SPP Southwest Power Pool

MARKET MONITORING UNIT

Summer 2019

Quarterly Report

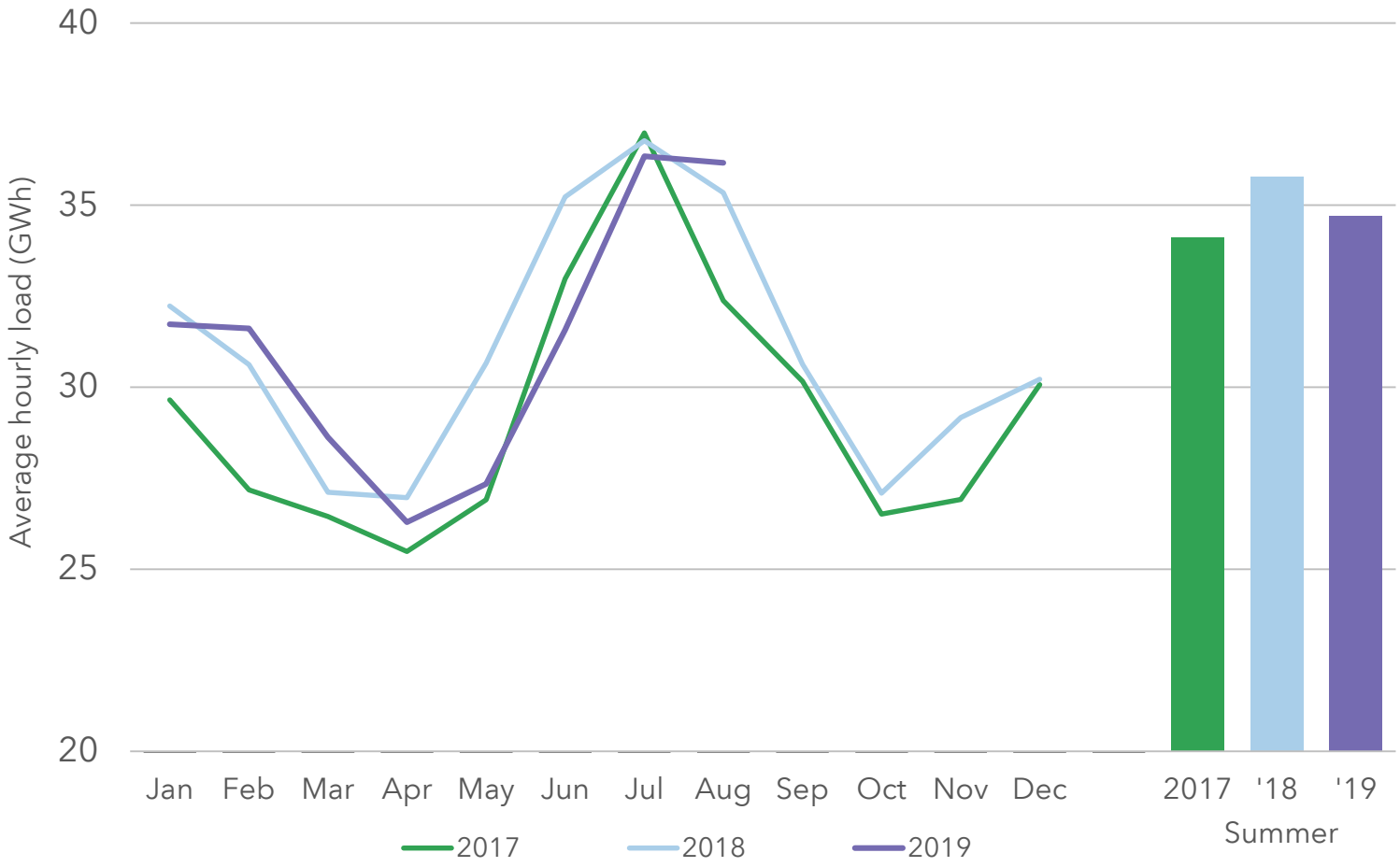
Helping our members work together to keep the lights on... today and in the future.

SouthwestPowerPool SPPorg southwest-power-pool

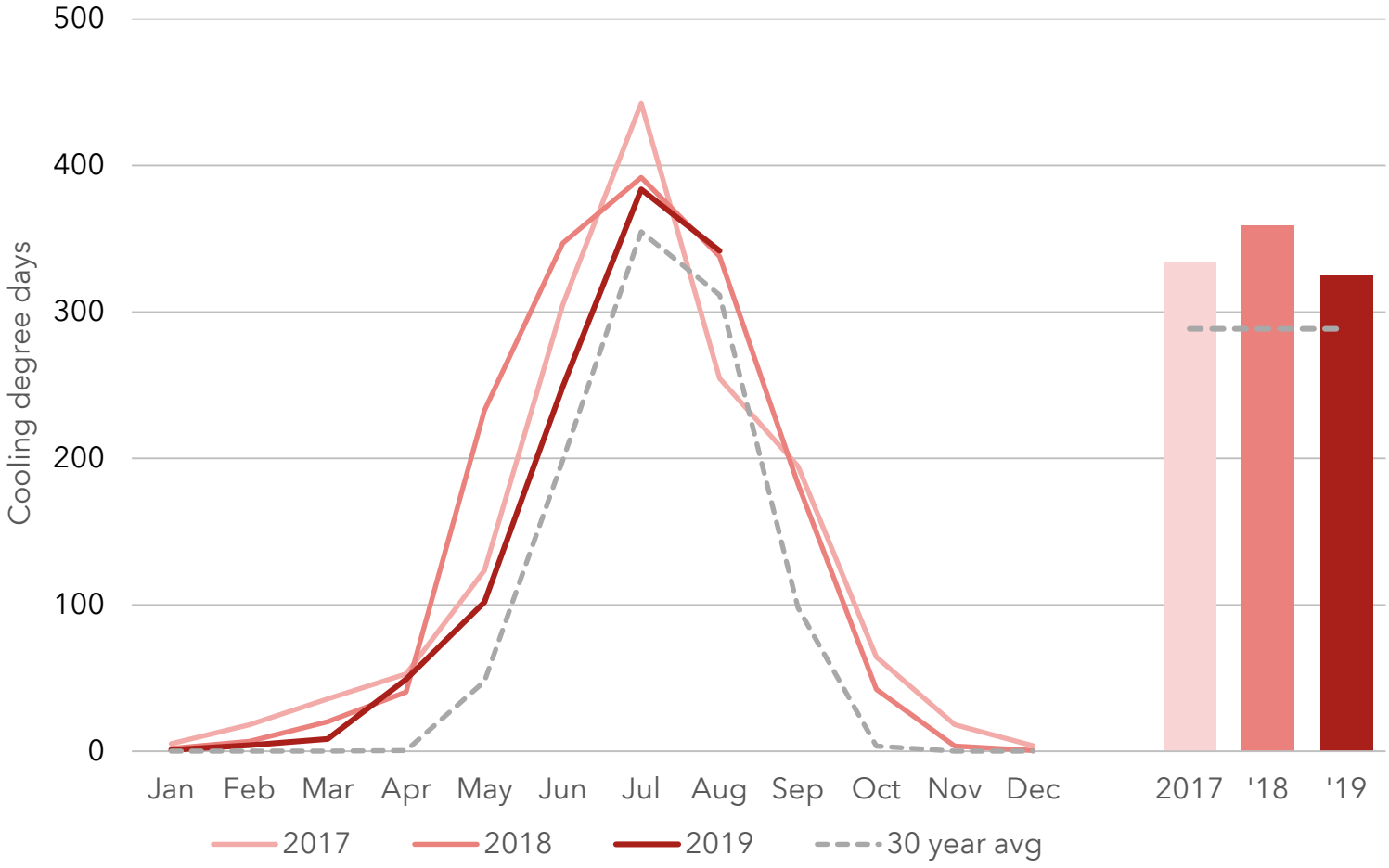
Summer 2019 highlights

- Load and generation declined
- Coal generation continued to decline; wind continued to grow
- Congestion highest in Oklahoma
- Energy prices and gas costs decreased
- Conservative operations
- Study of generation outages

