, long term expectations are not consistently generated over all time frames and, for all asset classes, there can be periods of under or out performance compared to the long term expectations.

Source: Avon Pension Fund Statement of Investment Principles

When looking to appoint an infrastructure manager, it is important that the objectives of the appointed manager(s) are consistent with the objectives highlighted in the SIP. In reference to these objectives, this report concludes that:

- **Expected return:** An investment in infrastructure can produce a sufficient return over the long term consistent with that required by the Fund to meet its liabilities:
 - » The SIP defines this expected return from infrastructure as the return on Gilts + 2.5% p.a.;
 - » The majority of the investment should be in infrastructure equity rather than debt to meet these objectives:
 - Although discretion to invest in debt should be allowed to manage risk;
 - » Investment across all stages (e.g. greenfield, brownfield, fully operational) will need to be considered to meet the target returns;
 - » There should be an ability to seek opportunities at a global level rather than just in the UK;
 - » There should be an ability to source opportunities across the risk spectrum to target the optimal risk / return profile.
- **Risk reduction and diversification:** Investment in infrastructure can offer real diversification benefits to investing in listed equities and other growth assets:
 - » There are genuinely different drivers for the returns from infrastructure investment compared to investing in equities and other growth asset classes;
 - » This is expected to provide diversification from equity investment and from other growth asset classes;
 - » However, investment should be in unlisted (i.e. not quoted on the stock market) infrastructure projects to achieve the required level of diversification.
- **Interest rate and inflation risk:** Infrastructure does not provide an immediate direct link to the long term interest rates and inflation expectations that cause volatility in the value placed on the liabilities in the way that, for example, an index-linked gilt does:
 - » However, the relatively predictable (compared to equities, for example) cashflows that are often linked to inflation provide a link over the long term to the nature of the Fund's liabilities.
- **Cashflow risk:** An investment in infrastructure can help the Fund to meet its cashflow requirements:
 - » The strategic review showed that the Fund will need to use an increasing amount of investment income and possibly the sale of assets to meet the cashflow requirements arising from its liabilities;
 - » Whilst infrastructure is illiquid, it is expected to produce investment income over the medium to long term:
 - Just because an asset is liquid, it does not mean it is suitable to regularly meet the Fund's cashflow requirements, as it could result in selling assets at a relative low point.

Next steps

Infrastructure forms a key part of the Fund's revised investment strategy. Following this report, we recommend that the next steps taken are to:

- Decide upon the broad criteria for any manager search(es);
- Consult with other LGPS regarding any potential collaboration to align any similar search activity and potentially share costs;
- Undertake any manager search(es);
- Update the Fund's SIP to reflect any changes in investment strategy, including the production of a letter to satisfy Section 36 of the Pensions Act 1995. This letter consolidates the investment advice that is required to be taken from an individual who is authorised by the Financial Conduct Authority ('FCA') to give advice.

Within this report we do not provide wider advice on the overall asset allocation or on the Scheme's other assets, as these were provided in the 2012 investment strategy review.

2 The infrastructure concept

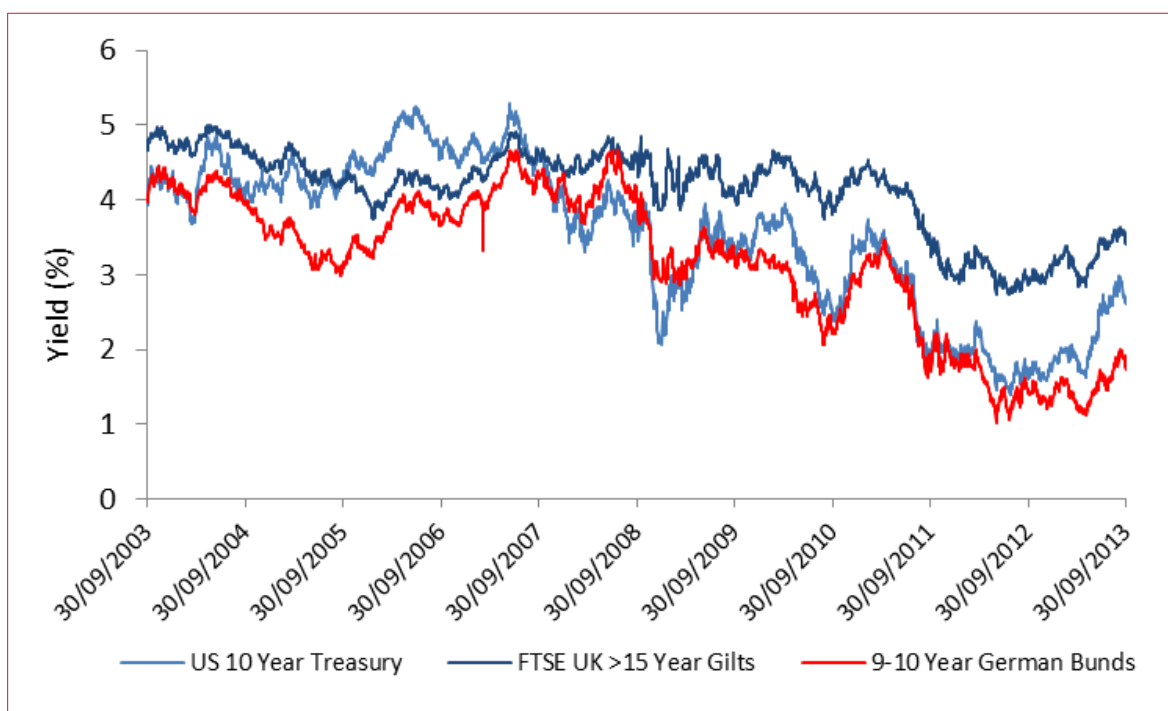
2.1 What is infrastructure?

As an asset class, infrastructure has a very broad remit and can encompass anything from an individual hospital or prison, all the way through to a wind turbine, oil pipeline or water company. As diverse as these assets may seem, they do in fact have some features in common, which is how we define infrastructure. We believe that infrastructure assets are assets which are essential within the global environment, often operating within regulated sectors, and providing monopolistic-like opportunities to allow long-term operating contracts with secure revenue streams.

Infrastructure has come to the forefront of private investments in recent times for a variety of different reasons. With the increasing population worldwide, and the rise in those moving out of poverty and into the middle classes, there has become a much greater need for infrastructure on a global basis to further facilitate growth. Whilst in developed regions there is also a need to some extent to replace and/or upgrade existing infrastructure assets which are no longer as efficient or demand has increased since original construction.

The UK Government's National Infrastructure Plan, November 2011, highlights over 500 projects 'in pipeline' that will require investments of more than £200bn by 2020. When the figures are looked at on a global scale, the gargantuan size of the investment requirement becomes clear. A 2007 OECD report estimates that the total spending requirement for world infrastructure to 2030 (incl. additions and renewals) is over \$71 trillion. Despite this, there has been a significant shortfall in the funding as a result of the 2008 financial crisis, and governments worldwide cutting back on expenditure. As a result, the private sector has taken up some of this shortfall. Investors are required to take on certain risks but, most importantly, it is the capital that institutional investors are able to deploy, and the long term nature with which they can make allocations, that has led to the opportunity for pension schemes to invest in infrastructure.

Another side effect of the financial crisis in 2008 has been the flight to safety of many investors. This severely reduced the yields of government bonds around the world, as can be seen in the graph below.



Source: Bloomberg, JLT Employee Benefits

With yields at near historic lows, pension schemes and other investors around the world have turned to alternative assets to meet the yield requirements of their portfolio. Yield and stable cashflows are two of the characteristics which make infrastructure such an attractive investment opportunity to pension schemes.

As well as the search for yield that investors have been undertaking, there is the need to hedge liabilities against the possibility of future inflation rises. Whilst this can be done through index-linked bonds, the market for these is very small relative to the inflation-linked part of the UK pension schemes' liabilities.

The demand for these index-linked bonds, can be seen with the recent issuance of UK Index-linked gilts which was more than twice oversubscribed which drives up the price and further depresses the gilt yield. There is also a corporate index-linked bond market; however, this is still very small with about 70 UK companies having c. £35bn in issue.

As such, we believe that pension schemes need to look elsewhere for index-linked cashflows, and infrastructure fits into this category.

2.2 Drivers of return

The drivers of return for infrastructure assets are somewhat different to those of typical equity assets. A number of these are explained below:

- Assets are monopolistic in nature, with high barriers to entry:
 - » This is beneficial for an investor, as the assets are more likely to remain in use, with less competition – making the cashflow more predictable over time.
- Economies of scale:
 - » These can be achieved throughout the construction phase of an infrastructure project, as well as in the operation and management of the asset. It enhances the return to the investor.
- Inelastic demand for services:
 - » This allows for greater returns for the investor, as an increase in price of a service would not typically lead to a corresponding drop in usage;
 - » It therefore also means that there is less inherent volatility than, for example, the equity market which is heavily driven by business and consumer sentiment.
- Regulation of infrastructure sector:
 - » Typically, infrastructure assets are within sectors which are highly regulated (such as water companies). This strong regulation increases the certainty of returns and makes them more predictable.
- Period of time that the asset is operational:
 - » The majority of fixed costs of the assets are needed in the early stages of the projects life. However, the factors noted provide greater certainty of the cashflows over the longer term.
- Inflation-linked income:
 - » Many sub-sectors of infrastructure have contracts in which revenue is directly linked to inflation. Any increases in inflation would therefore lead to a corresponding increase in the payments received, hence providing a link to the liability profile of the Fund.
- Foot fall:
 - » Assets are able to generate additional revenue if the foot fall is greater than that which was forecast. This links the returns to how the economy is faring. However, it is important to note that infrastructure managers tend to prefer availability payment mechanisms (fixed payments that do not depend on the level of usage), as they prefer certainty of returns as opposed to the potential variability in returns from changes in foot fall.

