Some comments on the Australian domestic gas market balance

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East coast gas supply and demestic reservation

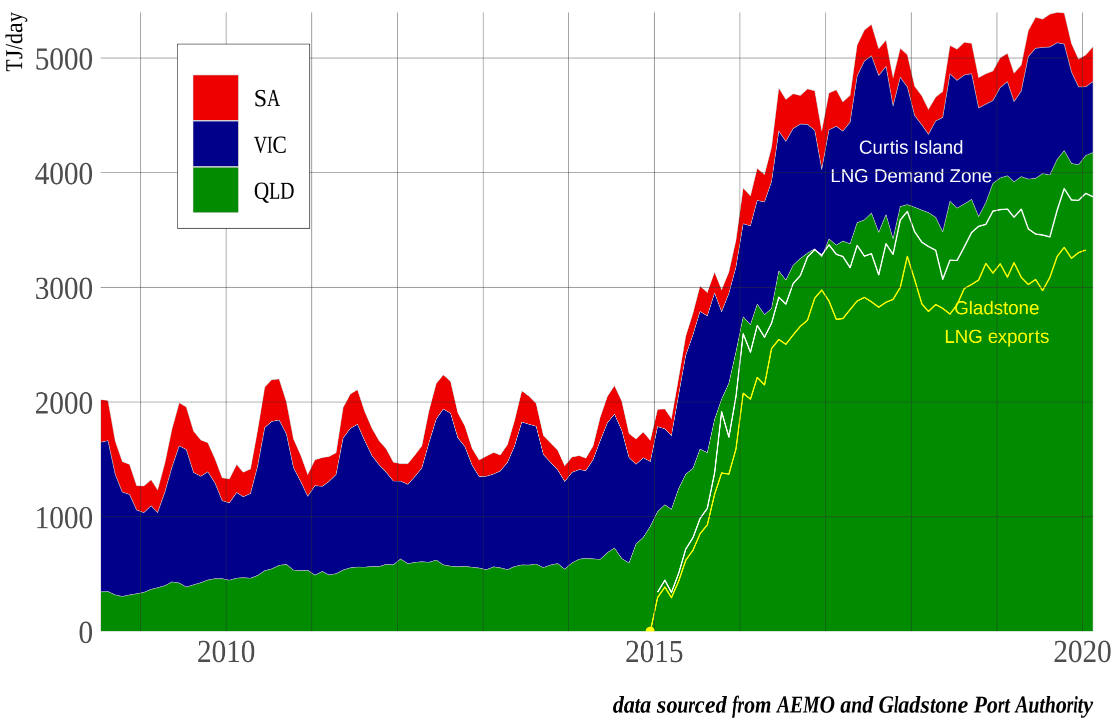
An analysis motivated by the question of the amount of reservation of Queensland CSG (coal seam gas) gas production needed to preserve domestic supply at pre-2015 levels (i.e. prior to opening of the LNG export facility at Curtis Island, Gladstone).

Data sourced from AEMO and the Gladstone Port Authority (GPA).

Total gas production by state

Note that in the figures NSW is negelected since it's contribution to east coast gas production is very small.

The key feature is the ramp up of east coast gas production in 2015 & 2016, from an average of around 1600 TJ/day to ~5000 TJ/day, due to increased production in the Queensland CSG fields.