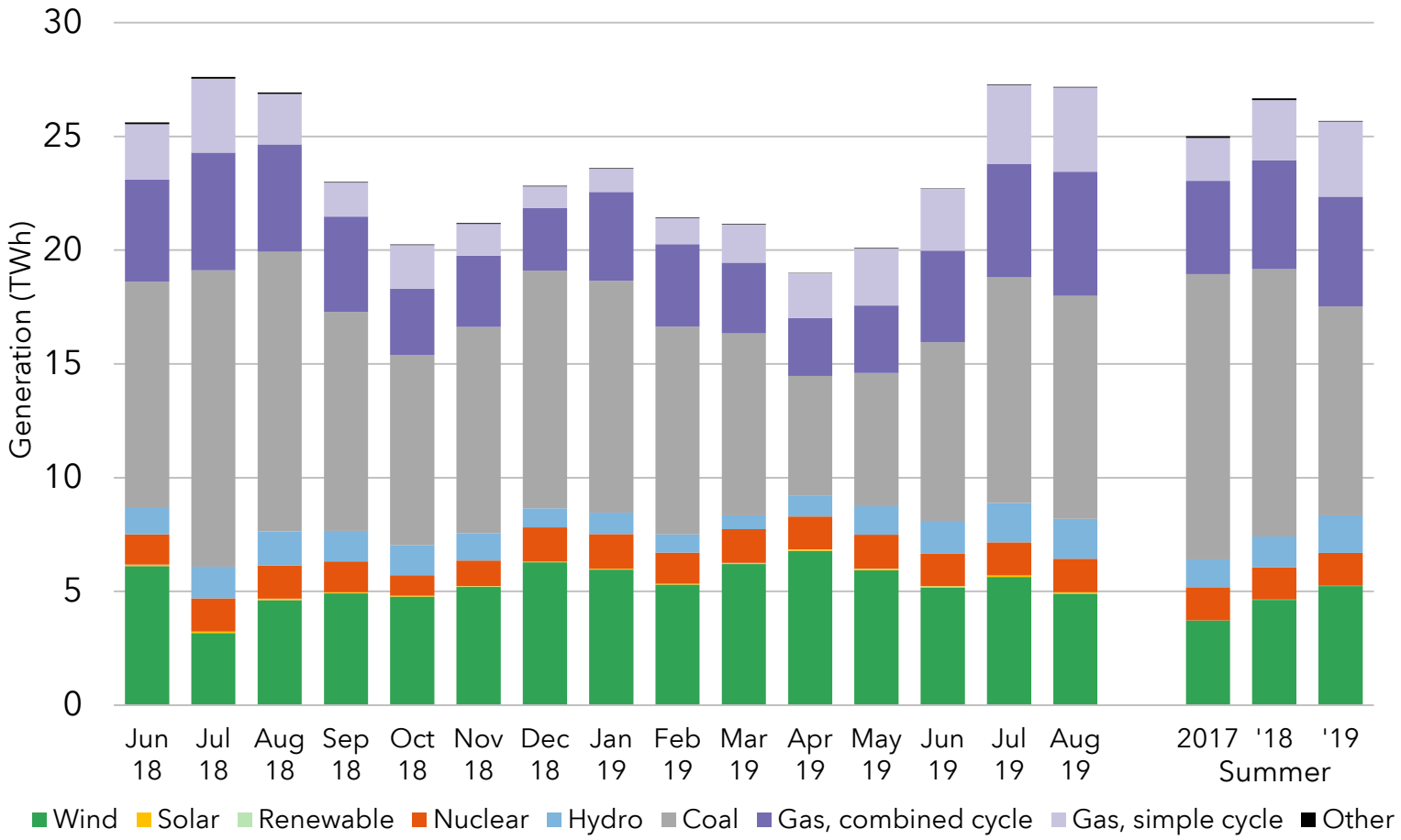
Overall load declined



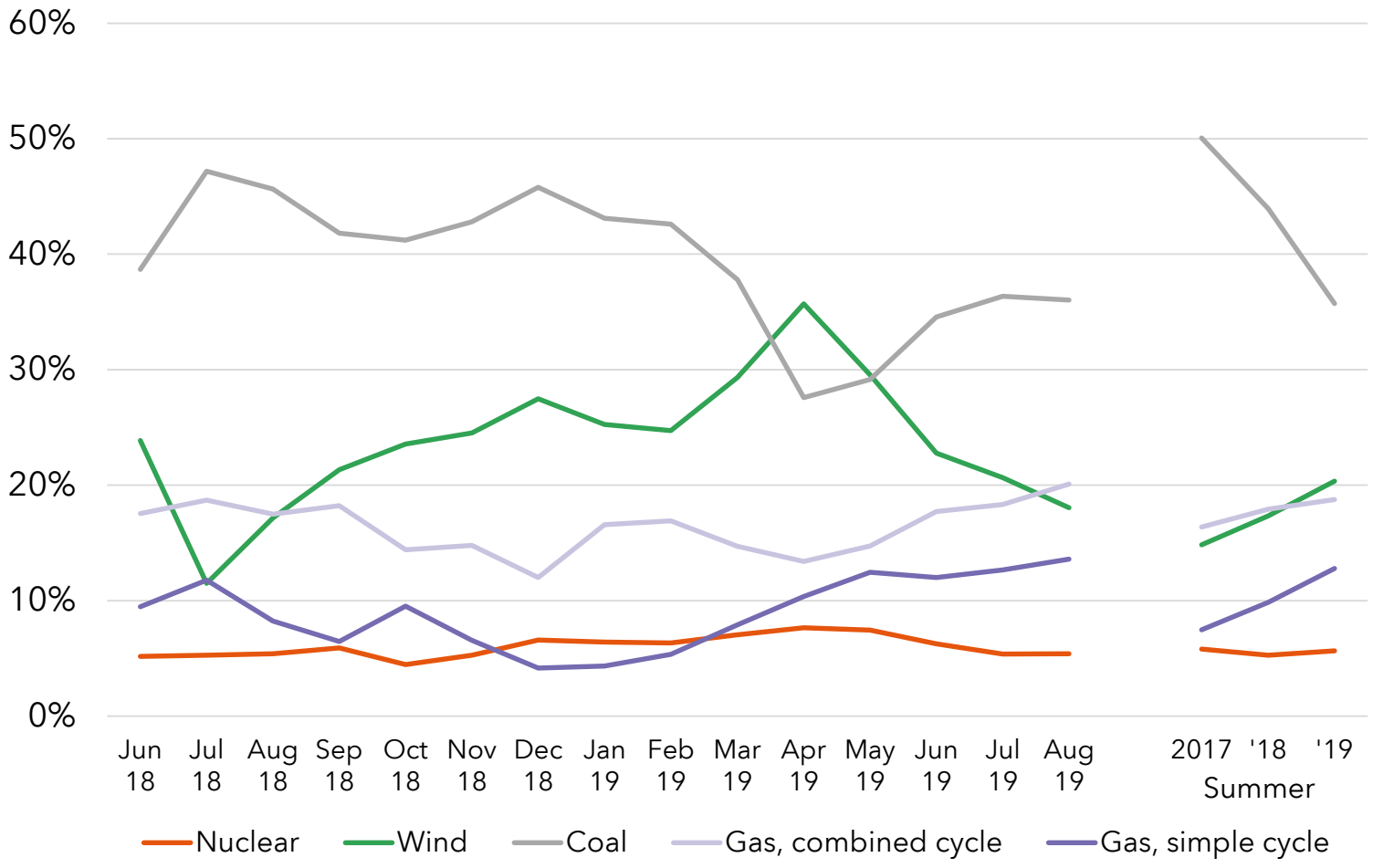
Cooler temperatures overall



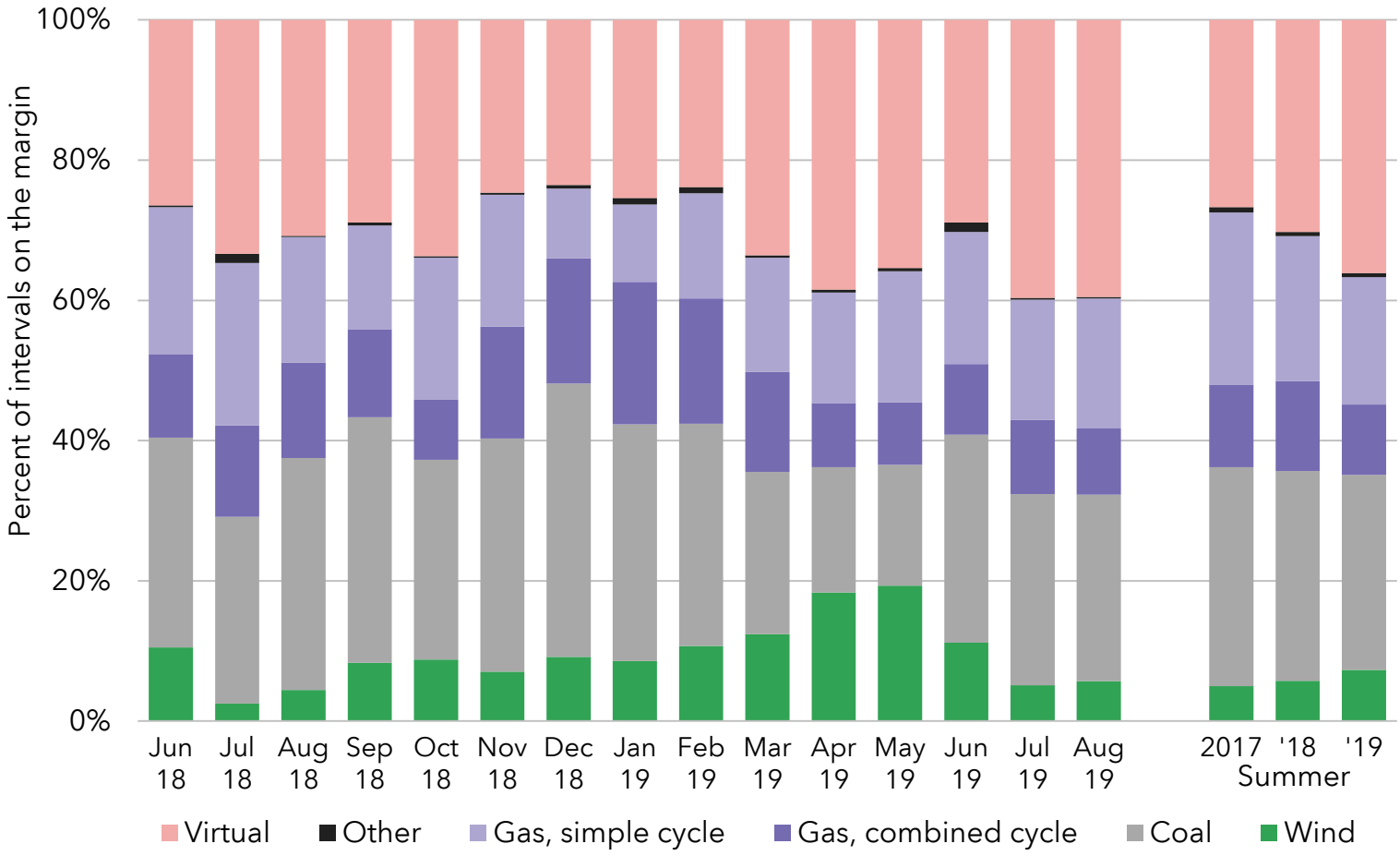