The above shows that the drivers of returns of infrastructure show some genuinely different characteristics compared to equities. Whilst some of these drivers between these asset classes will be correlated, there is genuine diversification from equities in making an investment in infrastructure. It is still necessary to take risk, as explained later, to achieve the required equity like returns over the longer term, but the diversification helps to address a key objective of the Fund's investment strategy, of reducing risk.

2.3 Risks associated with investments into infrastructure

There are inherent risks with infrastructure investing that are very different to that of an investment in a typical equity fund. A description of the most common risks in infrastructure investing are provided below;

- Reputational risk:
 - » An example would be adverse media coverage following an operational malfunction. Such potential risks can be mitigated as far as possible by having the correct governance in place, to ensure these errors do not occur.
- Operational risk:
 - » Operational risks can be more of an issue if the fund does not have a controlling stake in the asset, as they would not be responsible for the management. As long as those with a controlling stake install the correct management, and the business is well governed, these risks can be managed.
- Political risk:
 - » This is a very important risk to consider when investing in infrastructure, as an unstable political economy, with exposure to unstable regulation, could have a major impact on the returns of an asset.
- Financing risk:
 - » Given that infrastructure managers use leverage on a deal basis when investing in infrastructure, there is a risk involved with having to re-finance at higher costs at a future date. In addition the infrastructure manager will need to manage the financial risk when planning an exit from an asset.
- Construction risk:
 - » Construction risk is applicable during the initial phase of development as often there are a lot of unknown factors in relation to the build time and the cost. This can have a severe effect on the return of the asset, as its effective life could be greatly reduced. This construction risk explains why greenfield investments are typically higher up the risk-return spectrum.
- Throughput risk:
 - » This is a risk that would be specific to a certain asset, and would arise if the forecasted expectation of use was less than estimated prior to investment. Infrastructure managers typically like to invest in such assets on an availability payment basis, whereby they are paid a fixed amount irrespective of usage. Whilst this may reduce the potential returns of a high use, successful asset, it allows for more stable, predictable cashflows.
- Counterparty risk:
 - » Similar to the throughput and construction risks, this is a risk that is specific to an individual asset. This would arise from one of the stakeholders (typically the asset operator) breaking a contract that had been agreed upon. This is minimised through due diligence that would be carried out by the infrastructure manager prior to any investment being made.

2.4 Sub-sectors

The table below looks at the various sub-sectors that are within the infrastructure sector. The characteristics within table are discussed fully in section 4. A description of each of the sub-sectors, and the types of investment within each is considered after the table.

	Capital intensive	High barriers to entry	No demand risks	Regulated	GDP correlated	Monopolistic	Direct inflation linkage*	Long term offtake contracts**
Water and wastewater infrastructure	✓	✓	✓	✓	✗	✓	✓✓	✗
Gas and electricity transmission	✓	✓	✓	✓	✗	✓	✓✓	✓
Toll roads	✓	✓	✓/✗	✗	✓	✗	✓	✗
Airports	✓	✓	✗	✓/✗	✓	✗	✓	✗
Oil/gas/chemical storage	✓	✓	✓	✓	✗	✗	✓	✓
Car parks	✓	✓	✗	✓/✗	✓	✗	✗	✗
Ports	✓	✓	✗	✗	✓	✗	✗	✗
Rail	✓	✓	✓/✗	✓/✗	✓/✗	✗	✓	✗
Telecommunications	✓	✓	✓/✗	✓/✗	✗	✓/✗	✗	✗
Renewables	✓	✓	✓/✗	✓/✗	✗	✗	✓✓	✓/✗
Social infrastructure	✓	✓	✓	✓/✗	✗	✗	✗	✓

Source: First State, JLT Employee Benefits

* ✓✓ - strong, direct inflation linkage; ✓ - some inflation linkage; ✗ - no inflation linkage

** an agreement between a producer of a resource/service and a buyer, to purchase/sell units of future production.

In summary, there is significant diversity between the characteristics of the different infrastructure sub-sectors. We believe that all of these sub-sectors are appropriate for the Fund when considering an infrastructure investment, as each deal within each sub-sector will be unique, and the infrastructure manager should have the ultimate discretion when it comes to portfolio construction, albeit with certain concentration and risk limits, and diversification requirements. An infrastructure manager would not invest in a sub-sector unless there was sound investment reasoning behind it and this should be evaluated during any selection process.

Water and wastewater infrastructure

The provision and management of water and wastewater facilities are typically highly regulated. As such, these assets offer more visible and predictable cashflows and return, and are operated on a monopolistic basis with very high barriers to entry. The cashflow profiles of these assets are usually linked to inflation, and they typically have capital investment programmes that are taking place on a long term basis.

Gas and electricity transmission

Typically, these assets have been operated and provided by the state; however, more recently there has been an increase in supply from the private sector. One such example of this is the increase in Master Limited Partnership (“MLP”) investment opportunities in North America. A MLP is a publically traded limited partnership, that typically invests in the transportation and processing of oil and gas. The benefit of investments such as these is that they typically have stable operating cashflows, and low correlation to both equities and commodities.

Toll roads

When it comes to the operation of toll roads, there are a number of different structures which can be used. These include:

- Pay for use – each driver pays a toll for use of road;
- Shadow toll – government contribution for each driver who uses the toll road;
- Availability payments – government contributions, but no traffic risk.

A toll road investment normally involves taking a stake in the toll road operating company, which then owns, operates and maintains the asset. The benefits of a toll road investment in the long-term include inflation linked cashflows with limited operational risk. Typically, an infrastructure manager would prefer to receive availability payments, as this transfers the traffic risk onto the government, providing a more visible cashflow profile of the asset.

Airports

Similar to toll roads, an investment in an airport would typically be made through the operating company which owns, operates and maintains the assets according to the terms of a government lease. Unlike toll roads they have a more diversified income stream with income from air travel as well as retail and property. This reduces the volatility of the asset, though airports are still highly correlated with GDP and passenger growth/capacity.

Oil/gas/chemical Storage

An investment in oil, gas or chemical storage would typically comprise of owning the physical assets such as pipelines, storage tanks, or the vaporisers required for safe storage of liquefied natural gas. Revenues within this sector are normally generated from long-term capacity utilisation agreements, and can be heavily regulated if the chemical or commodity is viewed as strategically important within the region the infrastructure is required.

Investments within this sector can provide long-term inflation linked cashflows with the opportunity of capital growth.

Car parks

Within car parks, there are two very different sectors; on street and off street. On street parking is typically a very labour intensive operation, with low margins, whereas off street parking is capital intensive and often requires the ownership of the physical infrastructure on an outright basis (or long-term concession contract), dependent on the geographic location.

Similar to the cashflow profile of airports, car parks are highly correlated to GDP, but they also offer strong inflation linked cashflows.

Ports

An investment in a port typically involves taking a stake in the physical assets that are required for the handling of cargo to and from commercial vessels. The revenue of ports is often supported by transport and export companies taking out long term leases of berths and container facilities within the port. Ports also offer the prospect of capital growth and income diversification from developing land surrounding the port facilities.

The monopolistic nature of ports means they offer an attractive investment opportunity in certain circumstances, and there is also portfolio diversification from unique, long term cash flows whilst remaining correlated to GDP.

Rail

Rail investments are a very popular investment for infrastructure managers, and they usually comprise investments in the physical assets on which the rolling stock is run, both passenger and freight services. Revenue from rail services is often supported by rail companies entering into long term agreements for use. Due to the very high barriers to entry, and regulation within the rail sector, the assets are typically monopolistic in nature, although face tough substitution competition from other forms of transport.

Telecommunications

An investment in telecommunications would involve purchasing the physical assets such as underground cables or wireless towers. The cashflow profile is typically not linked to inflation, and the investment relies more on capital growth for returns. This capital growth is achieved as a result of the business proving it is able to generate stable revenues and risk management.

There is the risk within the telecommunications sector that other infrastructure assets do not normally face in their expected life, of becoming obsolete as technology advances and as innovation occurs within the sector.

Renewables

Given the tariffs that have been available to those who invest, this has been a relatively high growth area for infrastructure managers in the last few years. The pre-defined tariffs and regulations within industries such as wind and solar energy allow managers to obtain visibility of their cashflows into the future, which are also linked to inflation. Typically, these types of assets are also uncorrelated with economic cycles.

As well as solar and wind power, we have also seen interest around biomass, geothermal and hydroelectric energy. Investments such as these fit very well alongside environmental, social and corporate governance ('ESG') and socially responsible investing ('SRI') policies.

Social infrastructure

Social infrastructure includes the construction and operation of hospitals, schools and prisons, and may include social housing. Historically, these typically used to be provided by the public sector, but are now increasingly being provided in partnership with the private sector. These assets tend to be more longer term in nature than other infrastructure assets, and typically have a lower return profile – although do typically come with lower risk.

Social housing

Social housing is essentially the provision of affordable accommodation to people on low incomes. In the UK there are approximately 1,700 housing associations covering around 2.5 million homes. However, a social housing study conducted by Barclays in Q3 2012 estimates that there is unsatisfied demand for a further 1.8 million homes.

