



# MAPLE-BROWN ABBOTT

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## Research paper

### US Regulated Utilities – friend or foe?

What opportunities do the key investment characteristics of US regulated utilities present for global listed infrastructure investors?

Global Listed Infrastructure  
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# Abstract

We believe the characteristics of regulated electric, gas and water utilities are good examples of why we invest in infrastructure assets. These businesses provide essential services through monopoly assets that typically have very low volatility of cashflows. Such utilities also constitute a key component of the Global Listed Infrastructure (GLI) opportunity set, comprising approximately half of Maple-Brown Abbott's GLI Focus list<sup>1</sup>.

Within this opportunity set, the largest geographic concentration of regulated assets occurs in the United States. US utilities have mainly been privatised, and - with the exception of some electricity generation and retail markets - are regulated. Further, the majority of these businesses are listed in the public markets.

Typically, GLI focussed investors have only held modest exposures to US regulated utilities. We believe that this can be explained by a variety of factors:

- In markets outside of the US, regulated utilities are most commonly valued on rate base multiples<sup>2</sup>. US utilities as a whole trade on high rate base multiples and so appear expensive to some global investors.
- Regulation in the US generally has a lesser reputation than other markets. This viewpoint has very much been accentuated by the complexity of the market; considering the myriad of mainly State-based regulation that occurs in the US versus the typically Federal-based regulation in other jurisdictions. State-based regulation can at times be more politicised, and so less predictable, than Federal regulation.
- GLI indices generally do not have large allocations to US regulated utilities. These indices mainly include integrated utilities<sup>3</sup>, which due to their large market capitalisation 'crowd out' the index weighting to regulated utilities. A large number of GLI investors (including ourselves) agree that the integrated utilities do not have the characteristics of infrastructure assets.
- Regulated entities in the US often don't earn their allowed return on equity (Allowed ROE), most commonly due to a regulatory lag<sup>4</sup>. This is in contrast to many other regulatory constructs worldwide which utilise (a) forward looking test years to enable the Allowed ROE to be earned, and / or (b) incentive based regulation that enable utilities to earn in excess of their Allowed ROE through operational or financial out-performance.
- Water and gas utilities have been particularly under-owned in our opinion. In addition to the above factors, these utilities are predominantly mid or small-cap companies<sup>5</sup> and so larger GLI managers face liquidity issues when owning them.

Whilst some of the above are valid concerns that need to be considered, US regulated utilities with certain characteristics can provide excellent investment opportunities - both on an absolute basis and relative to global peers. Key attractions include:

- US regulated utilities are allowed an industry leading ROE which in conjunction with a conservative assumed capital structure provides a very attractive risk-adjusted return.
- Regulators are becoming more progressive with mechanisms to reduce regulatory lag.

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<sup>1</sup> The Maple-Brown Abbott Global Listed Infrastructure Focus List comprise those stocks which we believe to contain the strongest combination of key infrastructure characteristics. The Focus List was derived by a detailed qualitative review of each potential stock based on (a) the cashflow volatility to equity and (b) the strength of the inflation linkage. As at July 9<sup>th</sup> 2014 there were 109 stocks on the Focus List.

<sup>2</sup> The rate base multiple is the multiple of the Enterprise Value of a company to the value of the "rate base" as ascribed by the regulator.

<sup>3</sup> Integrated utilities are those utilities that incorporate both regulated and unregulated businesses

<sup>4</sup> Regulatory lag occurs when regulators calculate the allowed revenues for a regulated asset based on historical rate bases and historical costs, thereby not providing a return on recent capital investments nor allowing for current cost escalations.

<sup>5</sup> There are approximately 10 regulated water companies in the US; all of which have market caps of under \$10 billion, and only 2 of which above \$1.5 billion. The regulated gas utilities have market caps of typically between \$1 billion and \$6 billion.

- Some regulated utilities have very strong growth outlooks; with large capital investments particularly in the water, gas and electricity transmission sectors.
- The market heavily focuses on a single valuation methodology; which we believe creates opportunities for stock-pickers (and particularly those willing to take a longer-term view).
- The small to mid-cap utility sector is under-researched versus global markets, further enhancing the opportunity for stock-pickers.
- There continues to be consolidation within the US utility sector (especially gas utilities), providing upside potential to our valuations.

This research paper provides an overview of the regulation of US utilities; including the allowed and achieved financial returns and the gearing levels of these utilities. It then looks in more details at the specific factors influencing the four main investment sub-sectors, being electric utilities, gas LDCs, water utilities and electric transmission utilities.

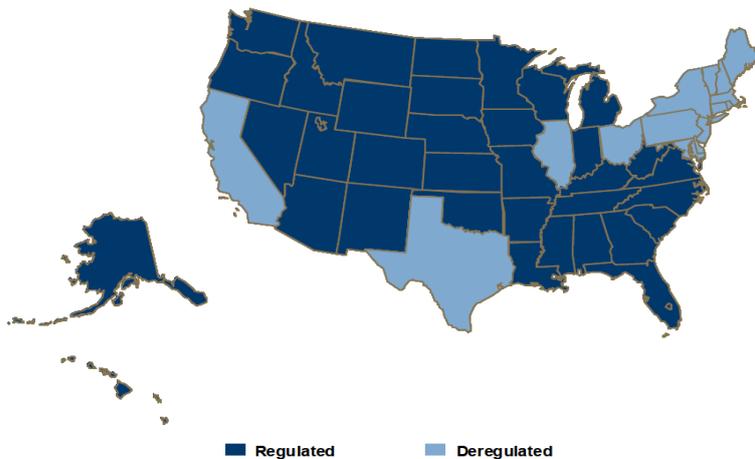
The paper considers the valuation approach that the market typically takes to the sector, and opportunities that this can create for investors. We conclude with some brief comments around our views on current valuations.

# US regulatory overview

The vast majority of the operations of US water utilities and local distribution gas utilities (LDCs) are subject to economic regulation.

The US electricity market is also substantially regulated. The transmission and distribution of electricity is a natural monopoly, and so is regulated across the country. The map below shows the split between regulated (dark blue) and deregulated (light blue) generation of electricity in the US and the dominance of the regulated market.

