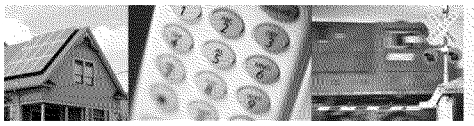

California Public Utilities Commission

Trends in Utility Infrastructure Financing

POLICY AND PLANNING DIVISION BRIEFING PAPER

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Summary

Similar to the rest of the country, California is nearing the end of useful life of its utility infrastructure, much of which has been built over the past century. This paper will discuss three financing options that can be used to potentially reduce the cost of upgrading utility infrastructure.

Introduction

Infrastructure assets are physical structures, networks, and other facilities that provide services essential for economic production . Transportation (roads, bridges) , communication, regulated (water, wastewater, transmission and distribution lines) a nd social (hospital, schools) assets are among typical infrastructure assets. These assets attract investor attention, as they carry positive attributes such as s table cash flows, inflation protection, and long expected life . They also introduce risks to the investor portfolios such as regulatory and polit ical risk, liquidity risk, emerging investment strategy risk, and operating risks. These assets are usually subject to government oversight, are not traded on a secondary market, little data exists on their performance as an investment asset, and are vulnerable to natural disasters.[1]

Replacement of aging structure and construction of new infrastructure is a necessity for public safety and healthy economic growth. However, there is a big concern whether sufficient capital can be allocated to meet the infrastructure need. It is well acknowledged that utility infrastructure in the United States is aging and large amount of investments is needed in order to meet the infrastructure demand. It is estimated that, b y 2030, the electric utility industry will need $1 .5 trillion to $2 trillion for infrastructure inves tment.[2] In California, the need for capital investment is substantial as well . For example, in a recent report prepared for Pacific Gas and Electric Company (PG&E), it was stated that:

> "Pacific Gas and Ele ctric Company is embarking on a multi -billion dollar plan to expand and upgrade its generation and distribution infrastructure that provides gas and electric service in northern and central California. The proposed capital investments are intended to meet the growing and evolving needs for gas and electric services by households, businesses and public facilities in its service area. And there are also proposed increases in O&M (operations and maintenance) spending that are intended to maintain the functiona lity and safety of existing, older facilities. Altogether, the proposed capital and O&M spending totals roughly $7 billion per year over the 2014-2016 period. This proposed spending will have notable effects on the economy of both PG&E's service area and the broader state of California."[3]

[1] Wallick, D.W. 2009. A Primer on Infrastructure Investing.
[2] Chupka, M.W., R. Earle, P. Fox, Penner, R. Hledik, 2008. Transforming America's Power Industry: The Investment Challenge 2010-2030.
[3] Economic Development Research Group. 2012. Economic Impacts of PG&E Proposed Generation, Distribution & Related Infrastructure Investments.

The amount of capital requested by PG&E to upgrade and expand electric and gas facilities corresponds to $12 billion dollars over the three years. As shown in the Table below , a little less than half of the investment is planned to be allocated to electric distribution and about 20 percent is expected to be spent on gas distribution.

Table I: Allocation of Proposed Capital Spending

Types of Capital Investment	2014	2015	2016
Electric Distribution	44.6%	45.4%	48.2%
Gas Distribution	21.2%	21.3%	19.7%
Energy Generation and Procurement	17.7%	17.8%	17.5%
Customer Care	4.8%	4.2%	4.1%
Common (IT, shared services)	11.7%	11.3%	10.4%
Total	100%	100%	100%

Source: Economic Development Research Group. 2012. Economic Impacts of PG&E Proposed Generation, Distribution & Related Infrastructure Investments, p.8

These upgrades and infrastructure investment s will presumably satisfy the need , generate additional economic activity resulting in new jobs, but will also lead to an increase in ratepayer bills.