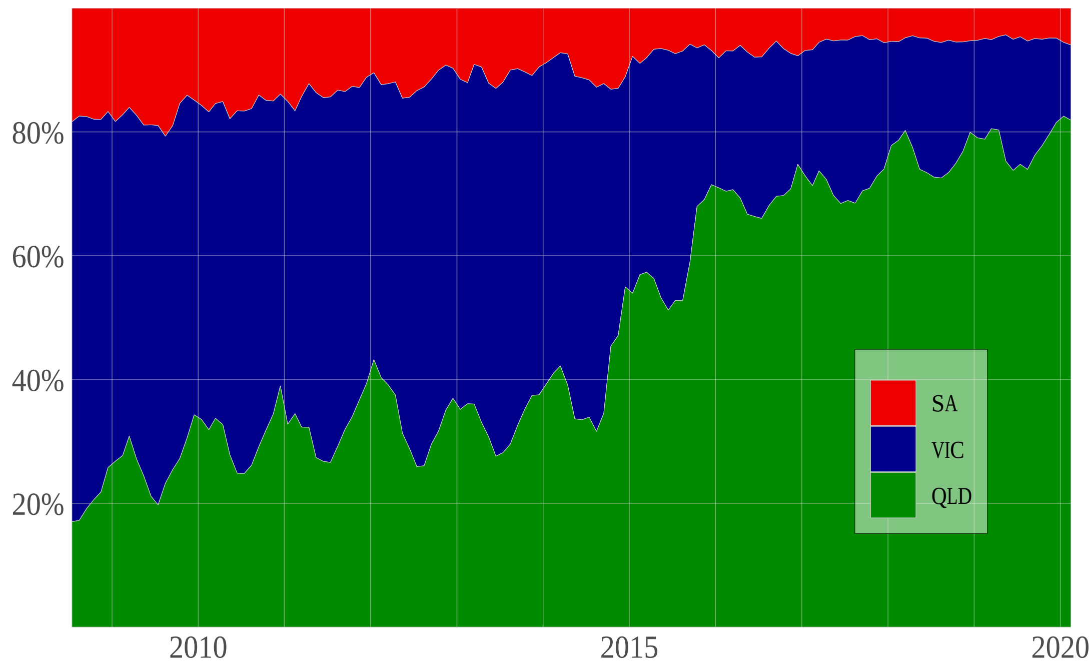
also illustrated are

- gas exported as reproted by the GPA (yellow line), and
- the gas delivered into the Curtis Island demand Zone (white line). Because the GPA exports are reported by month and are "quantised" by cargo departures on a >1 day cycle, monthly averages are approximated by applying a smoothing filter on reported monthly values (namely *1/6*previous.month + 2/3*current.month + 1/6*subsequent.month*).

Note-

- The ratio of demand to export is about 1.155 suggesting a parasitic load of about 16% of LNG processing at Curtis Island.
- while QLD production is relatively constant, the exported flows have tended to be high in summer than winter.

The changes in gas production are reflected in percentage contubutions, with QLD increasing from ~20% in the winter of 2010 to more than ~&5% of gas production in the winter of 2019. Summer contributions of QLD production are typicallly 5-10% higher reflecting the larger industrial demand proportion relative to southern states(see below).

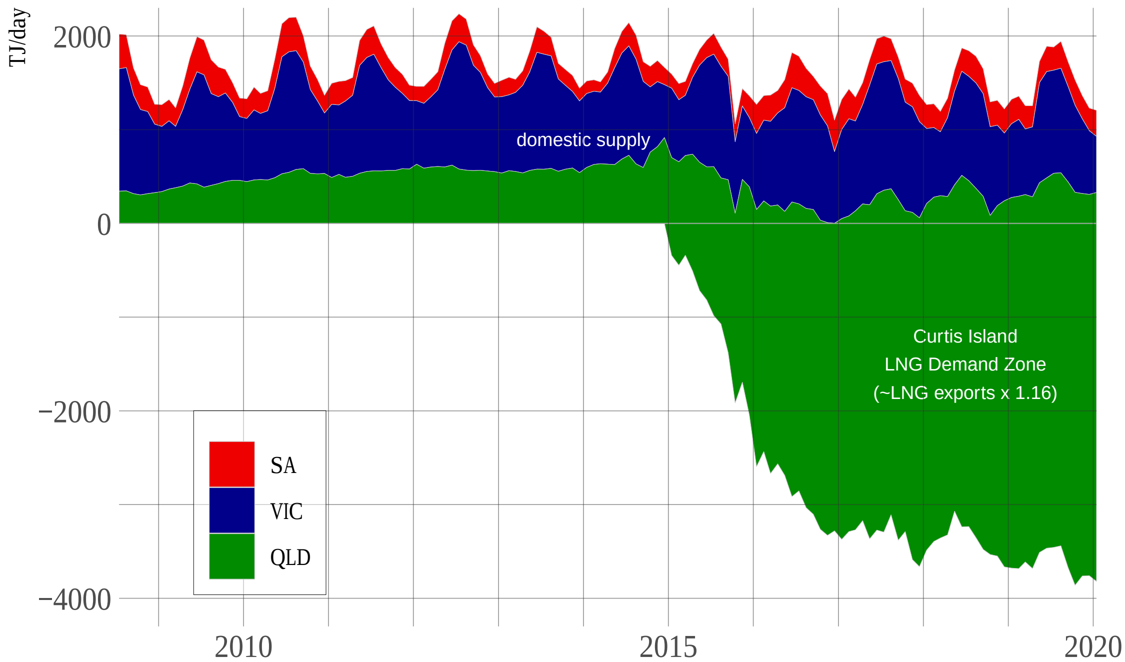


data source from AEMO

Subtracting the Curtis Island demand from QLD production gives the balance supplied into the domestic market.

