

D+1 Improvement Project

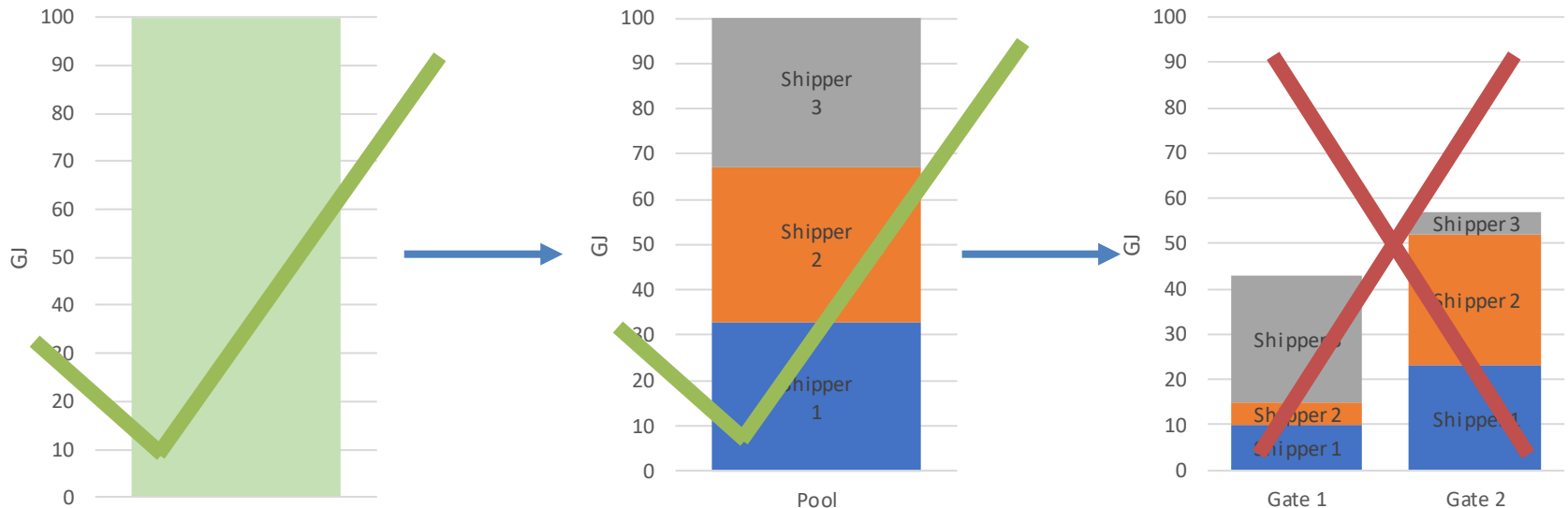
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What's the problem?

- Currently, D+1 is optimized to create allocations accurate at a pool level.
- We still produce gate allocations for transmission, but this step is crude.



- That's ok for VTC, because nominations are done at a pool level
- For GTAC, nominations are done at a zone level
 - Zones are smaller than pools, and can change from day to day.
- We need an algorithm that produces accurate gate forecasts.

What's the solution?

- Don't change what we don't need to change.
- Time-of-use ICP forecasting doesn't change.
- Don't change the non time-of-use forecasting much, but model at a gate level rather than a pool level.
 - This leads to big improvements!
- Why?
- On a gate-by-gate basis, most gates have a similar level of accuracy with the pool algorithm and the gate algorithm
- However, the pool to gate step means the largest gate in each pool gets all "leftover" gas.
 - One gate in each pool does much worse.

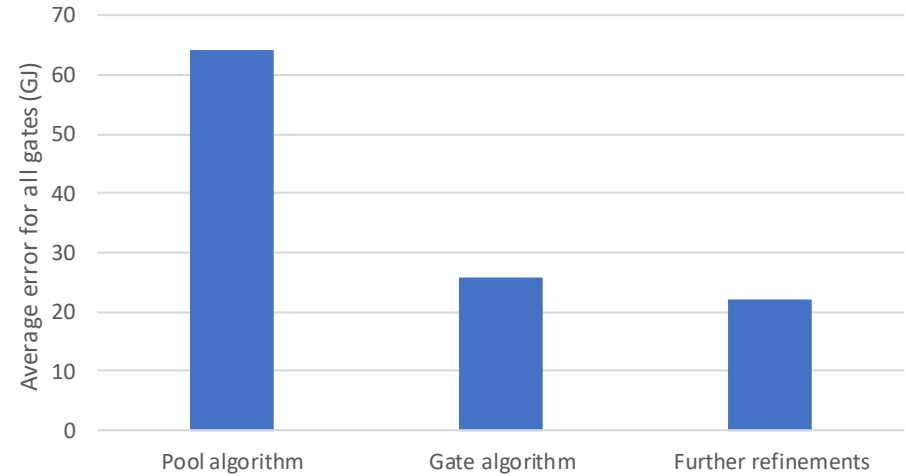
Other possible improvements

- While we're changing things, we can see if there's anything else that will lead to noticeable improvements.
- Some possible options:
 - Split up 4 and 6
 - Didn't do this previously because customers were switched from AG4 to AG6 en masse in historical data
 - No longer an issue (but could be in the future).
 - Change seasonal methodology
 - See if we can do better than just modelling each month as a factor
 - Use initial allocation data
 - Initial allocation data is less accurate than interim or final. Might be better to exclude it?

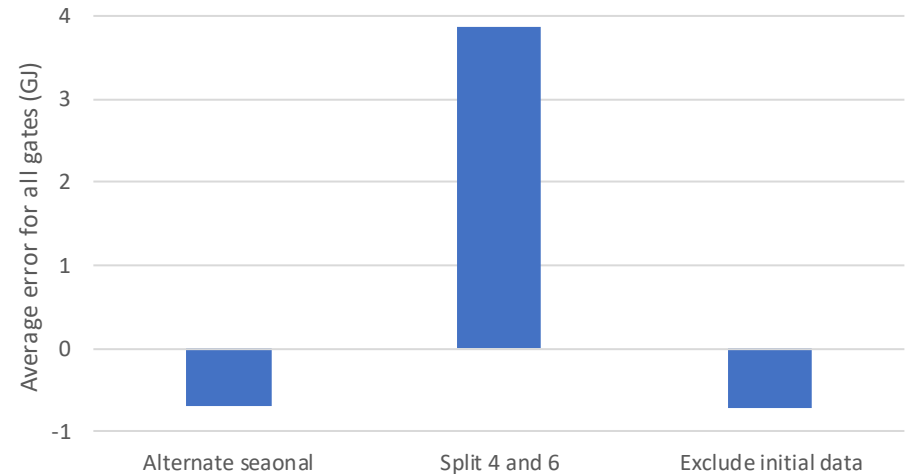
Best option

- Gate algorithm works much better than pool one
- Some minor improvements possible by further tweaking
- Using separate models for AG4 and AG6 provided the biggest benefits.
- Other changes made minimal difference.
 - Are there other reasons to consider them further?

Performance of models



Improvement in accuracy



Compare to SSA

- The specified shipper algorithm (SSA) performs a similar process.
- Is the proposed D+1 process just doing the same thing?
 - No.
 - Why?
- SSA forecasts results in highly asymmetric outcomes for shippers
 - A lower forecast is always better for shippers
 - Shippers could minimize forecasts with initial allocation if it were used in model
- Less of an issue with D+1
 - shippers want forecasts to be accurate. **Agree?**