Typically, capital needed for investment is provided by the regulated utility in the form of equity and debt. Once the asset becomes included in the utility ratebase, t he utility is provided with an opportunity to earn a rate of return on its equity. Given the potential impact of large investmen t financing on ratepayer bills, alternative ratemaking mechanisms that will help consumers avoid or mitigate high rate increases have been proposed . For example, a ccording to the 2012 American Gas Association (AGA) report [4], the use of advanced regulatory mechanisms, such as rate trackers, rate surcharges, deferral accounts, and rate stabilizers that allow natural gas utilities to recover costs of utility replacement between rate cases has triple d in the last five years. Similarly in the electric industry, c onstruction work in progress, cost trackers, rate and revenue caps, revenue decoupling, formula rate plans, forward test years are perceived as potential tools to mitigate or avoid rate shock, removing barrier s to new investment, providing access to capital, and increasing construction and operation efficiency.[5] However, these ratemaking approaches are confined within the traditional utility cost of service model. They do not tend to reduce overall cost of fina ncing of infrastructure investment, but allocate the cost over time in a more sm ooth and palatable fashion. Therefore, i t may be timely to explore other financial options to have access to capital in a more cost-effective manner.

In this paper, we will briefly review three of these mechan isms: Real Estate Investment Trust (REIT), master limited partnerships (MLP), and rate reduction bonds.

[4] American Gas Association. 2012. To Encourage Infrastructure Investment, More States Are Allowing Innovative Utility Rate Designs, Foster Natural Gas/Oil Report.
[5] Owens, D.K. 2011. New Regulatory Frameworks Encourage Electric Infrastructure Investment, Public Utilities Fortnightly.

Trends in Infrastructure Financing

It is understandable that utilities would prefer to finance infrastructure investments in a traditional manner, so that they can add assets to their ratebase and retain the opportunity to earn a rate of return on their investment. However, as the need for capital increases, it may be difficult for the utilities to have access to capital at reasonable costs without affecting the utility credit ratings. Therefore, looking into other forms of financing in order to diversify utility asset financing may be worthwhile. After all, infrastructure assets are attractive to private investors and perceived by investors as means to diversify investment portfolios and hedges against inflation and interest rate. [6]

Below, we will briefly review two relatively novel and one not-so-novel approaches to utility infrastructure financing: REIT, MLP, and securitization. REIT and MLP are relatively new structures and they have not been as prevalent as anticipated in the utility industry. Securitization is rather a familiar approach, which requires more preparatory work on the public side, e.g. legislation, but is becoming popular again, given the high need for infrastructure investment and related rate increase.

REIT:

The role and importance of private equity is well acknowledged over the recent years. Private equity funds utilize different types of funds such as venture capital, buyouts, or infrastructure funds. Some of these funds, such as buyouts or venture capital, have negative connotation with implementing excessive cost-cutting measures, seeking a quick profit and sell-out, and others. However, infrastructure funds are different than venture capital and buyout activities in that they expect long term returns and are less likely to seek a short term exit. [7] Whereas buyouts focus on share prices, infrastructure funds focus on the flow of income.

One structure where we see the presence of private equity is REIT, which is a pass-through entity free from taxation at the corporate level, thereby avoiding double-taxation. REITs own income-producing assets. In order to be qualified as REIT, an entity has to pass the following tests:[8]

1. The REIT must own the property.
2. Rental income must be paid to the REIT by a separate operator of the property.
3. There must be 100 or more shareholders and 90% of the taxable income must be distributed to investors.
4. Income tests: At least 95% of its gross income must be derived from rents from real property, dividends, interest, and gain from the sale or disposition of stock and securities. In addition, at least 75% of its gross income must be derived from investments relating to real property or mortgages on real property, including from rents from real property.
5. Asset test: At least 75% of the value of the REIT total assets must be represented by real estate assets, cash, cash items, US government securities and certain stock or debt instrument.

When a REIT entity passes these tests, it receives a deduction for the dividends it pays and not taxed as a regular corporation.

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[6] Weisdorf, M. A. 2007. Infrastructure: A Growing Real Return Asset Class, CFA Institute.
[7] Hall D., 2006. Private Equity and Infrastructure Funds in Public Services and Utilities.
[8] Merrill Lynch. October 4, 2008. Transmission Real Estate Investment Trust Presentation to FERC Technical Conference, p.4
http://www.ferc.gov/eventcalendar/Files/20081014114015-Piskadlo,%20Merrill%20Lynch-REIS.pdf

The first REIT legislation was enacted in 1960. REITs have traditionally targeted real property that generates rental income such as office space, apartment buildings, and business centers. Their popularity over the years has grown. A private letter ruling issued by The Internal Revenue Service (IRS) (PLR 200725015) allowed electric transmission and distribution systems to be transferred into real estate investment trust just like real estate assets.[9] This ruling has boosted the popularity of REIT in energy infrastructure investment. A 2010 Deloitte Report referred to REITs as the next investment frontier.[10] Even though private rulings apply only to the specific applicant and they are fact dependent , the IRS ruling paved the way for other investors to explore REIT structures in the energy sector and take the advantage of tax savings.