Note-

- the restricted domestic supply in late 2016.

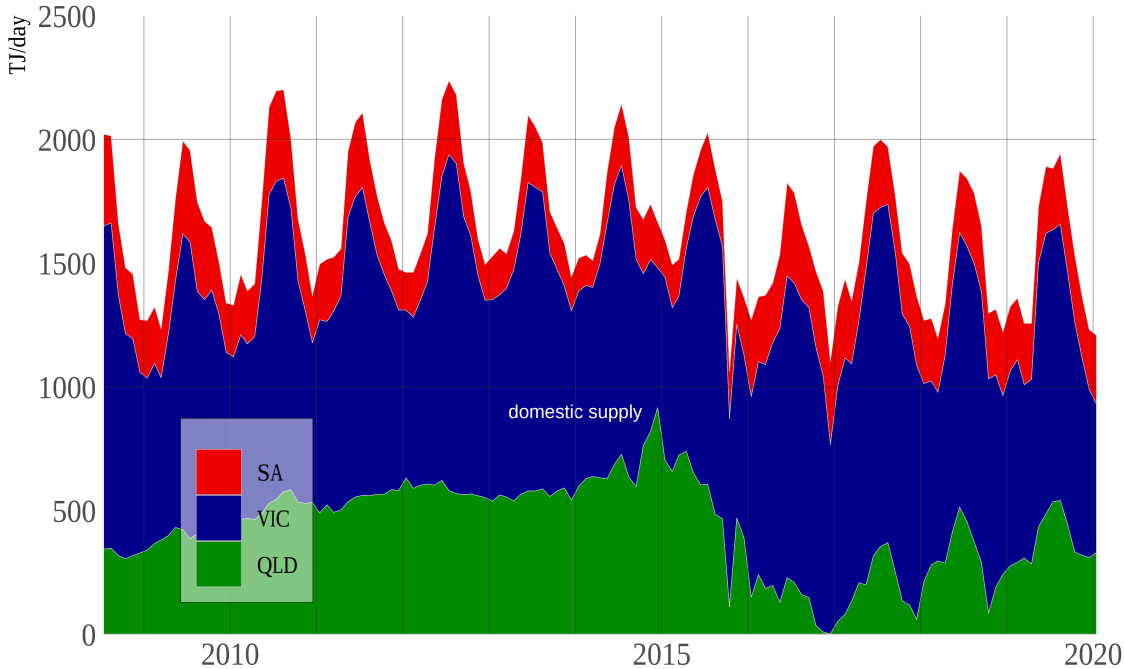


data sourced from AEMO and Gladstone Port Authority

Domestic demand shows a stong seasonal variatoon reflecting due to the historical use of gas for winter heating in the southern states, with peak production historically at slightly aove 2000 TJ/day.

Noted

- steady reduction in the peak supply to < 2000 TJ/day is evident since the winter of 2014, reflecting a significant tightening of the domestic supply.
- neglible contribution of QLD supply to the domestic markets in late 2016.
- a stronger seasonalality in QLD domestic supply, due more to variation in exports than to production