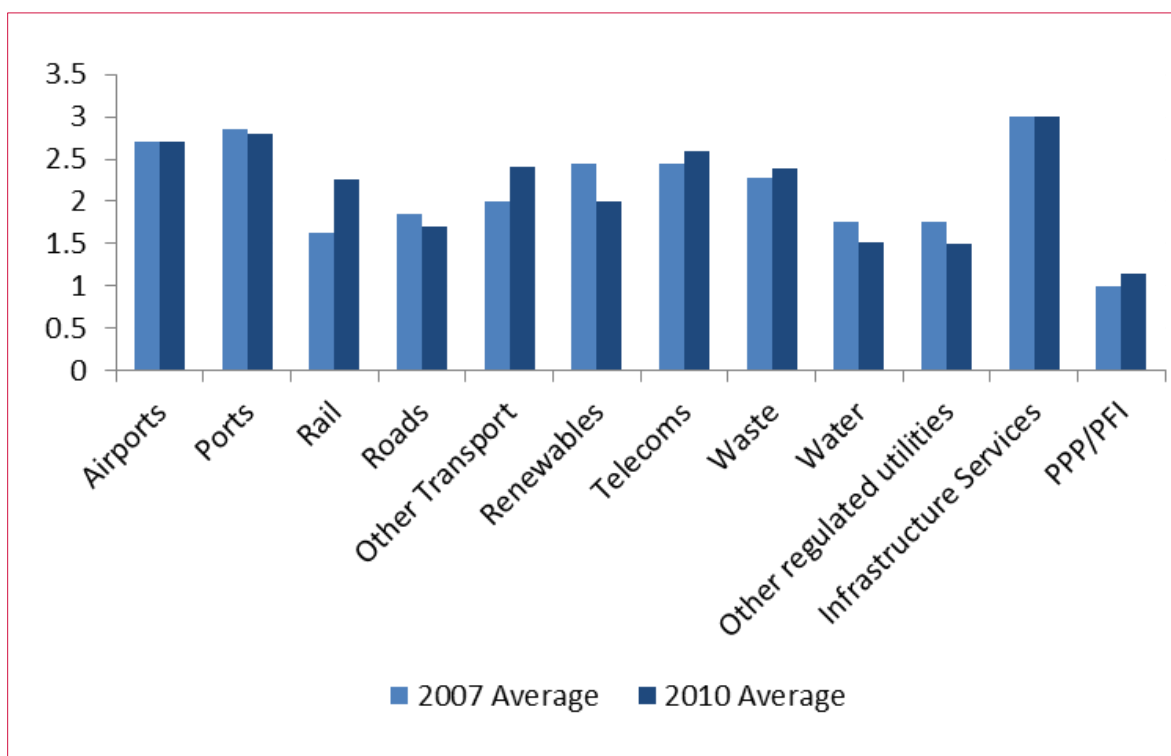
When referring to social housing, it is important to know exactly what it is we are referring to, as social housing could fit in different parts of a portfolio based on the way exposure is gained. There are three primary ways that exposure is gained:

- Index-linked social housing bonds are typically bonds issued by the housing associations in order to build, develop or maintain their social housing projects. As such, we would suggest these are categorised within a bond portfolio. The Fund's Corporate Bond portfolio with Royal London currently invests in bonds issued by housing associations.
- A development partnership is a direct investment via a special purpose vehicle in a housing association that is usually fully leveraged. These funds would typically be used to build new homes, and as such there are significant risks that need to be taken into account such as construction risk and other risks surrounding the development phases of the project. These do, however, offer investors greater potential returns, but we believe these would not fit in a core infrastructure portfolio and are rather more like private equity investments in nature.
- A sale and leaseback approach to investing in social housing would involve purchasing the existing assets of the housing association and then renting them back to the association over the long term. We believe that an investment such as this would fit within the property portfolio of the Fund, given the opportunities' characteristics. Schroder (who manage the Fund's UK Property portfolio) actively evaluate such opportunities as they arise.

Whilst there are many ways to invest in social housing and the index-linked characteristics that they have, we do not believe that they are suitable for an explicit allocation within an infrastructure portfolio. We believe that any investments into social housing should be left to the appointed infrastructure manager(s) discretion, based on whether the investment characteristics meet the investment strategy.

Relative sub-sector returns

The internal rate of return ('IRR' – see glossary) expectations from a survey by Deloitte for the different sub-sectors can be found in the graph below. These are not absolute IRR expectations, and are scaled from zero to three, with 3.0 being high and 0.0 low. As such, they will not tie-in with the IRR expectations within the table on page 17. This is one attempt at a direct comparison between the expectations for the returns of the different sub-sectors.



Source: Deloitte, The fork in the road ahead: An in-depth analysis of the current infrastructure funds market, 2011

There are two categories within the above chart which require further explanation as follows:

Infrastructure services are categorised as being the operational and management entities which are responsible for upkeep and maintenance of electricity transmission plants, gas and oil pipelines and renewable energy projects such as wind farms.

Public Private Partnerships ('PPP') are contractual agreements between public bodies, local authorities or central government, and private companies to deliver a public, social or economic infrastructure project. Private Finance Initiatives ('PFI') are a form of PPP developed by the UK government, whereby private companies carry out construction work and maintenance on projects, which are then rented back to the public sector.

3 The role of infrastructure within the Fund

3.1 Why invest in infrastructure?

There are a number of different reasons why infrastructure assets are relevant to Avon Pension Fund's strategy, the main ones include:

Diversification

Infrastructure assets can provide predictable cashflows and returns through all market cycles, which is more important with ever increasing market volatility. The assets and returns also have low correlations with global equity markets.

Inflation hedge & liability matching tool

Any increase in prices within an economy are often directly priced into the income of an infrastructure project due to the contracts underpinning the cashflows. Providing there is strong regulation, this is the case for assets on a global basis, as well as in the UK. This will offer protection against possible future increases in inflation. Whilst the Fund's liabilities are sensitive to UK inflation, an increasing globalised world means that UK inflation is increasingly influenced by global inflation and therefore exposure to global inflation is a reasonable proxy for the Fund's UK inflation sensitive liabilities. These cashflows make infrastructure ideal for matching the long-term inflation linked liabilities of the Fund.

Cashflows

These are usually predictable due to the monopolistic nature of the infrastructure assets. Large portions of the cashflows are agreed by the contract. High barriers to entry also help maintain stable cashflows over the length of the investment which assists a pension scheme investor with its cashflow management. Distributions to investors are often made quarterly or bi-annually.

Illiquidity premium

Due to the long-term nature of infrastructure assets, pension schemes are able to benefit from the lack of liquidity in this market. This goes hand-in-hand with the long term nature of pension scheme liabilities, particularly in the case of LGPS which remain open to new members and future accrual.

Responsible investing

In the same way that an active equity manager must take account of the risks from environmental, social and governance ('ESG') factors in assessing the opportunity a stocks presents, an infrastructure manager must also satisfy himself that these factors have been suitably taken into account when assessing a project. For example, construction is expected to utilise the best technology to ensure efficient buildings – not doing so represents certain risks to the portfolio. It is not expected that a specialist ESG fund is required to ensure these factors are considered.

3.2 The investment needs of the Fund

Income requirements

The need for income within the Fund is becoming more important given its cashflow negative position (excluding investment income). Infrastructure provides a very good return profile based on this need, as a large portion of the return (often c.50-70%) comes from income, with the remainder coming from capital appreciation of the underlying assets. This percentage is dependent upon the exact nature of the asset, as well as its expected life time. This stable income can then be used rather than to sell assets in order to cover the Fund's cashflow requirements. Compare this to otherwise raising income by liquidating the Fund's equities: whilst equities are liquid, they are volatile which means relying on them to meet cashflow could result in selling at a relative low point and therefore compromising the Fund to meet its long term objectives.

The predictable, stable, cashflows generated by infrastructure assets are more often than not linked to inflation (CPI or RPI). These are an excellent hedge against potential inflation increases in the future. However, when looking at inflation-linked cashflows, it is important not to consider them in isolation. If the factors related to operating an asset are also tied to inflation, then the real cashflow may not in fact increase as expected.

