Global infrastructure investment

The role of private capital in the delivery of essential assets and services
Foreword

At the core of GIIA’s agenda is the need for an evidence based account of the contribution private capital can play in assisting governments around the world to deliver high quality essential assets and services to the communities they serve.

There is now a wealth of evidence from bodies such as the World Economic Forum on the ‘infrastructure gap’ that exists in both the developed and developing world. Likewise, it is widely recognised that high quality infrastructure serves societies in terms of contributing to economic growth, local jobs and strong and vibrant communities.

Private investors, working alongside governments, can play a profound and positive role in the delivery of world class infrastructure. This report, produced in partnership with PwC, provides examples of the impact that has been made globally. The funds, which often represent individuals investing in their pensions for their retirement, are looking for long-term stable returns. Professional investors who are the custodians of these funds take a long-term view by investing in the assets they own, often transcending political and economic cycles, to improve the performance of the businesses and services they own.

There are wide ranging views of the role of private capital for infrastructure assets. We believe that the case studies in this document demonstrate the positive outcomes that can be achieved where the public sector, regulators and investors collaborate to create fair, transparent and open frameworks that both attract investment and represent the interests of the consumers that ultimately pay for the services provided.

We welcome an open dialogue on the future of infrastructure investment and the positive contribution private capital can play in helping societies achieve their ambitions.

If you would like to find out more about GIIA and its advocacy role, please visit www.giia.net.

I am grateful to PwC and GIIA members for their contribution to this report.

Andy Rose
CEO, GIIA
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A global transformation in infrastructure ownership

The last decade has seen a transformation in the ownership of the world’s economic infrastructure – with much now resting in the hands of specialist private investors who have inherited it through acquisitions from governments, major corporates and take-private transactions.

This transformation has been driven by an influx of capital seeking long-term, stable returns. More than US$200bn has been raised by specialist funds since 2006, with at least the same again allocated by pension funds and other direct investors.

Combined with a strong supply of assets, enhanced by the post-crisis need for governments and major corporates to reduce debt and focus expenditure, the impact has been pronounced, with US$1.7 trillion being invested into infrastructure assets globally since 2010. In the UK alone, some 56% of water assets, all of the UK’s major airports, most ports and all passenger rail rolling stock now sit within specialist infrastructure investor vehicles.

Understandably, questions have been raised around the financial and performance impacts this has had on infrastructure spending and performance, on the provenance and extraction of funds, and on the security of essential services within private investors’ hands.

Executive summary
This report, commissioned by the Global Infrastructure Investor Association and prepared jointly with PwC, draws from a global evidence base and presents a series of illustrative case studies. Whilst not a definitive research study itself, there are notably consistent themes coming out of the analysis:

1. **A specific investment approach geared towards long-term essential assets**
   The infrastructure investor community brings a long-term mind-set towards asset ownership. Of the capital raised by infrastructure funds since 2006, 48% has been by vehicles with a maturity of greater than 10 years. Capital investment decisions are typically weighted towards asset performance and long-term value creation, rather than short-term gain. Management incentives are commonly aligned to these goals (as opposed to the shorter term incentives typically seen in private equity and some corporate structures). Even when investors are considering selling their assets, this is typically done via presentation of a long-term business plan backed by management teams.

2. **A desire to drive significant performance improvements**
   Investors’ desire to improve their assets – commonly through improving efficiency and customer experience and exceeding regulator-set performance targets. Objective analysis has shown performance improvements across private-invested infrastructure with examples including:
   - In Australia, private owners of the electricity distributors have operated their assets at least 15% and as much as 33% more efficiently than public owned assets.
   - In the UK, water companies have achieved an annual reduction in water leakage of 13% annually, a saving equivalent to the entire consumption of Wales.

3. **Specialist investors understand and embrace the key economic and social roles of their infrastructure assets**
   The investors we have interviewed as part of this report have consistently referred to their roles as custodians of infrastructure assets rather than business owners. This is demonstrated in a willingness to invest in assets throughout the economic cycle and a desire to engage with regulators and municipal bodies to ensure public needs are being met.

4. **Appropriate returns expectations weighted towards the longer term**
   As more investors have entered the market, competition for available investments has increased. This, in turn has reduced the level of return targeted by infrastructure funds globally to reduce from an average of 14.0% in 2004 to 10.6% in 2016. Access to low-cost, long-term capital is providing significant benefits to consumers – with owners and regulators alike demanding substantial performance improvements to mitigate the need for significant increases in customer bills to fund the required investment.

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4 PwC analysis of InfraDeals fundraising information
Looking forward...

With a major gap between the world’s infrastructure needs and countries’ abilities to fund construction, combined with governments globally committed to infrastructure as a mechanism for driving growth, harnessing the large pools of low-cost capital presented by specialist infrastructure investors would appear an obvious solution.

Evidence of recent performance suggests that investors are responsible, appreciate the needs and public status of their assets, and are committed long-term stewards.

However, evidence is still relatively limited, and this industry remains less than 20 years old. It would be complacent to ignore the challenges, and the onus will remain on the industry to prove its capabilities as custodians of the world’s infrastructure.

Committed asset management to continue to drive improvement and investment

By their nature as essential public services, infrastructure businesses require a lot of effort and ongoing expenditure to keep them operating well, particularly those meeting the needs of expanding cities and increasingly demanding consumers.

Whilst new entrants to direct infrastructure investment are bringing with them lower return requirements and even longer investment horizons than their predecessors, they also often invest in minority stakes and are still developing their asset management capabilities.

We consider it important for the industry that investors continue to support active asset management to ensure the performance improvements achieved over the last decade continue going forward.

Transparent governance structures should be embraced

We consider it important that global infrastructure investors continue to recognise there is valid public interest in their investments and that, given the monopolistic nature of many regulated companies, the highest standards of governance are required. In order to further build confidence in the sector, investors in essential services should commit to good governance and robust ownership principles.

Continued dialogue to enable greenfield investment

Whilst there is a recognised need to fund new infrastructure across the world, the risks and challenges of investing in greenfield construction projects means that such projects typically remain beyond the remit of many institutional investors.

To bridge the global infrastructure gap, it will be incumbent on both the industry and governments to devise, sponsor and champion innovative structures in order to enable low cost capital to be better used in meeting the world’s infrastructure needs.
The need for private investment into global infrastructure – and its impacts
Background

The desire to invest in infrastructure as an asset class has never been stronger. Huge amounts of capital have been made available by pension, insurance and sovereign wealth funds and, as a consequence, many owners of infrastructure assets – government and private alike – have taken advantage of the sharp rise in asset values by putting assets up for sale.

Specialist investors have bought into a wide range of the developed (and in certain cases, developing) world’s infrastructure – ranging from Australian airports to UK water companies with a wide array of port, energy and telecoms infrastructure in between.