Generation declined



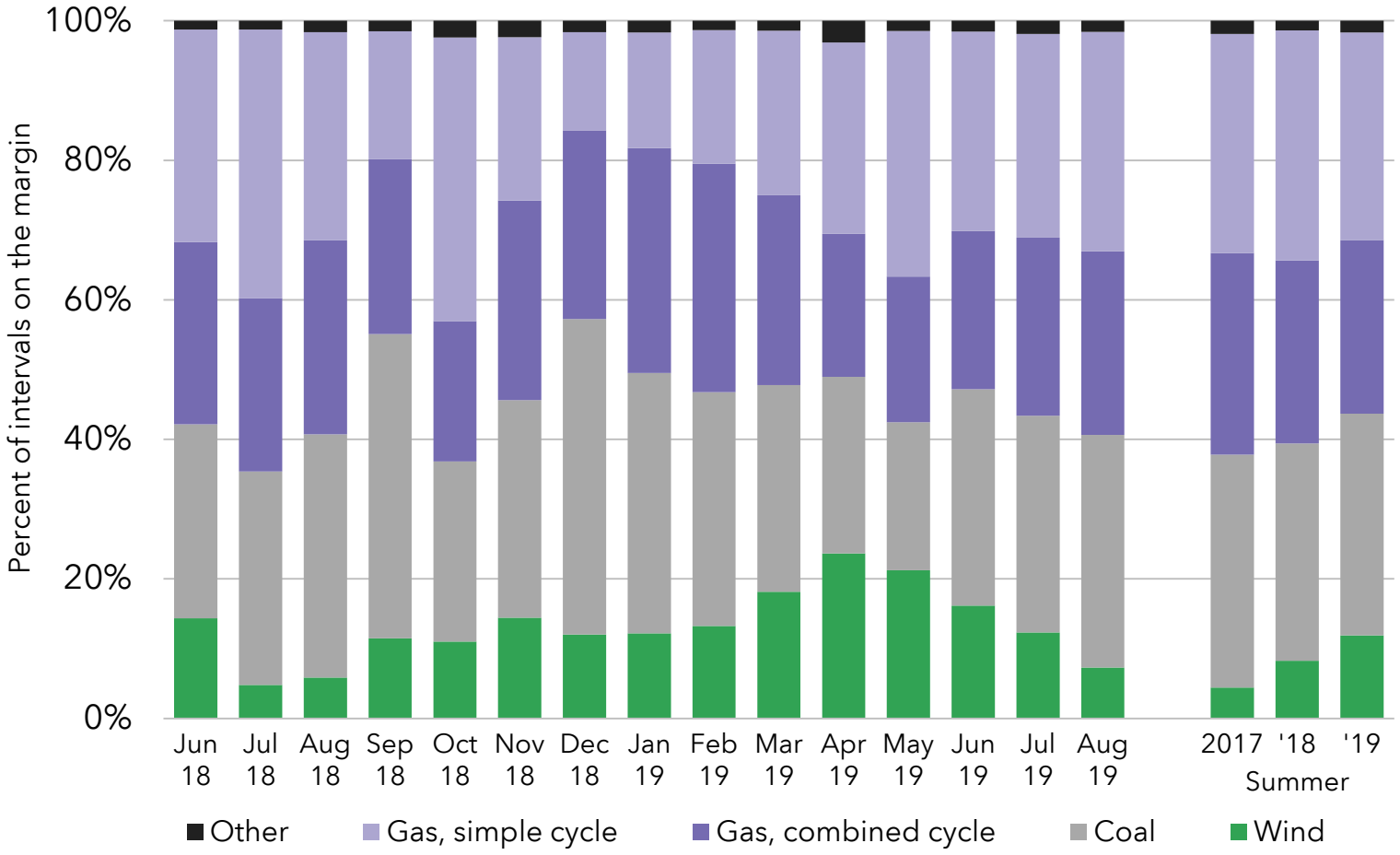
Coal generation continued decline



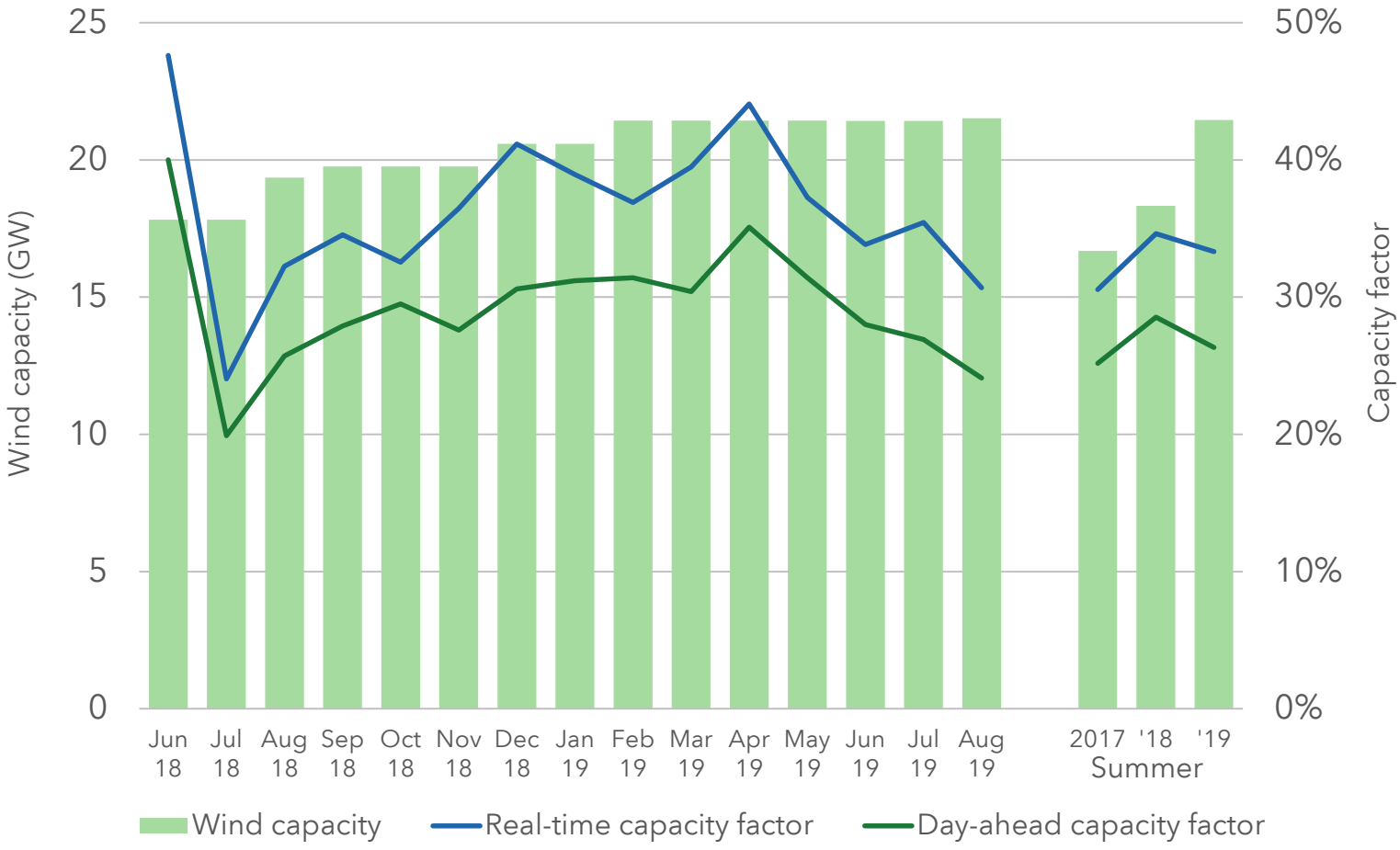
Virtuals set prices more frequently in day-ahead market



