



Going on the Offensive to Counter Dramatic Increases in Transmission Rates

Transmission Investing for Public Power and G&T Utilities

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**Jim Pardikes
Ron Kennedy**

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Transmission rates across the country and, particularly, in the Midwest Independent System Operator will be dramatically increasing over the next ten years due to new high voltage transmission projects and the steady stream of local transmission facility replacements and upgrades. Municipal joint action agencies, municipals and G&T transmission owners have the opportunity to mitigate or partially hedge these rate increases if they implement an offensive transmission investment strategy. This strategy involves thinking about transmission investment “as a business” and pursuing investments more aggressively than in the past.



The Increasing Transmission Rate Environment

In December 2011, Midwest Independent System Operator (“MISO”) approved a portfolio of 17 new transmission Multi-Value Projects (“MVP”) with a total cost of over \$5 billion. The impact of these MVPs will be felt by all MISO pricing zones and the costs will be spread across the entire MISO footprint on the basis of megawatt hours. While some ratepayers who take transmission service under some grandfather agreements (“GFA”), may be spared from the impact of regionally shared costs¹, all other MISO ratepayers can expect to see their transmission rates increase as a result of the MVPs and other regionally cost shared projects (e.g. RECB I and RECB II²). Therefore, even if local pricing zone transmission plans do not include substantial

¹ On February 28, 2012, the Federal Energy Regulatory Commission (“FERC”) ruled that the costs from regionally shared transmission projects could not be added to some existing GFAs. MISO tariff Schedules 26 and 26-A charges that MISO proposed to charge to GFA loads would be in a new Schedule 40.

² Under Regional Expansion Criteria and Benefits I (“RECB I”), 20 percent of the cost of qualifying MISO Regional Transmission Expansion Planning reliability projects rated at or above 345 kV is allocated across the MISO footprint on a load ratio share basis (i.e., a postage-stamp rate); the remaining 80 percent of the cost is allocated sub-regionally to one or more zones based on a Line Outage Distribution Factor analysis. Under Regional Expansion and Criteria and Benefits II (“RECB II”), 20 percent of the cost of qualifying economic projects is allocated across the MISO footprint on a load ratio share basis; the remaining 80 percent is allocated among three geographic sub-regions based on a beneficiary analysis.

new local transmission to be built, the impact from larger, regionally cost shared projects will significantly increase transmission rates for the vast majority of transmission ratepayers.

MISO currently forecasts Schedule 26 and 26-A rates for the regionally cost shared projects for the forecast period of 2013 to 2021. By assuming the local pricing zone transmission rates (MISO's Schedule 9) will continue to grow at the pace they have grown over the 2008 to 2012 period³, the local pricing zone transmission rates can also be forecasted for the 2013 to 2021 period. The total transmission rate can be forecasted by pricing zone by adding in the local pricing zone transmission forecast to the impact of the regionally cost shared project forecasts. The results show that there is considerable variability in forecasted total transmission rate increases across the footprint.

For example, for the period of 2012–2021, the total transmission rates from MISO Schedules 9, 26 and 26-A in the Michigan Electric Transmission Company (“METC”) pricing zone are forecasted to grow about 54%. These same rates in the Northern States Power Company (“NSP”) and the Ameren Illinois (“AMIL”) pricing zones are forecasted to grow about 97% and 98%. These forecasts include all of the regionally shared transmission projects that have been approved in MISO's transmission expansion plans through 2011.

Public policy requirements related to renewable energy, the closing of coal plants due to environmental rules and the potential for new gas-fired plants will continue to drive the need for new transmission and result in an increase in the number of regionally cost shared transmission projects in 2012 and beyond. This growth in transmission, in turn, ensures substantial increases in transmission rates. To the extent that public power and G&T ratepayers are not shielded from these increases through grandfathered agreements, their transmission rates will correspondingly rise. Although these new transmission projects hold the promise of lower wholesale power prices, increases in transmission rates will become a fact of life that should be addressed.

