

Market Monitoring Unit

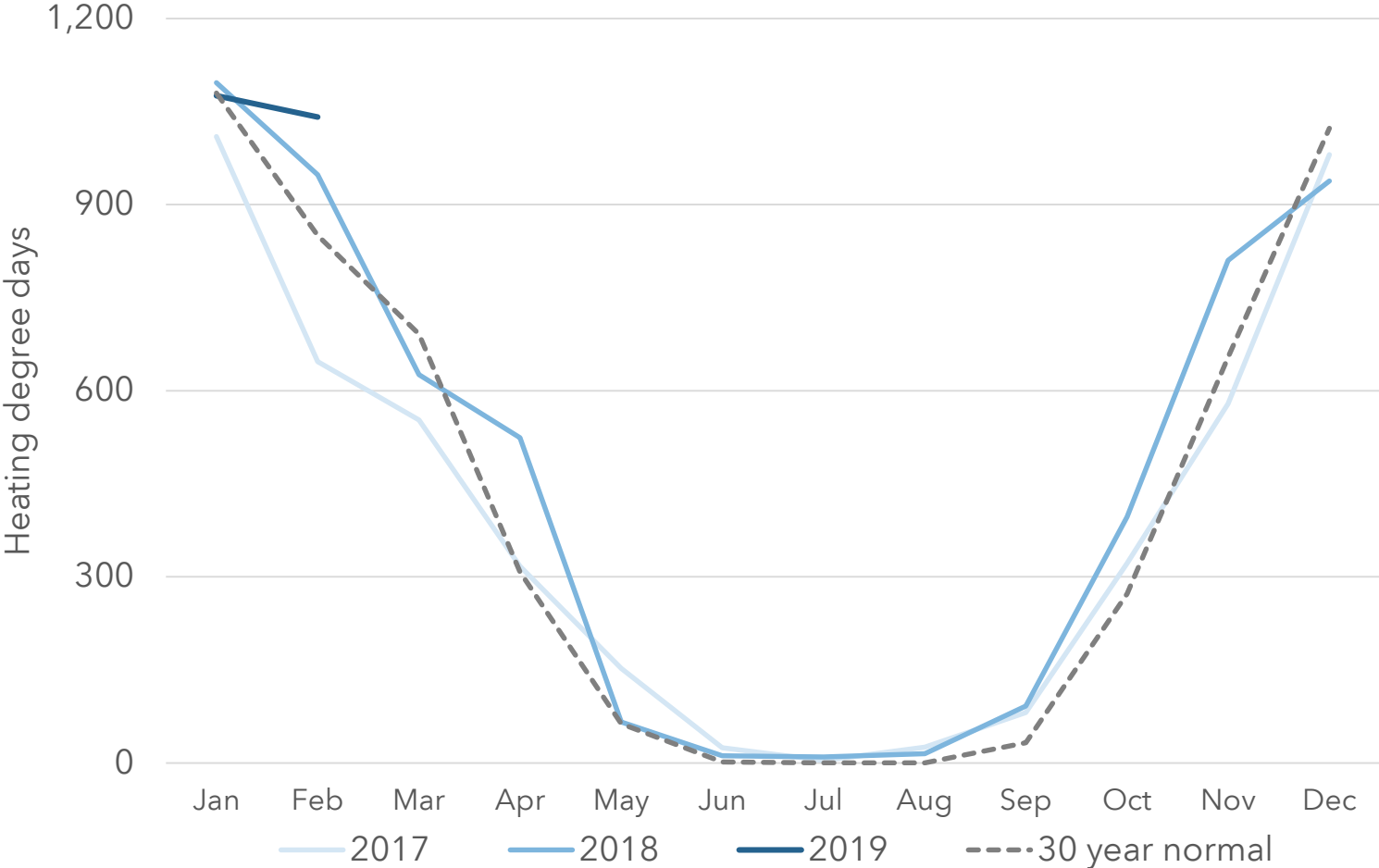
Winter 2019

Quarterly Report

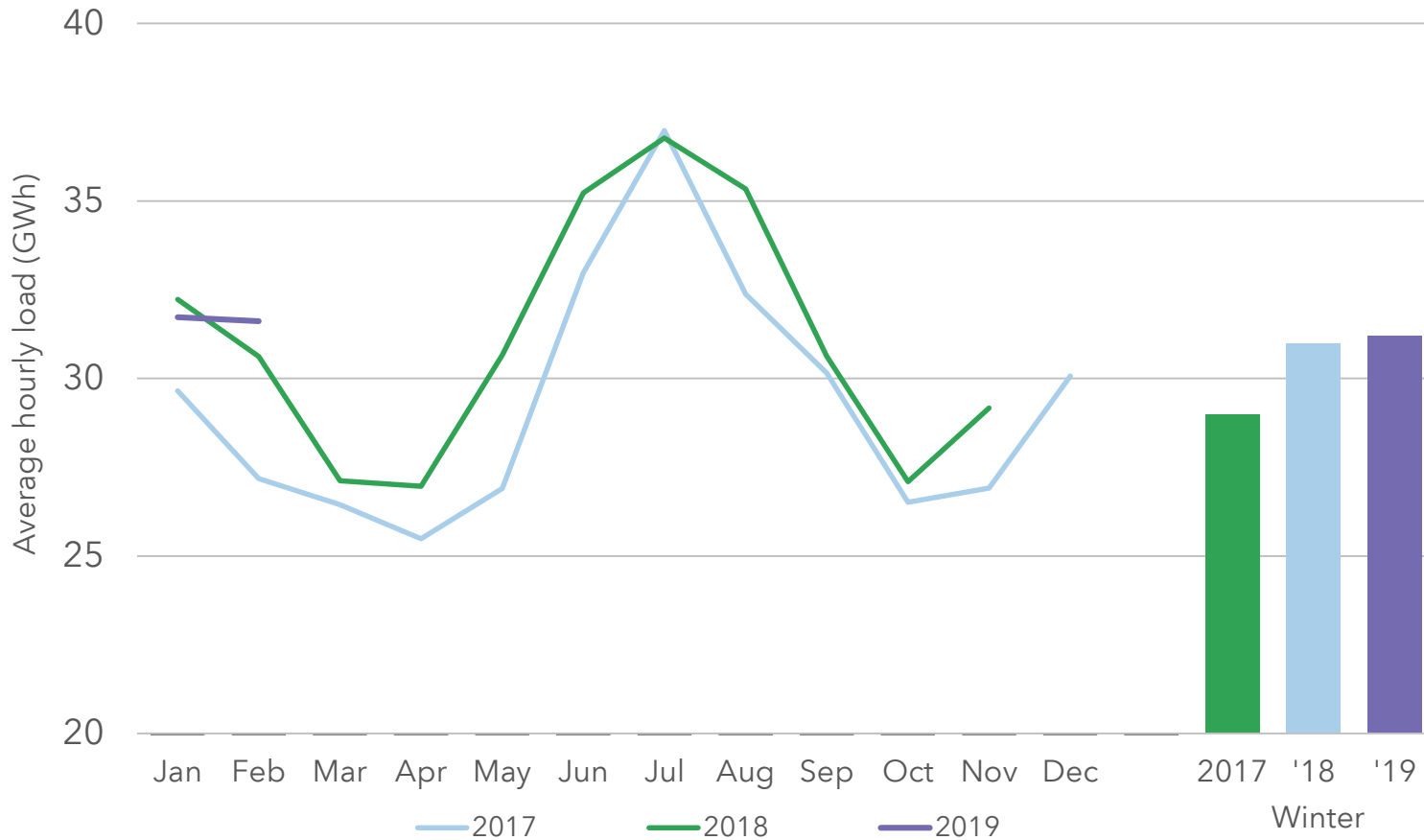
Winter 2019 highlights

- Load up slightly
- Increase in day-ahead price; decrease in real-time price
- Coal generation continued to decline; wind continued to grow
- Winter weather events