Investment objectives

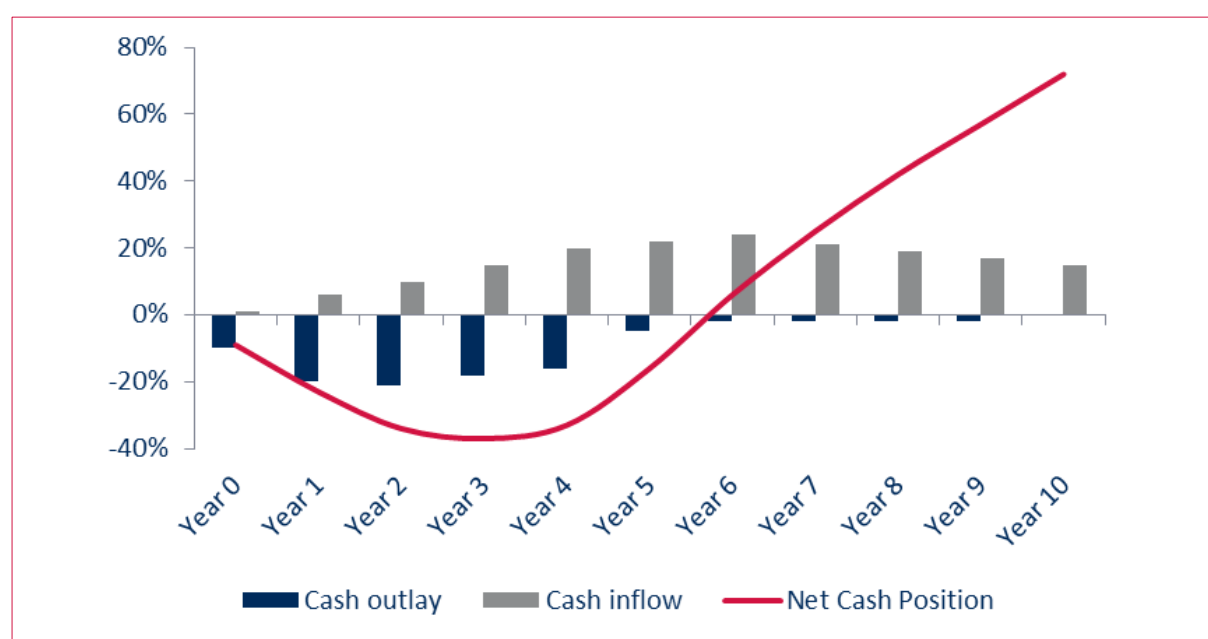
Therefore infrastructure meets the Fund's investment objectives as follows:

Required return	<p>The requirement for infrastructure investment in the economy (both UK and overseas) and the need to attract capital from institutional investors means that an equity like return is possible from infrastructure investment, thus consistent with the Fund's required rate of investment growth from the assets. The level of return available is discussed in more detail in the next section. The previous sections also show how there are different drivers of returns for infrastructure compared to equities and it is reasonable that the Fund access as many opportunities as is reasonable possible.</p>
Managing risk	<p>Whilst some infrastructure projects can be as risky or even riskier than certain equity investments, the fact that there are different drivers of returns leads to genuine diversification and therefore there is an expectation that infrastructure will not be perfectly correlated to equities (i.e. it will not fall and rise at exactly the same time). Furthermore, diversification across different sub-sectors, different risk profiles and different regions will further enhance diversification.</p>
Liability profile	<p>The focus on stable, index-linked cashflows shows how an investment in infrastructure can help satisfy the need that the Fund's assets better reflect its liability profile. However, it should be remembered that the value of the infrastructure assets will not move directly inline with changes to the value placed on the liabilities (which are affected by long term interest rates and inflation expectations). Therefore whilst this investment is made with the liability profile in mind, it belongs in the growth rather than stabilising portfolio.</p>
Liquidity profile	<p>It is important to understand that an investment infrastructure can be extremely illiquid. Indeed, the "illiquidity premium" is expected to be a source of returns. However, it is sensible to allow part of the Fund to be invested in illiquid assets given the long term nature of the Fund's investment strategy. The Fund will require readily realisable assets and investment income to meet its cashflow needs – infrastructure is expected to help in the latter of these (investment income).</p>

4 Characteristics of infrastructure investments

4.1 Private investment model

When investing in infrastructure, it is important to understand exactly how committed capital will be invested, as it is not as simple as investing in a traditional equity fund. Similar to investing in private equity structures (as per the Global overseas property mandate managed by Partners Group) the return profile will follow a j-curve, with investments being drawn down over a number of years, and the subsequent positive cashflow also taking a number of years to develop. The chart below shows the life of an infrastructure asset, from the construction phase with cash outflows to the operational phase with cash inflows. The chart is an example of how the j-curve works, with the blue bars representing cashflows into the investment (i.e. out of the Fund) in a particular year and the grey bars representing cashflows out of the investment (i.e. back into the Fund) in a particular year. The red line shows the net cash position at any particular point (i.e. the sum of the total cashflows in and out of the investment over the entire period to date).



Source: JLT Employee Benefits

By diversifying an investment between multiple infrastructure investments via a fund, the likelihood is the drawdown period and therefore cash inflow requirements will be 'lumpy'. As such, cashflows will need to be carefully managed to minimise the need to realise assets from other parts of the Fund's investment portfolio in order to meet any cash calls from the infrastructure investments.

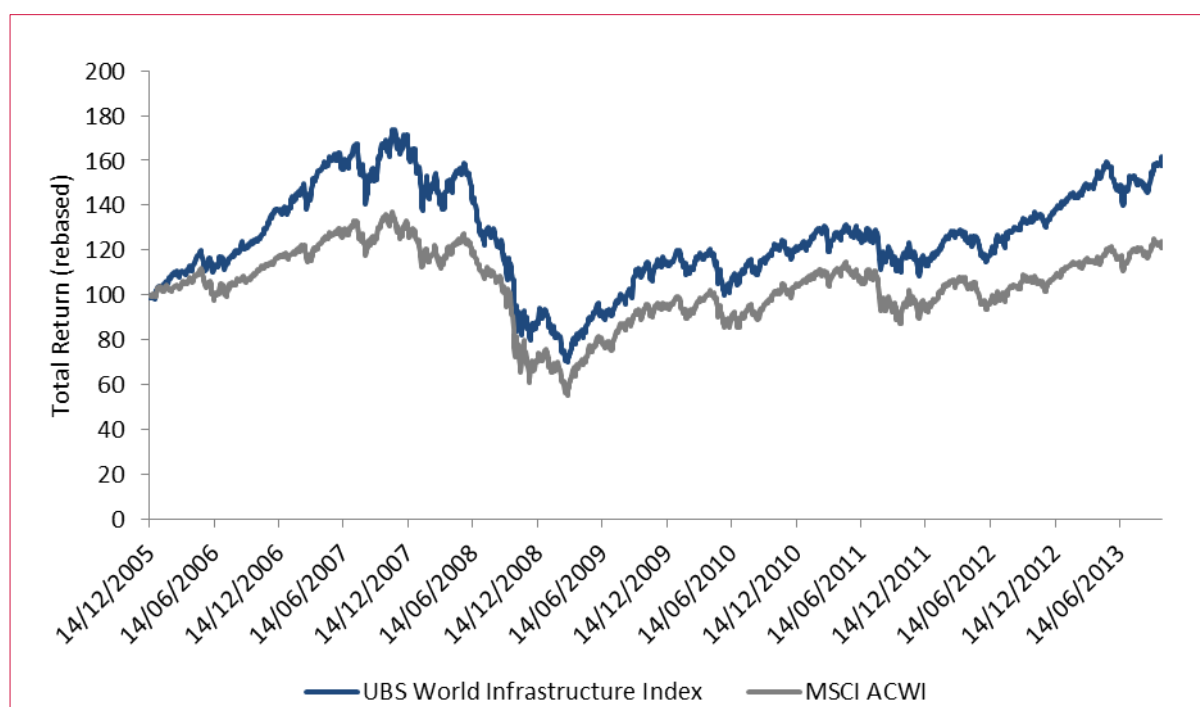
As well as investing via more than one fund, there are a number of different ways to invest in order to shallow out, and minimise the negative part of the j-curve in order to start receiving an instant yield (cash outflow). One approach is to invest in funds that are already past their first close, with one or two investments already made. Another way would be to invest in an open-ended fund, where there is already an existing pool of assets that the investor would receive a yield from. The third approach would be to invest into secondary funds, which would typically already have invested in assets, making the fund more visible. The difference between closed-ended and open-ended funds is looked at more closely in section 5.

4.2 Considerations when investing in infrastructure

Listed vs. unlisted

There are two main ways in which exposure to infrastructure can be gained; through either the listed or unlisted approach. The first fundamental decision that must be made is whether to invest via a listed or unlisted product. A listed product typically invests in the publically traded shares of infrastructure companies. This is an option which provides the most liquidity; however, listed infrastructure investments do typically have very high correlations with equity markets.

The graph below shows the returns of the UBS World Infrastructure Index, just one of a number of such listed infrastructure indices, against the MSCI All Countries World Index, with both being rebased on 14 December 2005.



Source: Bloomberg, JLT Employee Benefits

Although the UBS World Infrastructure Index has outperformed the MSCI ACWI over this period, there has been a correlation between the two indices of 0.85, so it does not really achieve one of the main aims of the infrastructure investment – to diversify the portfolio away from equities. As such, we believe that the best way to gain exposure to infrastructure assets is through private markets, where you can achieve better diversification along with the additional benefit from the illiquidity premium.

Equity vs. debt

Once the decision on whether to invest in a listed or unlisted product has been made, the next decision is whether to invest in equity (the real assets within a fund) or debt (the bonds issued to finance the purchase of assets) – if the unlisted approach is taken.

The reasons for investing in infrastructure equity have been set out in section 3 of this report and, whilst similar, there are a few different arguments for investing in infrastructure debt.

Infrastructure Debt is similar to equity in that the assets typically have a long life, which supports the long term nature of the Fund with its long term liabilities. The capital market dislocation of 2008 and the drying-up of bank funding for infrastructure debt vehicles has resulted in an increased risk adjusted return available to investors. As well as these factors (set out in section 3) which are analogous with the infrastructure equity, there is also the stability of ratings, with infrastructure debt typically having a strong historical rating from the rating agencies. Historical records show that along with the low record of default, there have also been high recovery rates – a beneficial combination for investors.

