



Generator Contributions to Transmission Expansion

OVERVIEW

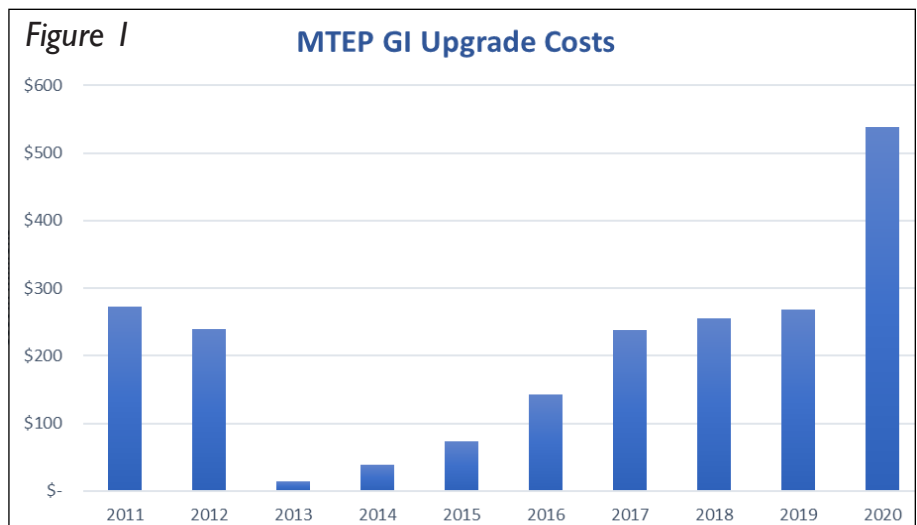
A portfolio evolution toward cleaner electricity production is currently underway in the United States and in the MISO footprint. To bring this new generation online, it is important to ensure that the transmission grid can operate reliably and deliver the power from these new generators. History has shown that consumers benefit significantly from transmission built to reduce congestion that results in higher energy prices, and to enable access to low cost generation resources.¹ As MISO, the Organization of MISO States, the region's utilities and other stakeholders engage in discussions around long range transmission planning to support this portfolio shift, generators are open to discussing new comprehensive cost allocation approaches that fairly charge them for the benefits they receive from regional grid expansion, and that compensate them for their financial contributions to this expansion.

MISO's Generator Interconnection (GI) study process identifies needed network transmission upgrades for new generators to reliably join the MISO regional grid. Network upgrades are in addition to the generator tie lines that connect the generator from its location to the bulk electric system, and these network upgrades contribute toward a more robust and resilient transmission grid. MISO's MTEP long range transmission process also identifies upgrades that support utility plans for resource expansion and the evolution of the generation mix.

Appropriate allocation of the cost of transmission upgrades is intended to ensure that those who benefit pay their share. Generally, GI network upgrades are paid for by generators as described in more detail below. Generators are willing to pay for transmission needed to support their interconnection. However, given the obvious interplay between the interconnection process and the transmission expansion planning (MTEP) process, a comprehensive consideration of cost allocation of network upgrades identified in both processes would be appropriate.

Costs Paid by Generators Today

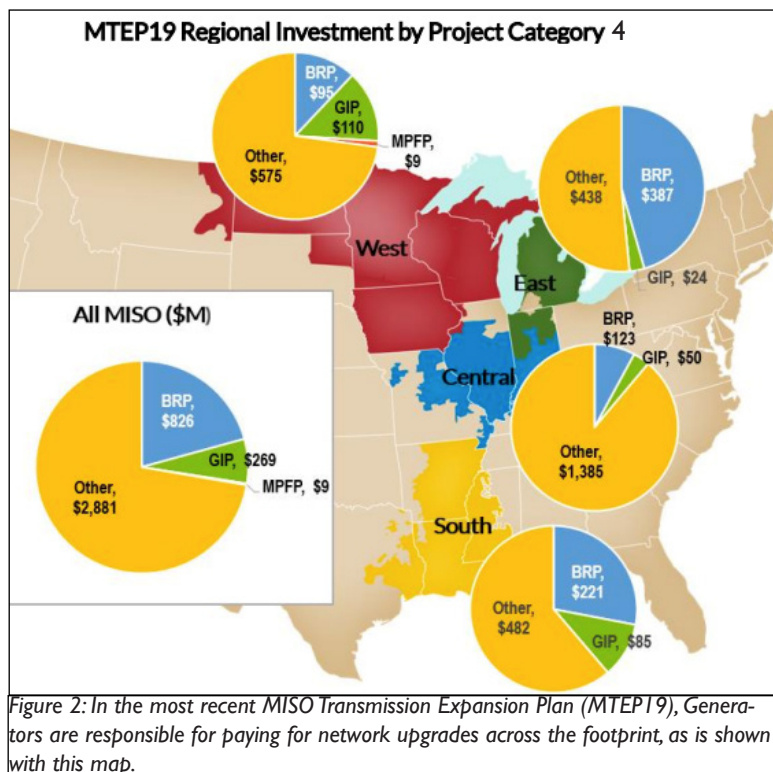
Generators have always paid, without controversy, 100% for tie lines that connect their generators to the regional grid. Since, mid-2009, generators have been assigned 100% of the costs for most network upgrades required for their interconnection. Prior to that time, generators paid 50% of these costs and load paid 50%. Today, only when the upgrades are at the 345kV voltage or above, does load pay 10% of the costs of the upgrades.² The costs of interconnection upgrades as reported in the MISO Transmission Expansion Plan annual reports are shown for the past 10 years in Figure 1³.