³ For example, continuing the 7% per year growth rate for NSP's Schedule 9 rate is a reasonable projection given that planned non-cost sharing investment dollars in the NSP zone (from the 2008-2011 Midwest ISO Transmission Expansion Plans (MTEPs)) have increased over 9% per year. Similarly, the AMIL and METC pricing zones assume 2.9% and 2.6% growth rates respectively for the Schedule 9 growth rates given that the planned non-cost sharing investment dollars in the AMIL and METC zones (from the 2008-2011 MTEPs) have increased over 3.4% and 3.3% respectively per year. Planned projects typically go in service and impact rates with a several year lag.

Even if local pricing zone transmission plans do not include substantial new local transmission to be built, the impact from larger, regionally cost shared projects will significantly increase transmission rates.

Going on the Offensive with Transmission Investment

Municipal joint action agencies, municipals and G&T transmission owners are not helpless to mitigate increasing transmission rates. Some of these organizations are investing in new transmission themselves and becoming “owners” rather than “renters”. By making strategic investments, public power and G&T organizations can use the healthy returns from the investments combined with beneficial cost-sharing mechanisms to partially offset the anticipated transmission rate increases.

As an example, in MISO, the transmission owners using the non-levelized (return on rate base) formula rate template have been allowed a return on equity (“ROE”) of 12.38% in the transmission formula rate. This ROE is substantially higher than the cost of debt available to public power and G&T utilities that would typically be used to finance these new transmission investments. The difference between the MISO ROE and the actual cost of debt provides a margin in the return on the new transmission investment that can be used to offset transmission rates paid by the public power and G&T ratepayers. Of course, this margin is only achievable to the extent that the public power or G&T utility has an actual equity component on its balance sheet that it can apply to the MISO ROE of 12.38%.

In the transmission formula rate, the return applied to the transmission rate base (i.e. the new transmission investment) is the weighted average cost of capital. This weighted average is calculated by the following equation:

$$\text{Weighted Average Cost of Capital} = \left(\text{ROE} \times \text{\% of Actual Equity on the Balance Sheet} \right) + \left(\text{Actual Enterprise Cost of Debt} \times \text{\% of Long Term Debt on the Balance Sheet} \right)$$

Because most public power and G&T utilities use debt to finance their capital investments, many of these utilities’ balance sheets are dominated by debt and have a smaller percentage of equity in their actual capital structures. As a result, the ROE of 12.38% may have little impact on the return they earn on a new investment in the transmission formula rate.

Some public power and G&T organizations are investing in new transmission themselves and becoming “owners” rather than “renters”.

One way to remedy this situation and in effect, make this ROE impactful to the public power or G&T transmission owner is to obtain a hypothetical capital structure ruling from FERC. With a hypothetical capital structure of 40–50% equity to be applied to the new transmission investment, the public power or G&T utility can make the ROE of 12.38% meaningful in the return it is allowed to earn on the transmission investment.⁴ This added return from a hypothetical capital structure provides even more benefit for offsetting increasing transmission rates.⁵

With the significant value produced from a return based on a hypothetical capital structure and a lower actual cost of debt, many public power and G&T utilities are taking a close look at making significant new transmission investments, particularly when the project's costs are shared with other utilities. The opportunity to shift transmission cost recovery to others is why regionally cost shared transmission projects (particularly MVPs) are so attractive to transmission owners. Many public power and G&T utilities, by virtue of their small size, take this benefit of sharing costs one step further.

When these smaller utilities make up only a small percentage of the pricing zone, all of their transmission investments are, in effect, cost shared. For example, take a situation where a public power entity is 10% of the KW load in its pricing zone and the pricing zone is populated by another large investor-owned utility (“IOU”) and maybe one or two other smaller utilities. In this case, not only are the public power entity's costs for its regionally cost shared transmission projects spread over the entire MISO footprint, but any of its costs that are allocated to its own pricing zone are recovered 90% from ratepayers other than its own. For example, if 85% of the public power entity's costs in a Multi-Value Project were allocated to other pricing zones, then $0.15 \times 0.10 = 0.015$, or only 1.5% of its costs are recovered from its own ratepayers and the remaining 98.5% are recovered by other ratepayers. Transmission investment may be the one time when being the small player in the pricing zone is an advantage.