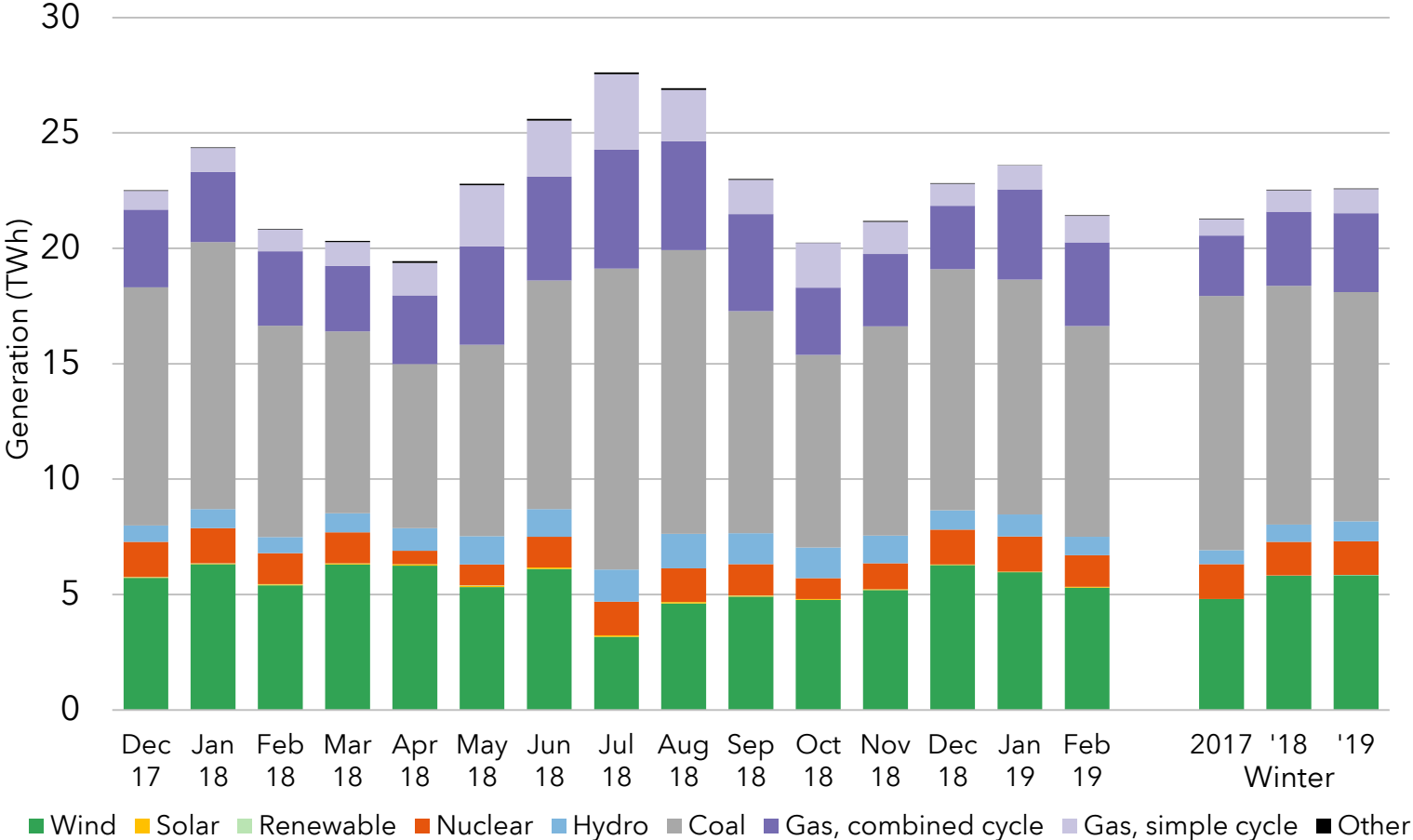
Lower than average temperatures



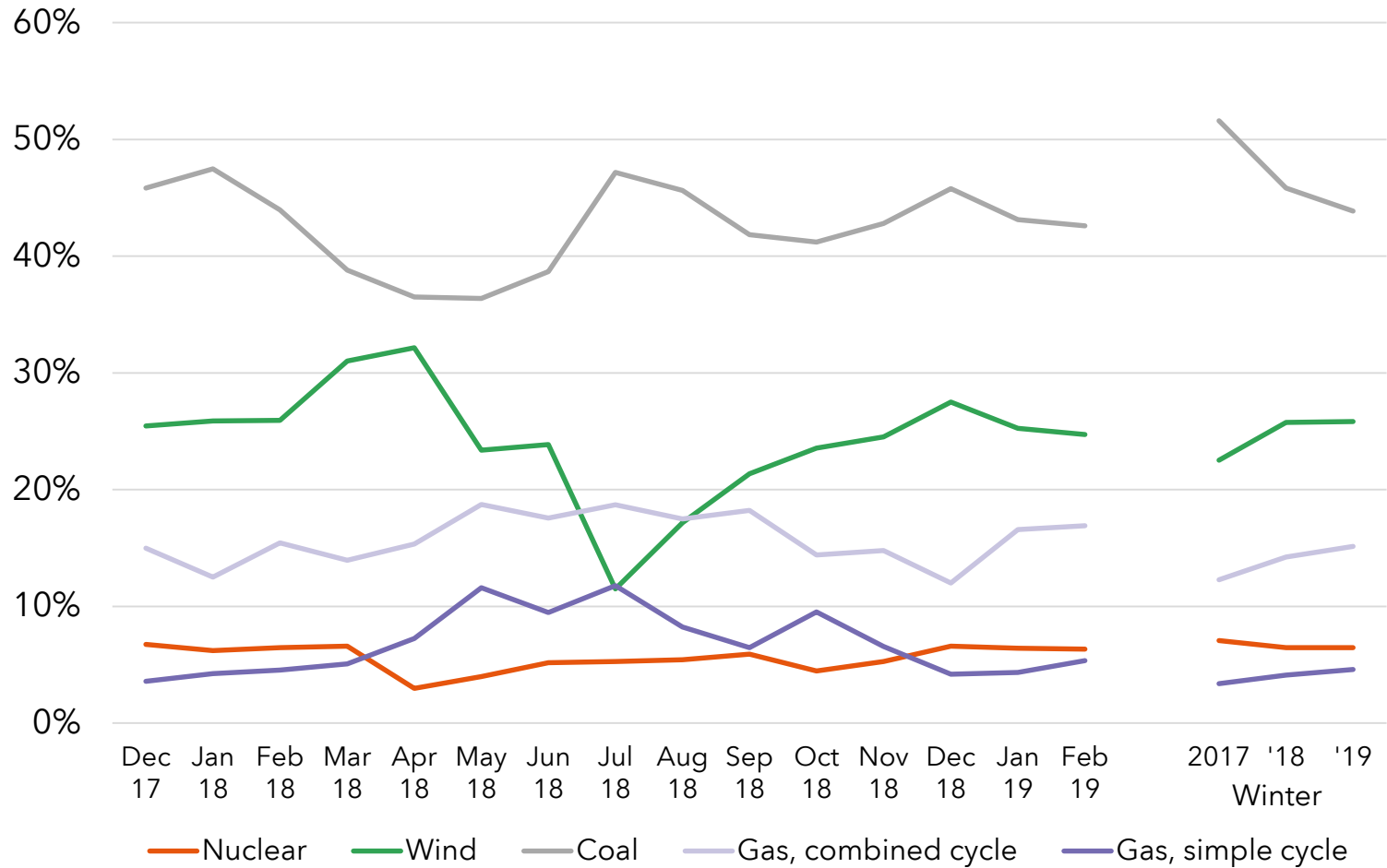
Overall load increased



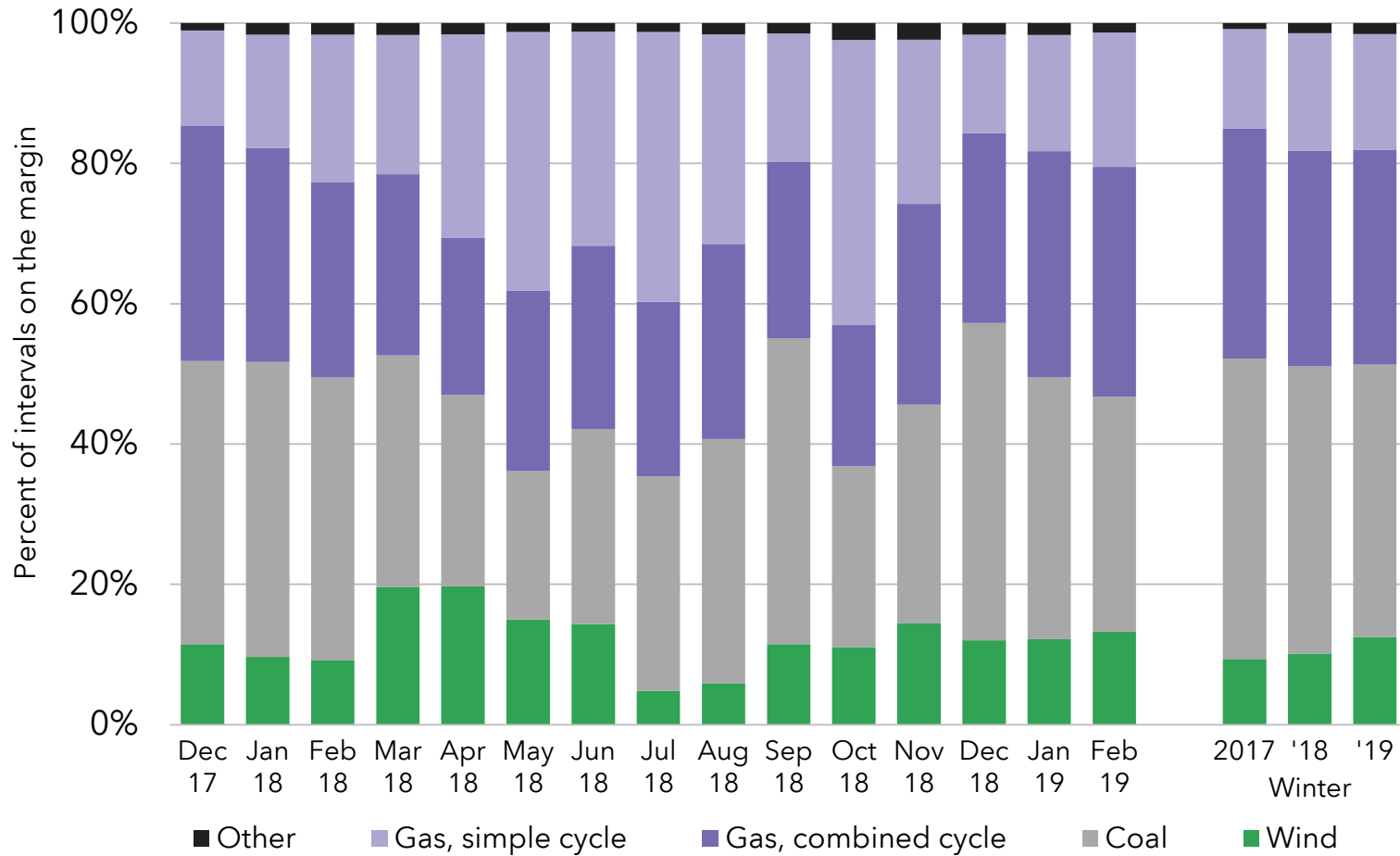
Generation increased slightly



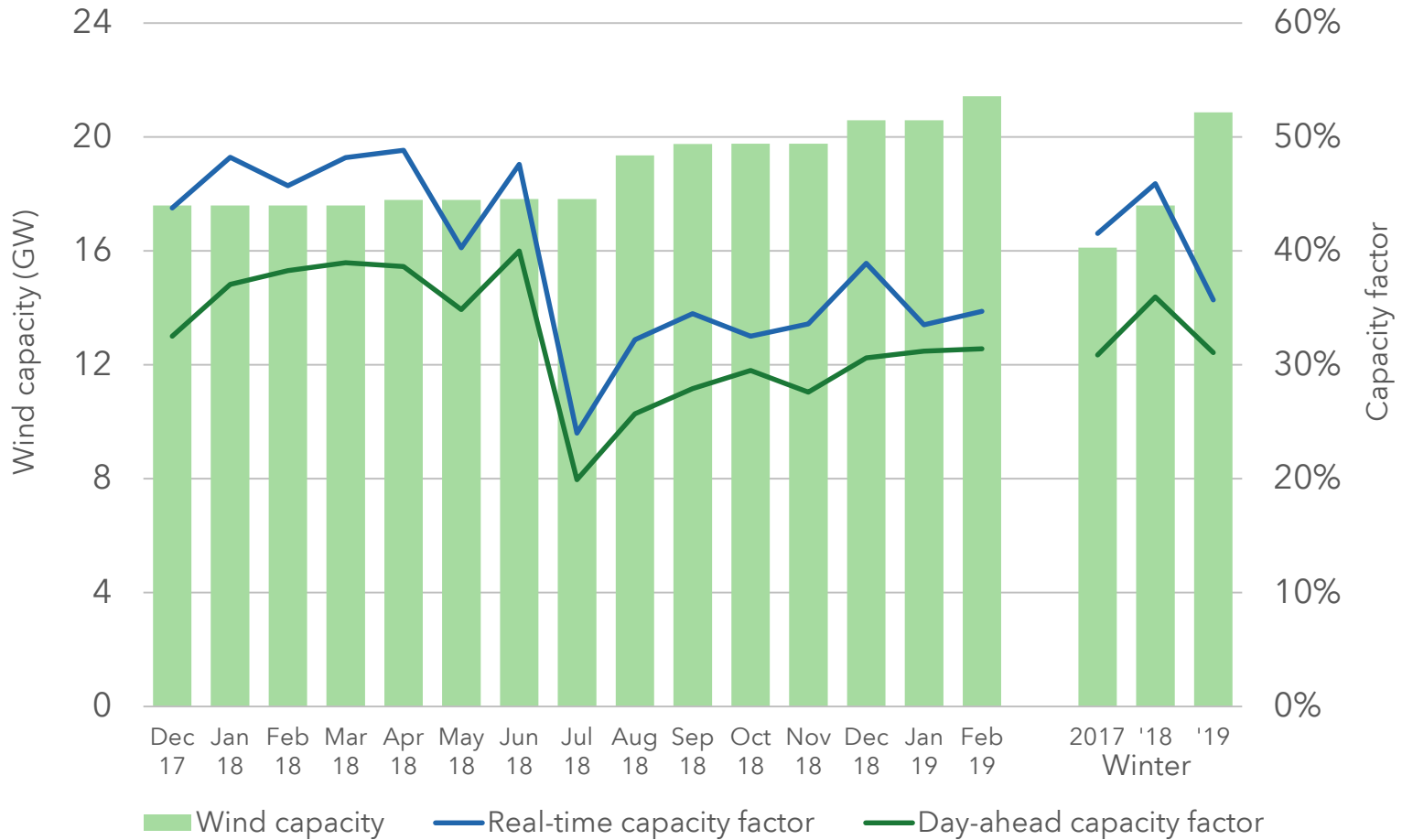
Coal generation declining



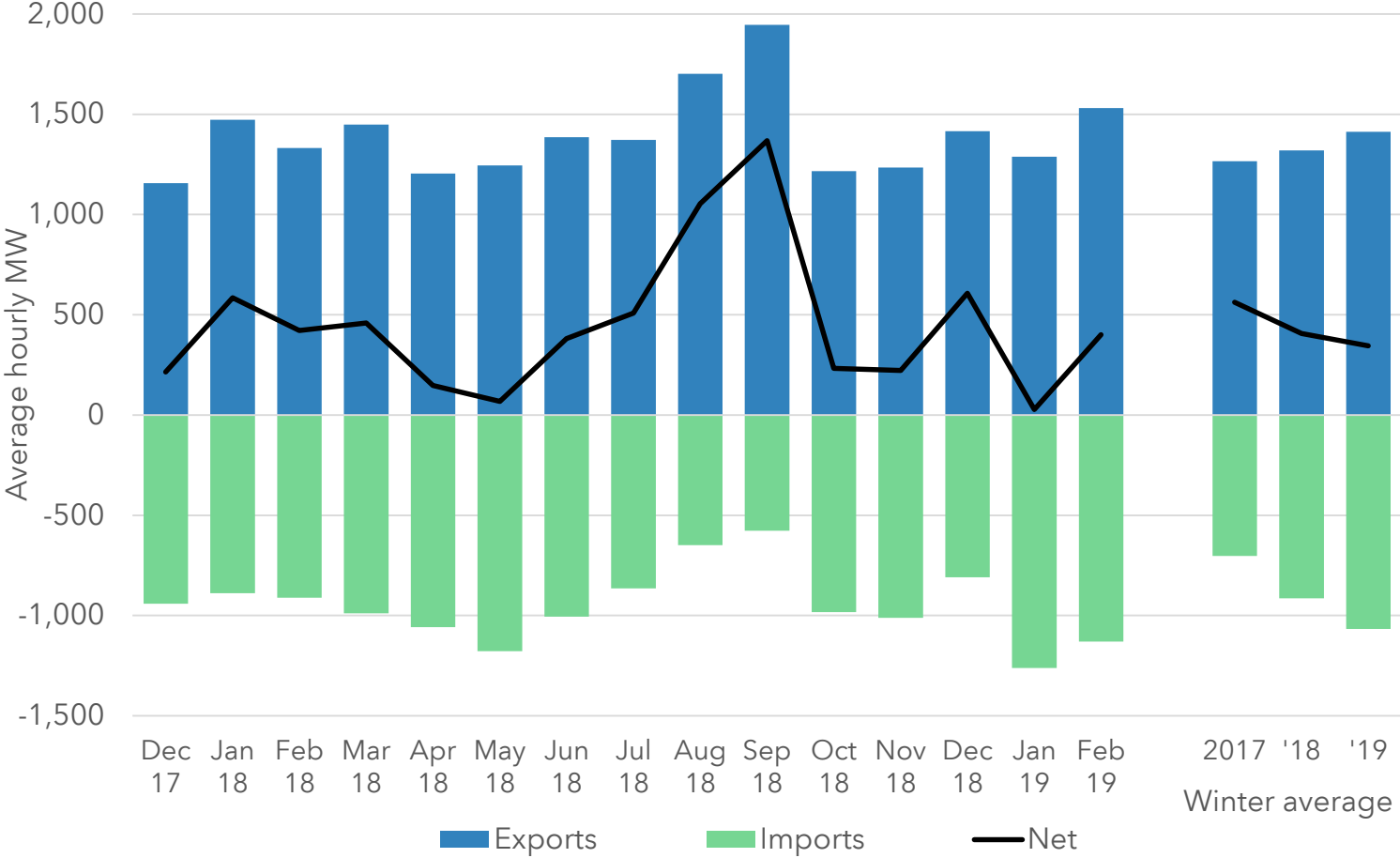
Wind setting prices more frequently in real-time