Infrastructure debt is typically a better match to the liabilities of a pension scheme, based on the contractually fixed return that is guaranteed. It is therefore a lower risk investment for the lender. However, unlike infrastructure equity, there is not the same opportunity for capital appreciation. Given the return characteristics of infrastructure debt, we believe that this would be a better match for the stabilising part of the portfolio as opposed to the illiquid growth portfolio, as we do not believe that a portfolio of infrastructure debt alone will meet the return objective of equity-like returns. That said, infrastructure debt can act as a good diversifier within an infrastructure portfolio, and any inclusion for either diversification or risk management reasons should be at the discretion of the manager, and they should be permitted to have a small allocation to infrastructure debt within the overall fund.

Core, value-add or opportunistic

Within the infrastructure equity asset class, we believe that opportunities can be grouped into three distinct categories, each of which has its own distinguishing characteristics. The expected return characteristics and yield are our prudent, realistic expectations of what is obtainable within the asset class, and may differ slightly from the views of infrastructure managers.

	Core	Value-add/core plus	Opportunistic
Expected net IRR (return p.a.)	6-8%	10-12%	15%+
Yield (p.a.)	4-5%	5-6%	6-7%
Characteristics	High yield with strong inflation protection, limited use of leverage and lower potential for capital gains	Medium yield with some inflation linkage, relatively higher levels of leverage and some potential for capital gains	Low yield with little inflation linkage. Much higher volatility but targeting significantly higher returns from capital appreciation

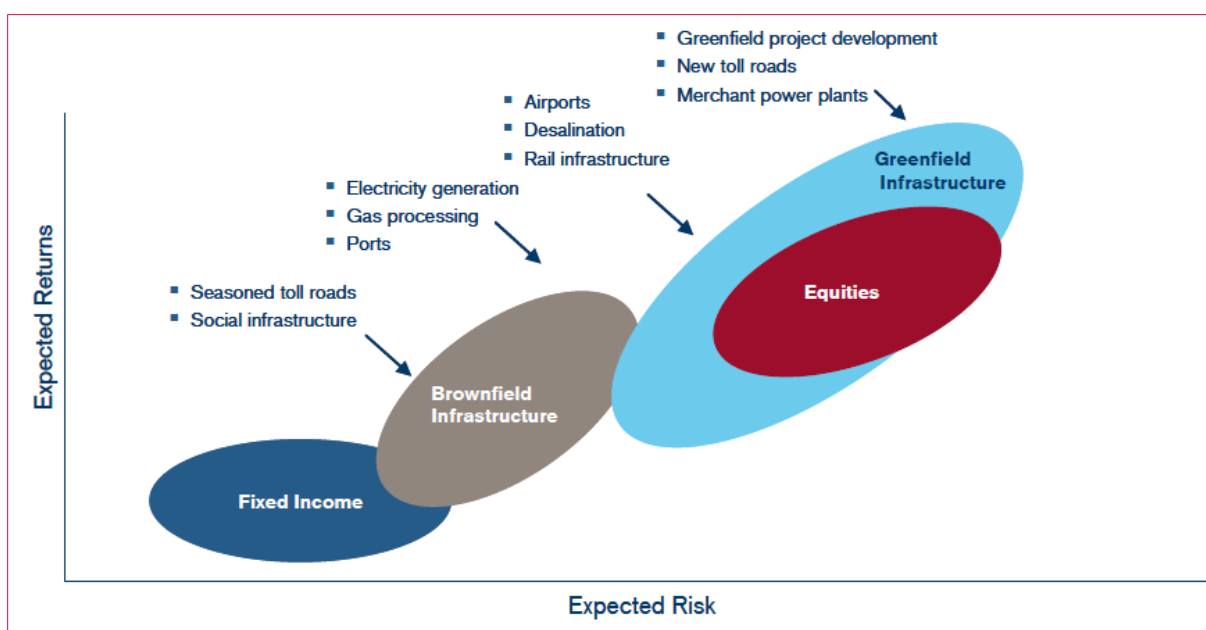
UK vs. global

There are some very important considerations that need to be taken into account when looking at the geographical remit to invest in infrastructure. Whilst we believe that a global opportunity set is the best way to approach the infrastructure investment issue, there are a number of reasons why infrastructure managers focus on UK, US, European and Australian assets. The main reason is the regulation in these developed regions is significantly stricter than would be found in the developing countries – allowing more accurate investment assumptions to be made, and less risk to be taken. We do, however, believe that there are opportunities outside of Europe and North America, and as such, a global mandate would be the best way to capture all of the possible opportunities as it would allow the selected infrastructure manager(s) to use their discretion in terms of geographical allocation. This being said, a cautious approach should be taken when it comes to potential investments in emerging markets, as the risks of investing in infrastructure projects in these regions are significantly greater.

Brownfield vs. greenfield

Infrastructure investments are mainly considered to be either brownfield or greenfield investments; Brownfield is defined as previously developed infrastructure projects and typically invests in fully operational assets where there is a track record of operation and a yield is earned immediately. One specific risk with a brownfield investment is whether there are any disposal costs to consider at the end of the useful life of the asset. These assets typically have a moderate level of return but with lower risk. Greenfield investments involve investing at the development stage of a project. This can therefore include both planning and construction risk, and a yield is not earned until post commissioning of the asset(s). The return is expected to be higher than brownfield investment due to greater capital appreciation potential but there is greater risk, as well as a period of time where there is no yield from the asset. In between greenfield and brownfield sits another category often referred to as 'yellowfield' where existing Infrastructure assets require work to either upgrade or replace the asset. Although construction work is involved it is considered lower risk than greenfield as more information is available to evaluate risk (such as operational history, revenue and 'foot fall' for example).

The chart below looks at a number of different sub sectors within the infrastructure asset class, and also shows the two stages (brownfield and greenfield) on an expected risk vs. expected return basis. The chart also includes where classic fixed income and traditional equity asset classes would fit into the graph, to allow a full comparison between the asset classes.



Source: Credit Suisse Asset Management, for illustrative purposes only

Also note that assets within the same sector can behave differently depending on for example, the contracts, and therefore move further along the risk spectrum. As well as the contract affecting the behaviour of the returns, there are also other factors which can influence the risk-return profiles of investments within the same sector.

The capital structure used to invest in the asset can play a very important role in this. For instance, if leverage is used alongside equity to make the investment, then you would expect to move up and to the right on the above graph, as that leverage should hopefully supplement the returns compared with not using leverage.

Another factor which can affect the return is geography, and more importantly the political, economic, and regulatory environment stability. For instance, an investment in an electricity generation plant in the UK is likely to have a far lower risk-return profile than the same asset in central Africa. Assets in countries with

greater political instability are going to be higher risk, and command greater returns as a result; and, it is typically these countries that have weaker regulatory environments.

The foot fall of an asset can also affect the expected return of an asset, if the experienced foot fall is different to that which was forecast. However, as mentioned in section 2.2, infrastructure managers tend to prefer availability payment mechanisms as this reduces the variability of returns and provides a contractually agreed return.

Management of assets

Once an asset has been purchased, or a contract for the lease has been agreed, there are two ways in which the asset can be managed; passively or actively. The infrastructure manager would typically only partake in passive management if it was a minority shareholder in the investment, and so would have no involvement in managing the asset. The infrastructure manager is more likely to want to undertake active management as the controlling shareholder, as this gives them much greater control and autonomy when it comes to managing and operating the asset.

Once an infrastructure asset has been purchased, and contracts agreed, the asset then needs to be managed. This is almost as important for the potential return of the asset as the contract negotiations guaranteeing return are. As a result of this, the majority of infrastructure funds hire specialists within each sector to run the assets, as the expertise is key to ensuring the asset is operated and maintained in the most efficient manner. When investing on a global basis, it is important that those who are managing the assets have local knowledge to facilitate a smooth and efficient operation of the asset.

We believe that active management is the preferred method of managing the assets once they have been purchased, as this allows for greater control over the risks which could arise from mismanagement and poor governance. However, if a manager was to invest as a minority shareholder - and therefore not have the ability to manage the asset actively - we would expect that the manager would only invest alongside another investor that it had conducted due-diligence on and was happy to invest alongside, based on their ability to manage the asset and ensure good governance.

Size of Assets

The size of the deal within any of the sub-sectors will vary on a deal-by-deal basis, as a general rule, the most expensive assets will be those which are monopolistic in nature, have very high barriers to entry, and serves vast portions of the population.

In terms of deal flow of an infrastructure manager, we would expect them to have a number of small deals (tens of millions of pounds), increasing to a few deals worth billions of pounds, dependent on the size of the fund. The size of the fund is an important consideration when looking at the assets, as a £2bn fund will not use 25% of its capital for one deal/asset, so will restrict potential opportunities to invest in £500m+ deals. A fund of this size would typically make investments from £50m to £400m.

We believe that the sweet-spot for the majority of infrastructure managers is deals in the hundreds of millions (£100-£400m, depending on fund size), as this allows sufficient diversification without spending significant amounts of time negotiating a lot of very small deals.

The largest 'core' deals (which are typically established assets with a steady yield) are likely to be expensive and moving more into the private equity buy-out world. This will push up the price valuations of these assets and reduce the overall return to investors.