⁴ At present, those entities using the cash flow template (i.e., a return or margin based on debt service coverage ratio) have no ready means to achieve a hypothetical capital structure on new cost-shared transmission investments, because the cash flow template formula does not include a return based on capital structure.

⁵ For a more detailed discussion of transmission rate incentives, please see the MCR whitepaper, “FERC Is Handing Out Transmission Rate Incentives: Does your project qualify?”

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Keeping Pace on the Transmission Rate Treadmill

There can be a catch to rapidly ramping up transmission investment under these circumstances. The primary constraint on the amount of transmission a public power utility can own is based on something known as its neutral transmission investment position. Many joint pricing zones operate with an understanding that each participant's transmission ownership in the pricing zone is limited by their neutral investment position in that pricing zone. And typically, with this understanding, the zonal neutral investment position is defined as the point where a utility's transmission plant percentage of the total transmission plant in the pricing zone equals the utility's KW load percentage of the total KW load in the pricing zone. That is, if a utility's load in the pricing zone is 10% of the total load in that pricing zone, then the utility is able to own 10% of the total transmission in that pricing zone. This balance is often referred to owning a load ratio share of transmission.



Conceptually, this load ratio share for a neutral transmission investment position is easy to understand and easy to calculate. However, if the ultimate objective is to achieve a position where a utility's paid transmission tariff equals the transmission revenue it receives (or, in MISO, its Annual Transmission Revenue Requirement ("ATRR")), then the load ratio share approach will cause public power and G&T utilities to fall further behind the goal of hedging transmission rate increases with increased transmission revenues from increased investment.

There are two reasons why achieving only a load ratio share in the pricing zone will not fulfill the hedging objective. First, as new transmission continues to be built, transmission rates will continue to rise. In the case of regionally cost shared transmissions projects, paid transmission rates will increase as a result of the projects even when the projects are located in regions outside of its pricing zone and far from the utility itself. As stated earlier, MISO approved a portfolio of 17 new transmission projects with total costs of over \$5 billion as Multi-Value Projects. The costs of MVPs are spread across the entire MISO footprint on the basis of megawatt hours. Even if local pricing zone transmission plans do not include substantial new transmission to be built, the impact of MVPs and other regionally cost shared projects will continue to drive transmission rates up across MISO. Therefore, in

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ATRR Comparisons of Joint Action Agency and an Investor Owned Utility Under an Actual and Hypothetical Capital Structure

Estimated Revenue Requirement Difference Between Joint Action Agency and IOU

Example 1

Using Actual Capital Structure for Joint Action Agency of 80% Debt and 20% Equity

Example 2

Using Hypothetical Capital Structure for Joint Action Agency of 50% Debt and 50% Equity

Example Transmission Investment

	Joint Action Agency		IOU	
Rate Base Investment	\$ 1,000	\$	1,000	\$ 1,000
ROE (standard MISO ROE)	12.38%		12.38%	12.38%
Cost of Debt	4.50%		5.50%	5.50%
% Debt	80.00%		45.00%	45.00%
% Equity	20.00%		55.00%	55.00%
Income Tax Rate (combined state / federal rate)	0%		40.0%	40.00%
O&M & Other Taxes as % of Gross Investment (Pass-thru cost)	6.80%		6.80%	6.80%
O&M and Other Taxes (e.g., property)	\$ 68	\$	68	\$ 68
Depreciation Life of Transmission	40		40	\$ 40

Gross Up Method Calculation:

	Joint Action Agency		IOU	
Long Term Debt (\$)	\$ 800	\$	450	\$ 450
Implied Equity (\$)	\$ 200	\$	550	\$ 550
Debt Component of Return	0.0360		0.0248	0.0248
Equity Component of Return (gross up equity component for taxes for IOU only)	0.0248		0.1135	0.0619
Pre Tax Return on Rate Base (%) (reflects debt return & equity return grossed up for taxes)	6.08%		13.82%	8.44%
Pre Tax Return (\$) (pre-tax return % X rate base)	\$ 60.76	\$	138.23	\$ 84.40
Income Taxes	\$ -	\$	45.39	\$ -
Interest	\$ 36.00	\$	24.75	\$ 45.00
Depreciation	\$ 25	\$	25	\$ 25.00
Revenue Requirement (pre-tax return + O&M & oth taxes + deprec)	\$ 153.76	\$	231.23	\$ 177.40
Difference		\$	77.47	\$ 53.83

Estimated Percentage Difference
(Difference/JAA Revenue Requirement)

50.4%

30.3%

In Example 1, we assume that the joint action agency and the IOU invest \$1,000 each in the jointly-owned transmission project. Each transmission owner uses its actual capital structure and earns the standard MISO return on equity of 12.38%. The joint action agency is able to finance its investment with tax-exempt debt at a debt cost of 4.5%. The IOU uses taxable debt for its debt financing. The ability to use tax-exempt financing for transmission investment is typically limited to the point where the tax-exempt utility is neutrally invested in transmission. However, the inability to use tax-exempt financing is not a deal killer for transmission investment. Even with the higher costing taxable financing, public power and G&T utilities can still earn a margin on their transmission investments.

In Example 2, the joint action agency uses a hypothetical capital structure to close the gap between the ATRR it earns and the ATRR earned by the IOU for the same investment amount made in the same transmission project. However, the gap is still substantial at 30.3%. This gap is driven by the following factors:

1. The IOU has a higher cost of debt than the joint action agency (5.50% vs. 4.50%)
2. The IOU still has a higher equity percentage in its capital structure than the joint action agency's hypothetical capital structure (55.00% vs. 50.00%)
3. The IOU pays income taxes and the joint action agency does not

Because the MISO transmission formula rate includes the recovery of income taxes and there is a difference between the IOU taxable debt costs and the joint action agency tax-exempt debt costs, there is not a hypothetical capital structure available to the joint action agency to fully close the gap between the two ATRRs. Even if the joint action agency applied a capital structure with 100% equity, the two ATRRs would not be equal. As a result, the transmission tariff paid by the joint action agency is growing faster than the transmission revenue received, even though both utilities are investing the same amount in the same transmission project. Due to the large forecasted investments in MISO, the desired neutral investment position for the joint action agency will slip farther away. Using a load ratio approach for calculating the neutral investment position will achieve a less and less effective hedge.

The "tariff paid = tariff revenue" framework is a much preferred method over the load ratio approach for calculating the neutral investment position. The tariff paid = tariff revenue approach provides a public power or G&T utility the opportunity to invest in substantially more transmission before reaching their neutral transmission investment position. In addition, this approach is directly designed to meet the hedging objective of offsetting future transmission rate increases.

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order to increase its transmission revenue received to offset these rate increases and achieve or maintain a neutral investment position in transmission, a public power or G&T utility in MISO will need to invest in transmission.

Second, the ATRRs earned for the same investment amount made in the same transmission project are different for different types of owners. Public power and G&Ts have significantly lower ATRRs than IOUs, even if they are granted a hypothetical capital structure. The table in the gray box on page 6 makes this point; it provides an example of an IOU and municipal joint action agency that jointly invest in a transmission project but have much different ATRRs.

Public Power and G&Ts are Attractive Partners for Transmission Investment

It is clear that returns associated with new transmission are very attractive; regionally cost shared transmission projects are the most coveted of all. These larger transmission projects are typically proposed and led by the larger IOUs in the region. If public power and G&T utilities commit to hedge the transmission tariffs paid by their ratepayers, they will need to also invest in these large transmission projects. In order to participate in the larger projects, public power and G&T utilities will likely need to partner with either IOUs or each other.