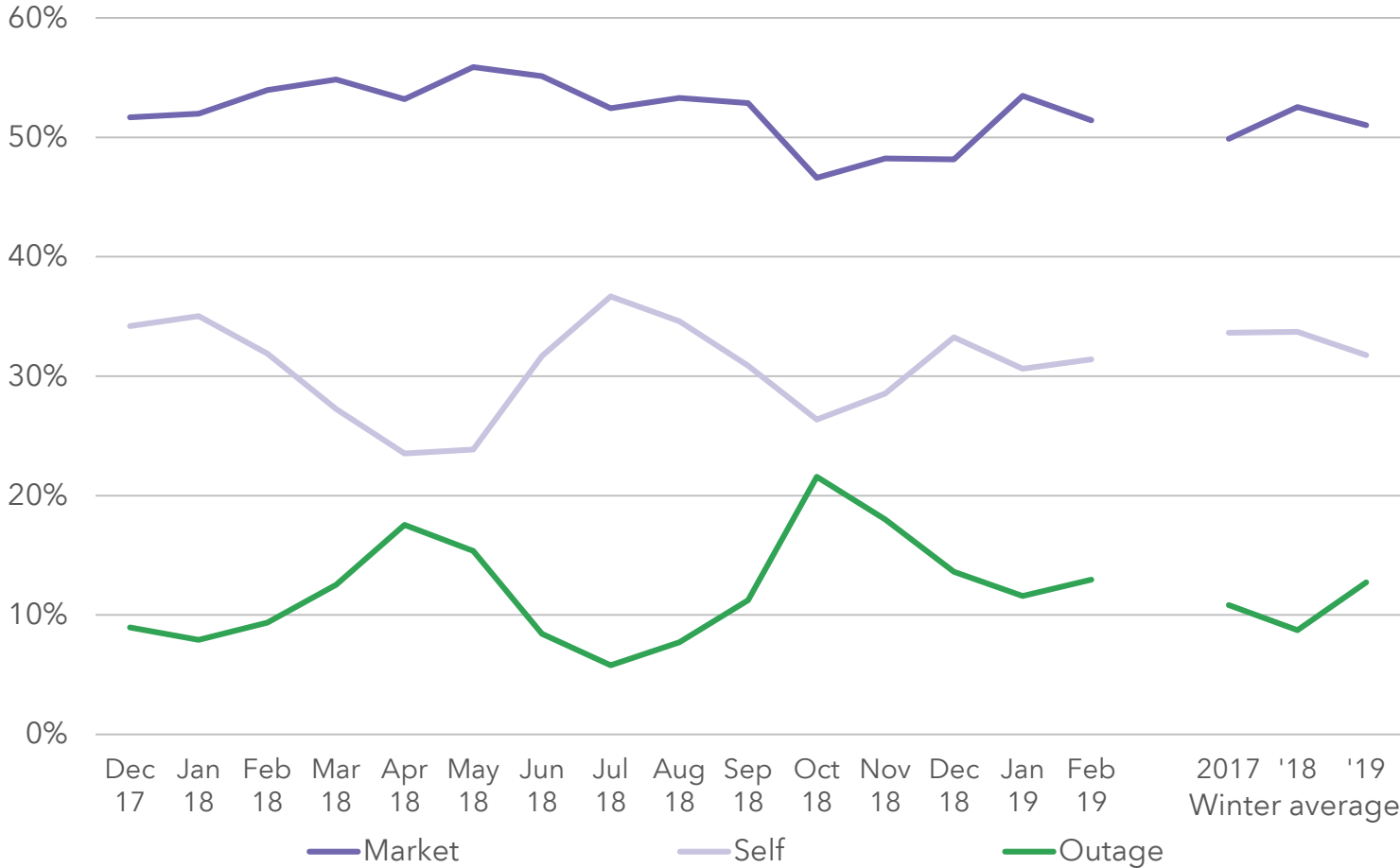
Wind capacity continues to grow



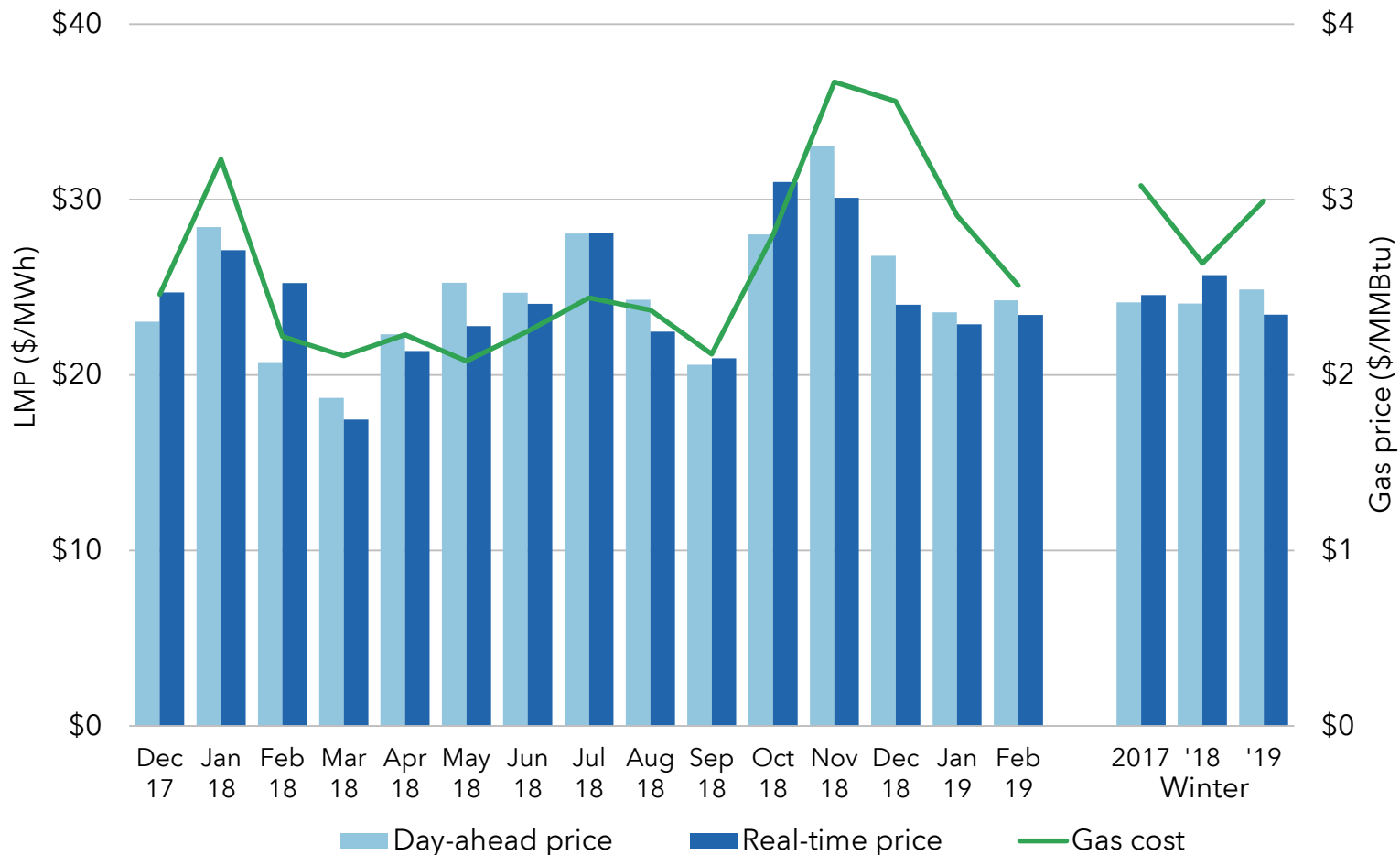
Imports have increased



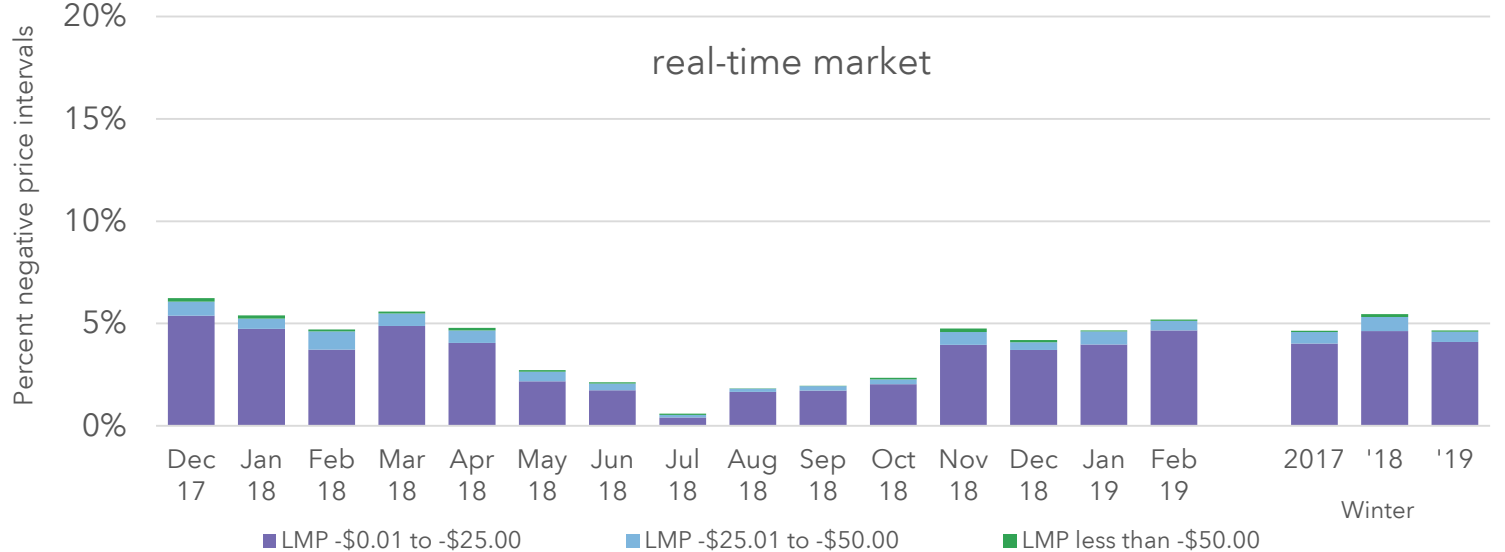
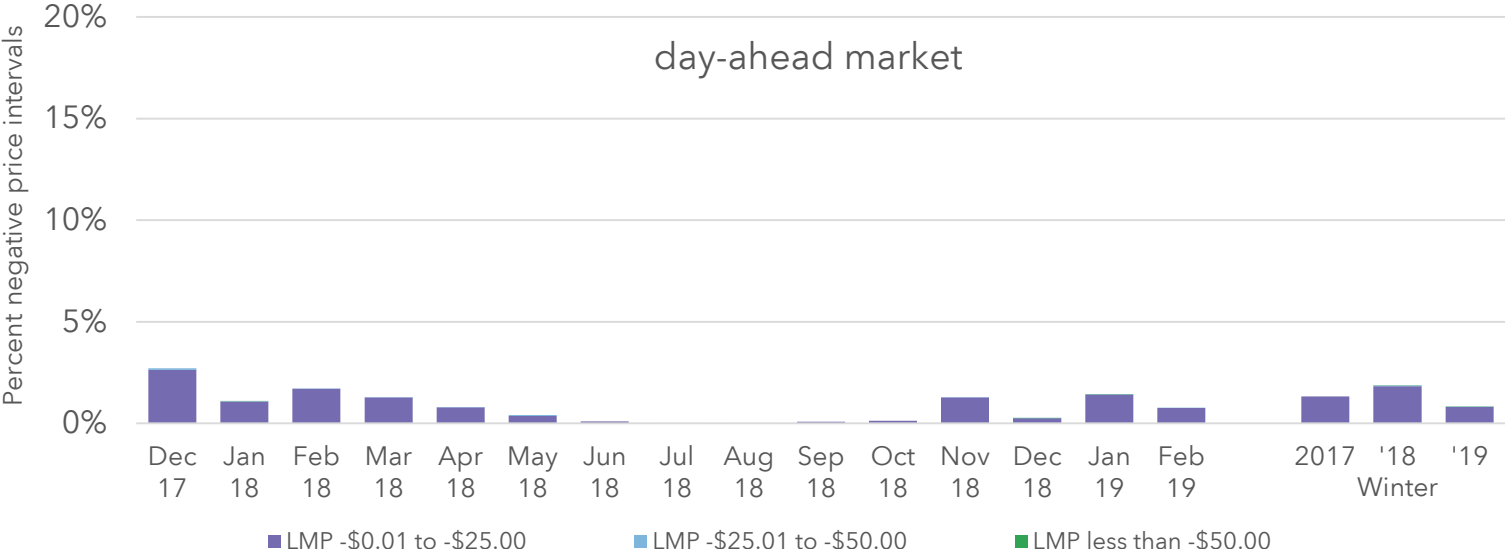
Day-ahead commitment status



