

# SPP's Wind and Westward Expansion

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**Data Sources Used in This Publication**  
Southwest Power Pool

To discover more about the data sources used, [click here](#).

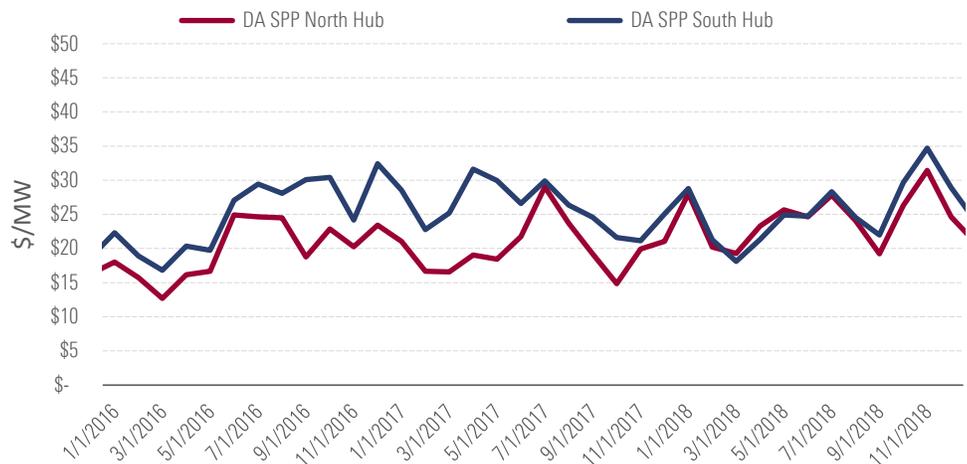
### SPP Congestion

Southwest Power Pool congestion has for years resulted in a South Hub premium over North Hub and a discount on the western interface that backs up against the direct current or DC ties that trap the plentiful wind generation in the ISO. In 2018, while the East-West price differential increased, the North-South spread converged. This change is reflected in the changing fuel mix for the region and where those resources are located. Going forward, SPP may be able to better manage its western congestion by incorporating the Mountain West Transmission Group's footprint, which is currently under consideration. This note looks at congestion on SPP's western front and the potential benefit of expanding the market's footprint.

### North vs. South

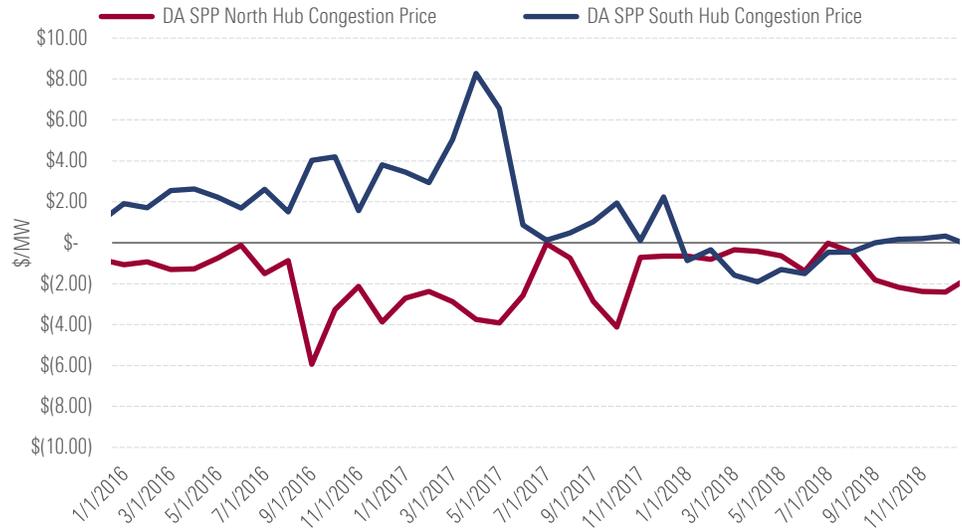
This past year saw the North and South Hub LMPs converge more so than any other point in recent years, (Exhibit 1) primarily driven by changes in congestion pricing. As shown in Exhibit 2, the South Hub congestion premium has collapsed to near zero, and the North Hub congestion discount has appreciated the same amount. This convergence has occurred because of the ISOs' ability to manage delivery on the grid more easily.

**Exhibit 1** SPP North and South Hub Monthly LMP Price (2016-18)



Source: SPP, Morningstar.

**Exhibit 2** SPP North and South Hub Monthly Congestion Price (2016-18)

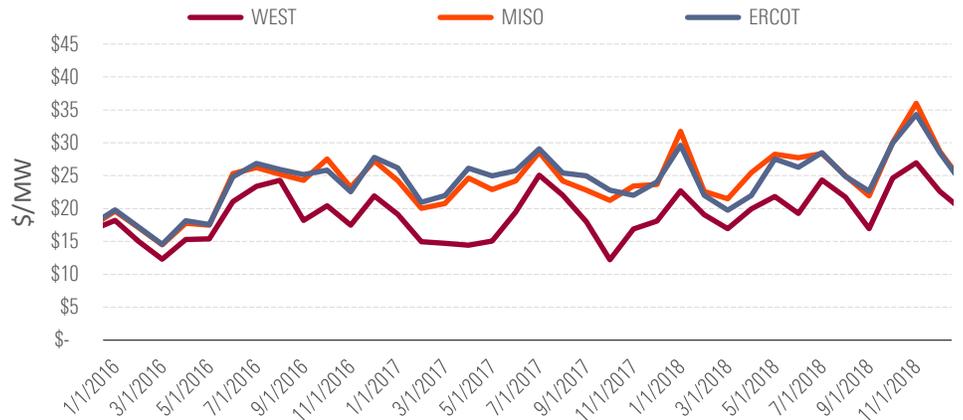


Source: SPP, Morningstar.