**Figure 1: US Electric Generation - Split of Regulated and Unregulated Markets**



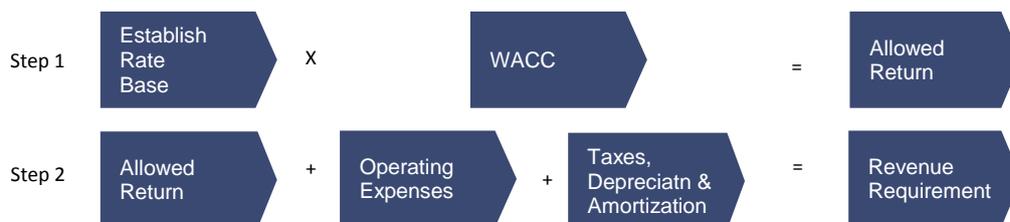
Source: Barclays Utility 101, December 2013

Economic regulation of water, LDC and electric utilities is primarily conducted by State-based public utility or commerce commissions. For certain assets that cross state borders, such as electricity transmission, the regulation is conducted by the Federal Energy Regulatory Commission (FERC).

The high level regulatory approach across the various regulatory authorities is quite consistent. Indeed the US Supreme Court guided in a landmark 1944 case<sup>6</sup> that the prudent level of necessary revenues for regulated utilities is “the minimum amount which will enable the company to operate successfully, to maintain its financial integrity, and to compensate its investors for risk assumed”.

Rates are typically set through General Rate Cases (GRC) using a rate of return regulation as follows:

**Figure 2: Typical US Regulated Utility Rate Construct**



Source: American Water company presentation

<sup>6</sup> Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944)

More specifically, the regulator is tasked with determining:

- The Rate Base of the utility, being the depreciated value of the capital invested through time on which the utility is allowed to earn a return.
- The applicable Capital Structure for the utility, and the allowed returns for each component of that capital structure (i.e. equity, debt and in some cases preferred equity). These amounts are multiplied by the Rate Base to determine the required return on capital.
- The operating costs, depreciation and taxes that the utility will incur. These amounts are added to the required return on capital to determine the revenue requirement.
- The revenue requirement is divided by the forecast load to calculate the charge per unit of electricity / gas / water.
- Finally the rate structure may be adjusted to account for different types of customers (e.g. industrial / commercial / residential) and for different usage levels, but in a way that does not impact the expected revenue of the utility.

Whilst the general approach is consistent, the attractiveness of different regulatory constructs in the US can vary substantially.

This first occurs through differences in the Allowed ROE and the proportion of the capital structure that earns this equity return (known as the 'equity thickness').

Secondly, the construct of the regulations is impacted by the ability for utilities to earn their Allowed ROE, and the predictability they have in doing so. The US has historically seen quite a material regulatory lag, but in recent years there has been a greater willingness by regulators to address this.

And thirdly, each Commission is constructed differently, and so the details of the Commission and how it operates need to be well understood. For example:

- The mechanism by which Commissioners are chosen is important. Across the 54 agencies regulating utilities in the US, all Commissioners in 37 agencies are appointed by the chief executive of the jurisdiction (typically the Governor), at 2 agencies Commissioners are appointed by state officials other than the Governor, at 8 agencies the Commissioners are selected through direct voter elections, in 5 jurisdictions the Commissioners are elected by district, and in 2 jurisdictions the Commissioners are elected by General Assembly. Our preference is for Commissions with appointed Commissioners rather than elected Commissioners which can be at risk of letting their future re-election prospects impact their independence, to the benefit of customers over shareholders.
- From a shorter-term perspective the political make-up of individual Commissions, and any likely changes to that make-up, are important. As of September 2013<sup>7</sup>, 40% of Commissioners were Republican and 35% Democrat, with 5% being Independent and 18% not disclosing their party affiliation.
- We view favourably Commissions who show a preference to settle rate cases, as opposed to litigate.
- The historical behaviour of regulators is relevant, as it sets precedence for future cases. In our experience this factor tends to be over-stated, as through time the relative constructiveness of different regulators does and will change.

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<sup>7</sup> Source: Regulatory Research Associates

## Allowed and Achieved Returns

### Allowed ROE's are currently very attractive in the US

Whilst US utility regulation has its flaws from an investor perspective, **we are surprised that more focus is not placed on the attractiveness of the Allowed ROE relative to global regulated peers.** Below are some examples of current Allowed ROEs across different jurisdictions:

**Table 1: Recent Allowed Equity Risk Premiums<sup>8</sup> by Country**

Country	Real ROE	Assumed Inflation	Nominal ROE	Allowed Equity Risk Premium	Comments
<b>USA</b>	n/a	n/a	9.84%	7.29%	Average return from rate cases during 2013
<b>UK</b>	5.65%	2.5%	8.15%	5.49%	Based on the current process of OFWAT, in relation to the AMP6 regulation of UK water utilities.
<b>Australia</b>	7%	2.5%	9.5%	5.98%	Based on the recent regulatory reset of SP Ausnet's Victorian transmission network.
<b>Canada</b>	n/a	n/a	Gas 9.37% Electric 8.89% Transmission 8.76%	6.51% - 7.12%	A negative of Canadian regulation is that the median equity ratio is typically lower than many countries, with a median of 40.5% for gas networks in 2013.
<b>Italy</b>	4.8 - 5.6%	1.8%	6.6 - 7.4%	3.72% – 4.52%	Whilst Allowed ROE is low, this is partly offset by: - equity ratio being high at 56% to 62.5% - most new capex receives an additional incentive
<b>Brazil</b>	11.9%	4.5%	16.4%	4.41%	- Real ROE based on draft Electricity Distribution regulatory period starting 2015. - Inflation based on mid-point of Brazilian central bank target range

Source: Company disclosures, Maple-Brown Abbott calculations, bond rates as at July 9<sup>th</sup> 2014

As can be seen, the US allowed Equity Risk Premiums for regulated utilities are currently higher than their offshore peers. These returns are particularly attractive from a risk-adjusted basis, considering the typically lower levels of gearing assumed by US regulators.