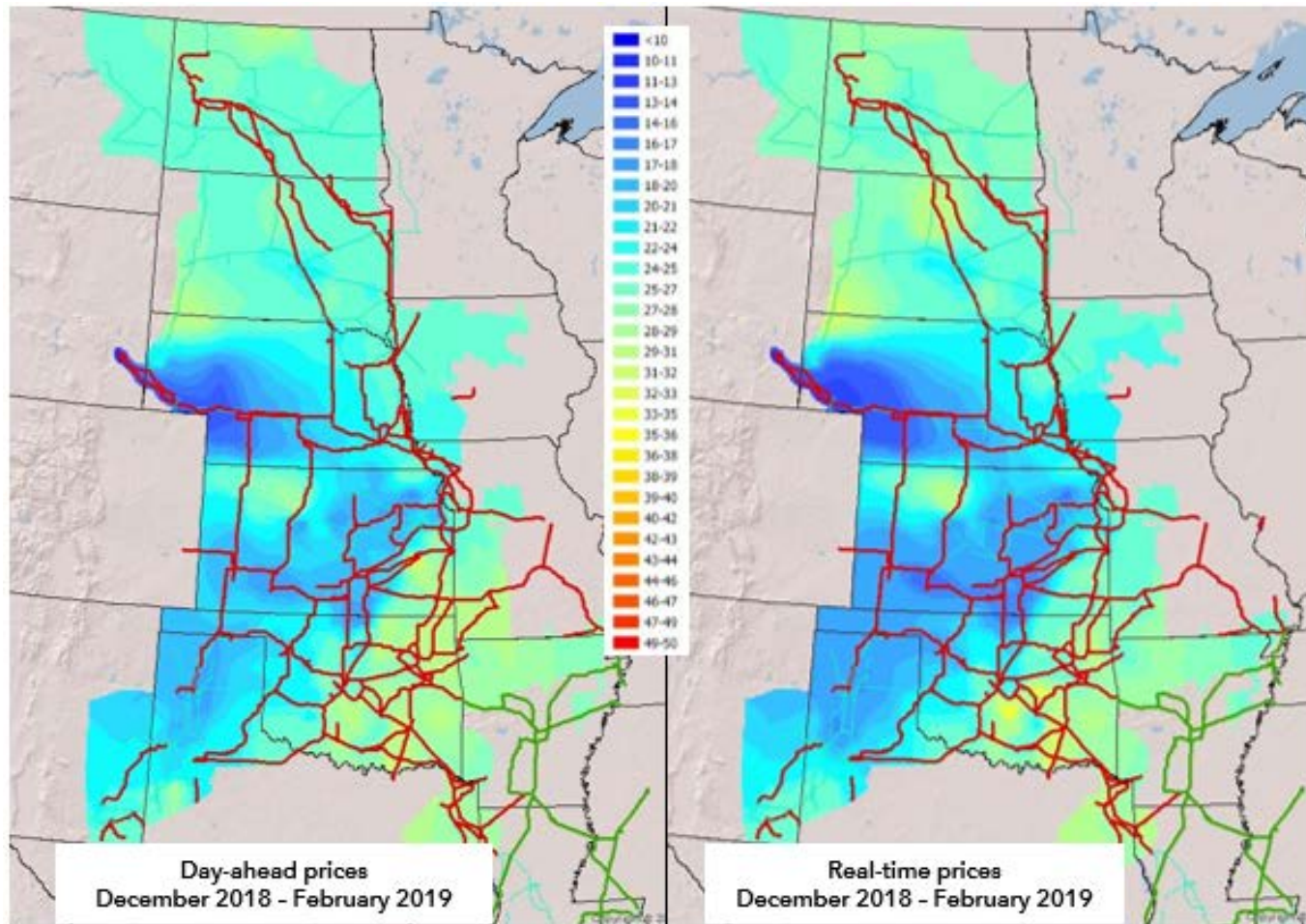
Day-ahead prices climbed, while real-time prices declined



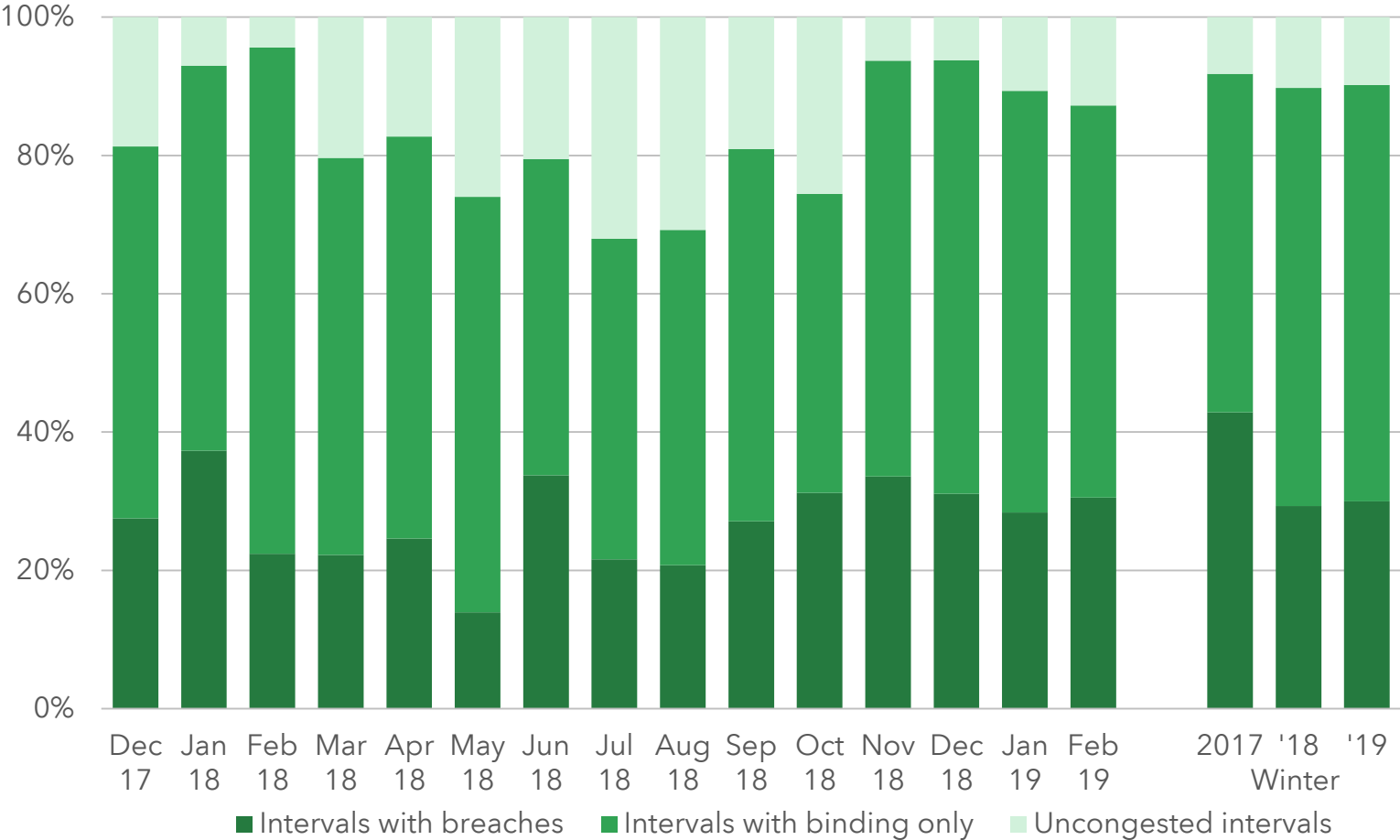
Negative price intervals declined



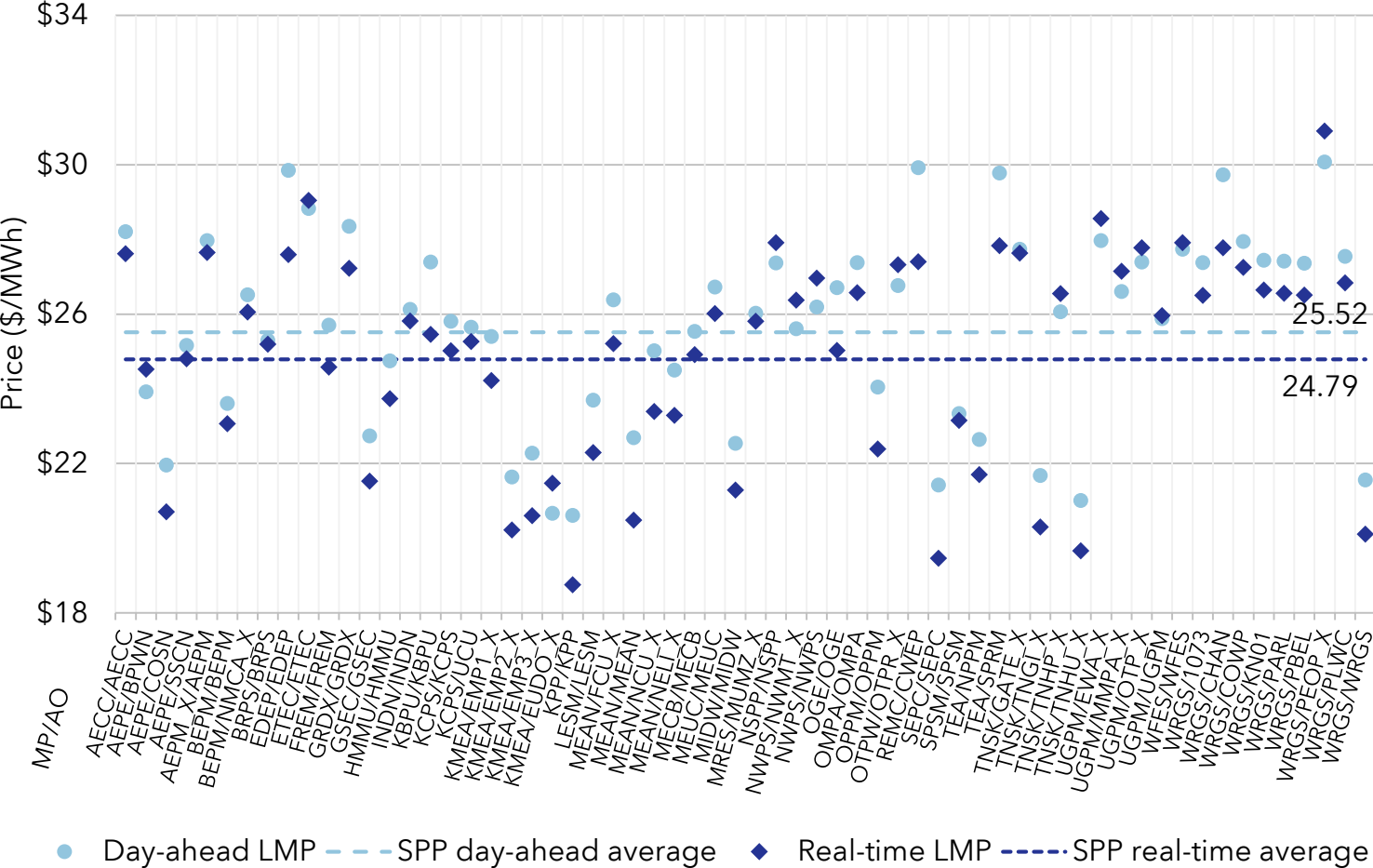
Congestion pattern similar between markets