Here is an actual example of a REIT structure formed in 2010:

Case: Two REITs, Electric Infrastructure Alliance of America, LLC (EIAA) and Gas Infrastructure Alliance of America, LLC (GIAA) , are managed by InfraREIT Capital Partners, LLC. EIAA was formed in 2010 to invest in and develop electric transmission and distribution utility assets located in Texas and the Southwest. EIAA's subsidiary, Sharyland Distribution and Transmission Services, LLC (SDTS), owns electric transmission and distribution assets that serve customers in Texas. These assets are leased to and operated by Sharyland Utilities, L.P., a Texas -based public electric utility that is regulated by the Public Utility Commission of Texas. SDTS will own additional transmission line segments and substations that Sharyland is building as part of the Competitive Renewable Energy Zone (CREZ) transmission build-out in Texas. GIAA was formed in 2010 as a REIT to invest and develop natural gas and other hydrocarbon delivery, storage and logistics assets.[11]

Even though regulated utilities might not be in favor of a REIT structure in order to keep their ratebase intact, there may be advantages of REITs for the investor-owned utilities as well. For instance, a REIT structure may minimize capital demands on the utility, help avoid development and construction risk, technology risk, as well as regulatory risk. On the other hand, REITs take away assets from the ratebase and the opportunity to earn a rate of return. They also may not give the utilities sufficient operation control, depending on the specifics of the contract.

From the ratepayers view, provided that the transaction is successfully completed, a REIT structure may provide substantial cost savings . An example presented by Merrill Lynch on transmission REIT structures have illustrated that a REIT structure can generate up to 10% rate savings that can be potentially passed on to the ratepayers or shared between ratepayers and equity holders. [12]

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[9] http://www.irs.gov/pub/irs-wd/0725015.pdf

[10] See Deloitte, 2010. REITs and infrastructure projects: The next investment frontier for advantages and disadvantages of using REIT in public-private partnerships from the point view of investors. http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/MA/us_ma_Infrastructure%20REITS_040210.pdf

[11] http://www.infrareitcp.com/overview.html

[12] Merrill Lynch, October 4, 2008. Transmission Real Estate Investment Trust Presentation to FERC Technical Conference, p.8 http://www.ferc.gov/eventcalendar/Files/20081014114015-Piskadlo,%20Merrill%20Lynch-REIS.pdf

Obviously, the specifics of a REIT structure proposal would determine the potential for actual cost savings for the ratepayers. There are tax and non-tax issues that can come up in a REIT structure and would affect the amount of savings under consideration:

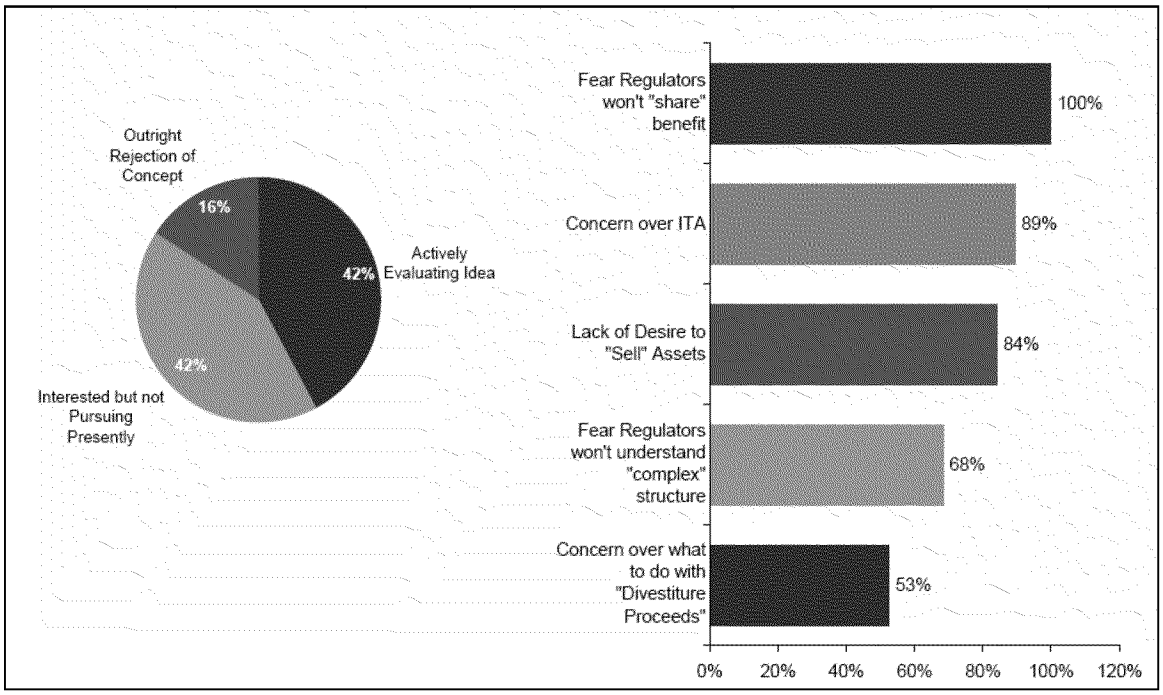
- A REIT structure may have debt and equity components to its financing and would ideally target an optimal capital structure to maximize the savings. For example, a 100% equity would not necessarily promise savings to ratepayers.
- If a substantial portion of the savings is not passed onto the ratepayer, the potential benefits could diminish.
- The assets will be leased and the incumbent utility will be paying rents.
- The estimation of cost of equity may be different, given that the structure of the REIT will differ from a traditional utility.