These high returns are especially valuable for utilities seeing strong rate base growth, and are the primary explanation of why US utilities can appropriately trade at higher rate base multiples to most other jurisdictions.

### Regulatory lag may remain an issue

Whilst the Allowed ROEs for US utilities are attractive, the challenge has been for the sector to earn this return.

Regulatory lag can occur for various reasons, although it most frequently occurs due to the backward looking nature of many US regulatory constructs. For example, during a GRC rates have typically been determined by the capital invested and the costs incurred as at a historical 'test year' – as opposed to what will have been incurred at the date that the rates apply. Further, capital invested during the current regulatory cycle may not be recognised until the next GRC.

<sup>8</sup> Defined as the Allowed ROE less the then current ten year bond yield.

Due to the factors causing this issue, the magnitude of regulatory lag at any time is dependent on the capital investment cycle. Regulatory lag is greatest when the capital investment cycle is at its peak; for it is during this period that the largest proportion of invested capital will not be earning a fair return. Periods of heightened cost inflation can similarly increase regulatory lag.

In recent years regulators have agreed to further regulatory mechanisms to address this regulatory lag. Some states, such as California, utilise forward test years. Many states have also introduced mechanisms that allow certain types of infrastructure investment to be automatically tracked into the rate base on a regular basis. These mechanisms most frequently relate to safety investments, or other non-revenue earning infrastructure investments. Many states have now introduced trackers for specific costs that are subject to more volatility or higher inflation, such as health care. **The continued development and wide-spread adoption of these types of mechanisms is providing more timely and predictable returns for investors, thereby improving the regulatory construct to their benefit,**

Notwithstanding the introduction of these mechanisms, regulatory lag can remain a material issue for some US regulated utilities. As an investor we believe it is critical to understand this lag, and especially whether it is likely to be permanent or transitory in nature. **Our preference is to invest in regulatory constructs with minimal or no regulatory lag (such as FERC), or in circumstances where we expect the regulatory lag to decrease in the future.** As discussed further below, due to the dominance in the US market of valuing regulated utilities on forward Price to Earnings multiples, we believe that companies with the potential to reduce regulatory lag over longer timeframes can be under-valued by the market.

The regulatory lag in the US is in contrast to countries such as the UK and Australia, where not only does the forward looking test years ensure there is a fair chance to earn the Allowed ROE, but opportunities are provided to earn above this level by out-performing the regulator's assumptions in relation to operating costs, capital costs or financial structure. For example, whilst National Grid's UK assets have an Allowed ROE of 9.6%<sup>9</sup>, in the most recent financial year they actually earned 12.7%.

### Sensitivity of Allowed ROEs to interest rates

Another key difference between US regulated utilities and most global peers is the relationship between Allowed ROEs and bond rates.

In most jurisdictions there is a direct, and often somewhat formulaic, link between bond rates and the Allowed ROEs. If bond rates rise by say 1% then typically at the next rate case the Allowed ROEs will similarly rise by that amount. In some countries - such as Italy, Portugal and Australia - the Allowed ROE is determined based on essentially the spot bond rate at the time of the rate case<sup>10</sup>. The UK, in contrast, primarily relies on the average over preceding years. What these countries all have in common is that the Allowed ROE is effectively adjusted by the full amount of bond rate movements.

US regulation is unusual in that the Allowed ROE does not adjust to the same magnitude as movements in bond rates. Further, these adjustments are far less formulaic than the other countries, typically being determined on a case by case basis by the relevant utility Commission.

Most commonly the Commissions look to determine the appropriate ROE by considering the "cost of capital" of a specified peer group of utilities. This is generally calculated for each company in the peer group by adding its forward dividend yield to its expected growth rate; the latter most typically based on broker forecasts over say the next 5 years.

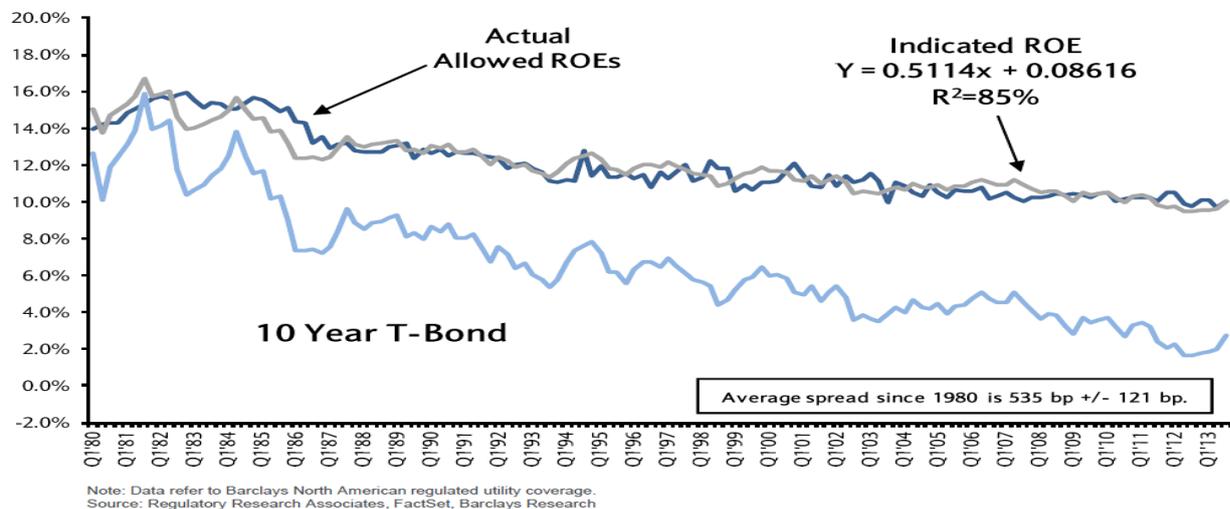
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<sup>9</sup> Assuming inflation rate of 2.5%

<sup>10</sup> Each of these countries utilise bond rates as calculated over a fixed period of time just prior to the setting of the Allowed ROE.