Summary

The investment in infrastructure must be structured appropriately to ensure it has the desired characteristics to meet the investment objectives. From the analysis above, we believe that in order to meet the strategic objectives the Fund should look for investments with the following characteristics:

- Invest via the unlisted approach with real assets:
 - » This is essential to ensure true diversification from the Fund's listed equity investments;
- Invest in infrastructure equity (i.e.; fund's which purchase real assets)
- To manage risk and dampen volatility, allow an element of debt at the manager's discretion
 - » In general, infrastructure debt is not expected to meet the required return of the Fund's growth assets over the longer term;
 - However, from time to time there may be opportunities that allow a superior return to be achieved than normal from debt with a much lower corresponding level of risk than an infrastructure equity investment;
 - There may also be times when the return or risk from available projects is not appropriate for investment and an investment in debt could provide a suitable alternative
 - » In the above way, the tactical use of debt at the manager's discretion can help to dampen the volatility of the infrastructure investment
- A broad mandate is needed, allowing access to core/value-add/opportunistic in order to achieve equity-like returns
 - » Similar to some of the reasons for allowing the infrastructure manager to allocate to debt, it is important to allow the manager to allocate between the different broad risk categories to meet the objective, albeit with some limits for the asset allocation to ensure the overall risk profile remains appropriate
 - » The attractiveness of opportunities will vary over time and allowing as wide an opportunity set as possible for the investment manager, subject of course to some limits, allows them to use their judgement and skill to enhance returns and manage risk
- Ability to invest on a global basis to take advantage of all opportunities within the market
 - » The need for infrastructure investment and the opportunity set within the UK is strong. However, the reasons why an infrastructure investment is suitable for the Fund, as highlighted, mean that investing in opportunities on a global basis is appropriate
 - » At different times, there may be attractive and superior opportunities overseas. Allowing a skilled infrastructure manager with the required research capabilities can add significant value.
 - » It also provides diversification from the UK environment which could suffer unique regulatory issues or, given the interest in this asset class, insufficient opportunities.
- Consider investment in greenfield assets in order to meet return target
 - » Greenfield investment is considered riskier than brownfield investment due to the risks in the construction phase. There is also potentially a longer period before the asset begins to provide a return.
 - » However, there is expected to be a premium from this additional risk and therefore allowing a skilled investment manager to make select investments in greenfield projects to compliment investments made at other stages will help the infrastructure manager and therefore the Fund's allocation to meet the required returns.

In summary, it will be important for any mandate to be properly specified in terms of limits on the types of investments to ensure the required risk and return profile can be met. Within this though it is important to offer a wide opportunity set to the investment manager(s), by region, asset class (equity vs debt), target return and stage of project to allow the infrastructure manager to manage risk as well maximise the probability of meeting the return objectives.

5 How to access infrastructure funds

Closed-ended vs. open-ended

There are two common vehicle structures that can be used by an infrastructure manager; an open ended vehicle and a closed ended vehicle. These have slightly different characteristics, each with benefits and disadvantages.

Whereas a closed ended vehicle has a set lifetime (typically c. 10-15 years for infrastructure), an open ended fund has no set lifetime and offers periodic windows where investors are able to invest or redeem units, subject to the liquidity of the fund. This is the primary advantage of the open ended structure, as investors are able to redeem their money far more regularly than possible with a closed ended structure. By not having a set lifetime, the infrastructure manager is then also able to decide when to purchase and sell assets, rather than being forced to sell at the end of the fund's life under the closed ended structure. This can be a benefit in the instances where the vehicle holds an asset which is appreciating and providing a stable inflation linked cashflow that the Fund may wish to remain invested in. An open ended structure also allows for the investor to see cashflows from a much earlier time, as they are investing in a vehicle that already has money invested in a visible portfolio, minimising the drawdown on the j-curve.

However, there are also many advantages to the illiquid, fixed lifetime structure that is offered within a closed ended vehicle. As liquidity is less of an issue, the infrastructure manager is able to invest in opportunities which are generally more high risk and, as a result, gives higher returns as investors are unable to redeem their investments on a monthly basis. This allows the manager to focus on investing to maximise returns for the investor, rather than ensuring there is sufficient liquidity within the fund to allow investors to redeem contributions.

When the costs and benefits of each are weighed up against one another, there is an argument for investing in both the closed ended and open ended structures. However, over time, the closed ended structure has become the primary strategy that infrastructure managers have preferred when setting up infrastructure funds, as they are generally simpler and more efficient when it comes to administration.

Direct vs. Primary vs. Secondary

Within the individual funds, there are also three main ways in which exposure to infrastructure assets can be gained; direct or co-direct investments, primary fund investments, and secondary fund investments. Each of these methods of investing requires a team with a slightly different skill-set, as each method is not alike.

Direct and co-direct investments involve the infrastructure manager sourcing individual deals, and investing in them by themselves, or alongside another manager. In these types of investments, the infrastructure manager would also be responsible for ensuring the asset is properly maintained and operated. In many instances, rather than purchasing the real asset, the manager will negotiate a contract which entitles it to the returns of the asset, making the contract negotiations a key part of the investment process. This is typically the most cost effective way to invest, however requires the greatest level of due-diligence and also poses the greatest risk. Investing in this way would also reduce diversification within the portfolio, however we believe there are funds that invest in direct and co-direct investments that are of sufficient size to ensure that diversification is not an issue.

An investment in a primary fund involves becoming a Limited Partner ('LP'), and investing in a General Partner ('GP'). This requires a different skill-set, as rather than sourcing the deals directly and negotiating contracts, this is left to the GP. As such, the research into the GP is the most important factor in a primary fund investment. A primary fund investment is typically more expensive than a direct investment; however, the risk

is greatly reduced. As an LP, you are only liable for the amount of money you have invested. This approach allows for a moderate level of diversification, as the GP would be investing in numerous assets.

The third approach is an investment in a secondary fund. This involves purchasing units of a fund from pre-existing investor commitments. Whilst there is a market for secondary investments, it is not as large as the market for primary investments. However, there are a number of benefits. As the funds are typically more mature than a primary fund, there is a greater visibility on the assets that are being purchased. This also allows for faster yield generation and has a shallowing affect on the j-curve. There is also the potential to purchase units at a discount to Net Asset Value ('NAV') on the secondary market, which has the potential to boost returns.

We believe that the best structure for Avon to invest in infrastructure would be via either a single pooled fund, or a fund of funds. Whilst a fund of funds structure would allow for greater diversification, this comes with an additional layer of fees. Whilst we believe that there are infrastructure funds investing in direct and co-direct investments that are of sufficient magnitude to achieve adequate diversification, with the benefit of lower fees, both this method and a fund of funds structure that invests in primary and secondary funds remain viable options and both should be considered in fulfilling the brief that is outlined in the following section.

Vintage year exposure

The time frame of when money will actually be invested is a very important factor to consider when reviewing infrastructure investments, similar to private equity. The reason for this is that the deals that would have been available in 2007-2008 for example are very different to those that are available today. There will be inherent 'vintage year' diversification within any investment into a closed ended infrastructure fund based upon the length of the investment period to final close.

In order to further diversify the vintage years that investors are exposed to, there are a number of options that could be considered. The first option would be to have an allocation to a secondaries fund (or a fund which considers secondaries as part of its investment strategy), as a vehicle such as this would take vintage years into account to ensure a diversified portfolio.

The second option to be considered when looking to diversify the vintage year of the underlying assets is to consider investing in a fund of funds product. These types of funds typically look at primary and secondary investments in other funds, so any investment would be spread throughout a much greater number of infrastructure assets which have been invested over many different vintages. The downside with an investment in a fund-of-fund investment is the added layer of fees, which should be considered alongside the potential benefits and the expected net return.

Fund Availability

One primary difference between an infrastructure fund and a typical equity fund, is the availability of funds to invest in at the time each investor is looking to invest. When tendering for an infrastructure manager, it is very unlikely that all known infrastructure managers will be able to participate in the process. The opportunity set for the tender will be defined by those infrastructure managers that are raising funds at the time of the search. Fundraising often lasts for 12 months or more.

Dry Powder

Dry powder relates to the amount of money which has been committed to infrastructure managers, but which is yet to be invested. Preqin, the data provider estimates that as at September 2013, the total level of dry powder within unlisted infrastructure is \$90bn. This is well over double the level of dry powder in December 2006 (pre- global financial crisis) that was estimated at \$40bn. The primary reason for this has been a weak deal flow pipeline as a result of the global financial crisis, which has provided a hangover with all the additional money unable to be invested. With such high levels of surplus cash, there is pressure for infrastructure

managers to invest, and this has pushed up the competition, and price, for infrastructure assets. It can also lead to a cash-drag on performance as the money remains un-invested.

Limited Partnership structure

The traditional ownership structure of an infrastructure vehicle is via a limited partnership agreement ('LPA'). The limited partner investor (i.e.; The Avon Pension Fund) is typically protected by law from losing anything but the original capital invested, and the general partner ('GP') retaining the liability of the overall fund and its underlying assets which it manages.

We believe that a LPA is the preferred vehicle for investing in infrastructure though, as it removes any of the liabilities from the investor.

Leverage

One factor that needs to be considered when making an investment in infrastructure is leverage. The purpose of the leverage is to supplement equity when purchasing the assets, in order to supplement returns. This is beneficial to the infrastructure manager and the investor based on the ability to borrow at a low cost.

Inherently within the underlying infrastructure transactions there is leverage, but this would be on a deal-by-deal basis rather than the fund as a whole being leveraged. Given the demand for infrastructure assets, often the only way to be able to compete is by including leverage on deals for the assets that are purchased.

Leverage is also used at the asset level in order to enhance returns and is often the most tax efficient way to finance infrastructure purchases. We believe leverage is only appropriate for individual deals and not at the fund level.