**East vs. West**

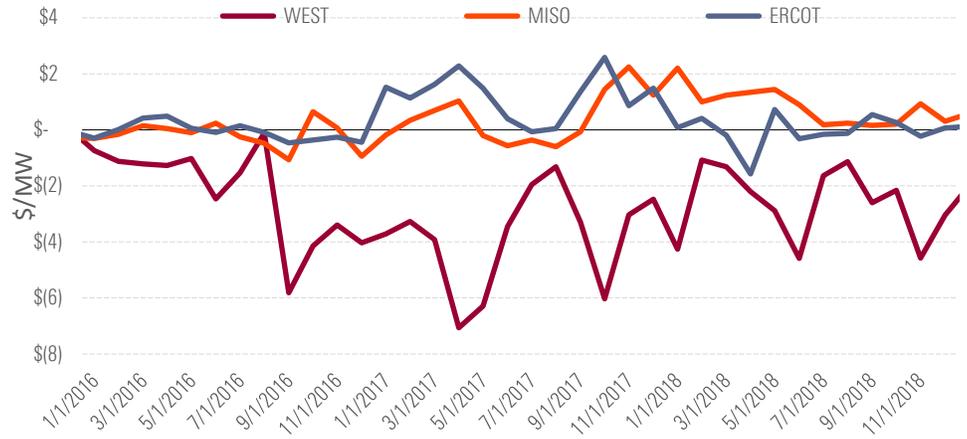
While the North- South congestion spread has narrowed, the East - West is as wide as ever, as can be seen in Exhibit 3. While the southern and eastern borders with ERCOT and MISO are more in line with the rest of the ISO, the western portion of the ISO has seen increased congestion pressure (Exhibit 4). This negative congestion price remains strong with the western tie pricing at a persistent discount to the rest of the ISO LMPs and increasing recently to one of the worst levels ever seen. This is not all that surprising, given the makeup and location of the generation in the ISO.

**Exhibit 3** SPP Tie LMP Prices (2016-18)



Source: SPP, Morningstar.

**Exhibit 4 SPP Tie Congestion Prices (2016-18)**

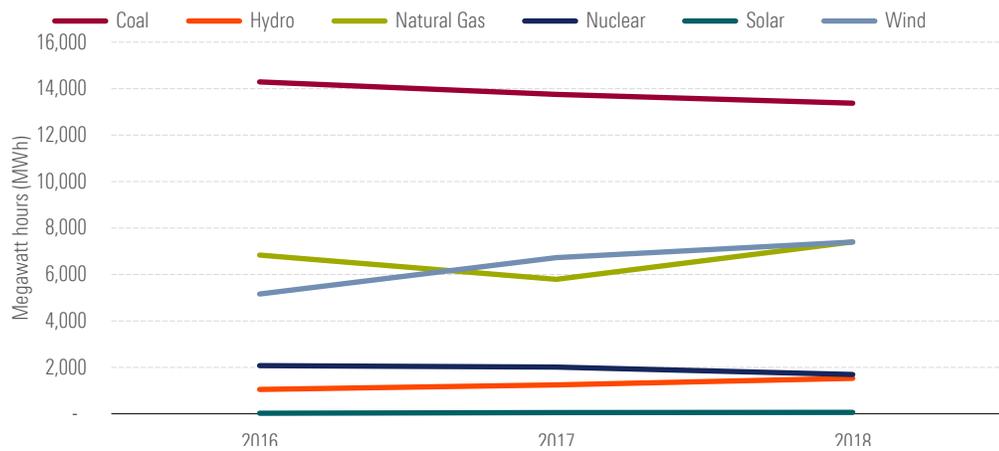


Source: SPP, Morningstar

**More Wind and Less of Everything Else**

Looking at Exhibit 5, the fuel mix over the past few years reflects falling coal and nuclear generation, which follows the larger U.S. trend. Wind generation is one of the few fuel sources that has shown a year-over-year increase. The southwest corner of SPP's footprint is where most of the new wind generation has been added. This area sits right up against the DC ties that separate the eastern and western U.S. interconnects, holding the generation against a wall with nowhere to go. As a result of added wind capacity that means SPP finds itself at times needing to curtail that resource, which creates negative LMP prices and pulls down the western tie LMPs.

**Exhibit 5 SPP Fuel Mix (2016-18)**



Source: SNL, Morningstar

**Westward Expansion**

SPP is looking to bring in the Mountain West Transmission Group to expand its footprint west. This will be an interesting addition for the ISO, as it would expand over several DC ties and potentially give the ISO room to maneuver when addressing its east-versus-west imbalance by internalizing a couple of key DC ties. Currently, the DC ties require a market participant to move power over the line. If there are no takers, that leaves the ISO with excess generation on its western edge. Such a shift in the western seam may be crucial for the ISO in its future balance if the heavy-sided wind generation continues growing as a larger portion of the mix and drives further issues on its western border.

**Possible Future**

SPP in 2018 experienced a far better match in managing congestion across much of its geography by reducing North versus South congestion. SPP still struggles with its western edge because of the physical limitations of being pushed up against the edge of the eastern interconnect. Additional wind generation alongside a seam that is isolated drives down prices. The potential to move its territory west may provide a new conduit to balance the ISO's oddly balanced generation mix. ■■

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