The below chart depicts the relationship over more than 30 years between bond rates and the Allowed ROEs. They have found that the Allowed ROEs have historically moved at approximately 51% of the magnitude of movements in bond yields.

**Chart 1: Historical Allowed ROEs versus Treasury Yields**



We believe there are two key conclusions to be drawn from this somewhat unique characteristic of US regulation:

1. It is best to buy US utilities when at least one, or ideally both, of the following exist:
  - a. In low bond yield environments, as this is when the Allowed Equity Risk Premium is greatest;
  - b. When bond yields are dropping, as this is when the Allowed Equity Risk Premium is increasing.
2. The higher currently Allowed Equity Risk Premiums for US utilities, as demonstrated by Table 1, is partly due to the current low bond rate environment. Were bond rates to rise in the US then this Premium would drop to be closer to (or in high interest rate scenarios, lower than) global peers.

It should also be noted that, similarly to other countries, the Allowed ROE's for regulated companies in the US are currently at or near cyclical lows (assuming that bond rates have similarly reached their lows). The key difference is that the US utilities have a higher low point than the other countries for the Allowed ROE, resulting in what we see as a very attractive 'floor' level.

## Gearing levels

Another differentiating characteristic of US utilities is the approach by regulators to debt.

US regulators typically assume debt levels of 40% to 60% which is quite low by global standards. For example, the average assumed debt level in US rate cases during 2013 was 51%. Regulators in the UK and Australia in contrast assume 60% or above. **This in itself can be seen as a positive outcome of US regulation; in that the Allowed Equity Risk Premium is being granted at a lower level of financial risk.**

A second difference with the approach to debt, but in this case a negative one, is that in most cases US regulators base their debt assumptions on the company's actual financial position. Thus, the debt is a pass through cost. The regulator will look at the company's capital structure to determine the appropriate split of debt and equity, and the company's cost of debt to determine its assumed debt costs. Because of this approach it is more difficult for US regulated utilities to out-perform the regulator's financing costs. This is in contrast to many global peers, who have scope to create incremental value by either leveraging the utility higher or by issuing debt at lower costs than their regulators' assumptions.

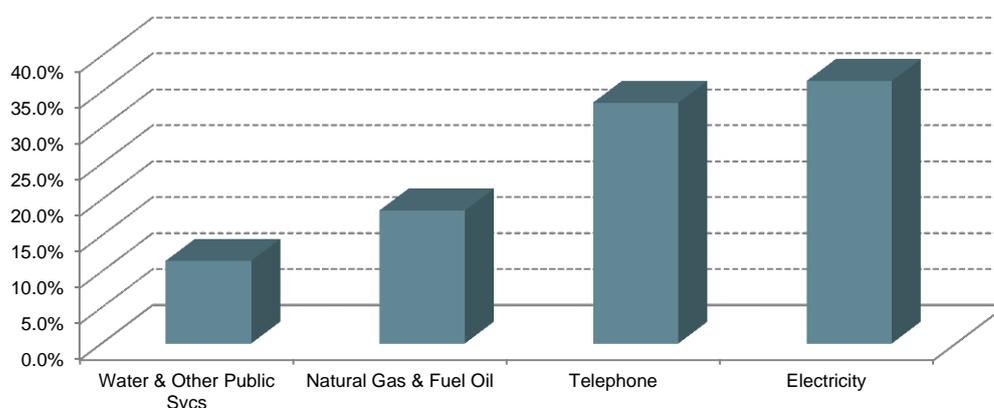
It should be noted that there are a minority of US utilities who can achieve financial out-performance via debt levels that are higher than the regulatory assumptions. This typically occurs when a company owns multiple utilities through a Holding Company structure, and the regulator chooses to consider only the capital structure of the regulated entity (and not the consolidated entity). In this circumstance it can be possible for the Holding Company to issue debt which is then invested as equity in the regulated entity, resulting in the regulator's assumed equity level being higher than the actual equity level of the consolidated group. **This can be particularly accretive for such utilities considering the conservative underlying capital structures typically assumed by US regulators.**

# US utility sub-sector factors

In addition to considering the factors that impact the regulated sector as a whole, we believe there are some powerful sector sub-sector drivers. These drivers need of course to be considered on a case by case basis in the context of individual stock valuations, but do have a clear impact on our views around the relative opportunities within the regulated utility sector.

One factor to be considered across the utility sectors is the respective bill sizes, and the relative political pressures that this can create. Shown below is the average proportion of a US household's utility bill across the different services, as a percentage of the average total spend per household of \$3,723. Electricity is clearly more expensive than both water and gas, and so tends to face the greatest political resistance to bill increases.

**Chart 2: Breakdown of US Household Utility Budget**



Source: American Water Co, United States Department of Labour – Consumer Expenditures Survey 2011.

The four main US regulated utility sub-sectors are as follows:

1. Electric utilities
2. Gas LDC's
3. Water utilities
4. Electric transmission

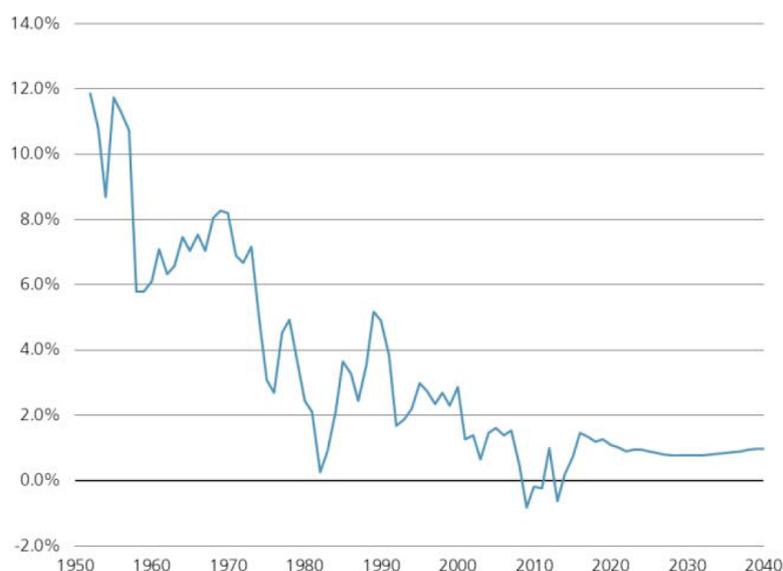
There are a number of factors relevant to these sub-sectors from an investment perspective as outlined below.