Two main operation models can be considered for REIT structures. For example, the incumbent utility can continue to operate the asset. Alternatively, a third party operator can be selected to run the asset. In both cases, the owner of the asset and the third party operating the asset would be considered to be a public utility in the sense that they would be under the authority of the regulator and their cost of service would be determined by the regulator. The REIT would lease the asset to the load serving entity. The lease rate or rent would be calculated in a CPUC proceeding. The REIT would charge the rent to the load serving entity, which would recover it from the ratepayers in rates. This portion of the transaction can be analogous to a power purchase agreement. Infrastructure funds may favor utility management, because they know their business, state regulators would feel more comfortable with working with the same team. [13] There are also basic rules on the lease structure that should be complied: (1) The lease must be a true lease, (2) the REIT cannot have more than 10% interest in the tenant, among others.[14]

Even though potential savings may be substantial, REITs are complicated in structure, subject to rigid rules for tax purposes, and consideration would require lengthy and complicated legal and financial analysis, so that the optimal savings can be realized for the ratepayer interests, integrity of the distribution system can be retained, and potential future transactions, such as IPOs, change of ownership, do not jeopardize utility operations and anticipated savings.

[13] A New Vintage of Investor; Rothschild investment banker Rioger Wood explains why those new infrastructure funds are hot on utilities, Public Utilities Fortnightly, March 2007.
[14] Client Alert. May 2009. Infrastructure and REITs: Happy Together, Proskauer Rose, LLP.

Figure I: Industry Feedback



Source: Merrill Lynch, October 4, 2008. Transmission Real Estate Investment Trust Presentation to FERC Technical Conference, p.7

When surveyed on the subject in 2008, most large transmission owners expressed interest in the idea. They were either evaluating the idea or were interested, but not pursuing it actively. Among these 30 respondents , all expressed fear that regulators would not shar e the benefit and 84% expressed no desire to sell their assets.

MLP:

Another financing trend that has become popular among advocates of clean energy polic y is master limited partnership. Created in late 1980s, MLPs carry the tax benefits of a limited partnership with the liquidity of common stock. It is reported that the market capitalization of energy MLP exceeds $160 billion. [15] Due to the tax code d efinition of MLPs, 90 percent or more of their incomes must come from investments in natural resources, co mmodities, or real estate. MLPs have been more popular with oil and natural gas production, pipelines and refining facilities. Extending eligibility to other c ategories of natural resources such as wind or biofuel is expected to draw more investment into deployment of new energy technologies.