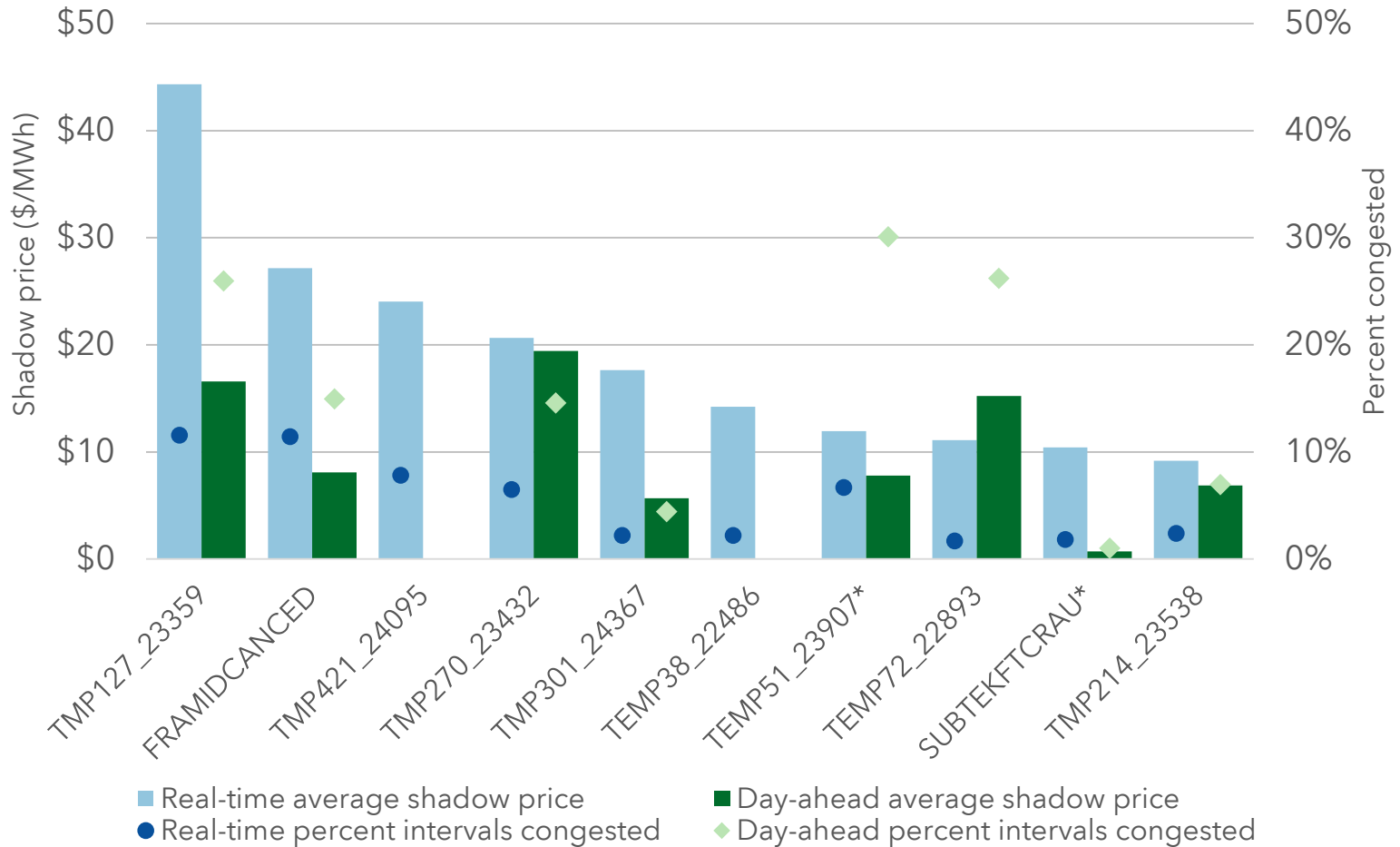
Breached intervals remained low



Prices vary across footprint

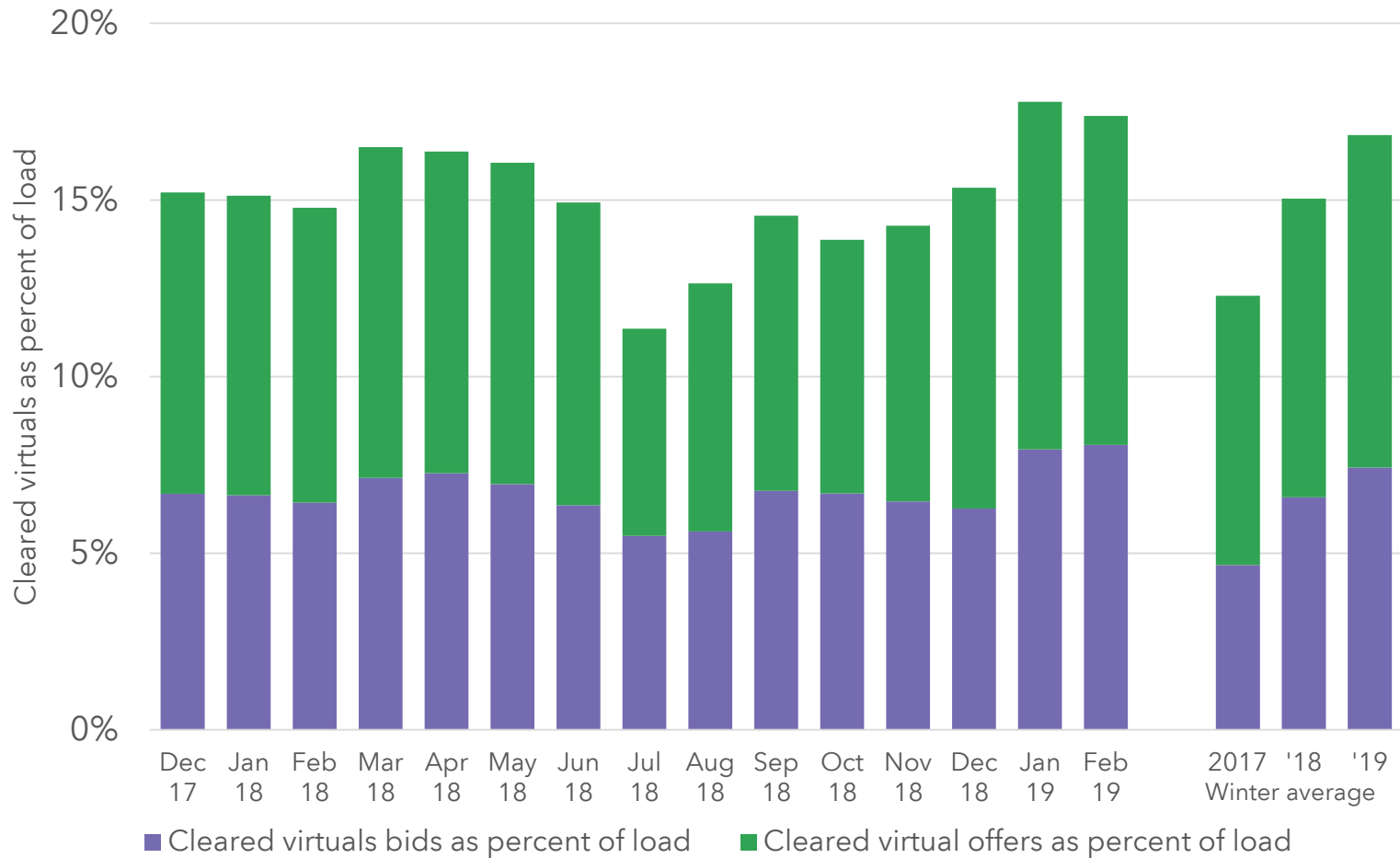


Congestion has shifted

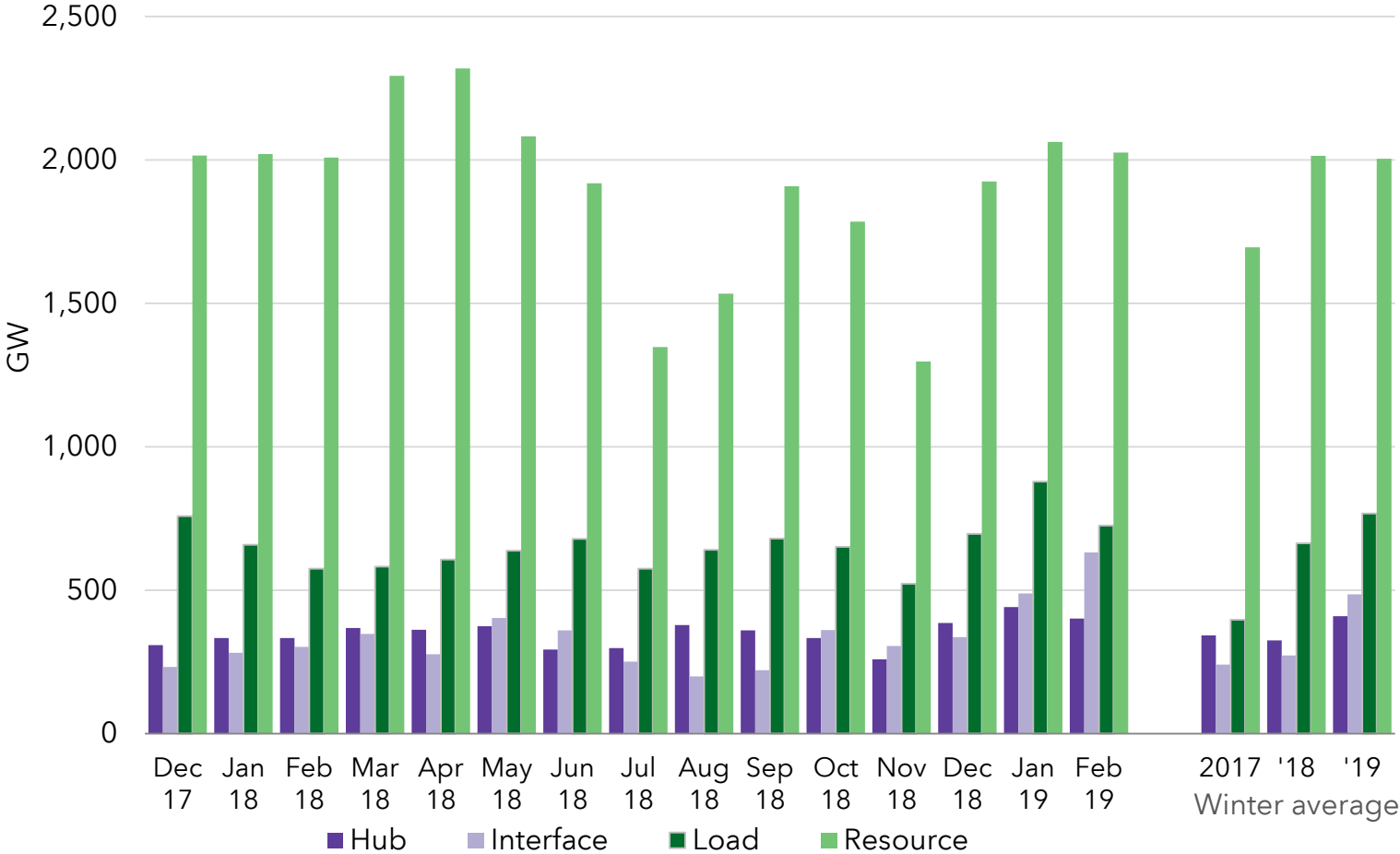


* SPP market-to-market

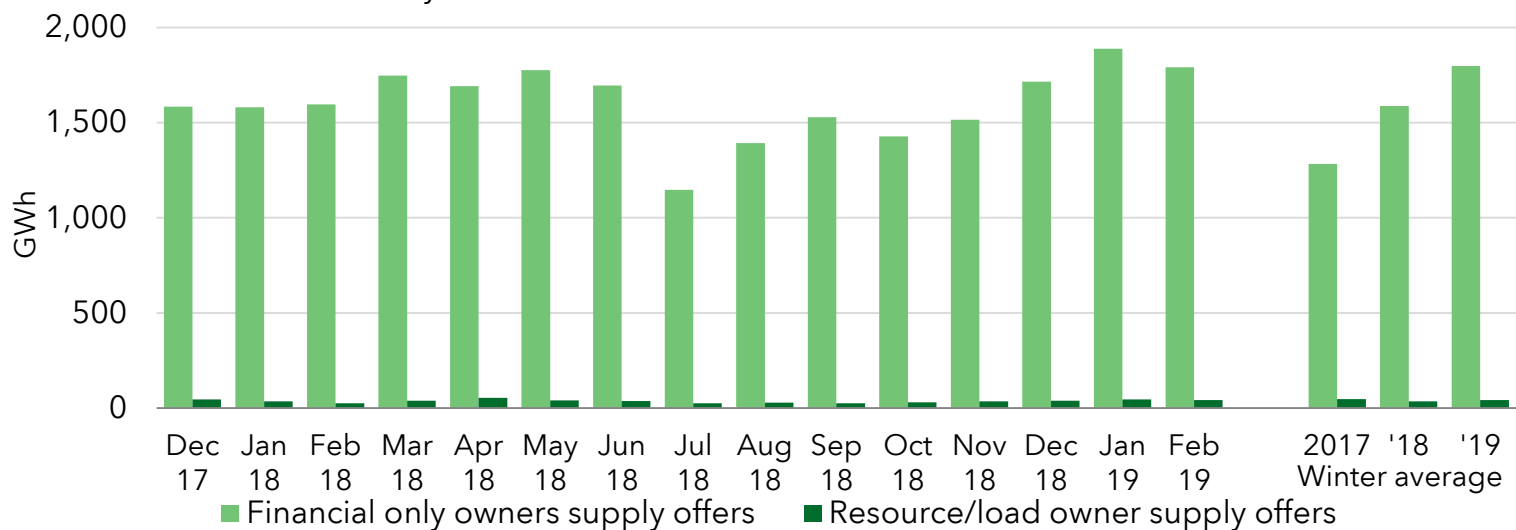