## Electric utilities

As a whole we believe that electric utilities face some unique challenges within the utility space, and so we are least attracted to this sector.

Firstly, and as shown in the following chart, the long-term electricity demand growth for the US is forecast to remain very sluggish. The reasons for this include a muted GDP growth expectation, increasing energy efficiency (from electricity appliances etc.) and a greater society focus on energy conservation.

**Chart 3: US Electricity Overall Demand Growth Rate 1950-2040 (Projected)**



Source: UBS, US Energy Information Administration Annual Energy Outlook 2013

Secondly, the growth in electricity that will be supplied by utilities will be lower than the above forecast, due to the impact of distributed generation (DG). DG, such as in the form of rooftop solar, is currently eroding utility electricity demand across the world. In states such as Arizona, DG is already impacting utility electricity demand by approximately 0.5% annually.

And thirdly, as noted previously, customer bills for electric utilities are already at high levels compared to other utility charges. These bill pressures will only increase in our opinion, as fuel costs and interest rates likely rise from their current levels.

The combination of all these factors we expect will lead to a muted capital expenditure opportunity, increased regulatory risk, and ultimately low earnings growth for the electric utility sector as a whole.

### **Electric transmission**

One exception to our generally negative outlook for the electric utility sector is Electricity Transmission, which enjoys attractive regulation and has a robust growth outlook.

The rationale for incentivising transmission investment in the US through regulation is in many ways consistent with electricity policy globally, although the catalyst for creating this regulatory treatment was US specific.

Reasons generally for incentivising investments in electricity transmission include:

- The impact from a transmission failure can be massive, with very large populations impacted (thereby greatly increasing the importance of reliability, relative to say distribution or generation).
- The costs of electricity transmission are relatively small versus the value that it provides to an electricity network.
- An inefficient transmission grid can be a significant source of network losses, creating both an economic and environmental cost to the system.
- Congestion on an electricity grid leads to the use of inefficient power sources.

- Transmission investment is critical for achieving environmental objectives, as new sources of wind and solar power frequently require grid enhancements.

In essence, transmission is the “great enabler” of competition and new technologies. Notwithstanding these benefits, the US grid has long suffered from significant under-investment. From 1975 to 1999 transmission investment fell by an average of \$117 million per year<sup>11</sup>.

This under-investment has predominantly been caused by significant barriers to new investment, including:

- Siting new transmission lines is notoriously difficult, due to the generally strong resistance from local communities (who often have no benefit from the line), and the multiple States and jurisdictions involved; and
- The existing transmission network is often owned by an incumbent, vertically integrated utility, who will not typically want to assist a competing generation project access the market.

### Case Study: ITC Holdings Corporation

ITC is the dominant pure play electricity transmission owner and operator. Since its creation in 2003 as a pure play spin-off from the Michigan multi-utility CMS, it has developed an excellent operational and financial track record.

This track record is set to continue, with ITC forecasting at its April 2014 Analyst Day an expected \$4.5bn in capital projects between 2014 and 2018. This will result in a near 70% increase in rate base plus CWIP (Construction Work in Progress) from the 2013 level. Further, ITC has forecast an 11% -13% per annum earnings per share growth through this period, and for dividends to grow between 10% and 15%.

ITC has been a core position since the inception of our strategy, as we don't believe the market's PE approach has sufficiently rewarded the size of ITC's capital expenditure opportunity and the attractiveness of its regulation.

The trigger in the US for formalising an incentive framework was blackouts in 2003 across large parts of the Northeast and Midwest. Studies following the blackouts suggested that the lack of investment that caused the outages was due to a breakdown in transmission regulation – including cost allocation, planning and siting.

The response led the federal government to pass the Energy Policy Act of 2005, which mandated FERC to establish incentives to facilitate greater transmission investment, and gave FERC increased siting authority for transmission corridors of national interest.

FERC policy on transmission has continued to evolve, but to this day remains extremely supportive of further investment. This can be seen in recent policies such as Order 1000, which sets out rules that ensure independent transmission owners can compete with incumbent utilities for new transmission projects.

The combination of the attractive regulation and the large investment requirements provide excellent opportunities for companies with specialised transmission expertise.

<sup>11</sup> ITC and National Transmission Grid Study, US DOE, May 2002

## Gas Local Distribution Companies (LDCs)

We believe the US regulated gas sector to have a number of positive investment themes, which will lead to high rate base growth:

- The shale gas revolution has led to abundant and cheap gas being available in the US.
- As a consequence, the penetration rate of gas is increasing, leading to the need for further investments for new connections. In particular gas is increasing its share of residential heating away from more expensive fuel oil. As a rule of thumb, each new customer connection will on average require further rate base investment of \$2,000 to \$3,000.
- Pipeline accidents in recent years have resulted in a greater focus on there being sufficient investment in ensuring the safety and reliability of gas pipelines. This has increased the opportunity for investments by gas pipeline owners, each of which earn a regulated return (and which is typically “tracked” straight into rate base thus minimising regulatory lag).
- Unlike the electric sector, we see a much lower stranded asset risk in gas distribution. Specifically we do not see DG to be a risk for the gas sector.
- For each of the above reasons we believe the regulatory risk is also far lower in gas than electricity; as the regulator needs to incentivise the companies to continue to invest, and with lesser bill pressures as gas demand through the network continues to grow.

It should be noted that the LDC sector does typically trade at higher valuation multiples than the electric sector, reflecting somewhat the above factors and possibly also the heightened potential of corporate activity. The size of this premium does vary, and so we are always alert to opportunities to increase our LDC holdings when valuations are supportive.