Wind set prices more frequently in real-time market

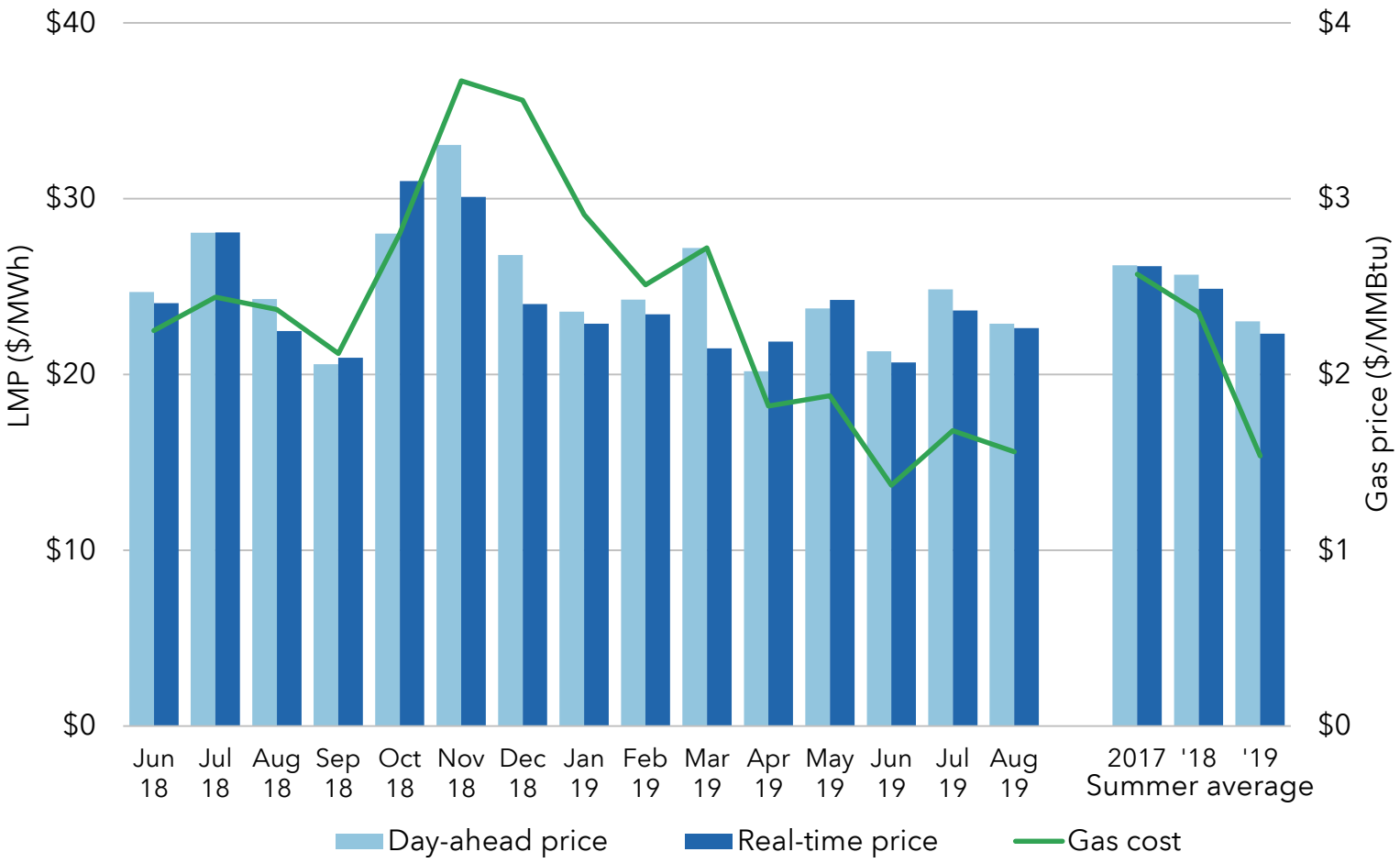


Wind capacity continued to grow

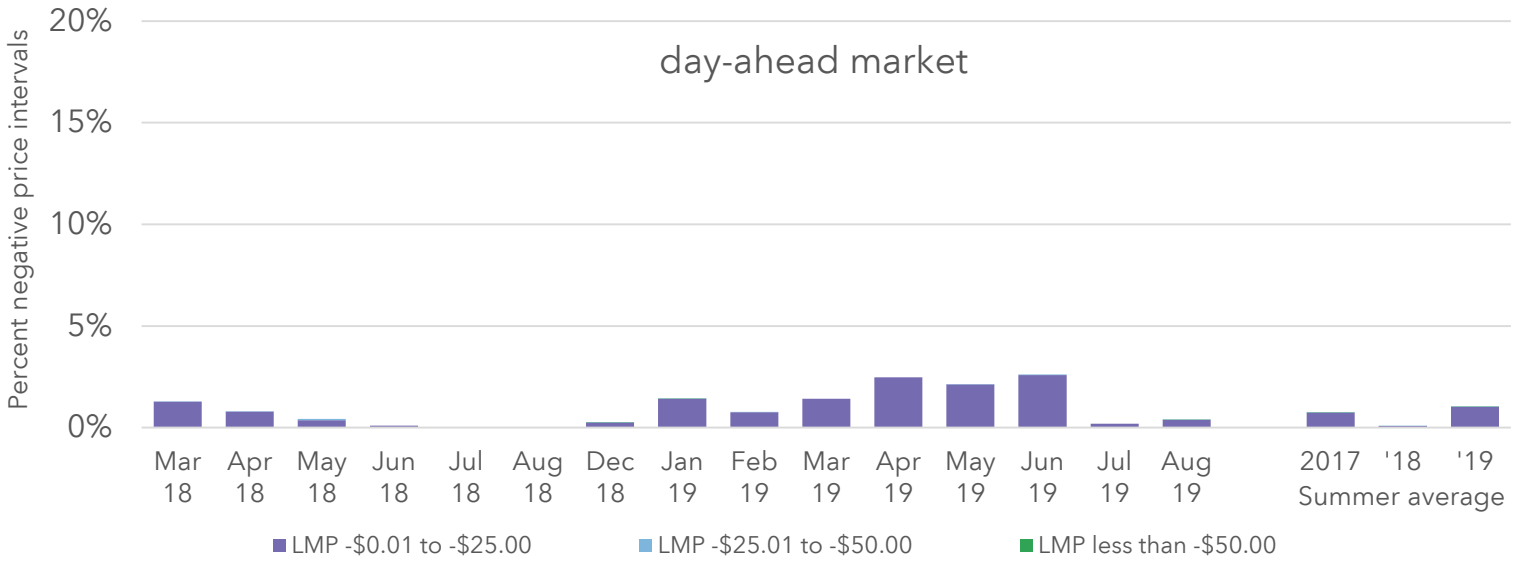


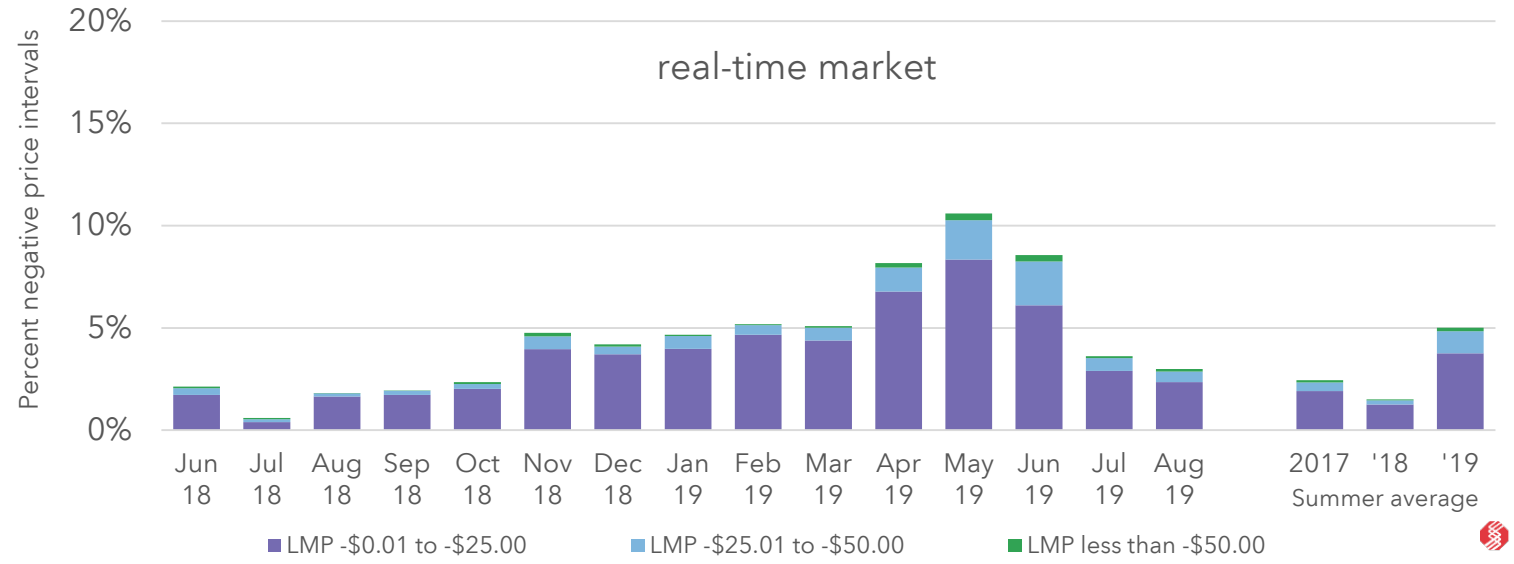
Outages have continued to increase in day-ahead market