Fees

Given the structure of infrastructure funds, there is also a difference in the way that fees are applied when compared to a more traditional equity fund. There are a wide variety of fee models used within each type of investment method i.e. an open ended fund, closed ended fund and a fund of funds, and the comments below can apply to all. With a fund of funds structure, there will of course be the fees at the underlying fund level and those fees payable to the fund of funds manager, so there could be a variety of fee structures within the Fund's allocation.

Typically, an infrastructure fund will charge a management fee on all committed capital, including that which is undrawn. There is typically a performance fee, which is usually based upon the NAV of the fund, but which is also subject to a hurdle rate and a high watermark, with some form of catch-up. What this essentially means is that a performance fee will be calculated using the NAV – assuming that a certain return is being generated (the hurdle). This hurdle would typically be different based on whether the fund was core, value add/core plus or opportunistic, so as to not just incentivise the infrastructure manager to go into the riskiest assets to maximise their profit.

A high watermark is in place to ensure that the manager is not rewarded for good performance unless the fund is above a critical NAV that has been previously reached - i.e. if the fund was to fall in value by 30%, the manager would not receive any performance related fee until the previous value of the fund is reached. This is again to incentivise the infrastructure manager to achieve predictable, long-term growth.

The catch-up rate refers to the way in which the fees are proportioned beyond the hurdle rate. This can vary, but if the catch-up rate was 50% to both the investor and the manager, then for profits above the hurdle rate the investor and the manager would split, 50/50, the profits above the hurdle rate, until they have reached a pre-agreed upon profit split or 'carry'.

It should be noted that fees to invest in Infrastructure are typically more expensive than other asset classes due to the high level of management resources required. This may include the hiring of skilled people with local knowledge, the cost in financing an asset through structuring leverage deals, the operational

management of the asset and the management of exit strategies. Headline investment management fees can vary from around 0.5% p.a. to 1.25% p.a., typically with core investment at the lower end and value add at the higher end. Over the lifetime of an investment, the overall fees for a balanced portfolio, including performance fees and the operational fees, could be in excess of 2% p.a.

Risks associated with fee structure

The inherent risk involved with such fee structures, where the manager remuneration is based on the NAV of the fund, is that the fund manager will wish to ensure they are above the preferred return, as this will make their 'carry' available to them, and therefore when approaching the performance hurdle the potential incentives mean that their actions may not be completely aligned with those of investors. However, high watermark, escrow and claw-back arrangements ensure that risk is maintained at a sensible level, as losses would be detrimental, not only to the investor but also to the GP, as some of their profit share could be withdrawn. Overall, we believe that there are sufficient incentives in place within the typical infrastructure vehicle fee structure to mitigate against misaligned risk taking.

Another risk within infrastructure funds is disposal risk. If the fund was hovering just below the hurdle rate, there is the risk that the infrastructure manager may dispose of an asset in order to boost return and their profit share as a result. Within a closed ended fund there is also the possibility that the manager will behave differently as he knows that he will definitely have to dispose of the asset at the end of the infrastructure vehicle's life.

NAPF's Pension Infrastructure Platform

The Pensions Infrastructure Platform ('PIP') has been in the pipeline for sometime, and deadlines have been passing with no further information being released. From our conversations with fund managers, we believe that the PIP will face a strong headwind from its launch, based solely on the mandate that it has set itself. The PIP has a target size of £2bn, and is expected to invest solely in core UK infrastructure assets, which are mature to avoid construction risk. It is also expected to operate at low levels of leverage, with no more than 50% on a deal by deal basis. These are the assets that are typically very highly contested for, within the infrastructure market due to their low risk and stable return characteristics.

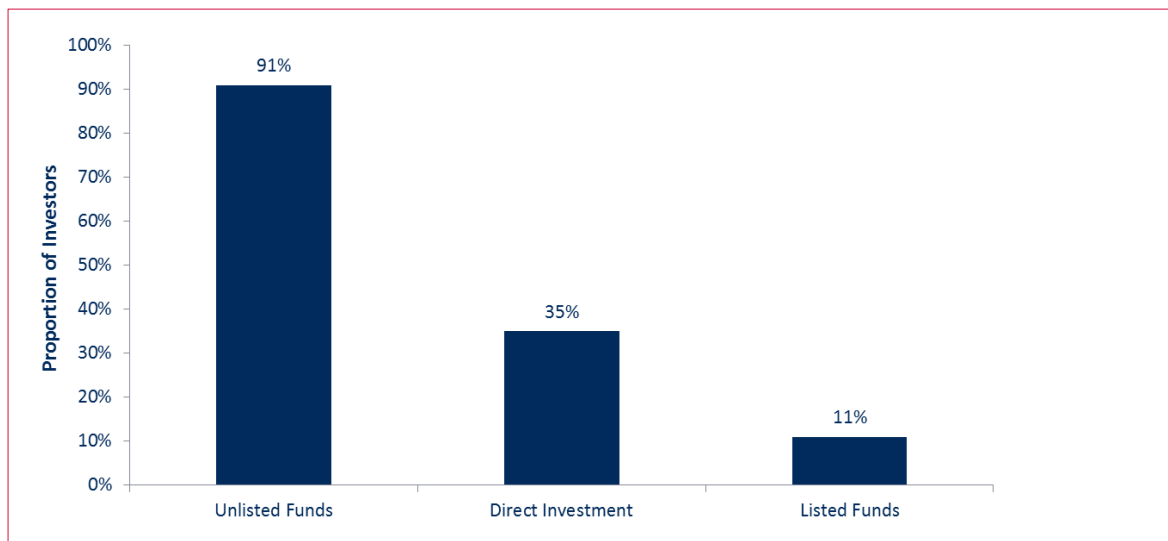
Given the above factors, further details released at the NAPF Annual Conference & Exhibition in October 2013 pointed to the fact that the PIP is likely to be open to construction risk, as there are now sufficient ways to manage this, and that it would be a 10 year vehicle. It was also said that an infrastructure manager was very close to being appointed, and the expectation was that the first investments would be made by the end of 2013.

The NAPF's PIP may be eligible to tender for the Fund's mandate should it feel that it is in a position to satisfy the criteria set out by the Fund, but we do not believe that the Fund should delay the tender process to allow time for the PIP to develop.

It should be noted that the PIP model may potentially provide a cheaper way to access UK Infrastructure for investors. However as the full details of the scheme are not yet known we do not know whether it would meet our mandate criteria.

Current preferred route to market

The graph below, taken from a recent survey conducted by Preqin, shows the preferred route to market of worldwide investors searching for new infrastructure investments in the second half of 2013 and the first half of 2014. The majority of investors are looking to invest via unlisted funds, but some investors are looking to invest via combinations of the three, which explains the bars totalling more than 100%. A direct investment would involve the Fund purchasing an asset directly, and then being responsible for its operation and management.



Source: Preqin

Given the lower correlation with equity markets and the illiquidity premium on offer, we advise that Infrastructure through an unlisted fund is suitable for the Avon Pension Fund's allocation.

6 Draft policy framework

The next stage is to finalise the policy framework that should be adopted.

Having reiterated the rationale and described the drivers, characteristics and implementation issues within this report we propose the following framework.

6.1 Proposed policy framework and constructing the portfolio

In terms of an appropriate framework for the Fund, we acknowledge that a 5% strategic allocation to infrastructure implies an investment of c. £150m into the asset class. This is a sizeable allocation which would allow exposure to a diverse range of infrastructure investments.

With the allocation to infrastructure forming part of the Fund's illiquid growth portfolio, we would recommend that the Fund invests in an infrastructure fund focussing on infrastructure equity (real assets), rather than infrastructure debt (bonds used to finance purchases of the real assets). Whilst infrastructure debt would not meet the return target by itself it could be considered as a small part within an Infrastructure growth portfolio as an additional diversifier and risk management tool under any manager's discretion.

As outlined in section 4.1, within the infrastructure universe it is possible to gain exposure through listed or unlisted funds. We would recommend that the Fund invests in private, unlisted, infrastructure funds. This is in recognition that listed infrastructure, which effectively is investing in the listed equities of infrastructure companies, has historically provided returns that are highly correlated to listed equity market returns. The fact that the Fund's revised investment strategy consists of a 50% allocation to listed equities also backs up the reasoning for investing in unlisted infrastructure, as there may well be instances of doubling up on exposure to certain listed equities in the allocation to infrastructure, listed equities and possibly even within diversified growth funds.

From the 2012 investment strategy review undertaken for the Fund by JLT, the JLT long term forecast for infrastructure was quoted as 7.0% p.a.. This is consistent with the SIP quoted return of Gilts + 2.5% p.a. over the long term. However, given the cashflow nature of the underlying assets within infrastructure, returns tend to be measured in internal rate of return ('IRR') terms. Often, the IRR will be quoted alongside a number that represents the value of the investment plus money returned as a multiple of the initial investment. This is often not directly comparable with the type of return quoted in the SIP and as used for the majority of the Fund's other investments. It is therefore important to assess the infrastructure returns in IRR terms given the nature of the investment, but to also be able to refer to the traditional means of measuring performance (i.e. as quoted in the SIP) because this is relevant for assessing the success of the investment strategy relative to the liabilities.

We would therefore suggest that the Fund should target an investment return, represented by the IRR, of 10-12% to ensure consistency with the stated objective within the SIP, of 7% p.a.. That is, given that the infrastructure investments are expected to occur in a staggered process (i.e. the drawdown process), it is important that the IRR targeted is above the required return as stated in the SIP. We believe the 10-12% IRR target is achievable by focussing on infrastructure equity rather than debt and through active fund management. We would recommend that this target be achieved by investing in funds offering a range of core, value-add and opportunistic infrastructure investments, to ensure diversification across geographical regions, sectors and also a mix between greenfield and brownfield investments. Section 4 highlights the different characteristics of the sectors.