Fortunately, public power and G&T utilities have a strong case for their participation in these large transmission projects. As explained in the example, public power and G&T utilities have substantially lower ATRRs than IOUs. These lower ATRRs serve to lower the rate impact paid by ratepayers for these transmission projects. Depending on the cost recovery method assigned to the project, this lower rate impact can either benefit local ratepayers or all ratepayers across the MISO footprint. In light of the forecasted increases in transmission rates over the next ten years, any ability to lower the rates for a specific transmission project is a significant advantage to the project developers during the project approval process. As was also shown in Example 2 in the gray box on page 6, even with a hypothetical capital structure, the public power and G&T utilities will still have a lower ATRR than an IOU. The unquestionable conclusion is that public power and G&T utility participation in transmission is transmission rate reducing.

Public power and G&T utility participation in transmission is transmission rate reducing.

In addition to lowering transmission rates, participation by public power and G&T utilities provide a means to facilitate the approvals of state certificates of need, the routing of the line and other required permitting. Public power and G&T utilities are often in rural or far suburban areas and are closer to local stakeholders affected by the transmission projects. This familiarity assists in communication and outreach to stakeholders. If large transmission projects that are supposed to provide regional benefits are proposed and owned by a partnership of several regional utilities, then it is likely to reduce potential opposition during the development phase of the project. After all, one would not oppose a project in which one was a part owner.

Competition for Transmission Investment Will Increase with FERC Order 1000


Competition for these large transmission projects is likely to increase. When the FERC issued Order No. 1000 in July 2011 and then upheld it in May 2012, FERC established a new competitive environment for transmission ownership. In Order No. 1000, FERC seeks to promote competition in regional transmission planning by removing the right-of-first-refusal of incumbents for new transmission projects that are approved for regional cost sharing in a regional transmission plan. Existing, already-approved projects in the expansion plan or local projects within an incumbent's service territory will be unaffected, but all new cost shared projects will presumably be subject to being proposed by non-incumbent developers. This will level the playing field for non-incumbent utilities competing for these large transmission projects. MISO will release its proposed compliance plan for FERC Order No. 1000 in October 2012.

Transmission Investment as a Business – It is Time to Develop the Offensive Game Plan

This is a critical time for public power and G&T utilities that seek to actively manage the transmission rates paid by their ratepayers, because transmission rates will be dramatically increasing. Transmission investment, however, is not like investing in a mutual fund where you can invest steadily each month or year in order to neatly hedge transmission costs. Transmission projects provide individual, situational opportunities. Pass on this project proposal and the next line may not need to be built in the region for 15 years. Public power and

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They must view transmission investment "as a business" and become more oriented towards business development in order to compete for transmission investment.

G&T utilities are well positioned to invest in transmission to help offset looming transmission rate increases, but they will have to go on the “offense.” They must view transmission investment “as a business” and become more oriented towards business development in order to compete for transmission investment with both incumbent and non-incumbent transmission developers in the post Order No. 1000 environment. 

Jim Pardikes

jpardikes@mcr-group.com

Direct: 847.504.2549

Jim is a Vice President at MCR leading the Transmission Strategy and Capital Planning Practice. Jim’s practice area serves Municipal Joint Action Agencies, G&Ts, Municipals and IOU clients. His 25 years consulting experience to utilities includes transmission strategy, capital project evaluation, wholesale power marketing and strategic planning.

Ron Kennedy

rkennedy@mcr-group.com

Ron is a Manager with MCR. His experience includes analysis of transmission investments and optimal cost recovery in a RTO, including the development of cost data for formula rates. Ron has conducted numerous analyses for clients to evaluate the costs and benefits of becoming an RTO Transmission Owner and has supported numerous incentive rate filings at FERC.

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Tel: 847.562.0066

Fax: 847.562.0077

155 N. Pfingsten Rd., Suite 155
Deerfield, IL 60015