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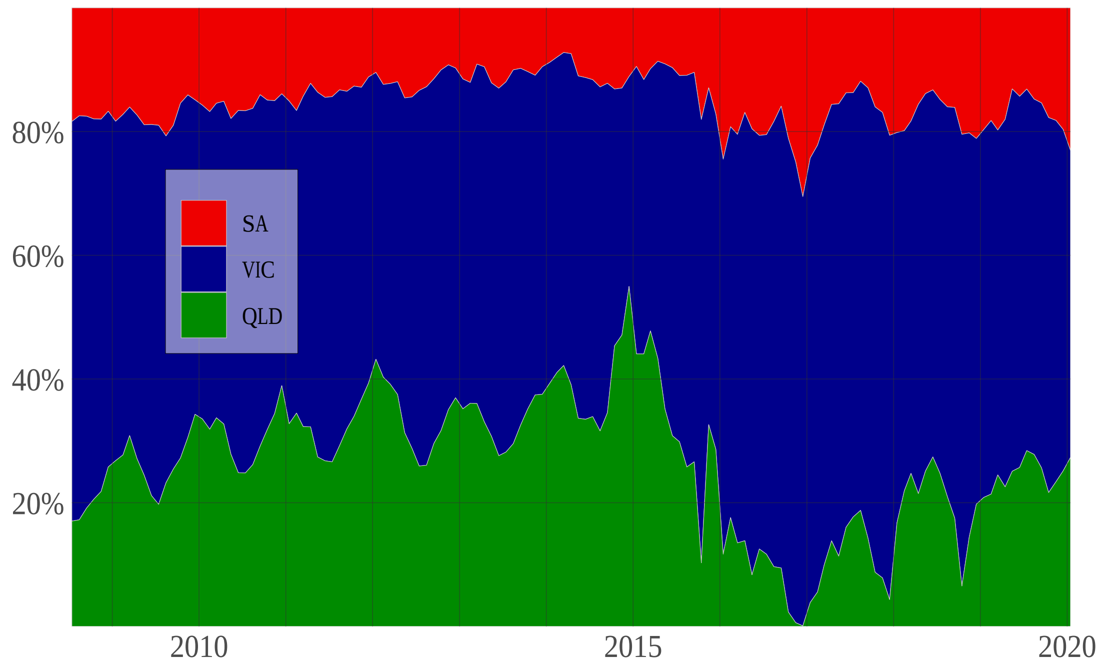

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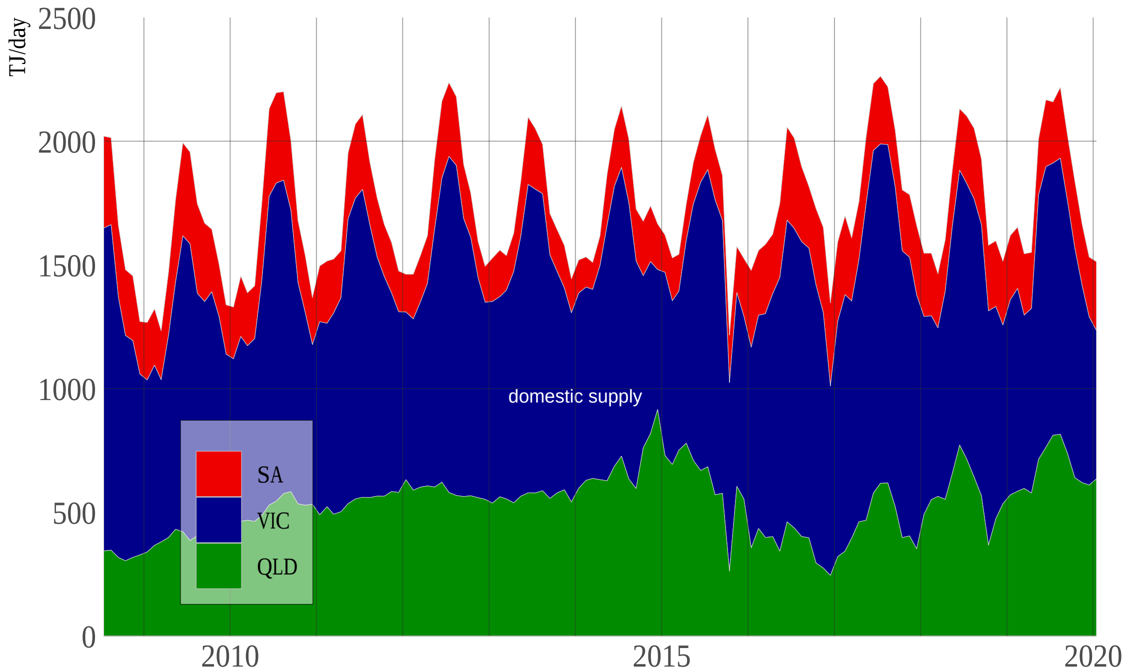

