# Technical summary of analysis of the LNG import investment and better alternatives

## Key messages

The Government's decision to pursue the construction of an LNG import terminal has been justified primarily on the basis that it is required for dry-year insurance.

There are also arguments being made that it is necessary to prevent deindustrialisation from diminishing gas supplies for our major industrial gas users.

The Sapere report demonstrates that a LNG import investment is not the best solution to New Zealand's energy security issues, nor is it the lowest cost dry year solution. Diesel-based bridging to a long term renewable dry year solution could be $900 million lower cost.  Rewiring agrees the cost of investing in LNG does not stack up and our view is that it simply delays the investment to decarbonise industry whilst locking in a long term subsidy.

Instead the Government can put in place a credible strategic response to declining domestic gas supply providing long term energy resilience. With significant new generation commissioned in the last 2 years and a strong pipeline of renewable investment, some organisations argue we don't need any additional dry year backup over the next 10 years. The Sapere report highlights the value in quantifying existing flexibility including in current gas use and reserves and other existing sources of dry year response to assess the need for new dry year fuels. It is clear there is time to consider alternatives to LNG and put in place a better solution to deliver energy resilience with declining domestic gas supply.

## Credible strategic response to deliver energy resilience

Sapere's report highlights that New Zealand lacks a credible plan to address key energy security issues which include:

- declining flexible gas supply for dry years,
- process heat dependency on declining gas, and
- without a contract market for firm energy to underwrite long term dry year solutions, businesses are exposed to wholesale electricity prices.

The following package of measures set out the Sapere report can address these underlying security issues:

Measures to address dry year security

- Accelerate deployment of renewable investment for dry year
- As needed utilise diesel as a bridging dry year fuel

- Creating long-term firm-energy contracts that drive dry-year investment and provide affordable dry year cover for industrial electricity consumers

Measures to accelerating transition of industrials away from gas

- Address cost barriers via targeted public co-investment
- Accelerated electrification through facilitating power purchase agreements between renewable investor and process heat customers
- A strategic policy approach to network connections can support accelerated process heat fuel switching and renewable generation, combining regulatory and funding changes.
- Accelerate fuel switching to biomass through biomass market development in line with demand expectation to ensure reliable supply.

These measures could be led via a dedicated team within the Department of Prime Minister and Cabinet, building on existing work by MBIE, EECA, the EA and Transpower.

Rewiring Aotearoa's interpretation of the LNG proposal is that the Government is introducing a fossil fuel subsidy for LNG by requiring electricity users to subsidise the cost of LNG for gas users. As there are better alternatives to address the dry year the rationale for electricity users to pay for LNG does not stack up. The best outcome for New Zealand on balance would be no LNG imports and a well managed transition away from gas as part of a package of policies (above) to deliver resilient and secure energy supply now and into the future.

The Sapere report highlights how crucial the Government choice is. For a similar cost[1] it can either:

- address our dry year problem (in the short and long term) and accelerated industrial fuel switching to address much of the process heat dependency on declining domestic gas (implementing the package of measures above),
- OR, requiring electricity customers to pay for LNG imports provides a dry year solution but retaining our dependency on gas for industrial process heat. At the end of the LNG solution these users would still have to be switched away from gas, as reserves would be nearing end of life. This could require subsidies for the fuel switching.

## Dry year risk

Sapere's analysis shows the **best way to solve the dry year challenge long term is through developing a contracts market for firm dry year backup** [see section

[1] Slide 33 of the Sapere analysis indicates that the cost to implement an LNG solution would be $365 million higher than a dual-fuel conversion and diesel storage plus providing grants to fuel switch 12PJ of process heat demand would be less than the cost of investing in LNG. The additional cost of the LNG solution assumes $269 million of additional LNG fuel subsidy to support process heat business to remain economically viable. However even without this additional fuel subsidy cost assumption the LNG solution would be slightly higher cost.