At the same time, strong questions have been raised about the quality and sufficiency of the world’s existing infrastructure. A McKinsey study in June 2016 estimated that US$3.3 trillion needs to be invested each year to 2030 in order to support current growth rates. Visitors to major capitals just need to spend time on Los Angeles’ congested roads, in long security lines at New York’s airports or London’s packed underground to experience this for themselves.

Politicians have responded to pressure by promising new major improvements – with the Trump administration pledging US$1 trillion of investment in roads, bridges, schools and hospitals – to be largely funded through tax-incentivised private capital.

Such commitments are mirrored around the world, with Theresa May’s new UK administration sponsoring high value investment into “infrastructure and innovation to boost productivity”, Angela Merkel pledging to raise spending on roads, railways and broadband with “no new debts”, and the Chinese government setting aggressive targets to improve many key infrastructure sectors between now and 2020.

Hence the need for high-quality, privately funded infrastructure has never been clearer – a position articulated back in 2008 by libertarian US think tank Cato Institute that “most nations face daunting infrastructure problems. To solve them, well-tested methods of private provision must be embraced”. A 2011 OECD study also concluded that increased private sector investment in strategic transport infrastructure will be essential.

However, given many of the investors remain relatively unknown private organisations, it is perhaps not surprising that the public can be sceptical about these organisations’ actions and motivations. Examples include headlines around “asset-stripping” and “morally questionable” structures. With limited public reporting on infrastructure performance, investment and return requirements, it has been difficult to date for the industry to respond.

This document brings together available commentary and analysis, exploring the impact that private investors have had – and are having – on the world’s infrastructure, and the impacts this is bringing to countries, economies and societies worldwide.

6 Research by consultancy INRIX indicates Los Angeles tops the list of the world’s most gridlocked cities, with drivers spending 104 hours in congestion in 2016 during peak time periods
7 PwC, Future-ready airports, 2017
9 Source: http://static.guim.co.uk/ni/1411375335657/Tube_graphic_DONE.pdf
A global desire to invest into Infrastructure

In the decade since the Global Financial Crisis, more than US$200bn (see Figure 1) has been raised by investment funds to deploy long term capital into infrastructure investments.

It is estimated that at least the same amount again has been allocated to infrastructure by organisations seeking to invest directly rather than through investment funds. Typically, these organisations will be major pension, insurance and sovereign wealth funds; all of whom have needs for long-term investments.

The creation of these specialist vehicles and teams has, unsurprisingly, led to a sharp rise in the volume and value of infrastructure transactions over the last decade (see Figure 2), and a significant rise in asset valuations13, as acquirers have accepted lower returns on their investments.

The key question, of course, is the impact these investments have had on customer pricing and quality of services.

InfraDeals estimates that over US$110bn of dry powder is available to deploy globally from unlisted equity funds.

Infrastructure asset performance

Whilst there is limited direct analysis on the impact of investors on infrastructure as a sector, it is possible to look at specific sectors where private investment is most developed. In its paper *The role and impact of specialist investors in UK infrastructure*, PwC reviewed the performance of the UK’s airports, energy distributors, water and sewerage companies, which had seen a pronounced shift in ownership over the ten years to 2015. Highlights of this analysis showed:

- A reduction in annual water leakage by 13% annually – equivalent to the entire consumption of Wales (see Figure 7)
- Reductions in electricity supply interruptions by 29% and length of average outage by 39% (see Figure 5)
- High investment levels: in every year between 2004 and 2014, water companies and electricity distribution network operators invested more per customer than was generated in profits

In their review, PwC UK attributed these improvements to a number of factors created by the change in ownership, including:

- A long-term perspective on the asset, with focus on performance and value creation
- Focus on the underlying infrastructure, rather than ancillary commercial businesses
- Desire to work with regulators for the long-term benefit of consumers
- An alignment of management incentives with long-term performance

PwC concluded overall that its analysis showed “a notable improvement in performance across all major asset classes, which we consider is in no small part due to the focus and investment capital provided by specialist investors”. (See Figures 3 and 4).

Key examples of the above can be seen in the case studies. Analysis of Thames Water’s performance following Macquarie’s investment shows a 31% reduction in leakage since 2006, beating regulator-set targets in each year, something it had been fiercely criticised for under previous ownership. Another water company featured in this report, Affinity, has seen marked improvements in its customer engagement and cost efficiencies since acquisition by Morgan Stanley and Prudential’s infrastructure arm in 2012.

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Profit versus service levels?
One of the charges commonly levelled against private sector investors is that their focus on improving profits can only be achieved to the detriment of customer service and reduced maintenance of the assets.

The vast majority of addressable evidence in fact appears to suggest the opposite – that private investment in infrastructure typically drives improvements for consumers with either a) the need to compete (for non-monopolistic infrastructure such as seaports and airports), which leads to a shift in strategy towards customers; or b) regulators setting demanding efficiency targets and price constraints. Typically, regulators appear to become emboldened when dealing with privately run companies rather than state-owned enterprises.

The regulator of the water sector in England and Wales (Ofwat), in its latest price review, was able to reduce bills in real terms by 5%, despite strong and continued improvements in target service levels. As Ofwat stated, "Companies are set to spend more than £44bn (or around £2,000 per household)…by 2020 customers will benefit from substantial improvements"\(^{15}\).

The above has only been possible through investors’ desires to put significant amounts of capital into the industry, seeking increasingly modest returns. Analysis by PwC of funds raised since 2004 shows a clear downward trend in return expectations from 14% in 2004 to 10.6% in 2016 (see Figure 8). Many regulators have taken advantage of investors’ desire to deploy capital in infrastructure, by allowing ever-lower returns in each regulatory review over the last decade (see Figure 9).

In October 2016 a review by PwC Australia into the impact of privatisation on the Australian electricity market demonstrated that, on a cost-per-customer basis, private owners of the electricity distributors in Australia operated their assets at least 15% and as much as 33% cheaper than publicly owned assets (see Figures 10 and 11)\(^{16}\). Further, this document highlighted a 2014 review by the NSW Treasury, which found electricity bills in Victoria and South Australia (where the electricity networks are held in private ownership) increased at lower rates than in NSW and Queensland (where at the time they remained in public hands\(^{17}\)).

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15 Source: http://www.ofwat.gov.uk/pn-0914-water-bills-held-down/
16 PwC Australia “The case for change – Privatisation of Western Australia’s electricity networks” October 2016
17 Across 2015 and 2016 NSW has subsequently privatised both its electricity transmission and distribution networks
Responding to public needs

Arguments are also often put forward that infrastructure operated on a commercial basis, weakens the ability to use it as a tool for economic development.

On investigation, evidence from the case studies indicates the long term nature of infrastructure investors also contradicts this claim. Analysis of Brisbane Airport Corporation’s (BAC) performance following privatisation in 1997 (owned by a consortium of Australian superannuation funds, led by infrastructure specialist First State Investments), shows nearly A$2.5bn in capital investment up to 2016 (see Figure 22), driving a doubling in passenger numbers over the same period. Indeed it has also been responsible for the creation of over 16,000 jobs, whilst being run as a commercial enterprise.