Requirements of MLPS include the following:
1. Partnership or LLC with units traded on public stock exchange,
2. 90% of income must come from qualifying sources such as interest, dividends, rents, income from natural resource activities (oil, gas, timber, minerals),

[15] Watkiss, D."Congress Should Embrace Favorable Tax Structures to Hasten Clean Energy Deployment," Electric Light And Power.
http://www.elp.com/elp/en-us/index/display/elp-article-tool-template.articles.electric-light-power.volume-89.issue-3.columns.congress-should-embrace-favorable-tzx-structures-to-hasten-clean-energy-deployment.html

3. Distributions to unitholders are not taxed.[16]

In 2007 a U.S. Appeals Court upheld a policy of the FERC allowing in public utility rates an income tax allowance for oil pipelines held in master limited p artnerships. That is, they are taxed on distributions to their partners, which made MLPs equivalent to REITs.

It is suggested that MLPs could choose to contribute assets to a REIT to fund internal growth, avoid negative tax structural aspects of MLPs (su ch as complex tax accounting, pass -through of unrelated business taxable income to tax -exempt investors, US taxation of foreign investors' effectively connected income) as well as have deeper access to capital.[17]

Securitization (Rate Reduction Bond):

A rat e reduction bond (RRB) is the securitization of a cash flow stream generated by a fee charged to utility customers. It has been used as a financing tool since 1990s. During deregulation of electric markets, many utility assets became uneconomic to operate due to decrease in revenues. These assets were referred to as stranded assets. RRB s were used to cover the difference between book value of st randed assets in the regulated market and the current market value in the deregulated market. [18] More recently, secu ritization has been used to finance construction and installation of environmental equipment (West Virginia), storm damage related expenses (Texas), to recover deferred power procurement costs (Maryland).[19]

There are three major components of a utility securitization:

"(1) state legislation that authorizes the utility to finance the recovery of certain costs through the issuance of securitization bonds and contains a pledge that the state will not interfere with the utility's right to recover from customers the amounts necessary to service the securitization bonds; (2) a financing order issued by the state utility commission pursuant to the state legislation which, among other things, creates the right to impose certain nonbypassable charges on utility customers in the utility's service territory; and
(3) a bankruptcy-remote, special-purpose entity, created by the utility, to issue the securitization bonds. The nonbypassable charges are collected from ratepayers and used to make payments when due on the securitization bonds. The state legislation specifically provides that the charges are subject to adjustment to ensure the collection of adequate funds to provide for timely payments on the securitization bonds. The financing order is generally irrevocable."[20]

In other words, RRBs are issued by a third party and the proceeds from the bonds repay the utility for its investment upfront. The utility's investment is not added to ratebase and ratepayers are not

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[16] Merrill Lynch. 2008 Transmission Real Estate Inve stment Trust Presentation to FERC Technical Conference, p.8
http://www.ferc.gov/eventcalendar/Files/20081014114015-Piskadlo,%20Merrill%20Lynch-REIS.pdf
[17] Client Alert. May 2009. Infrastructure and REITs: Happy Together, Proskauer Rose, LLP.
[18] Blake, K. Rate Reduction Bonds: A Diversifying Asset Class
http://pages.stern.nyu.edu/~igiddy/cases/rrb.pdf
[19] Baker, W.T.. et al., 2010. New Uses for Utility Securitization Bonds in the Absence of Traditional Rate Recovery•
http://www.morganlewis.com/index.cfm/publicationID/973bea6e-8304-4faf-9f08-ed2ba297ba5e/fuseaction/publication.detail

[20] Ibid. p.1-2

responsible for paying the debts costs, return on e quity and income taxes. Ratepayers pay off the bonds through a special surcharge (dedicated rate component). Since the financing is 100% debt, higher ROE and associated income taxes are avoided.

California has had past experience with utility securitizat ion for all its three utilities. Decisions 97-09-057, 97-09-56, and 97 -09-055 approved applications of SDG&E, SCE, and PG&E for a financing order pursuant to Public U tilities Code Section 841(a) and allowed the utilities to recover $7.3 billion in transiti on costs. Decision 97 -09-054 had determined that the issuance of rate reduction bonds would reduce rates for residential and small commercial customers.

Securitization highly benefits from a credit enhancement feature: A prefunded reserve account is held by the special purpose entity for further protection for bondholders in the event there is deficiency between rates and the fee collected from ratepayers. RRBs also have a true -up mechanism so that consumer charges can be adjusted up or down. All RRBs have State pledges to protect bondholders, that is a State guarantees for not taking action to affect the value of the asset until it is fully paid.[21]

For the utility, all costs recovered upfront thereby eliminating recovery risk. [22] However, tax treatment of the income by IRS, e.g. recognizing income over time versus recognizing the principal upfront, may complicate calculation of potential savings.