## Water utilities

In our opinion US water utilities also have very favourable long-term dynamics:

- The need for further investment is very large in the water sector, which we expect will lead to strong rate base growth.
- As shown on the previous page in Chart 2, bills are typically far lower for water utilities than electric utilities, yet the importance of the service is at least as great. This leads to lower bill pressure, and so lower political and regulatory risk.
- Water utilities often have additional growth opportunities beyond their existing service offerings. Most private water utilities in the US only supply fresh water, and so the provision of sewerage services in their existing territories is one such opportunity. Other examples include providing water services to the shale gas industry or for military housing.

In particular we would highlight the size of the capital expenditure opportunity for the water sector. It has been widely cited that the American Society of Civil Engineers ranked the nation’s drinking water infrastructure with a ‘D’ grade in 2013, requiring more than \$1 trillion in investment over the coming decades just to replace aging pipes. It is estimated that the country incurs 650 water main breaks every day and that two trillion gallons of treated water are lost every year, at an estimated cost of \$2.6 billion.

There is also a significant consolidation opportunity in the US water sector, but only a small number of private sector operators who could participate in such a consolidation. The system is currently extremely fragmented with approximately 52,000 community water systems, 56% of which serve less than 500 people. Further, private operators currently only provide 16% of water and 3% of wastewater services nationally.

Due to the combination of the above factors, we see opportunities to invest in water utilities with excellent long-term growth opportunities that in our opinion are commonly not fully reflected in market valuations.

### **Case study: SJW Corporation**

SJW Corp (SJW) provides water service to approximately a million people in the metropolitan San Jose area. It also has a smaller regulated business in Texas, and owns a portfolio of property assets that arose originally through the water business.

A key attraction of SJW is the size and duration of its capital expenditure program. It needs to invest almost 10% of its existing rate base each year just to replace 1% of its pipes. In essence that would mean that the pipes would be replaced over a 100 year replacement cycle, which in our opinion is the minimum of what is required. In addition to pipeline replacement, further capital expenditure is required for investments including reservoirs, control stations, dams and recycled water. Indeed the largest current capital expenditure project is a \$62m upgrade to the 40 year old Montevino Water Treatment Plant.

SJW is a small-cap utility that is not well covered by brokers. It is predominantly regulated by the California Public Utility Commission (CPUC) - who we believe to be a fair (and indeed moderately constructive) regulator - but is currently experiencing a severe (albeit temporary) regulatory lag. This lag has been caused by delays generally across the CPUC, which has meant that SJW's 2012 GRC has not yet been finalised.

We are attracted to SJW due to its extremely strong growth profile, which we believe is affordable and necessary. Further we believe that the stock is currently mispriced, due to (a) the short term regularity lag and (b) the market's focus on short term multiples that do not capture well the long-dated growth opportunity in this business.

# Valuation approach and opportunities

An interesting aspect of US regulated utilities is that they are valued by many market participants differently from most global peers. Globally we most frequently see regulated assets valued on an Enterprise Value to Rate Base multiple. Other common techniques include:

- Some form of cashflow multiple (or a cashflow proxy such as Enterprise Value to EBITDA); and
- Long-dated discounted cashflow models. A dividend discount model (DDM), which is a form of this approach, is in our opinion the most appropriate valuation methodology for long-dated infrastructure assets such as regulated utilities.

The US however has developed a different, but widely adopted, standard valuation technique for these assets. The sell-side analysts almost universally value the assets on two year forward PE multiples. The appropriate multiple is typically determined by using the current average multiple of the sector, adjusted by a somewhat arbitrary premium or discount for stock specific factors.

It should be noted that the accounting earnings of US regulated utilities are an unusually accurate evaluation of the economic value generated. US Generally Accepted Accounting Principles (GAAP) have specific guidance for the accounting of regulated utilities which was codified as ASC 980. In essence ASC 980 ensures that the accounting treatment closely matches the regulator's approach. For example, ASC 980 allows regulated utilities the ability to defer certain expenditures as regulatory assets that would otherwise be expensed under GAAP or International Financial Reporting Standards (IFRS), if the regulator similarly treats them as capital items. For this reason we believe that PE multiples are more relevant to US regulated utilities than global peers, as the earnings number better reflects the true economic value that has been earned. However, as detailed below, we do believe the markets' apparent strong focus on this singular valuation approach does provide specific opportunities for investors.

## Rate base multiples versus PE multiples

A rate base multiple and a PE multiple will arrive at the same conclusion if the capital structure and Achieved ROE of all regulated utilities is the same. In practice of course this is not the case.

Achieved ROEs differ for a number of reasons – including the approach of the relevant regulators to Allowed ROEs, the timing of the most recent rate case, and any factors which impact on regulatory lag. Some of these factors are more permanent in nature, whilst others are clearly transitory (examples of which are utilities whose last rate case was at the bottom of the bond yield cycle, or utilities who for specific reasons are currently suffering heightened but temporary regulatory lag). We believe a clear opportunity, that arises from the market's focus on near term PE multiples, is to invest in those utilities that are currently experiencing transitory factors that have led to a lower Achieved ROE than we believe they can sustainably achieve in the future.

Pure water business **American Water** is an example of a company that has delivered sustained out-performance since its listing in 2008 largely due to this factor. We identified a similar opportunity earlier this year with the listing of the regulated LDC **ONE Gas**.

## Multiples versus DDM valuation

A second valuation arbitrage we believe is the market focus generally on multiples – whether that be PE multiples in the US, or rate base and cashflow multiples in other global markets. In our opinion the most appropriate valuation methodology is a long-dated DDM.

Part of our rationale for this view is that we believe it is very difficult for practitioners to accurately apply the appropriate multiple premium or discount to reflect the long-term outlook of different utilities. In our opinion valuations should consider not only the current earnings of a utility, but also the:

- Future opportunities to invest and the returns that will be achieved on those future investments, and
- Any expected changes in the achieved returns of the existing assets.

In a number of cases we see arbitrary discounts or premiums being applied (to PE multiples), that in our opinion simply do not reflect the outlook for these factors. Modelling these companies out for a number of years is especially important we believe for companies whose ROE and growth outlook is considerably different to the broader utility sector. Pure electric transmission company ITC is an example of a stock which we believe has frequently been mispriced by the market due to this factor.