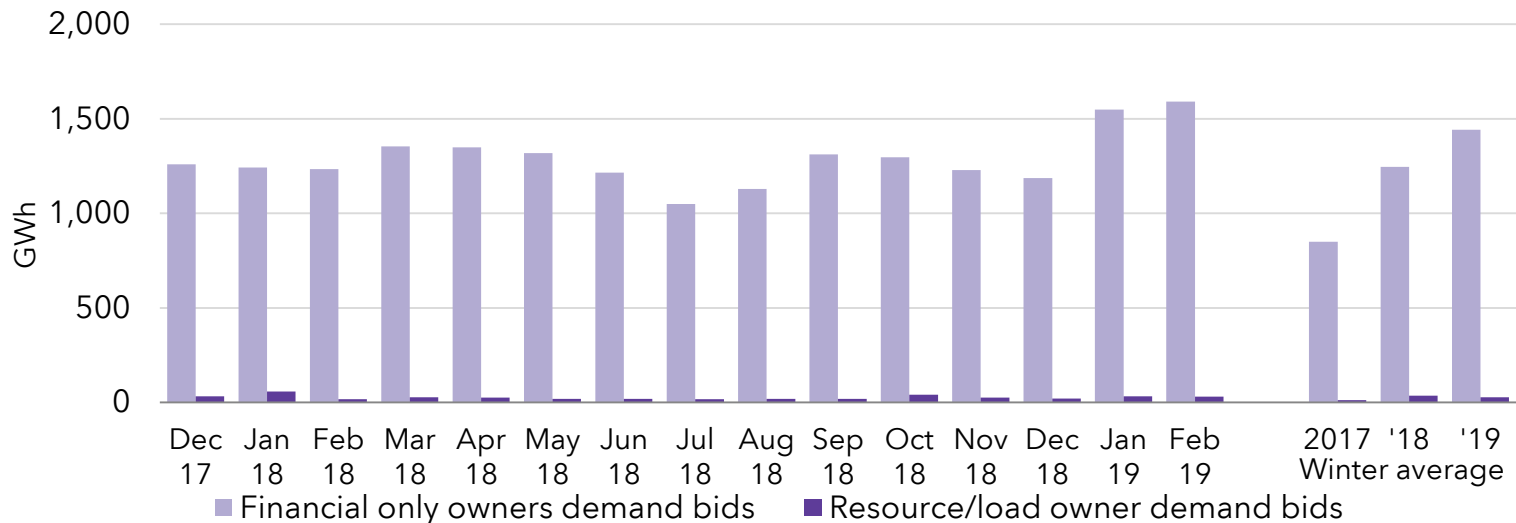
Virtual transactions continue to grow



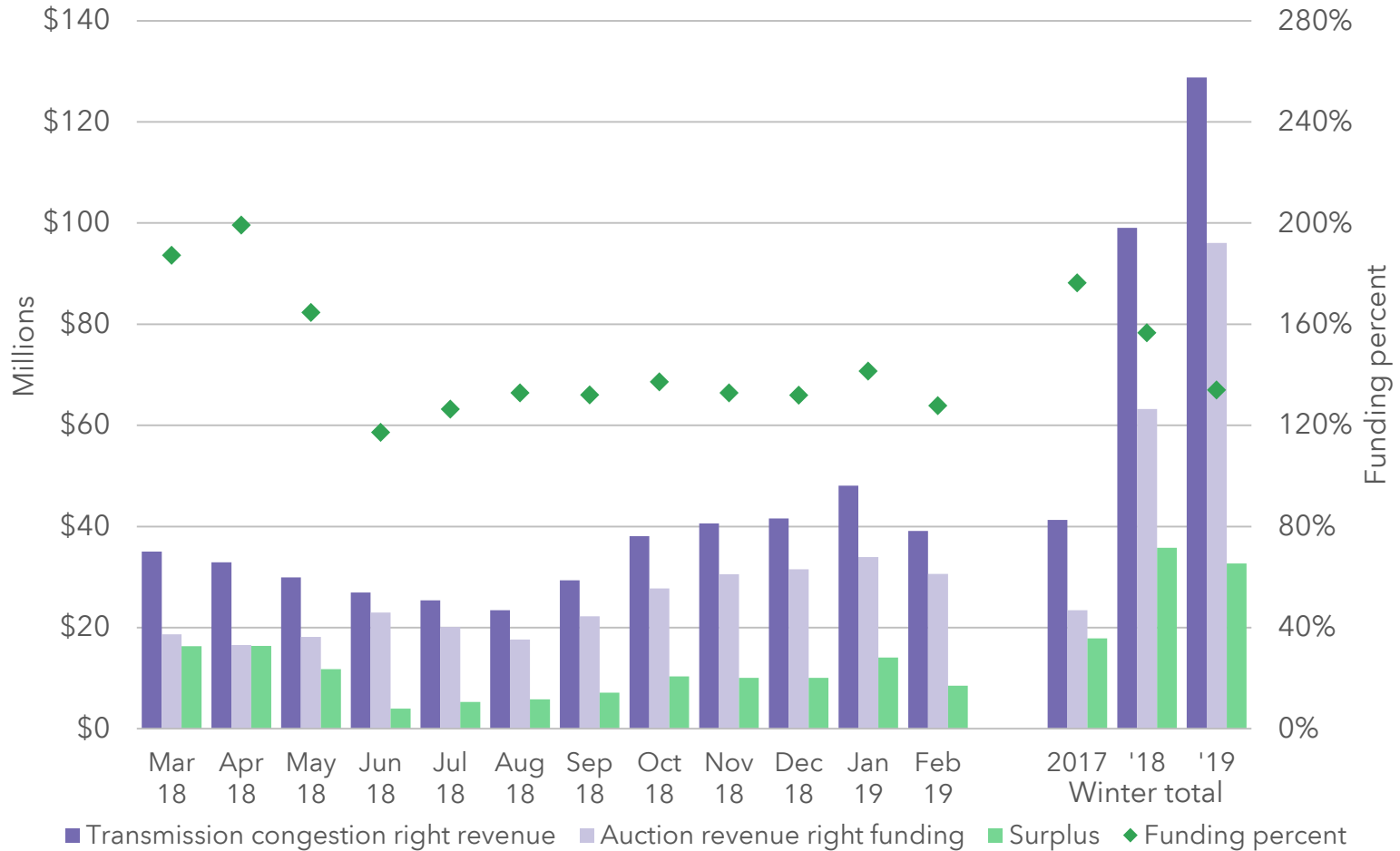
Most virtual transactions placed at resources



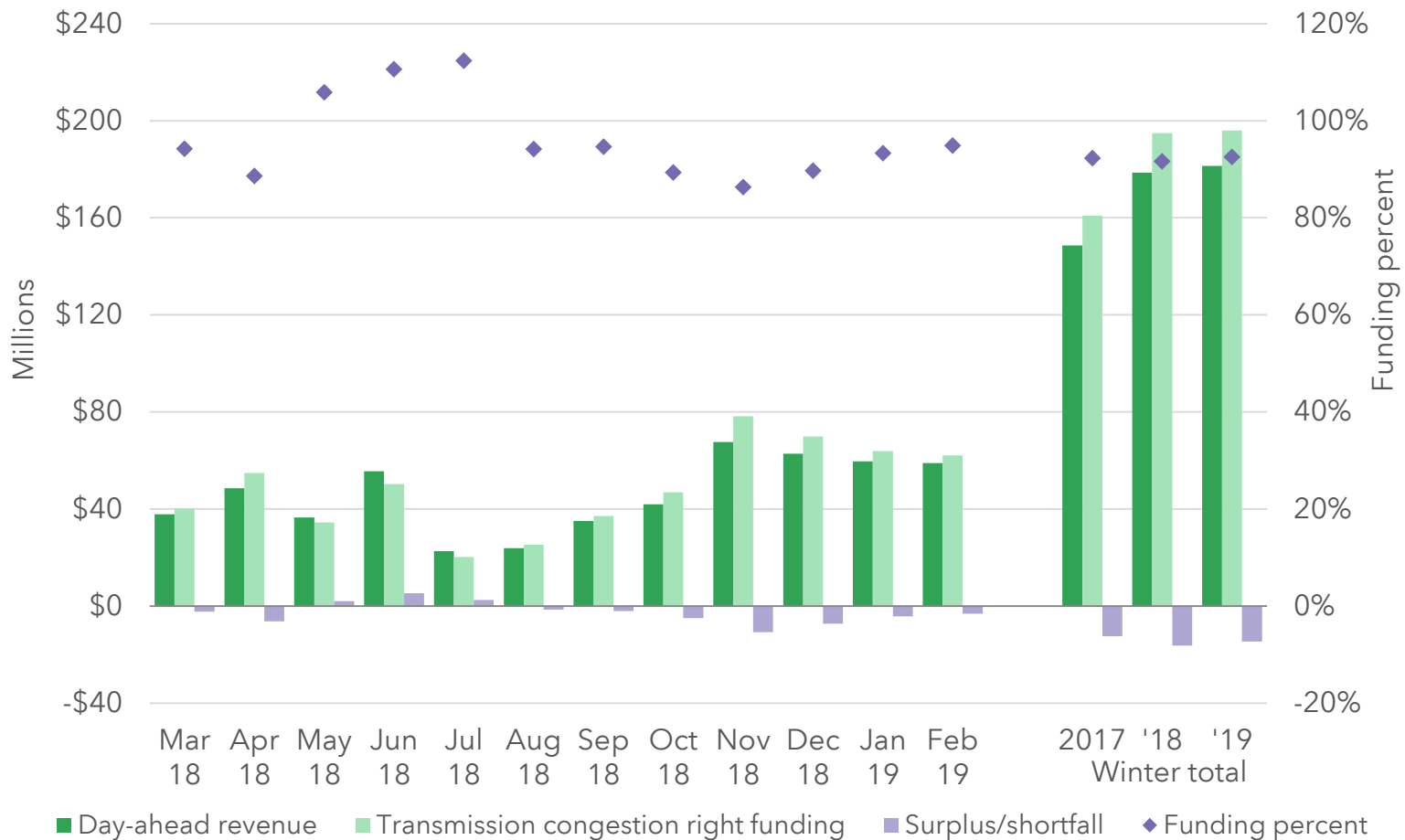
Most virtual transactions done by financial only participants