Ebert et al. (2006) lists the benefits securitization as follows:[23]

- Providing "immediate" cash as opposed to a lmost all other forms of cost recovery, with the exception of robustly -funded storm reserves that exceed and can be expected to continue to exceed all allowable costs.
- Providing "least cost" financing compared with other forms of utility borrowing. Markets, not regulators, determine the real price of money; private investors acting from market signals, not ratepayers initially, provide capital.
- Specific statutory authority that removes uncertainty about an intangible asset and reduces regulatory uncertainty in PSC securitization processes.
- Relatively lower cost to the utility's customers when compared to other forms of utility cost recovery measures; reduces the "rate shock" of temporary surcharges.
- True-Ups/True-Downs regulatory costs are reduced to simple mathematical calculations.
- If the utility would otherwise not earn a profit on the regulatory asset being securitized, the bonds eliminate a non-earning asset.

Reopening previous issues of debt securities has also been highlighted as a recent financing trend. [24]Additional securities with a different selling price and issue date rather than a new series are offered to generate funding.

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[21] Blake, K. Rate Reduction Bonds.

[22] Baker,W.T., et al. 2010. United States: New Uses for Utility Securitization Bonds in the Absence of Traditional Rate Recovery. http://www.morganlewis.com/index.cfm/publicationID/973bea6e-8304-4faf-9f08-ed2ba297ba5e/fuseaction/publication.detail

[23] Ebert, M.E. et al., 2006. Critical Electric Power Infrastructure Recovery and Reconstruction: new Polic Initiatives in Four Gulf Coast States After 2005's Catastrophic Hurricanes, DOE Grant DE-FG26-04NT42250

[24] Baseload, June 2012.

Conclusion

Regulators need to make sure that any form of ownership restructuring is in the interest of its ratepayers. In the past, many commission decisions in other states ruled against private ownership. For example, Kohlberg Kravis Roberts Co. (KKR) and Texas Pacific Group did not get approvals to acquire regulated utilities in Arizona and Oregon, respectively. In 2005 The Oregon PUC rejected Texas Pacific Group's request to acquire Portland General Electric because "of the expectation that such a deal would result in a heavily leveraged consolidated balance sheet for Portland General Electric and thus create more risks than benefits for its customers." [25] In 2004, Arizona Corporation Commission rejected KKR's leveraged buyout because of the concern that private equity's short-term interest would not be suitable for investing in regulated utilities.[26] It appears that regulators were concerned about impact of increased leverage on utility credit ratings and the buyer's short-term investment interest for ownership.

The financing tools we briefly reviewed here differ from buyouts. Nevertheless, they have to meet the legal and statutory requirements, and they have to pass a number of obvious tests, some of which are as follows:

- Whether the proposed structure is in the interest of public.
- Whether it provides a positive benefit-cost ratio and provides a higher benefit-cost ratio relative to the available options to the ratepayers.
- Whether there are any potential adverse impacts on reliability, availability, safety, and cost of service.
- Whether projected cost savings are real.
- Whether the cost of equity will be determined in the traditional way, given that traditionally structured utilities may not be a good proxy any more.
- Who bears the transaction costs.
- Whether there are any implications for market power and competition issues.
- Whether there is any implication on the regulators' access to financial and operational data.

It may be timely to start exploring the use of alternative financing tools in order to mitigate or avoid a possible rate shock, in a responsible and risk-conscious manner. Details of the proposed transaction/restructuring and evaluation of the transaction will determine the ultimate outcome. However, REIT structures are quite new to the energy market and there is an overall lack of past experience and data to conclude whether this is in the public interest or not. Therefore, we would advise holding discussions with the utilities on the subject, conducting a more thorough analysis on the legal and tax aspects of the issue, and then opening the issue for stakeholder input in an existing or new Rulemaking, provided that the expert staff finds it worthwhile to continue exploring the area.

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http://www.hunton.com/files/News/7ac5da8f-695a-40db-981e-271f5b17d1c9/Presentation/NewsAttachment/e763a391-8113-4458-b810-28a73f7c422f/Baseload_June_2012.pdf

[25] Weisdorf, M.A. 2007.. Infrastructure: A Growing Real Return Asset Class, CFA Institute
[26] Ibid. p.25