Brisbane’s owners have recently committed to further development – with an A$3.3bn runway expected to deliver incremental economic benefits to the region of A$5bn per annum and a further 29,000 jobs by 2035 as the airport’s capacity continues to grow\(^{19}\). The privatisation has clearly been a factor in total economic growth.

Similar outcomes are expected from both Peel Ports expansion of Liverpool 2 in the UK and Global Container Terminal’s (GCT) investment into improving Deltaport in Vancouver. These projects are expected to facilitate the creation of 5,000 and 5,500 jobs and £1.1bn and C$500m of economic value respectively.

Of course, public needs may require more than improved airports or shipping and tourism growth. In some cases, they’re driving critical investment to improve people’s health and wellbeing. Less than 20 years ago, most Chilean cities were still routinely dumping raw sewage into seas and rivers – with less than 15% of sewage being treated prior to disposal\(^{20}\).

Chile’s answer incorporated the harnessing of private capital alongside strict regulatory objectives, in particular the ambitious goal of providing 90% of the population with treated sewage. Partial privatisation of Chile’s water companies from 1998 encouraged long-term investors such as Ontario Teachers’ Pension Plan to invest alongside global water companies.

The result of the programme has been seismic, with huge improvements in water quality and supply, and a steep decline in hospital admissions for typhoid and shigellosis – illnesses typically contracted from unclean water (see Figure 15)\(^{20}\).


20 SISS (Superintendence of Sanitary Services), 2011 Official Environment Status report
Industry challenges

Whilst the overall picture has been positive, it would be naïve to assume that all infrastructure investments have found stable homes and will continue to perform excellently for the foreseeable future.

By their nature as essential public services, infrastructure businesses require a lot of effort and ongoing expenditure to keep them operating well, particularly those meeting the needs of expanding cities and increasingly demanding consumers.

Whether it is city centre water companies needing to replenish ageing networks to meet the needs of growing populations, airport owners needing to respond to airline demands, or telecoms businesses rolling out fibre infrastructure capable of filling the appetites of technology-hungry consumers, all will require high quality management supported by committed shareholders who are focused on the challenges facing their assets.

Following our review, we have identified three principal challenges facing the industry, which investors will need to respond to if they are to continue building their reputations as good custodians of the world’s infrastructure assets: (i) committed asset management, (ii) good governance and (iii) continued investment into new infrastructure.

1. Committed asset management

Much of the initial wave of infrastructure investment, which is explored in this report, was driven by infrastructure funds with strong asset management capabilities, harnessing private capital to acquire long term infrastructure assets, primarily from corporate and government vendors. These organisations typically had both the scale and appetite for heavy asset management roles, which in our view have contributed significantly to the improvements in performance evidenced throughout this report.

The industry has evolved since then, with many new entrants (which had previously invested in infrastructure funds) choosing now to invest directly instead. Many of these new entrants represent pension funds, insurance companies and sovereign investment funds.

As a group these organisations have brought much lower cost capital into the sector, often with even longer term investment horizons than the funds which they replace – both of which have the benefits of continuing to support high levels of investment whilst keeping end-user costs down. However, they also often invest in minority stakes, and many haven’t yet achieved the scale or appetite for major asset management roles.

We consider it important for the industry that its investors continue to evolve and strengthen their asset management capabilities in order to drive the next wave of improvements and investment across the world’s infrastructure base.
2. Transparent governance

Understandably, with an expanding universe of investors acquiring assets regarded by consumers as essential services, scepticism has been expressed around whether investors’ motivations and structures are in the public interest. This point has been articulated by many stakeholders including regulators, who understandably believe that the monopolistic, high profile, nature of many regulated companies requires the highest standards of governance.

Academics in the industry have also highlighted the long term benefits of robust governance. Recent studies have shown that long term, sustainable approaches to management are not just in consumers’ interests, but companies, too: “88% of reviewed sources find that companies with robust sustainability practices demonstrate better operational performance, which ultimately translates into cash flows.”

This is a view that is recognised and shared by numerous global investors (and GIIA members), which have clearly stated aims towards good governance. One such member, Hermes Investment Management, made its position explicit in a 2017 position statement: “It may be that the case for implementing a formal, separate governance regime for infrastructure businesses that provide essential public services is considered by some as impractical and undesirable…. However, we are strong advocates of an enhanced code applicable to privately owned Infrastructure businesses in the interests of both shareholders and society as a whole.”

We consider it important that global infrastructure investors continue to recognise there is valid public interest in their investments. In order to further build confidence in the sector, investors in essential services should commit to good governance and robust ownership principles.

3. Continued investment into new infrastructure

The appetite for private investment in infrastructure has never been stronger, but there remains a significant gap between infrastructure needs and investors’ expectations. In particular, whilst there is a strong, recognised need to fund new infrastructure across the world, the risks and challenges of investing in greenfield construction projects are typically beyond the remit of many specialist investors.

We note some of the highly innovative structures which have been created in order to harness low cost capital to major infrastructure projects; in particular, the regulated return structures around assets such as Thames Tideway Tunnel and High Speed One in the UK, feed-in tariff constructs on renewable energy and the unitary charge mechanisms on public private partnerships (PPP) contracts.

However, on major infrastructure projects, these remain the exception rather than the rule. Typically, infrastructure investors will continue to look for governments or corporate sponsors to take construction risk. Going forward, it will be incumbent on both the industry and governments to devise, sponsor and champion structures that will enable private capital to be better used in meeting the world’s infrastructure needs.

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21 From the Stockholder to the Shareholder, Clark, Feiner and Viehs, March 2015
A snapshot of global infrastructure investment and our case studies

**North America**
- **Investor mix by number of investments**
  - 39% 46%
  - 7% 7%
- **Investments by asset type**
  - 39% 21%
  - 9% 12%

**Europe**
- **Investor mix by number of investments**
  - 44% 38%
  - 4% 6%
- **Investments by asset type**
  - 44% 25%
  - 35% 12%

**Latin America**
- **Investor mix by number of investments**
  - 76% 11%
  - 9% 2%
- **Investments by asset type**
  - 52% 24%
  - 8% 5%

**Africa**
- **Investor mix by number of investments**
  - 82% 13%
  - 6% 5%
- **Investments by asset type**
  - 62% 23%
  - 10% 23%

**Asia**
- **Investor mix by number of investments**
  - 64% 18%
  - 1% 5%
- **Investments by asset type**
  - 33% 4%
  - 24% 6%

**Australasia**
- **Investor mix by number of investments**
  - 42% 19%
  - 20% 7%
- **Investments by asset type**
  - 32% 11%
  - 3% 6%
Investor mix by number of investments

- Corporate
- Infrastructure fund / investment firm
- Pension fund
- Sovereign wealth / government agency
- Other