### Case Study: One Gas Inc.

ONE Gas Inc. owns three pure regulated LDCs; located in Oklahoma, Kansas and Texas. It was listed in January 2014 following an in-specie distribution from ONEOK Inc. ONEOK's primary business is the ownership and operation of midstream pipeline assets, and so it was viewed that a separation of the pure regulated gas distribution business would increase the transparency of the two distinct businesses and potentially attract more focussed investors to each of them.

A second reason for the separation was because ONE Gas was unable to earn its Allowed ROE within the ONEOK structure. In 2013 it achieved an earned ROE of 8.3% relative to its Allowed ROE of 10%. ONE Gas's view was that it would be more able to achieve full compensation for its costs if it were operating as a stand-alone entity.

In the short-term the separation will actually compound this issue, as ONE Gas estimated that there would be approximately \$11m of new costs related to the separation which will not be able to be compensated for until the next rate case in each State. Due to these costs ONE Gas estimated that its Achieved ROE will drop to 7.4% in 2014.

We are confident that ONE Gas will substantially reduce this under-earn over the next 5 years, and this will be very material to earnings growth. Due to the timing of future rate cases this will not be able to start to be achieved in a significant manner until 2016, and so we believe that at the time of listing the market was under-valuing ONE Gas, due primarily to the PE valuation methodology not capturing this future earnings uplift.

# Current valuations

In our opinion GLI investors have by and large been under-exposed to US regulated utilities since the first dedicated GLI strategy was set up in 2004, and so through different periods of relative valuation for the sector. As such we believe that this relative under-weighting has been driven more by a fundamental view around the long-term investment merits of these businesses, and less by the then current valuations. For this reason the focus of our discussion, until this time, has not been on current valuations. Following are some brief comments.

## Historical multiples

When considered from the spectre of the market's preferred valuation methodology (price to earnings multiples), regulated US utilities appear expensive.

Provided below is a chart showing UBS's calculation of the Forward P/E multiples for US electric utilities since 1990. As can be seen, the current multiple (shown in dark blue) is towards the top of its historical trading range at nearly 16 times earnings, and well above the average of 13.7 times. This of course is not surprising in the current era of very low bond rates<sup>12</sup>, and so in itself should not be used to conclude that prices are currently expensive. Further, regulated utilities traded at higher PE's for most of the period between 2001 and 2007; notwithstanding that bond rates (and more importantly Allowed ROEs for regulated utilities) were then materially higher than current levels and so should have warranted lower PE's (in the same way that a bond trades on a higher PE as bond yields fall).

**Chart 4: Historical Earnings Multiples for Regulated Electric Utilities**



Source: UBS

Also shown on the above chart is the relative multiple of the regulated electric utility sector versus the market. Again the sector is trading above the long-term average (0.85x), suggesting the sector is currently highly valued. On the other hand it is below the average of the last ten years (1.07x).

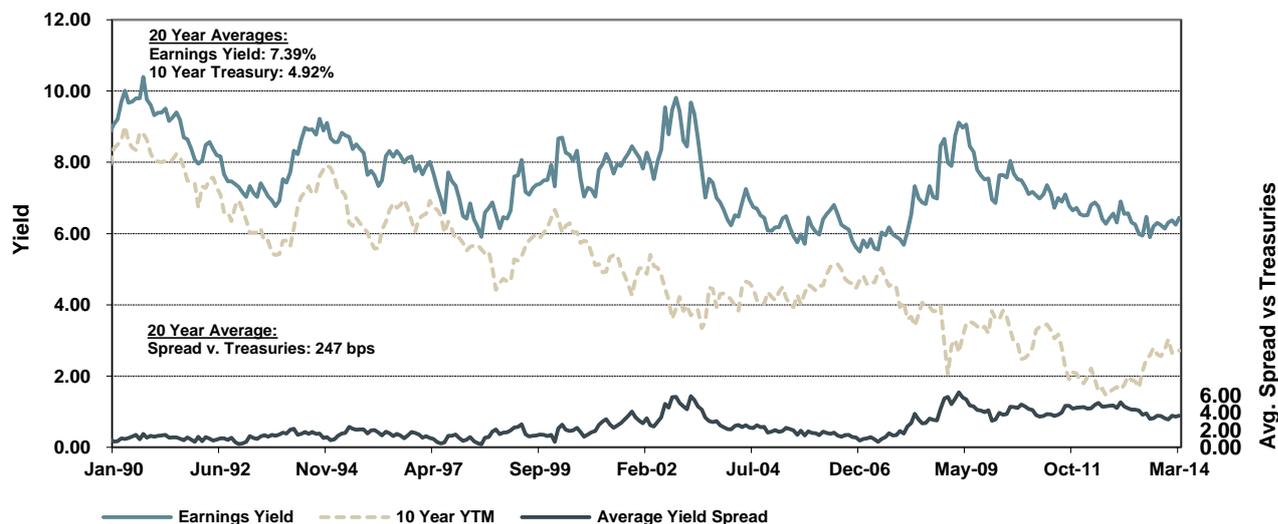
The picture is further complicated if one then tries to adjust for the current bond yield environment. Provided below is the equivalent chart from UBS but comparing the earnings yield of the sector to the then

<sup>12</sup> As the Allowed ROE of a regulated utility is correlated to bond rates, regulated utilities should trade at higher PE's in low bond rate environments.

current bond rate. As one would expect the earnings yield has generally come down with the bond rate, but not by the same magnitude.

This means that the spread between current earnings yield and the treasury bond yield is close to an all-time high (shown at the bottom of the chart), thereby suggesting that regulated electric utilities in fact are cheap.

**Chart 5: Historical Earnings Yields versus Treasuries**



Source: UBS

In our opinion neither of these charts can be relied on exclusively, and indeed each of them tells only part of the story. The sector is not hugely expensive as some people argue, but neither are we of the view that as a whole it is trading cheaply.