Auction revenue right funding percentage decreased

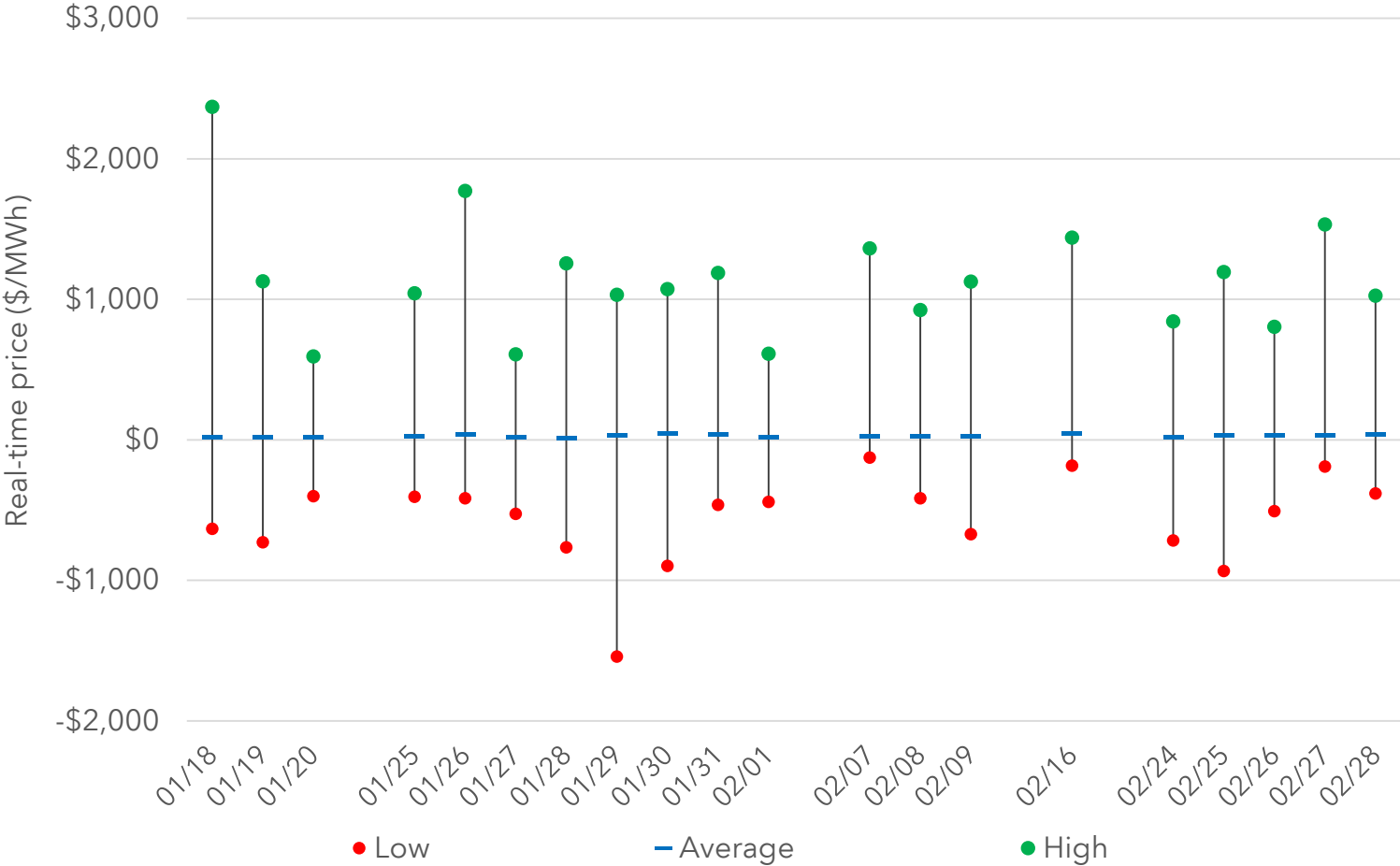


Transmission congestion right funding percentage remained flat

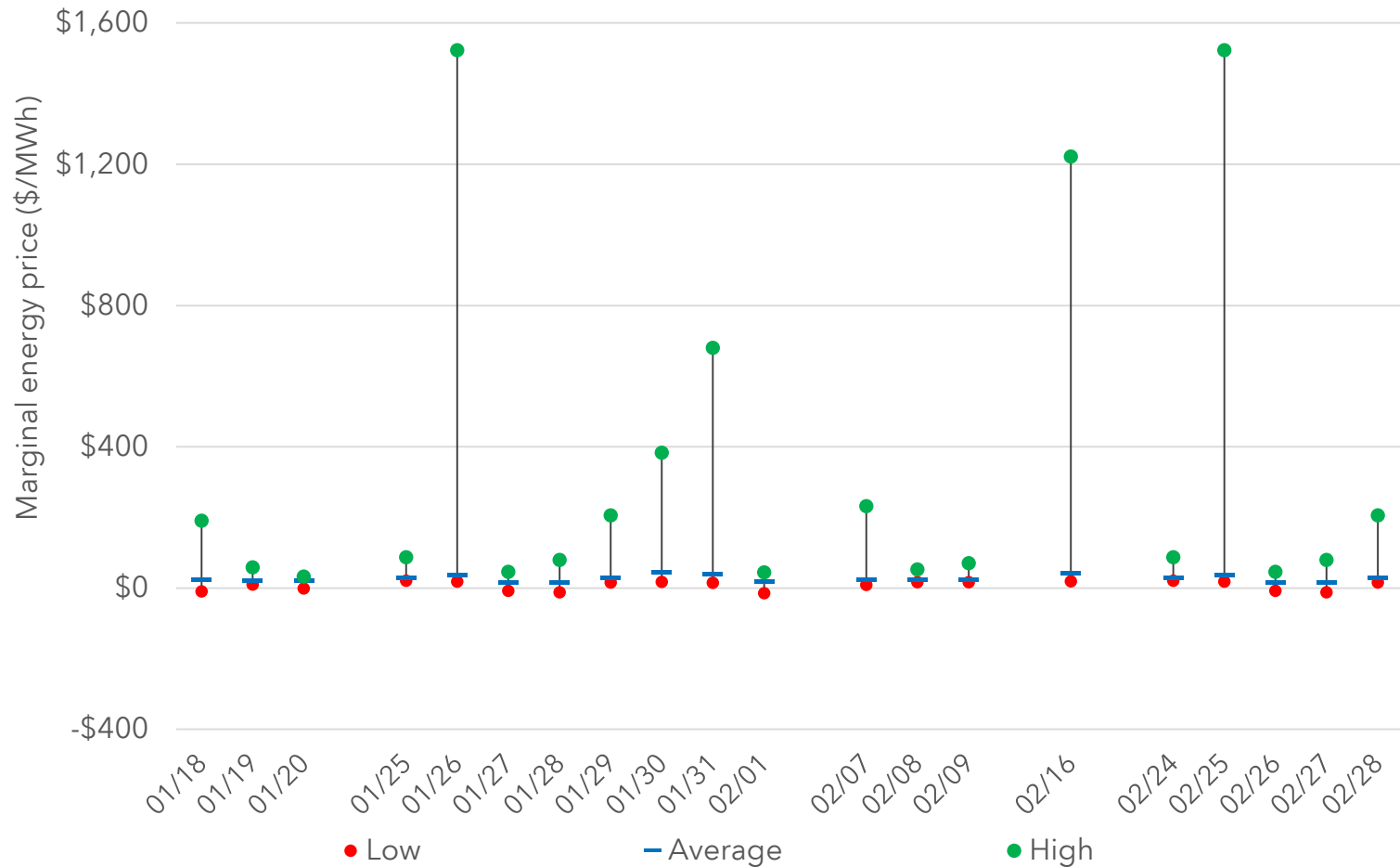


Winter weather events

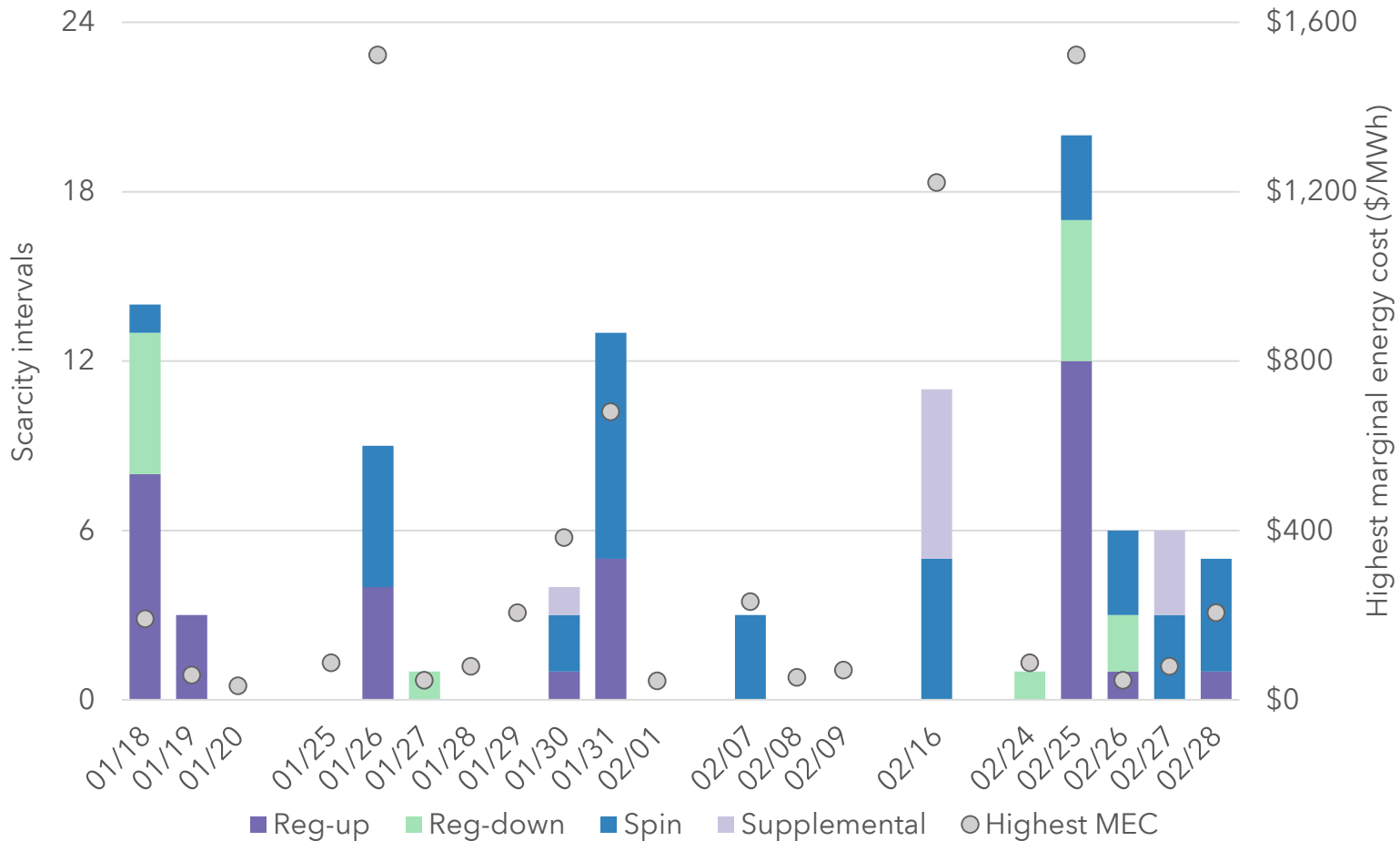
Real-time price during events



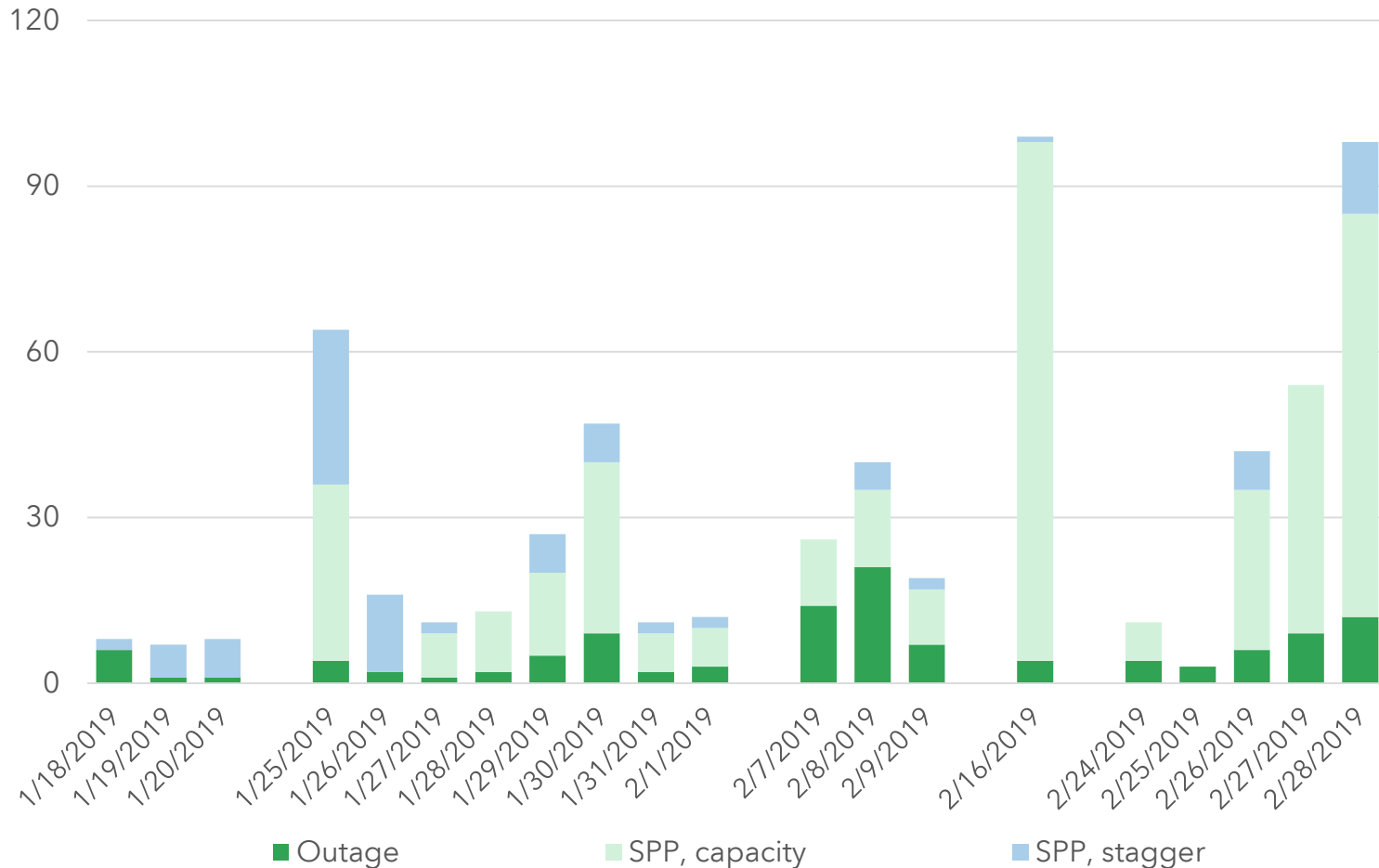
Marginal energy price during events