Investments by asset type

- Transport
- Social
- Power
- Environmental
- Telecoms
- Renewable energy

Key

Middle East

Investor mix by number of investments

- 60%
- 23%
- 13%
- 13%
- 7%
- 9%
- 5%
- 15%
- 4%

Investments by asset type

- 39%
- 16%
- 12%
- 21%
- 3%
- 9%
- 7%

Asia

Investor mix by number of investments

- 64%
- 18%
- 12%
- 5%
- 11%

Investments by asset type

- 33%
- 11%
- 76%
- 11%
- 2%
- 2%

Australasia

Investor mix by number of investments

- 45%
- 32%
- 14%
- 6%
- 3%
- 6%

Investments by asset type

- 42%
- 20%
- 19%
- 7%
- 11%

Source: InfraDeals investment and ownership mix as at 30 September 2016 based on number of investments
Chilean water: driving global health improvements through infrastructure privatisation

Less than two decades ago, the public water utility industry in Chile was in urgent need of investment to improve the quality of service to consumers and public health.
As recently as the early 1990s, cities in Chile were unloading untreated sewage into the sea or rivers. By 1998, even following a programme of investment, the country had just 24 wastewater treatment plants, and whilst urban coverage was around 97% for potable water, it was 83% for sewage collection and just 15% for sewage treatment.22

Having set a goal to treat 90+% of the sewage in Chile by 2010 and meet world-class standards, the country faced investing an estimated US$4bn to meet this target. This was an undertaking the government-owned water companies in Chile were neither able to self-finance nor had the necessary experience to implement.

Between 1998 and 2004, the government sold strategic interests in 13 water companies to the private sector, with five being perpetual concessions and the remainder 30 year concessions. The government retained minority interests of 30% to 45% in the perpetual concessions to maintain governance and a source of income.

The results were dramatic. Between 2000 and 2010, coverage levels for potable water, sewage collection and sewage treatment approached 100%. Chile is now a worldwide leader in sewage treatment coverage in urban centres, whilst maintaining some of the lowest water tariffs in the world.

The benefit to the population’s health of this investment has been seen through a steady decline in hospital admissions for typhoid and shigellosis as sewage treatment has increased (see Figure 19). All of this has been achieved whilst also creating more than 5,000 additional jobs between 2004 and 2015 (see Figure 18).

Figure 16: Chile – urban coverage of drinking and wastewater

Source: SISS (Superintendence of Sanitary Services)

22 SISS (Superintendence of Sanitary Services), 2011 Official Environment Status report
**OTPP’s involvement in Chilean water**

The initial investors in the Chilean water industry were primarily European strategic investors, including Agbar (wholly owned by Suez), Anglian Water and Thames Water. Most of these players exited within five years through sales to institutional investors, and now only Agbar remains. The institutional entrants include the Canada based global investor Ontario Teachers’ Pension Plan Board (OTPP), which entered the Chilean water industry in 2007 by acquiring majority stakes in four Chilean water companies: perpetual concessions Essbio and Esval, and 30 year concessions Nuevosur and Aguas del Valle.

After a thorough review, it became clear to OTPP that Chile’s robust regulatory frameworks and strong rule of law made it an ideal country in which to invest. The water industry emerged as a high potential area, given its strong need for investment, and an industry regulator that – at that time – was actively seeking to attract new investment to improve service quality and coverage.

OTPP Portfolio Manager Stacey Purcell says that on making the investments, OTPP could see two key opportunities for improvement in the companies it had acquired. The first was governance: “We wanted to deepen the dialogue on valuation creation and strategy while at the same time letting management run the day-to-day business,” says Purcell. The second area that OTPP set about improving was long-term planning: “Traditionally, the companies had been quite reactive with limited long term planning – so we pushed them to change the way they worked. Taking a long-term view and thinking about sustainable investment, risk management and continuous improvement were big steps forward.”
The benefits delivered

With a sophisticated international investor as majority owner, OTPP’s Chilean water companies have enjoyed a wide range of advantages. These include access to insight from a network of world class commercial operators to help drive innovation and leading edge thinking on financing. Alongside these gains, one of the clearest benefits OTPP brings as a long term investor without immediate cash requirements is the ability to maintain required investment plans, irrespective of shocks in the macro environment.

Backed by OTPP’s ownership and investment, the companies have achieved strong financial performance, as well as improvements in operational metrics such as the level of water losses despite material external shocks. OTPP’s Purcell says this twin track progress reflects the way OTPP balances financial investment with operational improvement. “The long-term plans we have worked with management to create are both driving continuous improvement and improving the robustness of our systems to ensure security of water supply,” she explains. “In recent years we’ve cut back our distributions to increase the level of investment as the companies needed it. Ultimately, we see that what is good for the companies in the long term is also good for us as investors.”

This simultaneous focus on financial investment and operational improvement is fostered by the ‘model company’ regulatory framework applied by the Chilean industry regulator, the Superintendencia de Servicios Sanitarios (SISS). This approach means both OTPP and the water companies’ management are constantly seeking innovation to deliver better services at a lower cost. Purcell says OTPP seeks to align the management incentives with this focus on innovation through a balanced scorecard “that includes operational performance, strategy and risk measures rather than financial-only metrics.”

A further factor in the success of OTPP’s investments in the Chilean water industry has been the role played by AndesCan (its Chilean-based asset management team) in helping to manage and coordinate the investments on the ground. AndesCan’s Rodrigo Montes says this role includes helping the companies share process innovations and best practices, as well as realise economies of scale in areas like procurement. Montes comments: “An important part of AndesCan’s value is to act as a coordinator between the companies to ensure that good ideas, whether from Toronto or the companies themselves, are understood by all of them, helping to promote best practices across the board.”

Looking forward

While privatisation of the Chilean water industry has objectively been highly successful, inevitably some challenges remain. One is the need to handle the growing impact of climate change on the security of the water supply, including a recent severe drought that lasted about five years, whilst simultaneously keeping customers’ bills at affordable levels. These challenges add to the already strong need for private investors such as OTPP to support the companies in continuing to innovate and invest. Going forward, in the face of the ever-present threat of environmental changes to the security of water supply and the cost of delivery, it will be crucial for water companies and their investors to maintain an active and open dialogue with the regulator over how to best address these challenges.

Taking a long-term view and thinking about sustainable investment, risk management and continuous improvement were big steps forward.

Stacey Purcell
Portfolio Manager,
OTPP
As private investment continues to transform Chile’s water sector, a similar process is under way in China. Rather than full privatisation of companies and infrastructure, the approach in China is based on a PPP model. Private investors build water and waste treatment facilities and receive ongoing revenues for operating them in line with service quality standards.

Macquarie Infrastructure and Real Assets (MIRA) began investing in the Chinese water sector in 2012. By combining a long-term investment perspective with global industry experience, its facilities are now treating more than two million tonnes of tap water, wastewater and recycled water per day, all to the highest treatment standards in China.