## Global perspective

Comparing earnings multiples to global peers is complicated due to (a) differences in accounting methodologies between IFRS and US GAAP and (b) the lack of any accounting reflection of the inflation escalation of rate bases, for those countries that utilise real rate regulation.

To address both these issues, we believe that a fair means by which to normalise the earnings of foreign utilities – so to be comparable to those of the US - is by calculating their “value added”, as defined by National Grid:

$$\text{Value Added} = \text{Change in Rate Base} + \text{Dividend Paid} - \text{Growth in Net Debt}^{13}$$

Using this methodology as a proxy for Earning’s Yield<sup>14</sup> for global utilities, we calculate examples of current forward Earning’s Yields as follows:

<sup>13</sup> See page 42 of National Grid’s 2013/14 Full Year Results Presentation, 15 May 2014. We have excluded Goodwill on the basis that it is normally immaterial, but in the circumstances where it is not needs to be considered on a case by case basis.

<sup>14</sup> Earning’s Yield is the earnings of a company (or for non-US companies the Value Added) divided by the current market capitalisation

**Table 2: Current Earnings Yields of Developed Market Regulated Utilities<sup>15</sup>**

	<b>Earnings Yield / Value Added</b>	<b>Current Bond Yield</b>	<b>Spread to Bond Yield</b>	<b>Reference Set</b>
<b>US Regulated Electric</b>	5.9%	2.6%	3.3%	Maple-Brown Abbott proprietary list of 29 electric utilities
<b>US Regulated Gas</b>	5.7%	2.6%	3.1%	Maple-Brown Abbott proprietary list of 10 gas utilities
<b>US Regulated Water</b>	5.3%	2.6%	2.7%	Maple-Brown Abbott proprietary list of 8 water utilities
<b>UK Regulated</b>	7.2%	2.7%	4.5%	National Grid, United Utilities, Severn Trent
<b>Italian Regulated</b>	6.5%	2.9%	3.6%	Terna SPA, Snam Rete SPA
<b>Portuguese Regulated</b>	9.2%	2.8%	6.4%	Redes Energeticas Nacionais
<b>Australian Regulated</b>	8.8%	3.5%	5.3%	Spark Infrastructure Group, SP Ausnet, DUET

Source: company disclosures, Maple-Brown Abbott calculations, bond rates as at July 9<sup>th</sup> 2014

Caution is required in interpreting the above numbers, due to differences across the different jurisdictions. Australian regulated names show up as being cheap in the above table - which we do agree with – however it should be noted that currently the Australian numbers benefit from these entities paying little to no tax, which will not be sustainable over the longer-term. The majority of Australian and UK regulated names, as well as the Portuguese entity, also have upcoming regulatory resets which will see a reduction in their earnings yield. In addition - and similar to the UK and Italian names - the Australian forecasts are quite sensitive to the assumed inflation rates.

The forecast earnings yields for US regulated utilities appear slightly expensive relative to the UK and continental European utilities.

In summary, by our valuations, the US regulated utility sector is currently fairly valued, with many stocks showing only a small valuation upside or downside. From our perspective the current opportunity for US utilities is not the valuation of the sector as a whole, but the potential mispricing of individual stocks (as discussed in the prior sections).

<sup>15</sup> As at July 9th 2014, Factset and internal forecasts

# Conclusion

It is our contention that GLI investors have been under-exposed to US regulated utilities due to a general negative view towards the sector, particularly in relation to its regulation. We believe that this view is too simplistic, and that the sector should instead be viewed in the context of both its strengths and weaknesses.

Key positives that we observe include that the Allowed ROEs are currently materially higher than other markets. Further, these ROEs are being granted at lower levels of assumed debt, resulting in materially lower financial risk. At the sub-sector level we are particularly enthused by the water, gas (or LDC) and electricity transmission utilities due to (a) the long-dated rate base growth and (b) lower regulatory risk typically in these assets.

The largest negative of US regulated utilities has been the inability of the space as a whole to earn its Allowed ROE due to regulatory lag (and particularly when contrasted with many global peers who out-perform their Allowed ROE), although regulation continues to move in a way that is reducing this factor. We acknowledge that whilst the Allowed ROEs are very high in the current bond rate environment, they would look less attractive relative to global peers were bond rates to rise to more “normal” levels or higher. Further, the more fragmented nature of the regulation has led in some cases to a more politicised regulatory environment. Our least preferred sub-sector is regulated electric utilities; due to its muted capital expenditure outlook, higher regulatory risk and lower earnings growth trajectory.

We see time arbitrage opportunities for long-term investors arising from the valuation methodology that has been broadly adopted by the market. The strong focus on a single valuation metric – being PE multiple – provides in our opinion opportunities for valuation mispricing. Circumstances where we believe a PE multiple is unlikely to capture the full value of a regulated utility include:

- Utilities who we expect will be able to continue to earn their Allowed ROE. These utilities have sustainably higher ROEs than most global peers, which is particularly valuable if they also have a strong capital expenditure outlook. Examples of such companies include **ITC** and **CMS**.
- Utilities who are currently experiencing regulatory lag, but which we believe to be only temporary in nature. This increasing ROE profile is unlikely to have been appropriately valued if it occurs beyond the period of the market’s earnings focus. This has been a key driver for the extended out-performance of **American Water** since its listing in 2008, and we have seen similar situations arise this year in companies including **One Gas** and **SJW**.
- Utilities that have the ability to sustainably earn a higher ROE through financial out-performance. **ITC** and **American Water** are examples of such companies.
- Companies with very long-dated and high capital expenditure programs that are affordable and sustainable. We most commonly see this in water, LDC or electric transmission utilities, with examples including **SJW**, **Pacific Gas & Electric**, **CMS** and **ITC**.

In relation to the Maple-Brown Abbott Global Listed Infrastructure portfolio, we have recently been trimming our exposure to US regulated utilities, reflecting the strong sector performance in 2014. We do continue to see strong individual investment opportunities, and so the sector remains an important part of our portfolio.

More importantly, from a longer-term perspective we believe that the attributes of US regulated utilities will continue to see them remain a core component of our strategy.