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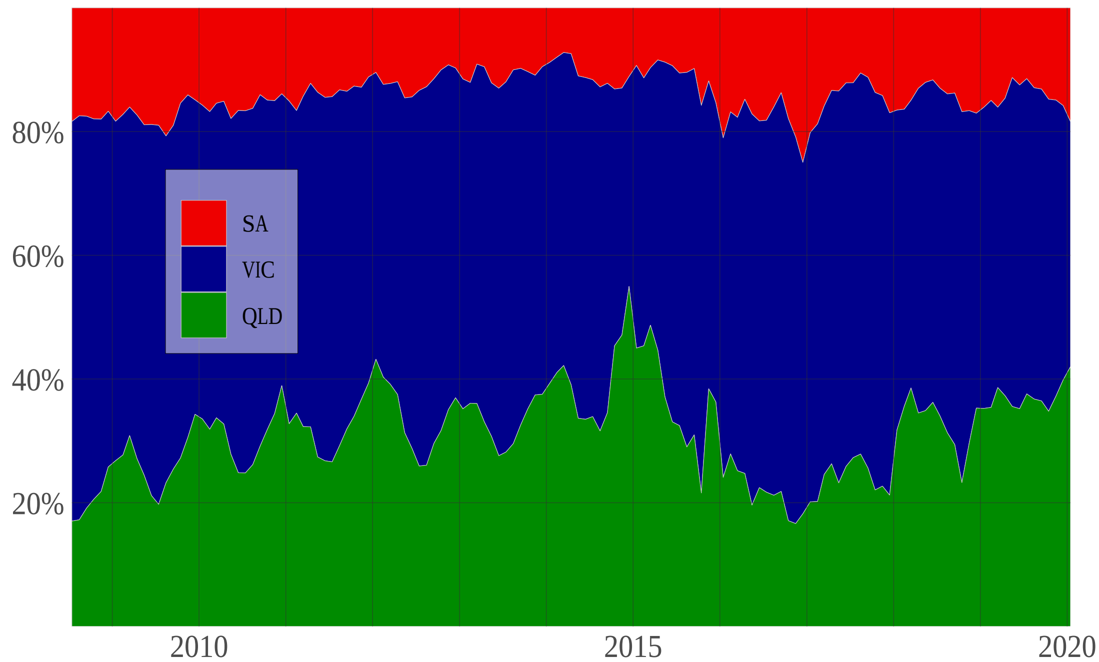

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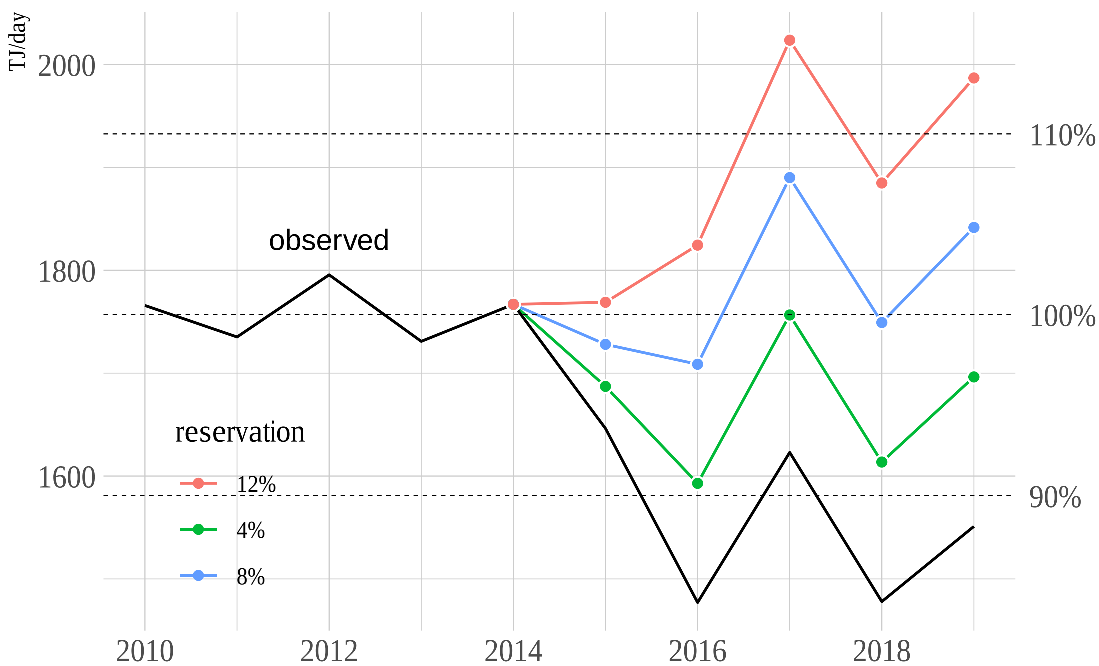

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