The environmental benefit of MIRA’s investment is made clear by its facility in Shenyang, one of the largest wastewater treatment plants in northern China. The facility today treats more than 500,000 tonnes of raw effluent that was previously being deposited everyday, untreated, into the Hunhe River, the city’s major water source.

As a global financial investor MIRA is also committed to ensuring its work force meets the highest Environmental Health and Safety (EHS) standards. Neil Johnson, head of MIRA’s China infrastructure team, explains: “Good environment, health and safety is synonymous with operational and financial performance. You can’t have the returns without the right service provision and employee welfare. Once those building blocks are in place and you’re meeting the required treatment standards, only then can you look for operational efficiencies.”
Good environment, health and safety is synonymous with operational and financial performance: you can’t have the returns without the right service provision and employee welfare. Once those building blocks are in place and you’re meeting the required treatment standards, only then can you look for operational efficiencies.

Neil Johnson
Head of MIRA’s China infrastructure team
Australian airport privatisation: enabling economic expansion through infrastructure investment
For over 10 years, between the mid-1980s to the mid-1990s, Australia's 10 largest airports saw 8% compound growth in domestic and international passengers\(^{23}\). Over this time it became increasingly clear that the publicly owned structure of these airports was starting to hinder their ability to keep pace with the evolution of the global aviation industry.

Faced with developments such as the rise of low cost carriers, increasing passenger volumes and the opening up of Asian markets, the required investment into airport capacity, facilities and passenger experience were becoming a growing burden on the balance sheet of the Australian Federal Government.

In light of these issues, the government decided that investment from the private sector accompanied by appropriate regulatory oversight was the best way forward for the country’s airports and proceeded to privatise Australia’s airports from 1997 into the early 2000s.

\(^{23}\) PwC analysis. Source: Bureau of Infrastructure Transport and Regional Economics (BITRE)
From day one we recognised that the airport is an economic engine for the entire State of Queensland. So it was important that we worked with management to develop a long term strategy not just for the domestic outlook, but to realise the potential for international growth related to Asian and other international markets.

Chris McArthur
Partner,
First State Investments

FSI’s involvement in Brisbane Airport

In 1997, Brisbane Airport Corporation (BAC) was one of the first wave of Australian airports to be privatised. First State Investments (FSI), known in Australia as Colonial First State Global Asset Management, is a foundation investor and the largest shareholder in BAC, with owned and managed interests totalling 26.5%.

FSI Partner Chris McArthur, who sits on the BAC Board, says FSI’s consistent investment strategy since the acquisition reflects the airport’s characteristics as a core infrastructure asset that acts as a gateway to the entire state. “From day one we recognised that the airport is an economic engine for the entire State of Queensland. So it was important that we worked with management to develop a long term strategy not just for the domestic outlook, but to realise the potential for international growth related to Asian and other international markets.”

This strategy has seen investment and operational improvement across all aspects of the airport, with close to A$2.5bn in infrastructure capex since privatisation (see Figure 22). The investment has included a redevelopment of the international terminal and new northern access road system, as well as several upgrades and developments of the domestic terminal and car parks.

McArthur notes that the ability to invest the significant levels of capex required has been facilitated by the ‘light touch’ regulatory model employed by the Australian Competition and Consumer Commission (ACCC) since 2002. “The regulatory framework employed by the ACCC allows BAC to negotiate directly with the airlines, agree on the investment required and how this is paid for,” he explains. “This model has been key to enabling the airports and airlines to agree on how to grow the airports in line with demand, and ensure the facilities in place provide the best overall customer experience.”
The benefits delivered

To support the airport’s performance, FSI takes an active asset management approach. This involves working with the Board and management to shape the strategy and drive investment performance, while also maintaining a long-term focus on responsible investment and sustainable returns. Nominee directors from FSI participate on all Board Committees, bringing aviation sector experience.

Brisbane Airport’s success in implementing its strategy is underlined by the growth in employment on the site, with the number of direct and indirect employees increasing from 4,700 in 1999 to 21,000 today (see Figure 23). This is supported by active development of the airport’s large 2,700 hectare land bank – the largest of any Australian capital city airport. Over the same period, overall EBITDA has risen at a CAGR of 10.4%, and passenger numbers at a CAGR of 4.3%24.

At the same time, the airport’s positive human, social and environmental impacts have been recognised through several awards. It has been rated as Australia’s number one airport for quality of service 12 years in a row in a survey by the ACCC, and was also only the seventh airport in Asia Pacific to achieve Airport Carbon Accreditation Level 3.

Figure 22: BAC – capex investment since 1999

Source: BAC annual reports

24 Source: BAC annual reports
Looking forward

While significant investment has already been made in BAC since privatisation, a further A$3bn is expected to be spent over the next four years in projects including the New Parallel Runway (NPR), the largest aviation project of its kind in Australia. On completion in 2020, the NPR will double the airport’s existing capacity. It is also expected to deliver a regional economic benefit of around A$5bn per year by 2035, including increasing employment at the airport to more than 50,000, as well as creating 7,800 jobs across the Brisbane / Moreton region.

Significantly, the NPR has been in the airport’s master planning document for two decades and wasn’t derailed by the global financial crisis of 2008-2009. “Australian airports have proven to be remarkably resilient despite occasional traffic shocks, with growth quickly reverting to long term trends. So our decision making is focused on maximising the long-term growth potential of the airport, and doing so in a responsible fashion,” comments McArthur.

The wider economic impact of BAC’s ongoing capex was underlined in 2015, when the then Deputy Prime Minister and Minister for Infrastructure and Regional Development, Warren Truss, approved its 2014 Master Plan, commenting25: “Brisbane Airport plays a significant role in Queensland’s economy, generating jobs, investment and tourism – and the proposed infrastructure investments will provide benefits to the local, state, regional and national economies.”

Figure 23: BAC – employment at the airport

Source: BAC annual sustainability report, 2016

The wider story

The success of the Brisbane Airport privatisation has been mirrored at several other airports across Australia. For example, since an IFM-led consortium first acquired the lease for Melbourne Airport more than fifteen years ago, nearly A$3bn has been invested into the airport. This includes extension and expansion of a new fourth terminal and associated transport hub, improvement to land-side access to the airport such as new roads, car-parking and public transport points of access, and improved customer experience including baggage reclaim facilities, retail and airline lounge offerings. These investments have seen passenger numbers increase by more than 20 million to 35.2 million in 2015-2016.

Adelaide Airport – privatised in 1998 – is another example. The consortium of Australian superannuation funds that acquired the concession oversaw the construction of a new, integrated international and domestic terminal, replacing what was previously two separate and dated facilities. Core to the approach adopted in Adelaide has been an effort to open up South Australia to the global economy through increasing international connections.

This strategy has resulted in a four-fold increase in the number of international passengers going through Adelaide since 1999 – the highest rate of compound growth of Australia’s capital city airports.

What is clear is that in less than two decades since privatisation, private investment has transformed Australia’s airports and the benefits are continuing to grow.