3.2] with this backup supply likely provided by renewable generation as the lowest cost option. For example 800MW of wind generation that is contracted and paid to be available as additional supply in a dry year (and kept out of the market until needed) could provide an economically competitive solution to dry year risk. [see section 1.2].

In dry years the challenge is an energy (not capacity) deficit, therefore intermittent renewables (like wind and solar) are a technical feasible dry year solutions and in many ways provide a better way to solve the dry year problem:

- High variable cost of LNG, diesel or coal in dry years, incentivise delay in incurring these costs until it is clearer that hydro inflows are trending towards a 'dry year'.
- Alternatively the near-zero variable cost of renewables means more precautionary use (i.e. releasing it into the market earlier) has little or no opportunity cost. Hence **the price effect of dry years could be reduced, particularly in the early period of a dry year.**
- There is a sufficiently large pipeline of renewable generation investment to meet both demand growth and dry year needs. [Section 1.2]

Sapere's analysis assumes that additional dry year back up is required in the near term until a contracted renewable dry year solution can be delivered. [Section 1.3] If this renewable dry year solution can be in place before 2039, then **diesel (utilised in existing gas peakers converted to run on diesel, along with 120 million litres of additional diesel storage) is a lower cost dry year solution than investing in LNG.** The sooner this occurs, the more savings available.

The cost assumptions used by Sapere for comparing investment in the diesel dry year solution to LNG were conservative and included costs for greenfields diesel storage. However despite this their analysis showed diesel would be $900 million lower cost if a contracted dry year solution is delivered by the end of 2033. Rewiring Aotearoa notes that if lower cost diesel storage could be achieved through recommissioning of storage at Marden Point the economics would lean more strongly in favour of diesel for short term dry year firming with Rewiring's calculations indicating approximately $350 million to $420 million additional savings available.

Investing in conversion of 400MW of existing gas plant to dual fuel peakers that can run on diesel (or any liquid fuel) or gas has a number of benefits:

- This solution could be delivered before winter 2028, utilising off the shelf kits that take about 15 days to install.
- This would include 120 million litres of additional diesel storage, providing 28 days of generation. This would provide a buffer to allow time for additional diesel deliveries in the unlikely event of a bad dry year.
- Additional diesel storage would greatly improve the resilience of our primary sector and trucking fleet, if there is another fuel crisis. Sapere note

the resilience value for diesel is likely much higher than LNG (for industrial gas users) because transport impacts a much larger part of the economy than process heat.

Due to its lower capex a diesel solution to dry year risk maintains greater optionality, is lower risk and provides a better path to energy independence.

### MBIE's assessment which dismissed diesel as a dry year solution was flawed

Diesel as a dry year solution should not have been ruled out by MBIE so quickly. Section 1.3 of the Sapere Report outlines how many of the assumptions used to justify ruling out diesel were inaccurate.

For example MBIE argues diesel peakers are only suited to short duration peaking, however this is not a technical constraint. It is often described as a peaking fuel as it has high variable costs and low capex (preferable for lower duty). However, when compared to other high variable cost and higher capex fuels, it can be preferable as Sapere's analysis has shown.

MBIE's analysis suggests diesel peakers would not provide enough energy for a dry year, but this ignores the option to convert 400MW of gas peakers to run on diesel which is quite common internationally and could be delivered quickly.

## Managed gas transition

Accelerated fuel switch of industrial process heat is feasible, and is a significant tool for managing declining gas reserves. **Sapere's analysis shows much of the large industrial process heat gas use could be decarbonise by 2032** (23PJ of gas use):

- 11PJ of industrial gas use could be switched today at positive rate of return
- An additional 12 PJ could be switched at a cost of $958 million today (NPV of $765 million if implemented from 2028 to 2032 calculated by Rewiring).
- The new network connections required for the accelerated electrification of industrials (only 12% of all electrification projects) is achievable with a concerted policy focus.
- There are sufficient resources in-country (biomass and electricity generation) to meet the demand for these alternative resources.