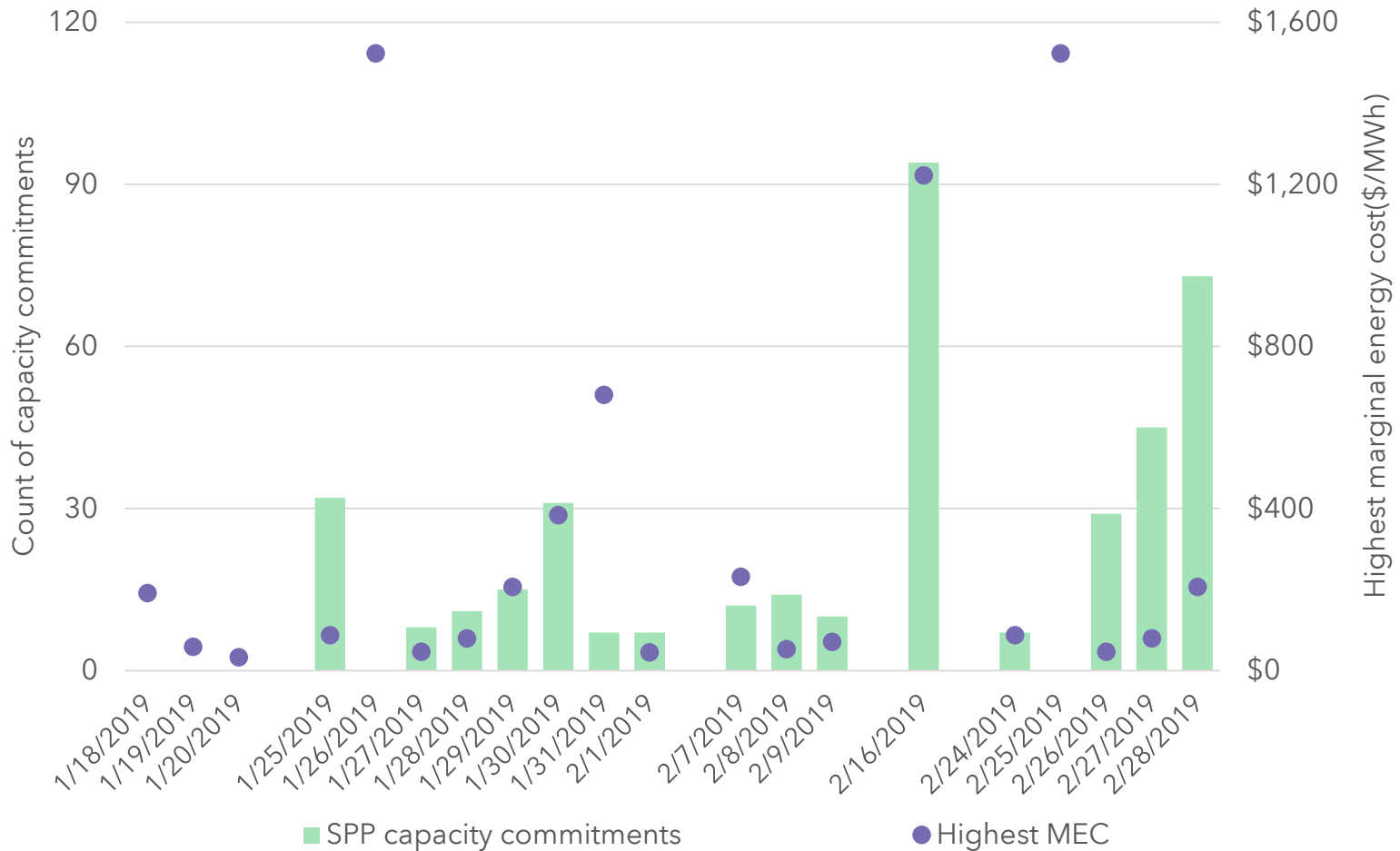
Comparison: scarcity and marginal energy prices



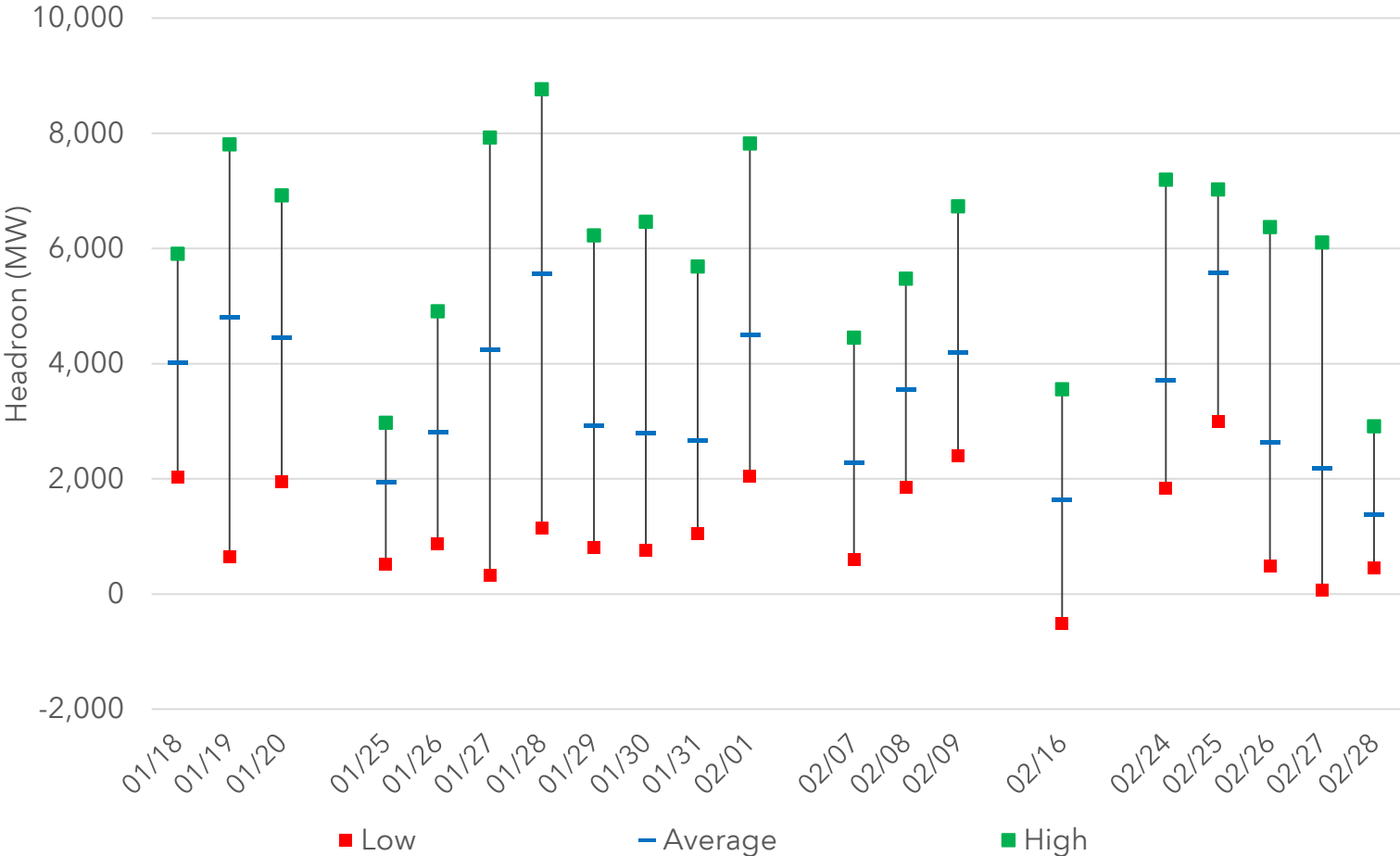
Unplanned fuel outages and manual commitments during events



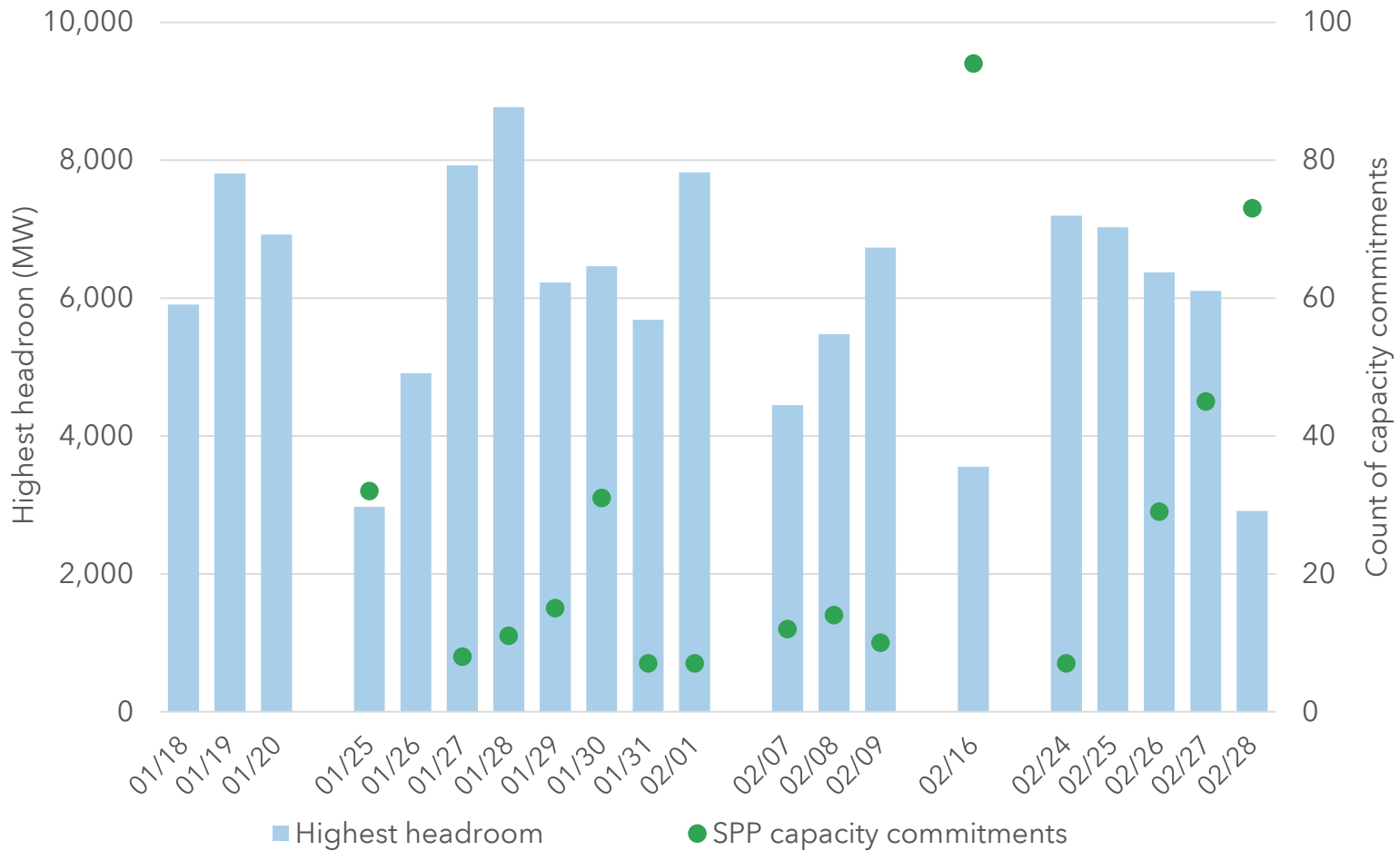
Comparison: manual capacity commitments and marginal energy prices



Headroom during events



Comparison: headroom and manual capacity commitments



Questions?