Source: Adelaide Airport annual reports, BITRE

Figure 24: Adelaide Airport – international passengers

<table>
<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>1997/98</td>
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<td>2015/16</td>
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Source: Adelaide Airport annual reports, BITRE
Peel Ports: driving the Northern Powerhouse

The Liverpool 2 development. Source: Deutsche AM
Peel Ports is the UK’s second largest group of ports. Its broad geographical footprint includes: the Ports of Liverpool, Medway in South East England, Heysham in Lancashire, Clydeport in West Scotland and Great Yarmouth on the east coast, along with the Manchester Ship Canal, a container terminal in Dublin and marine support facilities in Tyne, Tees, Liverpool and Falmouth.

**Deutsche Asset Management’s involvement in Peel Ports**

In 2006, Deutsche Asset Management (Deutsche AM) acquired 49% of Peel Ports from Peel Group. Peel Group decided to partner with Deutsche AM to bring on board long term asset management and financial management expertise to catalyse further growth opportunities. In the decade since, Deutsche AM has supported Peel Ports in development programmes involving around £680m of capex. It has seen volumes through the port increase at a CAGR of 4%, and around an additional 600 FTEs employed since 2008 (see Figure 26).

Deutsche AM’s approach involves taking a long-term view of opportunities for the group, supporting management decision making, and helping to drive growth. Sundeep Vyas, Managing Director, Deputy Chief Investment Officer, Deutsche AM’s infrastructure business, comments: “We see ourselves as active owners who take responsibility for creating value and helping the business grow, rather than being passive and simply taking out dividends.”
The benefits delivered
Peel Ports’ Chief Executive Mark Whitworth confirms the benefits brought by an active private investor working hand in hand with the management. “Our whole culture at Peel Ports is about understanding the market and customers in our hinterland, and being able to react with agility to meet their needs,” he says. “We acknowledge our role in being a key part of the supply chain for the wider North West region, so understanding how we can work together with our customers to drive growth in the region is core to how we operate and very much encouraged by our shareholders.”

This mentality is reflected by Peels Ports’ Cargo200 campaign, where it has engaged with businesses who have operations in the North West to transform their global supply chains. By bringing new port related services to the likes of Matalan, Typhoo and B&M, major volume flows have been rerouted to Liverpool on new ‘feeder’ services. Whereas only two major shipping lines offered connections to Liverpool via feeder services at the start of 2011, around ten do so now. The resulting volume growth of 60,000 units to 157,000 units represents a CAGR of 10.2%, favourably compared with Peel Ports’ estimate of the market CAGR of 3.6%.

This in turn has also had an environmental benefit. Incremental volume growth since 2011 has removed around 25 million miles from the UK road network, generating a net saving of around 30,000 tonnes of transport-related CO2. This is supplemented by Peel Ports’ container service along the Manchester Ship Canal. Started in 2009 and operated by their in-house shipping operation BG Freight. The service currently moves more than 20,000 containers a year between Liverpool and Manchester by Canal, saving a further 700,000 miles per year.

A further characteristic shared by Peel Ports’ investors and management is looking beyond short term cycles to focus on the long term, an approach demonstrated during the last recession. “For us as long term investors, recession per se is not a driver of any particular action,” Vyas explains. “The recession focused the minds of shareholders and management on the need to collectively improve what we already had. So the actions we took are things we would have done anyway, but with an added incentive.”

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Economic analysis by AMION Consulting in 2011 forecast that Liverpool2 would contribute £1.1bn of GVA by 2020. When combined with a number of other investments across the Liverpool City Region in transport infrastructure, skills development and logistics assets, it has the potential to create 30,000 new jobs and an additional £18.3bn of GVA by 2030.

Liverpool2 is not the only substantial investment committed to in recent years by Peel, with a new £100m Biomass terminal for Drax commissioned as well as a £150m to develop tri-modal logistics along the Manchester Ship Canal.

"The question is which opportunities to focus on for the medium and long term," Vyas says. "It’s not about what business we can be doing tomorrow. It’s about what business we should be doing that will be productive for customers for the next five to ten years."

Sundeep Vyas
Managing Director,
Deputy Chief Investment Officer,
Deutsche AM’s infrastructure business

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Global Container Terminals

In North America, a similar story of how private capital has supported significant capex investment and is helping drive economic activity can be seen with OTPP’s acquisition of Global Container Terminals (GCT) in 2006. GCT is one of the largest container terminal operators in North America, operating two terminals – Deltaport and Vanterm – under long-term leases with the Vancouver Fraser Port Authority, as well as Bayonne and the NY Container Terminal in the Port of New York / New Jersey.

Over the decade since the acquisition, a particular hallmark of OTPP’s stewardship of GCT has been both its willingness to take a long term view in decision making, as well as its coordinated approach to working in partnership with the public sector for mutual benefit.

“With a terminal business, you have to recognise that it’s part of a greater supply chain,” says Darrin Pickett, who heads OTPP’s team managing its investment into GCT. “So any investment needs to consider the quality of the rail, road and related infrastructure, even extending so far as distribution centres.”

He cites two particular examples. In 2009 OTPP successfully concluded negotiations with the Port Authority of New York and New Jersey to expand GCT Bayonne onto the adjacent 70 acre property. This involved the sale of Bayonne’s existing 100 acre facility to PANYNJ (the only freehold land in the port that PANYNJ did not own). In return PANYNJ leased it back to GCT under a long term concession and provided US$150m of funding for the expansion as well as a further US$50m for subsequent development of an intermodal rail yard.

The expansion doubled capacity at Bayonne, allowing for semi automation of the facility and included the installation of state of the art rail mounted gantry cranes to enable improved operational performance, and enhance safety and service to truckers.

The decision to undertake this investment in the face of difficult global financial conditions was a significant vote of confidence in the port’s long term prospects. Daniel Rossetti, Senior Principal at OTPP underlines the point: “In 2009 we – like everybody else – faced a number of challenges caused by the global economic environment. But we believed in the Bayonne terminal’s long term prospects so chose to invest US$325m at a time when many investors were pulling back from the industry.”

Another good example of public private collaboration has been GCT’s investment programme to improve the rail and road links to Deltaport in Vancouver. GCT committed C$300m to improving intermodal rail tracks and the replacement of rail container handling equipment. Once completed in mid-2017, this project will add 50% to Deltaport’s rail capacity within the existing terminal footprint and is estimated to create up to 5,500 new jobs and add C$500m to the Canadian economy32.

As with Bayonne, to ensure the benefits of this investment for Deltaport and the wider economy are fully realised, GCT’s investment has not been undertaken alone. The federal government and port authority have spent close to C$50 million building an overpass to enable better traffic flow and make using the port for shipping onwards through Canada and to the US Midwest more appealing33.