Accelerating 23PJ of industrial gas fuel switching, along with reducing gas use for electricity generation from 25 PJ in 2025 to less than 2PJ by 2035 is sufficient to significantly extend the life of **current gas reserves that could provide supply until the mid 2050s in the Sapere analysis**.

**Developing a major new gas resource in New Zealand is unlikely and it is risky to consider LNG as a bridge to an abundant domestic gas future**:

- International exploration firms deploy capital to look for oil. Even if oil discoveries are made, finding significant gas is a second-order objective

- Bringing gas ashore would need long term commitment for sufficient gas demand. With improving fuel switching economics this becomes less likely.
- Potential for a big gas find is unlikely in Taranaki basin more likely in a greenfield basin far from current gas delivery infrastructure

Without any action from the Government to deliver a pathway off gas, LNG locks in ongoing subsidies including covering ongoing LNG import lease costs and possible further subsidies for trade exposed industrial LNG users to buffer international LNG price increase.

## Gas contracting challenges for commercial and industrial users not related to gas shortage

Challenges to access contracts for industrial and large commercial gas users has been highlighted as an issue in recent years. **Inability to access gas contracts is not inherently due to declining gas production**. Results from modelling by Concept Consulting indicates that the gas supply-demand balance for non-petrochemical consumers (excluding Balance and Methanex)[2], when conservative gas demand reduction assumptions are made, indicates no pressing need for urgent development of LNG. Results showed there is headroom above gas demand to production capacity out to 2030 with low production rates and no continuation of fuel switching trends away from gas. WIth low production assumptions and a continuation of the current trends of fuel switching away from gas this extends to 2033.[3] This result was stress tested against dry year hydrology sequences, and found that gas production could meet non-petrochemical demand in all periods in 2028, with no additional investment in storage.

This analysis showed the importance of Ahuroa's flexibility to store during periods of surplus and export back to the pipeline at times of scarcity, and the potential for Ballance's urea production plant to flex demand to help in times of scarcity.

The challenge to access contracts relates to the significant gas contracts Methanex holds out to the end of 2029. Upstream producers cannot provide firm gas contracts to large consumers, because they have already contracted the rights to the gas to a level which could not be satisfied and also meet the demands from non-petrochemical consumers if gas production turned out to be at the low end of projections. Concept analysis estimates that the significant delays in negotiating the re-allocation of gas from low-value (methanol production) to high-value (electricity generation) during Winter 2024 resulted in

[2] Petrochemical consumers have not been included in the projection because it is fundamentally uneconomic to develop LNG import capability to enable petrochemical production.
[3] As we note above, with a strategic approach to target fuel switching, removing 23PJ of industrial gas use and avoiding the 25PJ of gas use for electricity demand that occurred in 2025, we can extend current reserves until mid 2050.

electricity prices rising to $800/MWh rather than 'only' $400/MWh had gas been allocated to highest-value uses.

This ongoing situation of ‘friction’ in gas re-contracting means that declining domestic gas supply is often not being contracted to its highest value. Market concentration may mean that contracts cannot be agreed that fairly share value. This challenge could persist until the end of 2029 when Methanex’s gas contract entitlements expire. Lack of transparency of contract prices could lead to outcomes that favour suppliers over consumers. The Government could explore options to improve contract price discovery including requiring more transparency and reporting of contracted prices.

## LNG is a high costs pathway to avoid deindustrialisation

As we have discussed above - LNG is not a sensible intervention to address short term ‘contractability’ barriers for commercial and industrial gas users. It also does not make sense as a medium to long term stop gap to prevent deindustrialisation. Concept Consulting's modelling of gas prices, without investment in LNG, shows that domestic gas prices trend towards the price of substitutes (LPG and diesel). The cost to subsidise all trade exposed industrial gas users to make LPG prices equivalent to subsidised LNG would be less than the annual lease cost estimates for the LNG terminal and significantly less than the net cost in present-value terms of subsidising LNG via an electricity levy.