Prices continued to fall

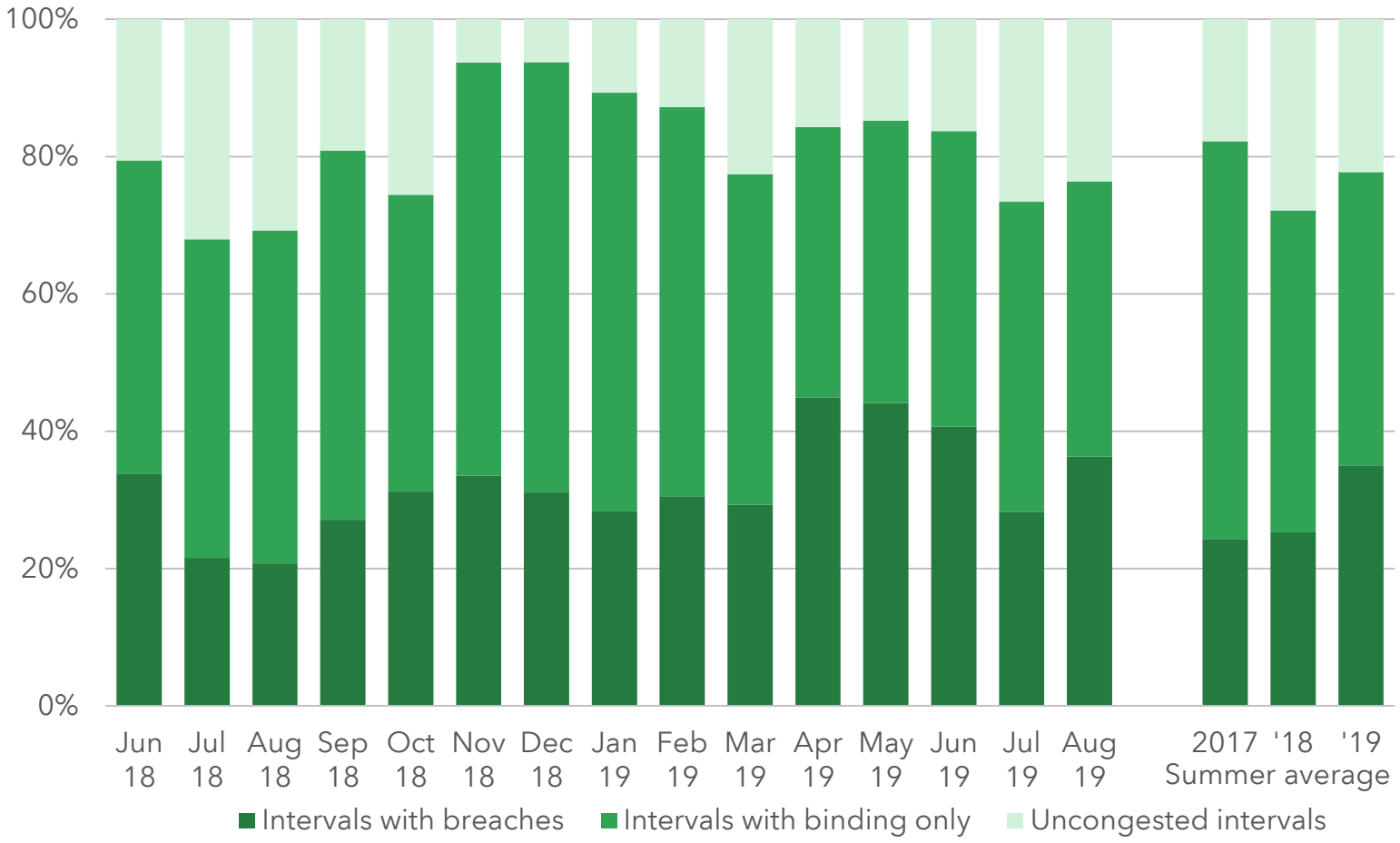


Negative price intervals increased

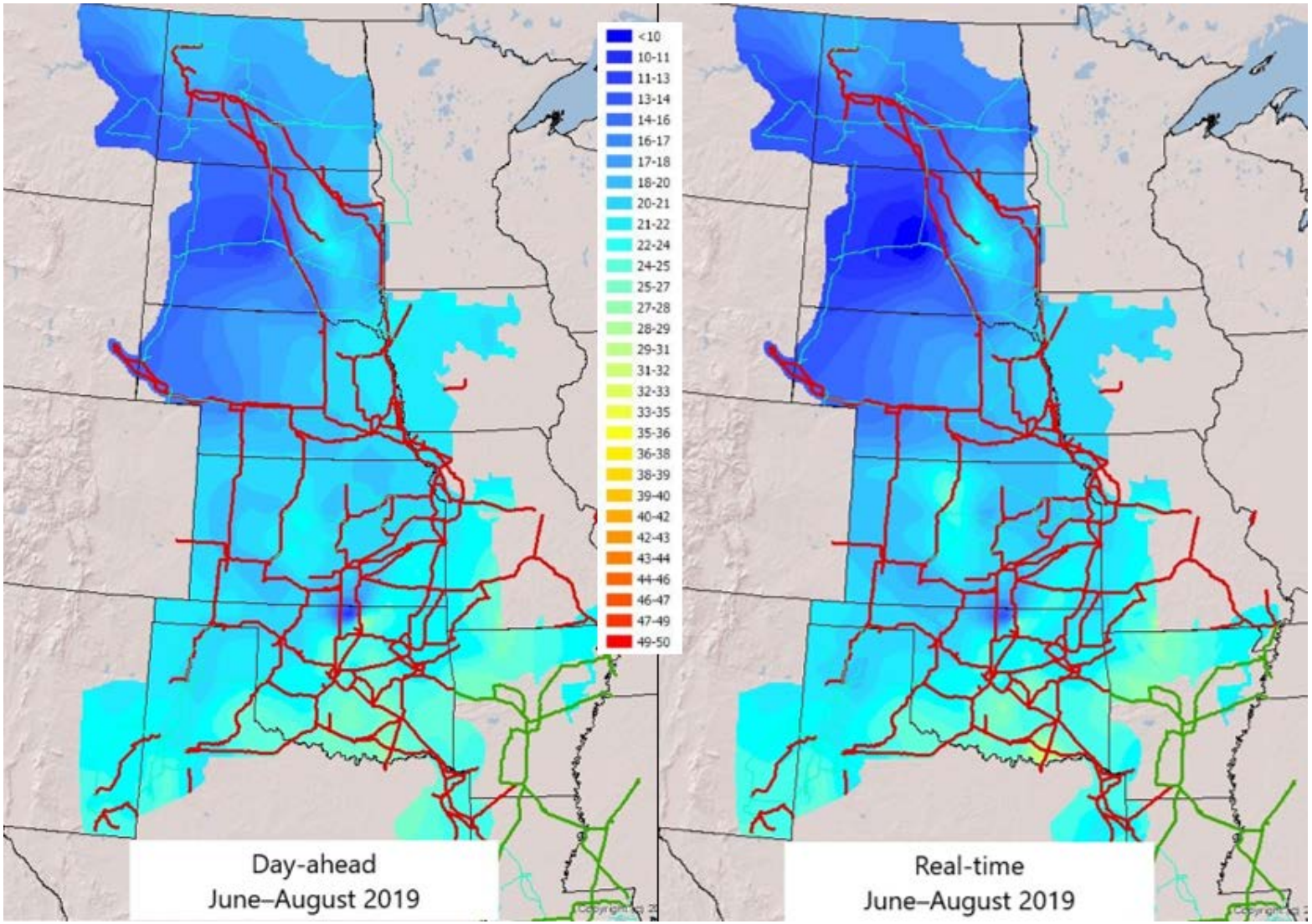




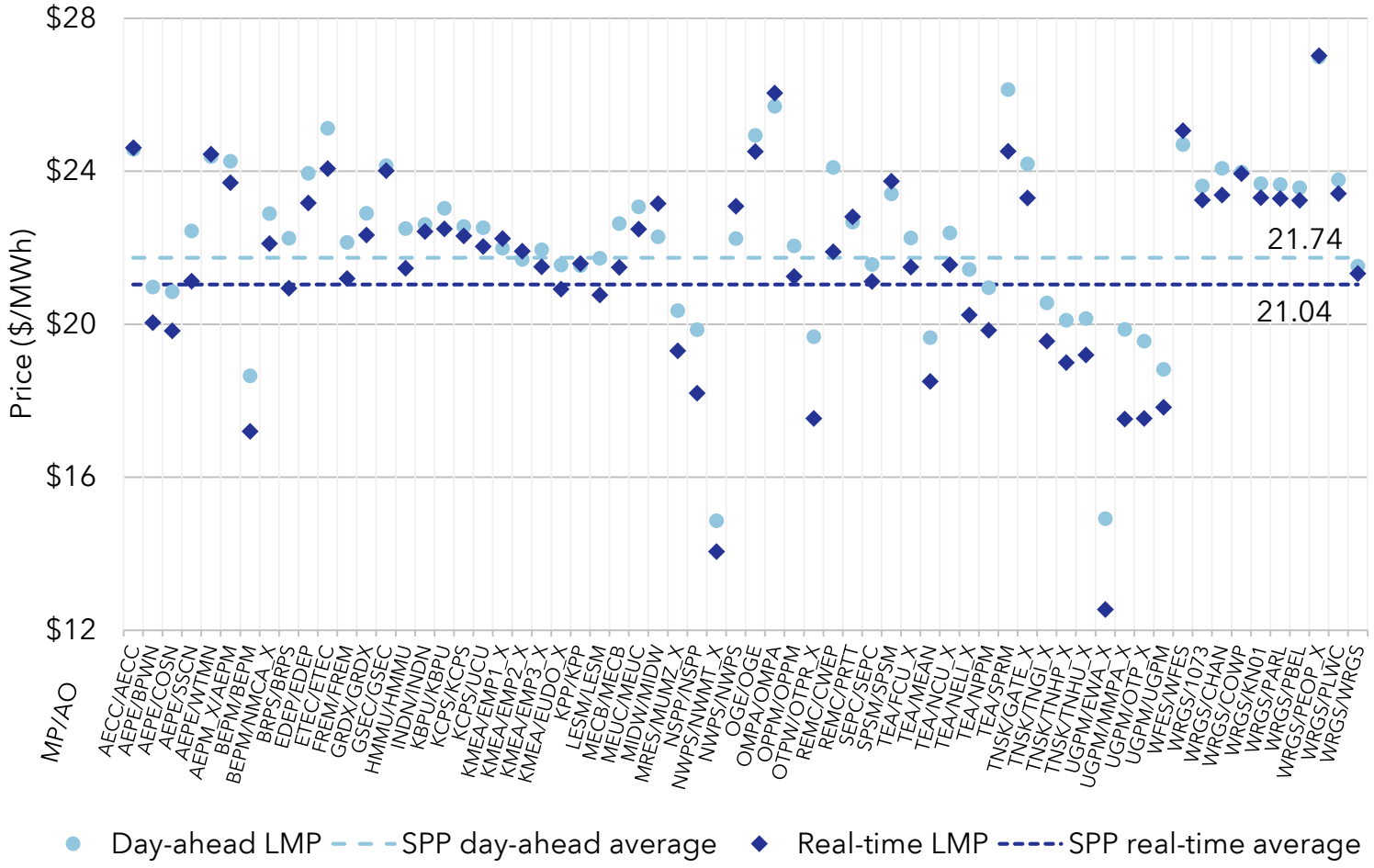
Real-time breached intervals increased



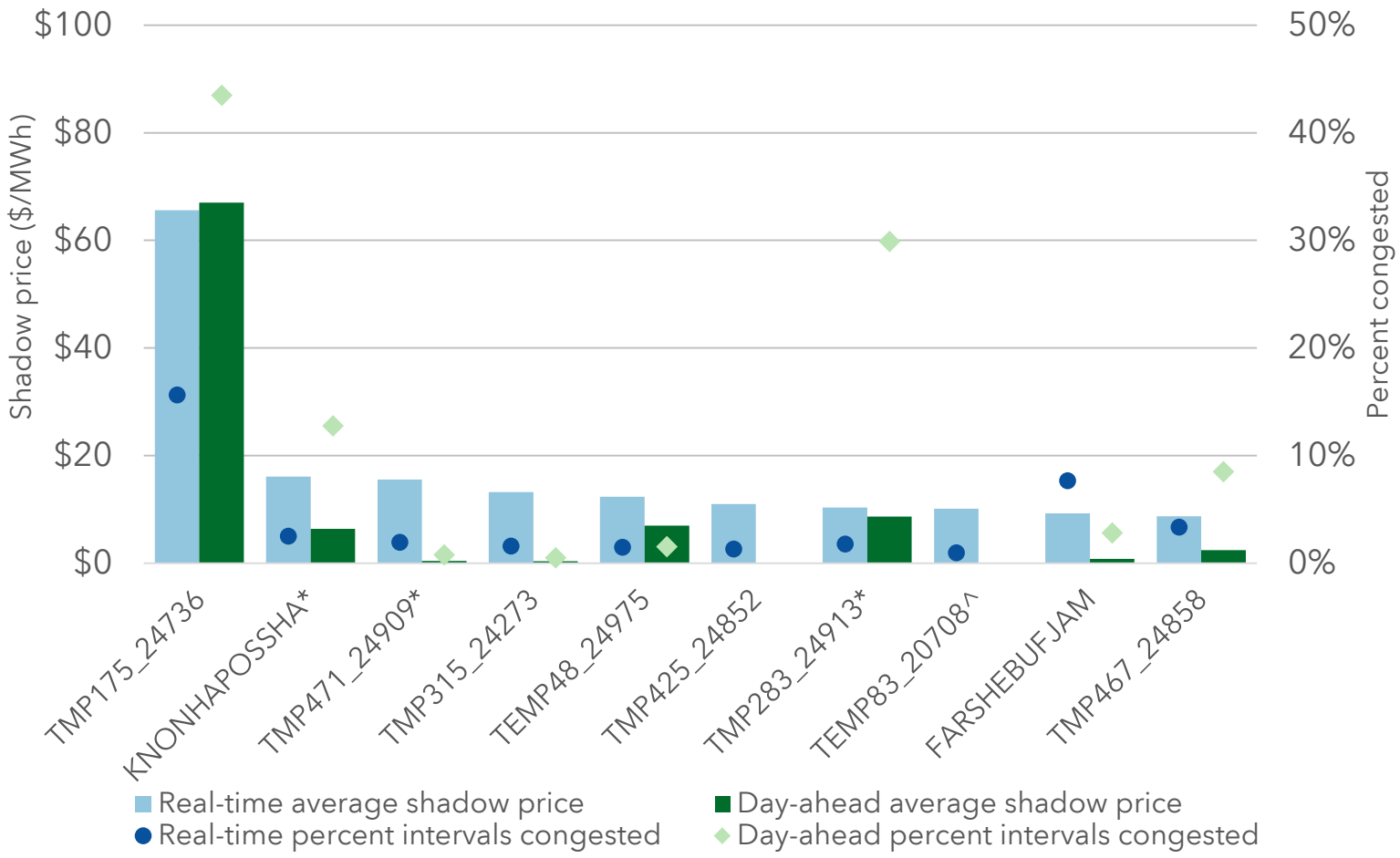
Congestion pattern similar between markets



