File Note: ERP2 Modelling of Methanex

17th December 2024

Methanex is a Canadian company that operates methanol production plants in Taranaki: a large plant at Motunui comprised of two separate production "trains" and a smaller plant in the nearby Waitara Valley. The plants were built as part of the 'Think Big' project in the early 1980s, including the Waitara Valley plant as a synthetic petrol plant before it shifted to methanol production after its acquisition by Methanex.

Over time, the plants have closed and re-opened, and have scaled up and down, responding to gas supplies, market demand and to has and methanol prices. Methanex has contracted for gas supply out to 2029 to meet some of the potential plant production.

Currently:

- the smaller Waitara valley facility was mothballed in early 2021, following a decision by Methanex because it was "unable to secure sufficient gas supplies."[1]
- one Motunui train was closed in early 2024 in response to less available natural gas supply.
- Methanex idled both its production facilities at Motunui in mid-August 2024 and on-sold its contracted gas at a profit from then until the end of October to electricity generators[2] . Following this, only one train at Motunui returned to service with the other closed "indefinitely".[3]

This is still the case, despite greater gas availability and gas prices having fallen to low levels (Figure 1) (Methanex releasing gas to the market will be part of the reason for the falling gas prices). Our understanding is that there is an industry expectation that Methanex will not re-open either the Waitara valley plant or the currently closed Motunui train and, without substantial new gas discoveries, will close operations fully at the end of its gas contract in 2029.

For modelling for ERP2, we followed MBIE in its projections, with Methanex fully closed by the end of 2029. This considers that the Waitara Valley plant remains mothballed and does not restart. The assumption used for ERP2 is that one Motunui train will continue operation and close at the end of 2027, and the other at the end of 2029. Thus, we are assuming higher emissions than would be the case if the one train stays closed.

In the MBIE modelling, the decision to close Methanex's New Zealand operations is made endogenously within MBIE's energy model and is not fed in as an exogenous assumption. The model considers the level of natural gas demand across the economy in comparison to the supply outlook.[4] Using this, the following process is applied:

---

[1] https://www.stuff.co.nz/business/300237857/taranaki-methanol-plant-closure-disappointing-but-not-unexpected-business-leaders-say

[2] https://www.methanex.com/news/release/methanex-corporation-to-temporarily-idle-new-zealand-operations-to-assist-in-improving-energy-balances/

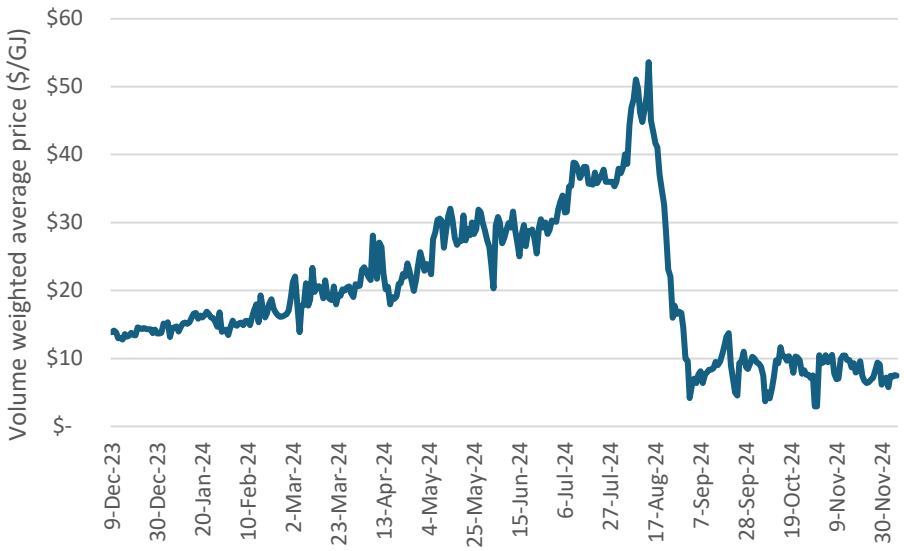
[3] https://www.nzherald.co.nz/nz/politics/another-blow-for-industry-methanex-proposes-idling-one-plant-indefinitely-job-cuts/FZS76HTRDJAEVN3RS4YAWXJXFQ/

[4] This is informed by the 2024 update of MBIE's Petroleum Reserves data, released on Thursday 11 July 2024.

- If the level of demand exceeds supply, Methanex demand will flex downwards as trains close for short periods when supply is unavailable
- If Methanex utilisation of its plants falls below a minimum threshold in any given year, then the decision is made to close all New Zealand operations

The resulting closure years have then been fed into ERP2 as exogenous assumptions.

Figure 1 Wholesale gas prices



Source: https://www.emstradepoint.co.nz/