¹ ERCOT's Competitive Renewable Energy Zones (CREZ) projects, SPP's Priority and Balanced Portfolio projects, and MISO's Multi Value Projects produced benefits for consumers 2.6 to 3.9 times their costs.

² There are two Transmission Owners (TOs), ITC and ATC, that still refund interconnection customers for costs paid for network upgrades in their footprints when those generators are selling to MISO loads. ATC has filed with FERC to move to MISO's standard GI upgrade cost allocation.

³ This graph was generated using data from MTEP reports but does not consider the fact that some TOs, instead of generators, pay for these upgrades as noted in footnote 2. The data for MTEP20 comes from a preliminary presentation and is not final.



Today's Challenge for New Generators and Utilities

Since the large transmission buildout of Multi-Value Projects (MVP) was approved in 2011, a number of generators have been able to interconnect using this new transmission capacity. But more recently, as this capacity has become fully subscribed, costs have been increasing significantly for new generators as studies identify large backbone projects providing regional benefits. For example, the costs for required 345kV upgrades for generators in the February 2017 – West interconnection study cycle averaged a cost of \$925,000/MW for projects whose capital costs average near \$1.5 million/MW of installed capacity. The excessive cost of these recently identified higher voltage upgrades has resulted in many generators withdrawing proposed projects, including a number that had signed Power Purchase contracts (PPAs) with utilities. Cancelled PPAs also impact load, delay IRP implementation, and ultimately drive consumer costs up. While this phenomenon has been occurring mostly in the West subregion of MISO, it is beginning to occur in the South as well and will likely spread to other parts of the footprint soon.⁵

Going Forward

A comprehensive approach to long range transmission planning and generation interconnection planning that considers the broad range of transmission needs and beneficiaries at the same time would provide the best opportunity for efficient grid expansion to support the generation shift underway across the MISO footprint. But planning for transmission that meets multiple needs and has multiple beneficiaries raises reasonable questions about whether MISO's current cost allocation tariff provides the proper tools to allocate costs appropriately. Ultimately consumers will pay for the costs of transmission to deliver energy to their homes and businesses. The reason to charge generators for transmission additions needed to reliably connect to the grid is to ensure that the utility customers purchasing from those generators are appropriately charged. And it remains important that GI customers and utilities continue to receive appropriate price signals regarding the most cost effective locations to interconnect at the same time we work to ensure that the costs of building out of the regional grid are fairly shared among the cost-causers and beneficiaries. Generators have long been funding network upgrades to the MISO transmission grid and continue to be willing to pay a reasonable portion of transmission costs. They are prepared to participate in discussions of how to fairly allocate the costs of backbone transmission reinforcements that offer a range of benefits to load and also enable the integration of new lower cost resources to support specific policies and goals of states and utilities.

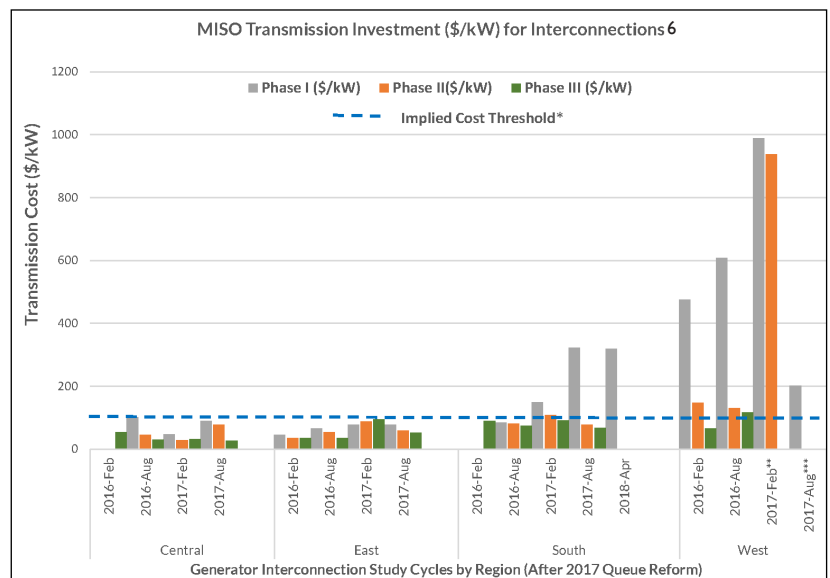


Figure 3: Generators have been paying and continue to be willing to pay, a reasonable share of transmission costs. Historically, the "Implied Cost Threshold" beyond which new generators are often no longer financially viable is shown on this graphic at an average of about \$100,000 per megawatt of installed capacity.⁷

⁴ From MTEP19 Report, page 17.

⁵ In addition to the MISO interconnection costs there can also be Affected System Study costs that are significant. Work is needed to address interconnection cost allocation on the seams as well, particularly between MISO and SPP.

⁶ MISO Generator Interconnection Update slide 4.

⁷ It is important to note that each project is individual, and some projects can still be developed with higher interconnection costs than this, but it serves as a reasonable average to date.