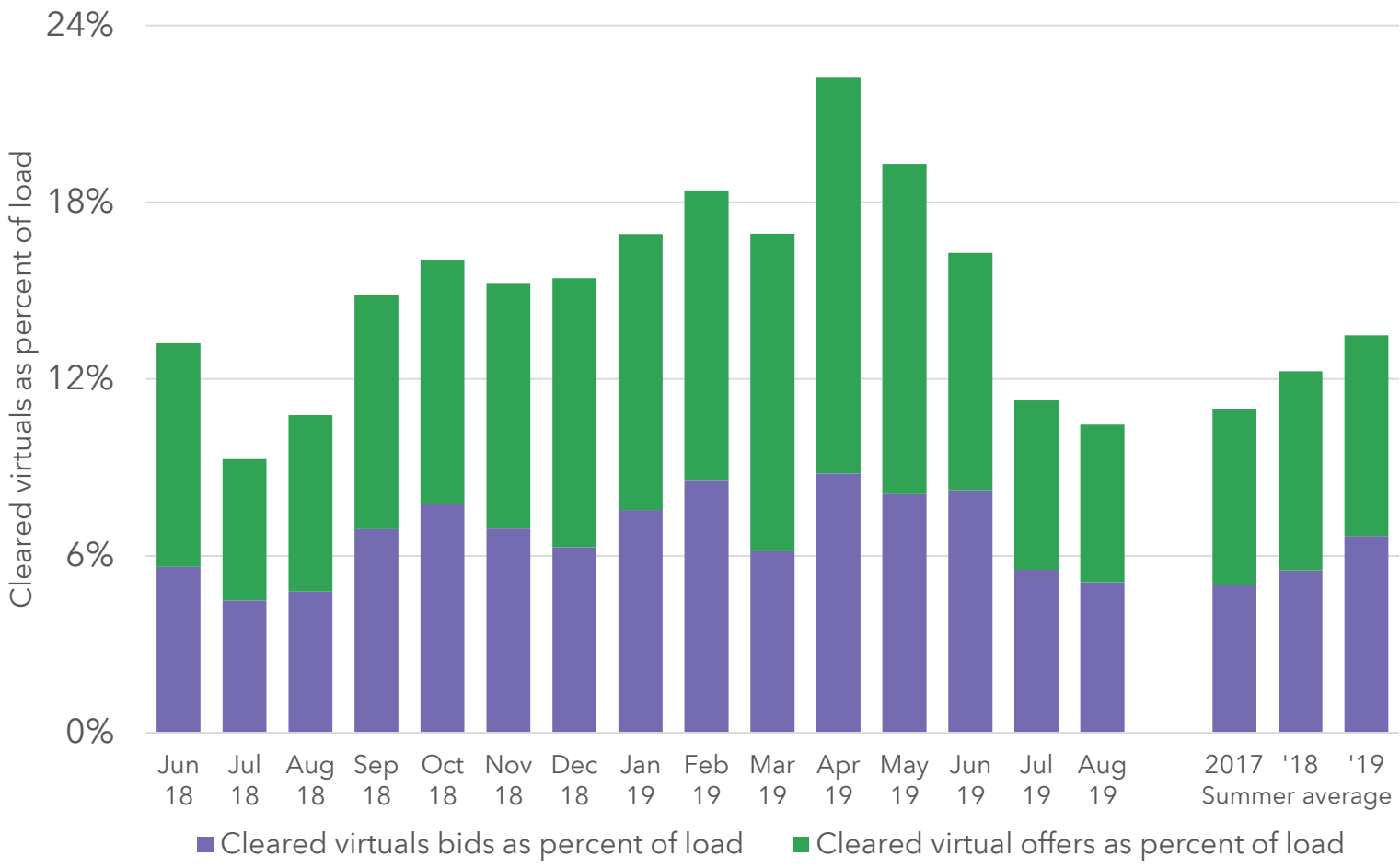
Prices vary across footprint



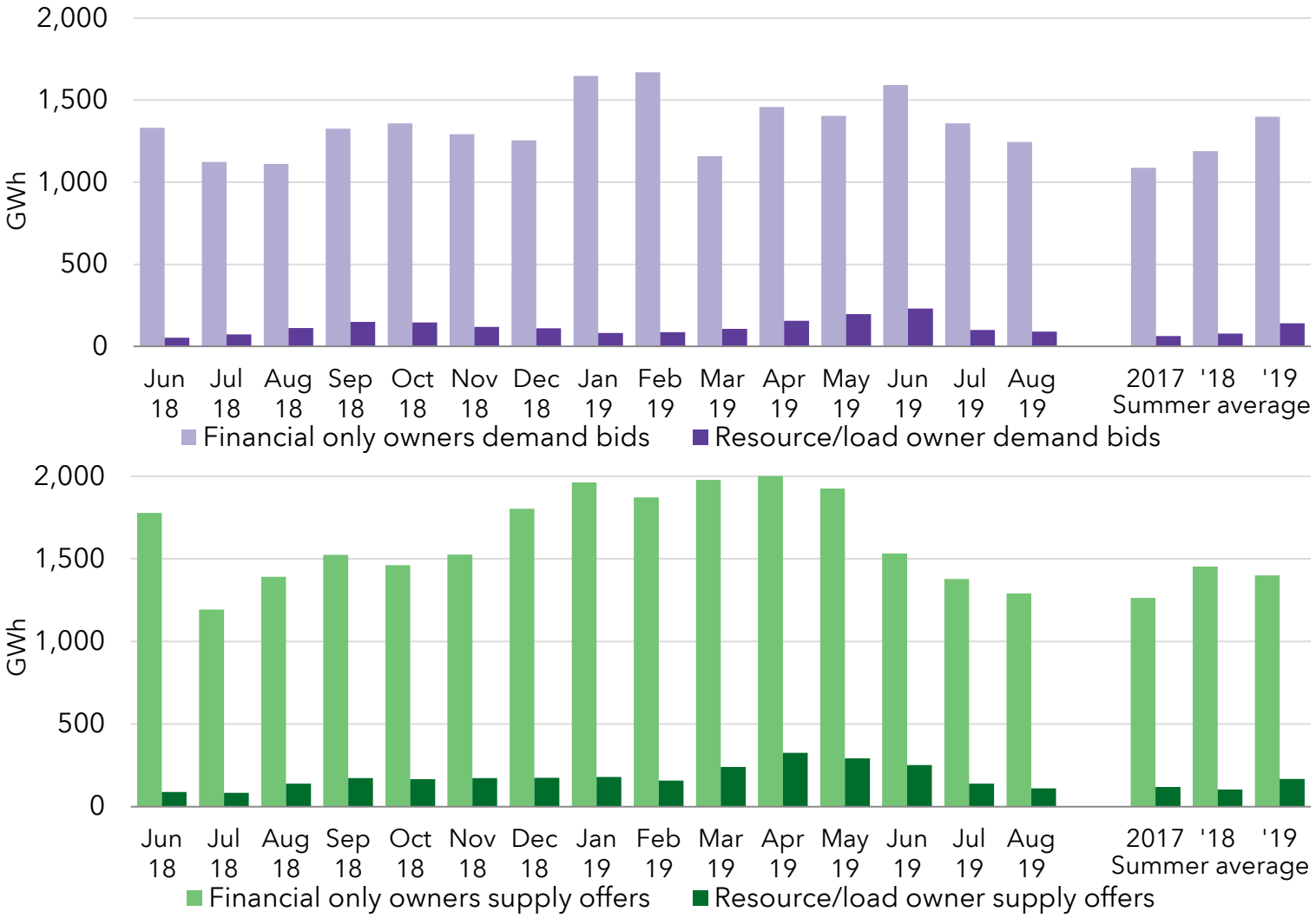
High congestion in Oklahoma



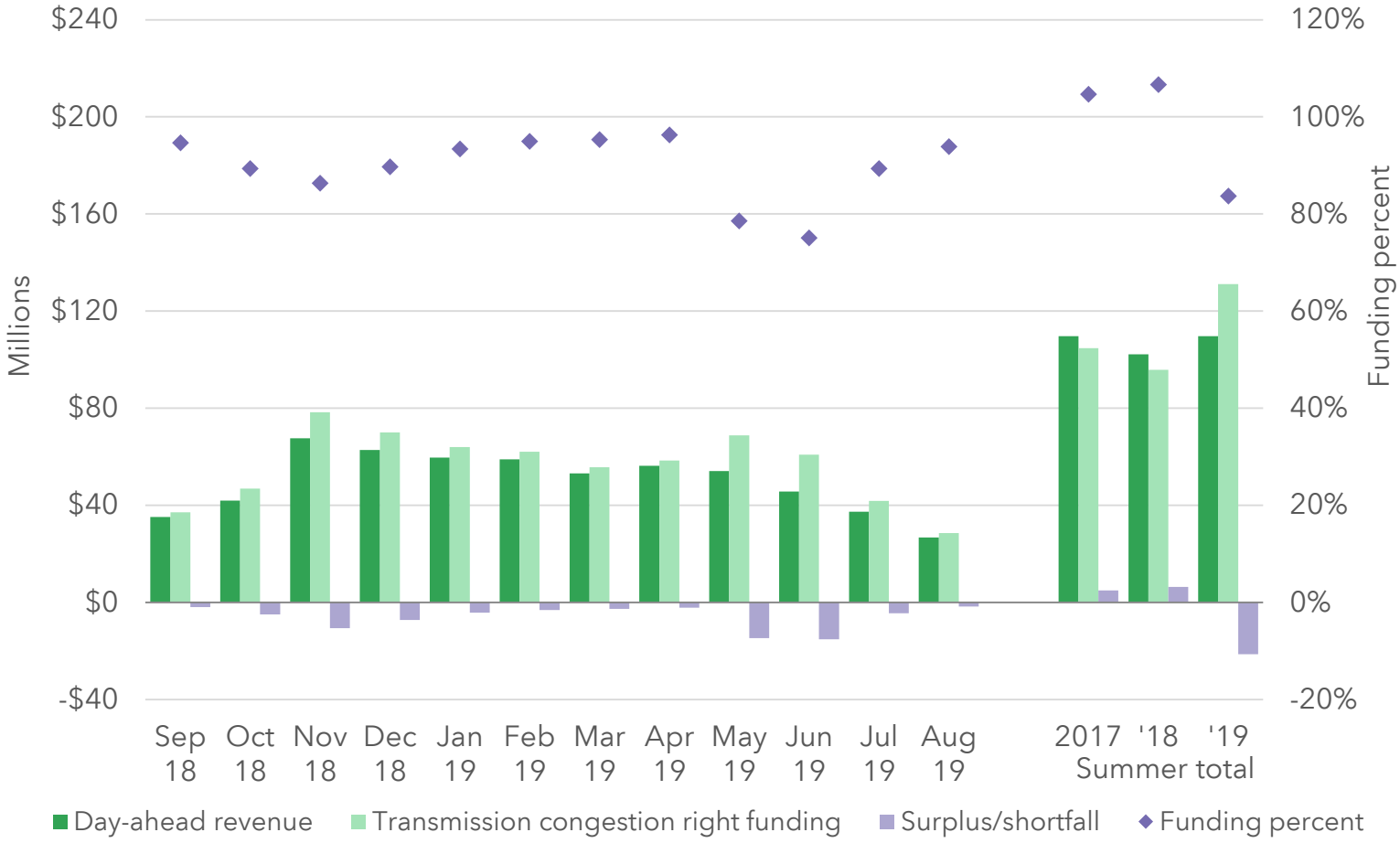
Virtual transactions continued to grow



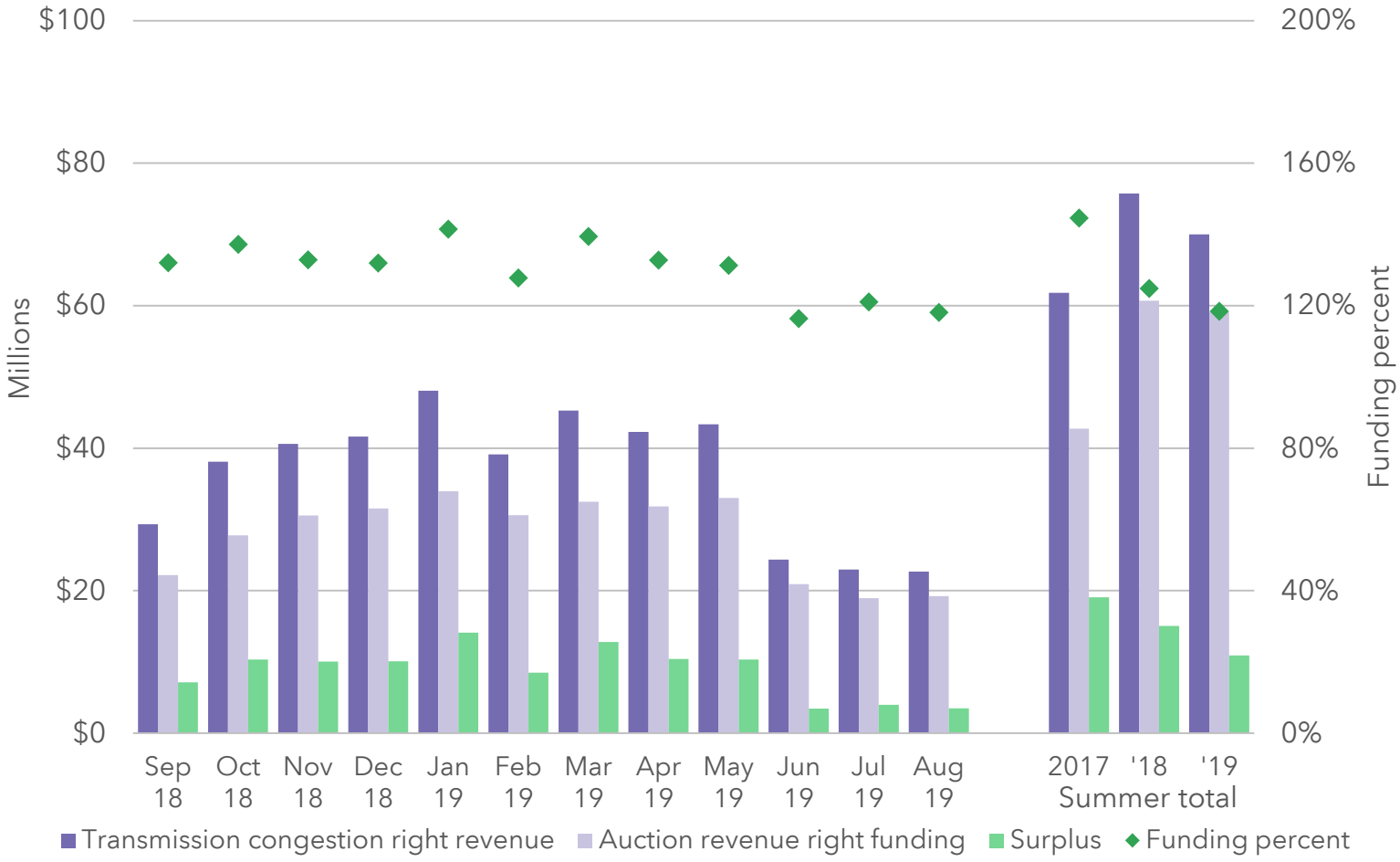
Most virtuals by financial-only participants



TCRs are underfunded



ARR funding


$100
$80
$60
$40
$20
$0
Millions
200%
160%
120%
80%
40%
0%
Funding percent
Sep 18
Oct 18
Nov 18
Dec 18
Jan 19