Figure 28: GCT – group capex investment since acquisition

Source: Global Container Terminals’ information

Deltaport, Source: OTPP

32 Port Metro Vancouver consultation discussion guide
The proportion of incoming goods shipped on into the US by rail has risen from virtually zero in 2006 to between a quarter and a third of all volume today. The potential for further growth that the Deltaport project creates is obviously very good for jobs in the area and helps drive wider economic growth in Vancouver.

Darrin Pickett
Infrastructure & Natural Resources
OTPP
UK water privatisation: driving performance improvement through asset renewal
The privatisation by Margaret Thatcher’s government of the Regional Water Authorities in 1989 created 10 listed monopoly water and sewerage operators. At the same time, it set up the industry regulatory agency Ofwat, using the model of infrastructure regulation already proven in sectors such as energy and telecoms.

Whilst much criticism was initially levelled against the regulatory bodies for failing to adequately police the privatised utilities, today it is widely recognised that the UK’s utility regulators set the ‘gold standard’ for incentive-based regulation. Other regulators across the world actively track the evolution of Ofwat and other UK regulatory regimes.

Over the decades since water privatisation, there has been industry-wide improvements in metrics such as drinking water quality, network pressure and supply interruptions. Two examples of where specialist infrastructure investors have seen the opportunity to drive improvement in the operations of these assets are Thames Water and Affinity Water.

**MIRA’s involvement in Thames Water**

A consortium led by Macquarie Infrastructure and Real Assets (MIRA) acquired the UK water utility Thames Water from global conglomerate RWE in 2006. In making the investment, the acquirers had a clear view of the opportunities for the business and its 15 million customers. Richard Greenleaf, MIRA Asset Director on Thames Water explains: “MIRA was already an experienced investor in the UK water sector via its investment in South East Water. When RWE started the sale process for Thames Water, we saw the opportunity to commit more capital to the sector together with great potential to drive improvements in the performance of the business.”
The benefits delivered

In the years since the takeover, MIRA has continued to pursue its goal, with Thames Water’s operating performance notably improved since acquisition. The company’s drinking water quality compliance score of 99.99% is now the equal highest in England, the security of water supply has consistently been rated as the maximum attainable and leakage rates across its 20,000 mile network of water mains have beaten the regulatory target for ten successive years and are now 25% lower than at the time of acquisition (see Figure 29).

The foundations for these improvements were laid down at the time of the 2006 takeover. On completing the purchase, an immediate priority for MIRA was to divest a multitude of non-core, unregulated activities that had distracted management’s attention away from the core water infrastructure business. Combined with the appointment of a highly experienced CEO and the introduction of new management incentives, the divestment programme helped to focus and energise Thames Water’s management towards improving the quality of service to customers. This was all via a simultaneous ramp-up in investment, and an improvement in operational performance, undertaken with a long-term perspective.

“These assets are regulated over five-year cycles," explains Greenleaf. “So we set our management team’s agenda and incentives around delivering to that cycle, while also ensuring that the business is as well-positioned as possible for the next five-year cycle and the long term. This is aligned with our long term approach to investing in infrastructure.”

This long term view saw MIRA and management work to provide transparency around the company’s investment plans with stakeholders. “When we acquired Thames, aspects of its operational performance and the underlying resilience of some of its assets was unacceptable. We saw that a significant step change in the level of investment was required to address these problems. It was important that we demonstrated to stakeholders that we are a positive custodian of the business, while evidencing that the incremental investment is necessary and how it will benefit customers.”

Under MIRA-led ownership, annual capital investment has exceeded £1bn for 11 years in a row. This has enabled record spending on treatment works, pipes and sewers, while maintaining a focus on operating costs has helped keep the average household bill the third lowest in England and Wales.

As well as replacing old water mains, the company has also invested in many other initiatives delivering wider benefits to the community. Examples include completing the construction of the Lee Tunnel to help remove waste from the river Thames, completing major improvements at each of the five large sewerage works serving London to support the growing population, investing in new technologies to handle water and waste and becoming one of the leading UK water companies in generating electricity from waste.

Furthermore, MIRA worked closely with Thames Water management to develop an investment model for delivery of the Thames Tideway Tunnel. With the support of Ofwat and the UK government, this model has become a reality and may now become a blueprint for future large infrastructure projects.

34 https://www.thameswater.co.uk/sitecore/content/corporate/corporate/media/facts-and-figures
35 https://corporate.thameswater.co.uk/about-us/our-business/previous-performance-reports
36 Thames Water published accounts. Expressed in 2012 / 2013 prices
Looking forward
Eleven years on from its acquisition by specialist private investors, significant improvements have been made, but management and investors acknowledge the job is not yet done.

Whilst year on year improvements have been made to the service incentive mechanism (SIM), Ofwat’s measure of customer service, Thames remains in the lower quartile of the league table. The £1bn per year spent on maintaining, upgrading and expanding the network is also set to continue for the foreseeable future to try to ensure both leakage and disruptive bursts (such as those impacting parts of London in December 2016) are prevented wherever possible.

“The plan and approach we’ve developed has come directly from listening to what our customers want. Ultimately, we drive our business plans in response to the customers’ needs – while at the same time recognising that, as a financial investor, we seek to earn an appropriate return,” explains Greenleaf. It’s a fine balance and, to date, MIRA and Thames Water seem to have struck it successfully.

Ultimately, we drive our business plans in response to the customers’ needs – while at the same time recognising that, as a financial investor, we seek to earn an appropriate return.

Richard Greenleaf
MIRA Asset Director,
Thames Water
Affinity Water

Another UK water company to demonstrate a similar path of performance improvement post separation from a wider corporate structure is Affinity Water.

In 2012, a consortium comprising Infracapital and Morgan Stanley Infrastructure Partners acquired 90% of Veolia Environment’s UK regulated water business for £1.24bn. The business – subsequently rebranded as Affinity Water – supplies water to 3.5 million customers in suburban areas to the North and West of London, as well as in North Surrey, parts of East Kent and Essex. Following the acquisition, the three regulated water companies that previously made up the business were combined into a single licensed water company.

If we engage effectively, customers can be clear on what they want. And if we demonstrate how we are going to deliver this efficiently and economically, it leaves a lot less open to debate.

Simon Cocks
CEO,
Affinity Water

The benefits delivered

Having completed the acquisition and restructuring, the new investors refocused the business’s strategy around two main themes: putting the customer first and targeting long-term value creation. Key changes included:

• Introducing management incentives more closely aligned with the customer and operational measures monitored by Ofwat. Creating a long term incentive plan structured around growth in longer term regulatory value.

• Modifying governance and reporting to give more weight to health and safety, customer service and operational issues, balanced with financial performance outcomes.

• Putting greater focus on delivering value for customers (for which Affinity was considered to be in the bottom quartile\(^{37}\) at the beginning of the regulatory period) including immediate steps to boost efficiency such as closing the company’s shared service centre.