Section five highlighted how an individual fund that invests in direct and co-direct investments could provide sufficient diversification. A fund of funds approach, investing in primary and secondary investments is likely to be able to achieve an even greater level of diversification than an individual fund, but would attract an additional layer of fees. Given that both structures could fulfil the brief, we believe that both should be considered by the Fund.

Another means of achieving the necessary level of diversification would be to appoint more than one manager. Whilst an investment of £150m could potentially be split across up to two infrastructure managers, we do not believe this is justified given the targeted allocation of 5% and given that diversification is possible through a single manager. That is, we believe that the following brief can be fulfilled either by a sufficiently large single fund investing in direct and co-direct investments, or through a fund of fund structure:

- An explicit investment into core / value-add / opportunistic infrastructure, on a global basis;
 - » Focussed on core infrastructure equity within developed economies such as the UK, Europe, North America or Australia, but with the opportunity set to invest in value add and opportunistic assets if the characteristics are right;

We believe that it is most appropriate for the core infrastructure investment to be in stable economies which is highly regulated. However, we do not believe any further restriction on geography should be imposed. For example, a manager may be concentrated within the UK because a high level of diversification by sector and type of investment is available in what the manager believes are attractive opportunities. When it comes to value add or opportunistic infrastructure investments, whilst these are available in developed, regulated markets such as the UK, Europe, North America and Australia, the infrastructure manager should have the discretion to invest on a global basis to best take advantage of any opportunities.

It should also be remembered that, whilst there are a number of very credible infrastructure managers in the market, it is unlikely that they will all be raising funds at the time that the Fund goes out to search in relation to the mandate. In addition, potential collaboration with other LGPS could be considered if the mandate specifications are the same and the investment timeframe matches.

Given the additional fees and additional manager to monitor, we recommend that the Fund should look to appoint one manager for infrastructure investments. The Fund should invest either in a fund with exposure to direct and co-direct investments or a fund of funds structure, which offers access to a mixture of core, value added and opportunistic infrastructure investments. The one requirement of this investment is the size of the fund. Investing in a single direct / co-direct fund could potentially lead to concentration risk by geographical region, sector etc., although we believe there are funds available that have sufficient scale to mitigate these risks. As mentioned in section five, the fees associated with accessing core/value-add/opportunistic investments typically vary, and, as such, in completing due diligence on a manager who offers access to all three areas, questions should be asked to ensure that the manager is not excessively incentivised to invest in the higher fee bearing investments.

Nonetheless, should the Fund look to increase its exposure to infrastructure in the future beyond the current target of 5%, particularly if targeting a specific opportunity, it may be appropriate to consider an additional manager at that time.

Whilst fund of funds come with an additional layer of fees, as mentioned in section 4.1., this should be considered in the context of the additional diversification that is offered. This is not an unfamiliar concept to the Avon Pension Fund: the overseas property exposure is gained through a fund of funds structure managed by Partners Group. This includes direct / co-direct, primary and secondary investments. Similarly, some infrastructure managers do use fund of funds within their investment strategies to offer diversification alongside primary and secondary investments. This would be a factor to be considered in the due diligence on the investment managers, to ensure that they are not incentivised towards one type of investment over

another, as the transparency of fees in cases such as this starts to reduce. It is important to note that fund of funds are not the only way to gain vintage diversification, as a single fund can also invest in a number of projects and secondaries and therefore diversify by vintage year.

6.2 Recommendation

We recommend that in order to meet the strategic objectives of the Fund in relation to an investment in infrastructure, the investment should take into account the following characteristics:

- Aim to achieve a return of gilts +2.5% p.a., as set out in the SIP;
- An unlisted fund investing in unlisted assets, based on the low correlation with typical equity markets and to take advantage of the illiquidity premium;
 - » Managed by a single investment manager either in a direct / co-direct fund structure or a fund of funds structure;
- Allow debt to be considered under manager discretion for effective risk management of the portfolio;
- Invest across core, value-add and opportunistic assets to ensure a steady and predictable yield whilst still meeting the return target of gilts +2.5%;
- Implement a global mandate giving the infrastructure manager the discretion to select where investments are made to take advantage of all opportunities based on the risk/return characteristics of each deal, albeit with an expectation that the majority of exposure is in developed, highly regulated markets and in core investments;
- Subject to sufficient diversification by sector and stage of project as noted below, further constraints on geographical location should not be imposed
 - » The opportunity set should be global but investments in a region should not be made if they offer sub-optimal returns and protections;
- Diversify across sectors to reduced sector concentration risk within the portfolio;
- Allow greenfield investments in addition to brownfield in order to meet return target of gilts +2.5% p.a..

6.3 Next steps

Infrastructure forms a key part of the Fund's revised investment strategy. Following this report, we recommend that the next steps to take are:

- Decide upon the broad criteria for any manager search(es);
- Consult with other LGPS regarding any potential collaboration to align any similar search activity and potentially share costs;
- Undertake any manager search(es);
- Update the Fund's ('SIP') to reflect any changes in investment strategy, including the production of a letter to satisfy Section 36 of the Pensions Act 1995.

7 Infrastructure glossary

Brownfield

Brownfield investment involves an existing asset or structure that requires improvements, repairs, or expansion. The infrastructure asset or structure is usually operational and may already be generating income.

Carried interest (Carry)

A share in the profits of an infrastructure fund. Typically, a fund must return the capital given to it by limited partners plus any preferential rate of return before the general partner can share in the profits of the fund. The general partner will then typically receive a 15 to 20% carried interest. Also known as 'carry'.

Catch-up

A specific clause in the agreement between the general partner and the limited partners of an infrastructure fund relating to the remuneration of the general partner. Once the limited partners have received a certain portion of their expected return, the general partner can typically receive the majority of profits until the previously agreed-upon profit split is reached.

Deal flow

A measure of the number of potential investments that a fund reviews in any given period.

Drawdown

The general partner will call upon investors to provide monies for investment in underlying companies. Each of a series of requests for investment capital from the limited partner to the general partner is referred to as a 'drawdown'.

Dry Powder

Dry powder is the amount of money that has been committed to an infrastructure manager, but has yet to be invested.

Due diligence

The investigatory process performed by investors to assess the viability of a potential investment and the accuracy of the information provided by the target company.

General partner (GP)

A class of partner in a limited partnership agreement. The general partner retains liability for the actions of the partnership. The GP is the fund manager while the limited partners (LPs) are the institutional and high net worth investors in the partnership. The GP earns a management fee and a percentage of profits (see carried interest).

Greenfield

Greenfield investment involves an asset or structure that needs to be agreed and constructed. Investors fund the construction of the infrastructure asset and potentially, the ongoing maintenance when it is operational.

Internal rate of return (IRR)

This is a measure of the performance of an infrastructure investment based on the initial investment costs and the investment proceeds over the period of investment. The internal rate of return for a fund is based on the cashflows into and out of the fund, as experienced by an investor. The annual rate of return would typically be lower than the IRR, representing the fact that not all monies are invested immediately.

J-Curve

The curve realised by plotting the cashflows generated by an infrastructure fund against time (from inception to termination). It is so-called because initial cashflows are negative and over time these 'below the line' investments are (hopefully!) equalled and exceeded by the returning cash flow distribution from the infrastructure commitments to the limited partners. Once these are net positive they are referred to as 'above the line'.

Leverage

This term refers to the use of debt to acquire assets, build operations and increase revenues. By using debt, a company is attempting to achieve results faster than if it only used the cash available from pre-leverage operations. The risk is that the increase in assets and revenues does not generate sufficient net income and cashflow to pay the interest costs of the debt.

Limited partnership

A legal entity composed of a general partner and various limited partners. The general partner manages the investments and is liable for the actions of the partnership while the limited partners are generally protected from legal actions and any losses beyond their original investment. The general partner receives a management fee and a percentage of profits (see carried interest), while the limited partners receive income, capital gains and tax benefits.

Limited partner (LP)

An investor in a limited partnership. The general partner is liable for the actions of the partnership while the limited partners are generally protected from legal actions and any losses beyond their original investment. The limited partner receives income, capital gains and tax benefits.

PPP/PFI

Public Private Partnerships ('PPPs') are contractual agreements between public bodies, local authorities or central government, and private companies to deliver a public, social or economic infrastructure project. Private finance initiatives ('PFI') are a form of PPP developed by the UK government.

Secondary market

A market for the sale of partnership interests in infrastructure funds. Sometimes limited partners choose to sell their interest in a partnership, typically to raise cash or because they cannot meet their obligation to invest more capital. Certain investment companies specialise in buying these partnership interests, often at a discount.

Yellowfield

Existing Infrastructure assets that require work to either upgrade or replace the asset. Although construction work is involved it is considered lower risk than greenfield as more information is available to evaluate risk (such as operational history, revenue and 'foot fall' for example)

Vintage year

This refers to the year in which the infrastructure fund was raised.

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JLT Employee Benefits

The St Botolph Building, 138 Houndsditch,
London EC3A 7AW
Tel: +44 (0)20 7528 4000
Fax: +44 (0)20 7528 4500

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Authorised and regulated by the Financial Conduct Authority. A member of the Jardine Lloyd Thompson Group.
Registered Office: The St Botolph Building, 138 Houndsditch, London EC3A 7AW.
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