Feb 19
Mar 19
Apr 19
May 19
Jun 19
Jul 19
Aug 19
2017 Summer total
'18
'19
Transmission congestion right revenue
Auction revenue right funding
Surplus
Funding percent

Conservative operations

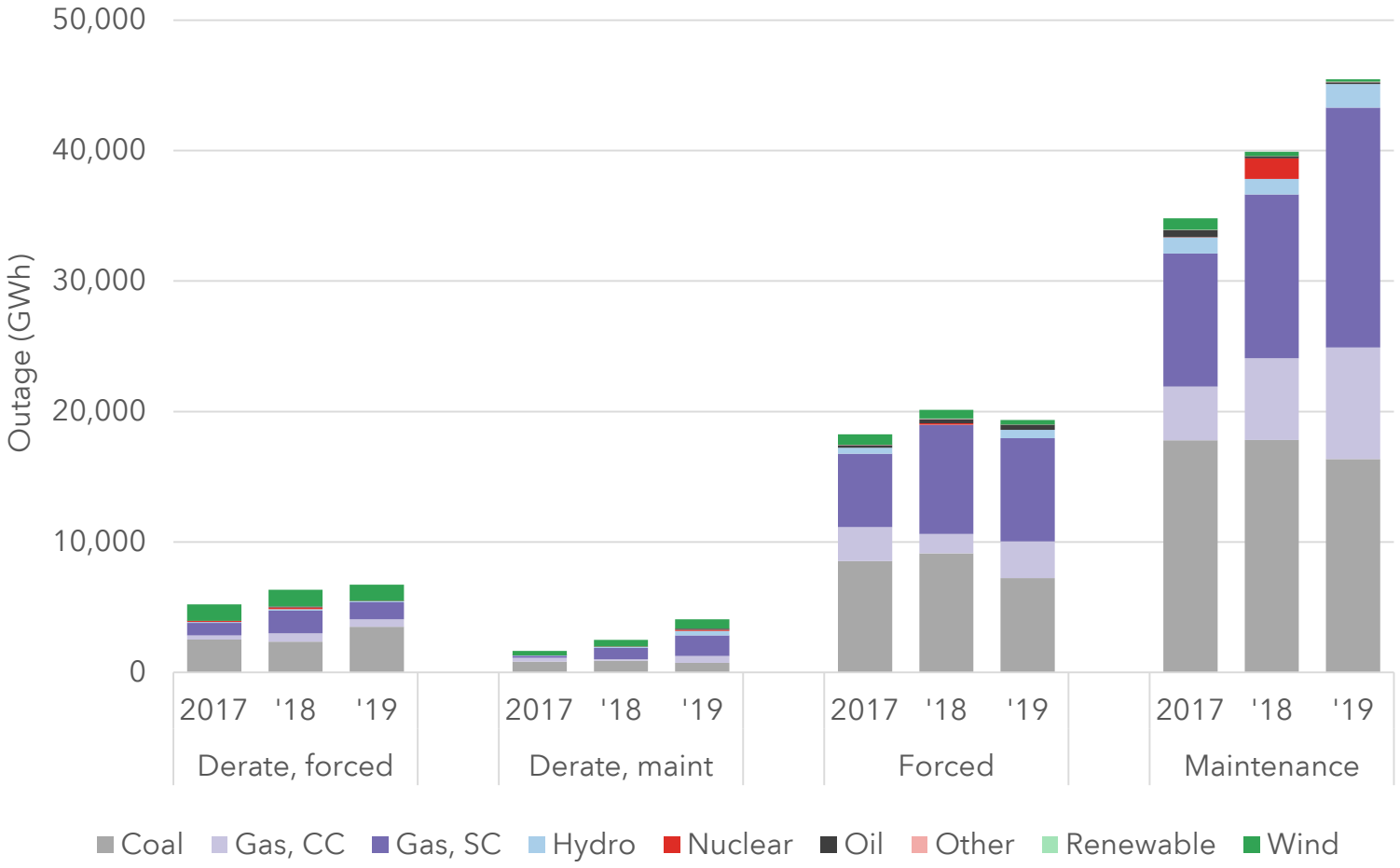
- Ten instances of conservative operations in 2019
  - February 7–9
  - March 3–5
  - May 29–June 1
  - June 4–7
  - July 1–3
  - July 10–17
  - August 6–8 (included EEA 1)
  - August 12–13
  - August 20–21
  - September 5–7