Both investors and management highlight the role that private investors play in the company’s continued progress. CEO Simon Cocks comments: “The biggest difference for me personally, from being part of a listed company, is that I have my investors in the room, and we’re all directly aligned around a plan and outcomes and incentivised in the same way. That helps give much shorter lines of communication and makes decision making happen clearly and in a more agile way.”

From the investor side, Stephen Nelson, Asset Management Director at Infracapital, adds: “There’s a relationship advantage as well. If you have a chemistry and relationship that allow you to make quick decisions, and have easier access to management, you’re going to be more effective – and that’s what happens here. Part of that is a mutual respect for the different but complementary skills that each party brings to the table.”

From a customer perspective, the investors recognised that the business needed to improve its interaction with customers as problems in this area were resulting in higher customer contact costs and bad debt levels, worsening performance against customer service metrics, and reputational risks.

Improvement in customer service staff training was prioritised and enhancements made in a number of other areas, including online functionality and call centres. A community engagement programme was also initiated to enable charities and community organisations in the Affinity region to benefit from the company’s water resources and expertise.

The approach is paying dividends with customer complaints reduced by 18% over 2016 and SIM results improving quarter on quarter in 2017. Work has now started on developing a technology strategy that allows a higher degree of autonomy and self-serve functionality for customers.

Affinity Water CEO Simon Cocks notes that in the build up to Ofwat's 2014 price review (PR14) the company spoke to more than 12,500 customers and spent the time with each of their communities to understand what they expected and wanted Affinity to do with the money they were paying for water.

"Unless you’ve got that understanding of what your customers want you to do and also not do, you end up deploying capital inefficiently. For us engagement with our customers is not just a nice thing to do. If we engage effectively, customers can be clear on what they want. And if we demonstrate how we are going to deliver this efficiently and economically, it leaves a lot less open to debate."

Management and shareholders acknowledge that Affinity is still on the journey to realise the desired level of customer satisfaction.

Jim Wilmott, Managing Director at Morgan Stanley comments: “There is an intense focus around raising our game in all aspects of the business, to deliver today’s plan, enhance our reputation further and unlock more potential for the future. As an example, at the Board level we have taken positive action to support the management team by targeting non-executive director refresh, to bring in customer service and technology/IT skills to the boardroom, complementing the existing skills of the board. As a team we feel this will really help us positively address future challenges and opportunities.”

The progress made is reflected in Ofwat awarding Affinity ‘enhanced status’ at PR14, highlighting Affinity’s plans to provide community-level reporting and recognising the quality of the company’s business plan and commitment to industry leading performance improvement “that stood out from the other companies”. This represented a significant achievement in the relatively short period since the acquisition.

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38 Source: Affinity Water Wave 1 to Wave 3 results in 2016/17
Azure Power: investing in a greener India
Context
Whilst evidence has been presented of the capacity for private capital to be good custodians of infrastructure for ‘big ticket’ infrastructure assets and support high value investment, how do these attributes translate to smaller, new build infrastructure? The following is an example of where private investors have brought their expertise to work with existing management on an asset still in development to make a positive economic, social and environment impact on communities across India.

Azure Power, New Dehli, India
Azure Power is an independent power producer (IPP) that builds, owns and operates small and medium scale solar power plants across India. Founded in 2009 and led by Chief Executive Inderpreet Wadhwa, who’d spent much of his previous career working in Silicon Valley, Azure was set up to deliver low cost, green energy to the approximately 300 million people in rural India who have no access to power39.

Azure’s first project, Punjab 1, was the first private utility scale solar project built in India. A further five private solar projects soon followed, bringing the operating capacity of Azure’s portfolio to 110MW’s by March 2015. During this time, Azure demonstrated its capability to deliver cost-effective energy for its customers by consistently seeking to identify efficiencies and improve operational performance.

IFC and GIF’s investment into Azure
Following on from an initial seed investment by the International Financial Corporation (IFC) in 2010, the IFC’s Global Infrastructure Fund (GIF) invested US$50m into Azure Power in June 2015, providing it with the capital it needed to scale up and meet the growing potential for solar photovoltaic energy in India.

So, why did IFC and GIF choose Azure? Whilst they noted challenges in the Indian solar market, notably downward pressure on prices, low margins, and a power auction system that enables big international players to buy market share by bidding low, Onur Goker, a Principal with GIF, says the quality of Azure’s management enabled GIF to overcome their concern and form an appropriate investment case.

“Mr Wadhwa set up Azure on Western lines, with high standards of project and data management,” explains Goker. “Also, a challenge for solar companies in India is having the land to develop the assets – and Mr Wadhwa understands land procurement in India incredibly well.” GIF also took comfort in Azure’s ability to drive efficiency at the asset level. “As well as keeping abreast of developments in solar technology in North America and Europe, Azure was constantly taking new equipment and testing it out in the field to find the best solutions for the environmental conditions,” says Goker.

While the fundamentals for a good business were there, GIF saw that Azure needed to improve monitoring of financial and operational data and strengthen its governance in order to realise its full potential.

GIF boosted the strength of the board, and put Azure in contact with solar businesses in other countries around the world so that the company could share experiences and insight into global best practices. The finance team was also bolstered to improve monitoring of financial information and enable the CEO to focus on operations rather than spending time on the road trying to raise funding.

The benefits delivered

The positive impact Azure and its management team have been able to deliver with the support of IFC and GIF are at the same time economic, social and environmental. Since the time of GIF’s investment, Azure has increased its generation capacity four fold, whilst also being able to bring down the cost of energy by almost 38%. At Dec-16 Azure’s total generation was 512 MWh, enabling around 180,000 people to be connected to electricity and avoiding 250,000 tonnes of CO2-equivalent emissions per year. A further 559 MW is under construction which once operational will correspond to approximately 1.3 million of residential persons reached and 1.8 million tonnes of CO2 equivalent emissions avoided per annum40.

In addition to the economic and social benefits of connecting huge numbers of people to electricity for the first time, Azure is also looking to benefit local communities in terms of the environment and employment. As Goker explains, Azure’s approach to land procurement includes agreeing to clean up polluted ‘brownfield’ dumpsters for use as solar sites. It employs local people to carry out this clean-up work. Those who perform especially well are offered permanent operational jobs, which includes Azure building each of them a house near the site.

“The company literally changes lives,” says Goker. “And aggregated across multiple projects, it’s having a profound impact on Indian communities and society.” Over the past six or seven years, Azure has employed – directly and indirectly – close to 4,000 people, mostly in areas where there’s little other economic activity40.

Looking forward

For the future, GIF see its key role going forward as working with management to continue to support further investment while also ensuring the company’s operations are sustainable. Goker sums up: “Emerging markets can be vicious and survival is key. It is not uncommon to see companies grow extremely quickly, but because their structures and governance are not in place, just as quickly they disappear. As investors, we are continuing to work with management to help the business grow. But how Azure grows and adapts to what is a rapidly changing power market – and assuring this growth is both sustainable and profitable – is much more important to us than the growth itself.”

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40 Azure Power analysis
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