EEA 1

09:00	SPP declared Conservative Operations
13:00	Reliability status generation committed
13:30	290 MW resource tripped off-line
14:05	Real-time prices above $1,100/MWh
14:45	SPP declared EEA 1
14:47	SPP issued operating instruction for 478 MW of capacity of grid-switchable resources to be brought back into SPP from ERCOT
14:55	Real-time prices above $200/MWh
15:14	SPP curtailed non-firm export schedules
15:15	Real-time prices to $20–$30/MWh range
19:00	SPP declared EEA 0

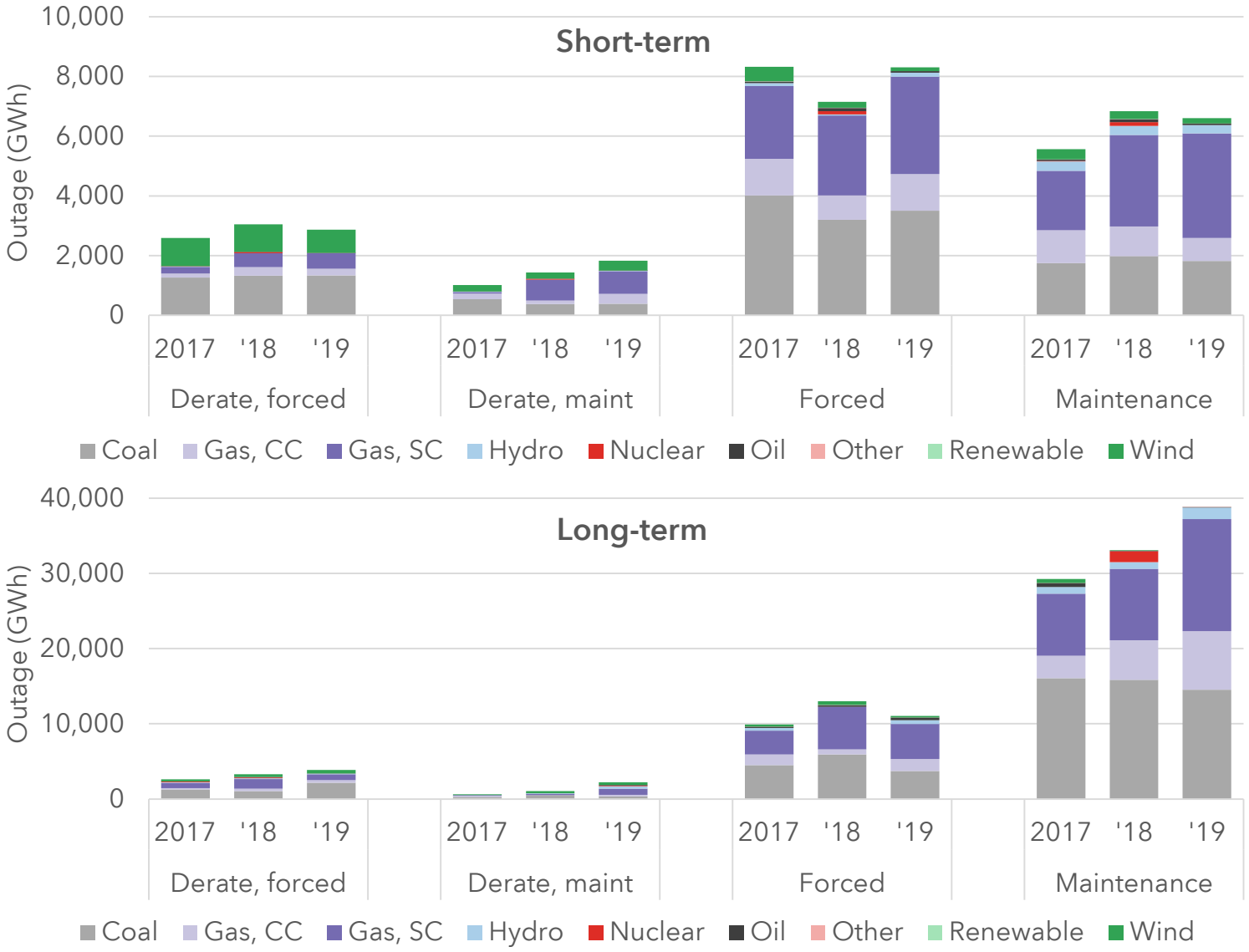
Generation outages

Maintenance outages have increased



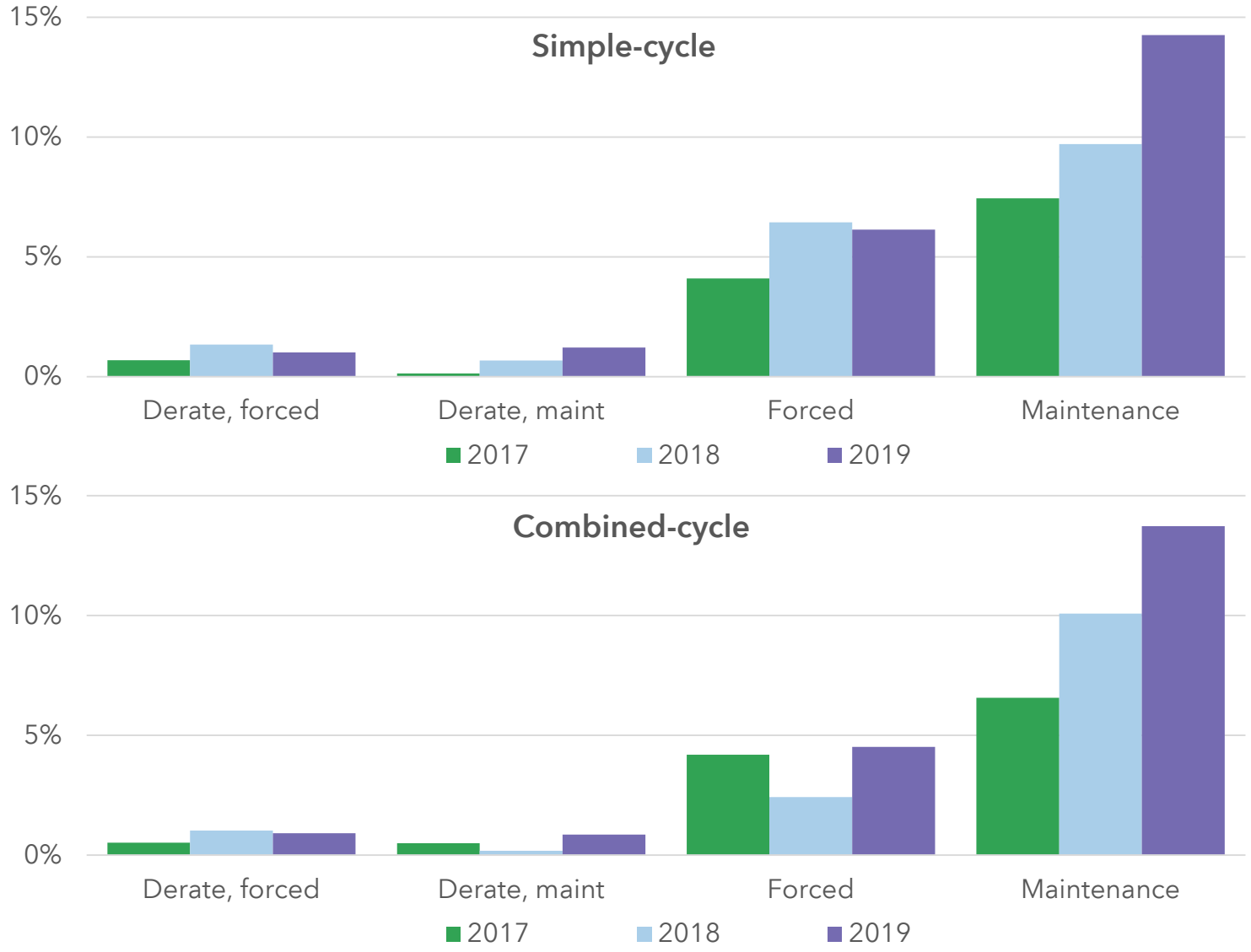
* data covers January through August each year.

Increase in long-term outages



* data covers January through August each year.

Increase in gas resources



* data covers January through August each year.

Observations

- Several units had fuel outages because of natural gas pipeline outages;
- A number of units, claimed for capacity had very poor performance during the summer months;
- Repair time varies between market participants; some were timely, while some were very slow; and
- Outages are not always properly reported to SPP as required by the outage coordination methodology.

Real-time and day-ahead price incentives

- The MMU recommends that SPP and its stakeholders should review emergency price formation rules to consider:
  - if they appropriately incent generation availability,
  - would likely reduce outage MWh, and
  - increase the value of fuel certainty.

Attachment AA incentives

- The MMU recommends that SPP and its stakeholders should consider a mechanism to reward resources that perform more reliably and are available when needed by SPP operations.

Outage coordination methodology

- Market participants should review and follow the outage coordination methodology.
- Outage coordination methodology language should be strengthened or clarified as needed, including having all reserve shutdown outages reviewed for approval by the RTO.

Summary of recommendations

- Attachment AA be reviewed to consider financial incentives for operational performance;
- SPP and its stakeholders should review emergency pricing rules and consider revisions;
- Market participants should review and follow the outage coordination methodology; and
- Outage coordination methodology language should be strengthened or clarified as needed, including having all reserve shutdown outages reviewed for approval by the RTO.

Questions?