MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
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Crown Minerals Amendment Bill modelling

The repeal of the oil and gas exploration ban may lead to greater investment in existing gas fields.
To assess the potential impacts of this, sensitivity analyses have been run on MBIE's baseline[1] model to test the impacts of converting some contingent gas reserves into 2P resources for production.

MBIE's demand model then captures impacts on electricity generation, Methanex usage and likely exit dates, and industrial and commercial consumption. There are then flow-on effects across the system, including for electricity demand, build schedules, and coal demand for electricity generation.

The repeal may also mean that new gas field supply is discovered and developed, increasing supply further. However, this is unlikely to happen before 2035 and is outside the scope of this exercise.

Results

The high-level impacts on emissions are as follows (see **Table 1**):

- If 30 per cent of contingent reserves are added to supply forecasts, emissions rise a cumulative total of 1.6 Mt CO_2-e through to 2035.
- If 60 per cent of contingent reserves are added to supply forecasts, emissions rise a cumulative total of 2.4 Mt CO_2-e through to 2035.

Table 1. Total non-transport energy emissions per scenario, MT CO_2-e.

	Baseline	Contingent (30%)	Contingent (60%)
EB2	71.09	72.08	72.04
EB3	61.15	61.77	62.56

These impacts are smaller than those previously estimated in the analysis underlying the May 2024 CIPA prepared for this policy[2]. The key difference is the expected timing of when contingent reserves

[1] The term "baseline" in this document refers to a modified version of MBIE's "With Existing Measures" scenario used for Biennial Transparency Report projections which are published by the Ministry for the Environment. The baseline had already assumed some additional gas supply would be made available from the 2030s. This baseline has been modified for this modelling exercise through further reducing supply in the early 2030s to form a counterfactual scenario.
This baseline will not align with the ERP2 baseline emission figures, which are still being finalised at the time of writing.

[2] Climate Implications of Policy Assessment disclosure sheet (mbie.govt.nz)

can be converted to supply. We have assumed that contingent reserves may extend the lifespan of existing fields but are not likely to significantly raise short-term production. Additional gas supply partially displaces coal use for electricity generation, which offsets the total emissions increase.

Compared to the baseline, the increase in emissions is chiefly driven by the extension of Methanex operations, which can remain economic for longer if additional contingent reserves are converted to supply. However, in all scenarios, gas supply is will likely be constrained across much of the economy.

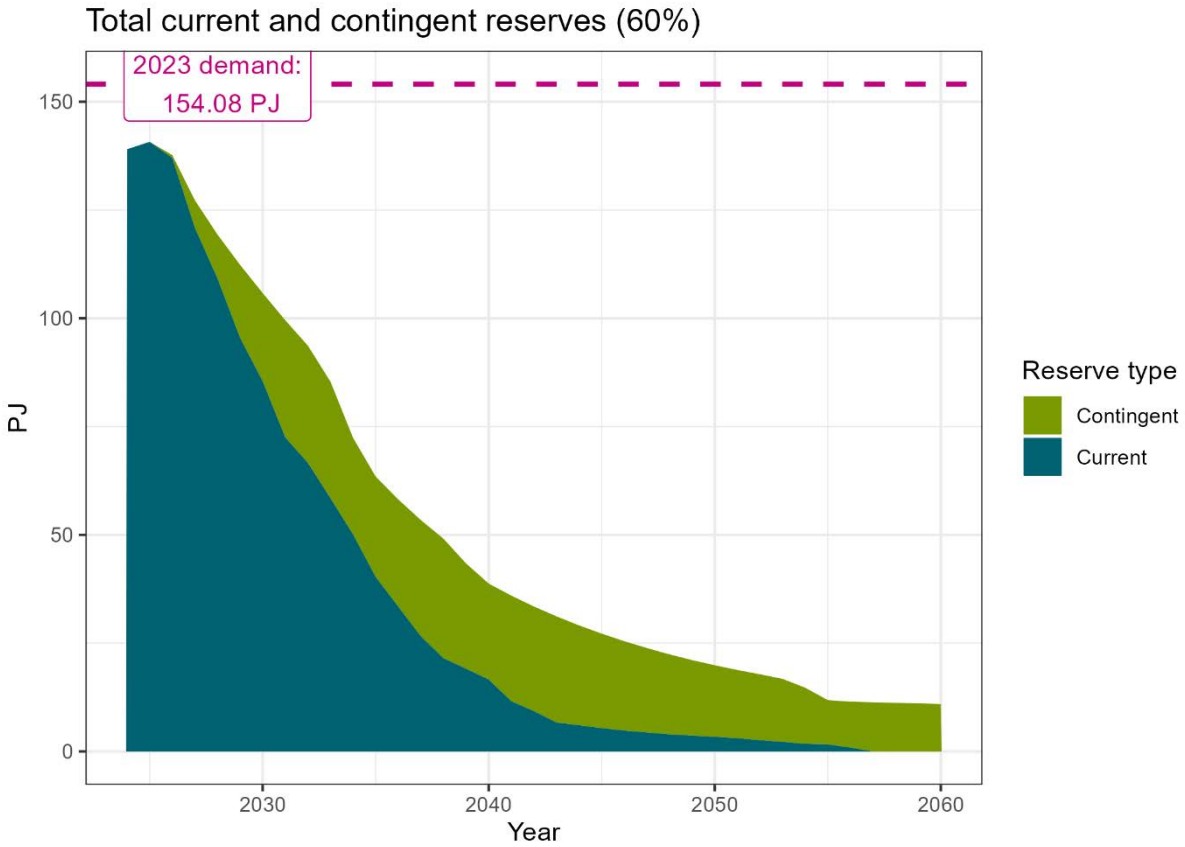
Method

To properly reflect impacts in the model, we make two key adjustments for the sensitivity scenarios: raising gas supply and decreasing gas prices.

1. Increasing available gas supply

In the two scenarios, 30 per cent and 60 per cent of current contingent reserves respectively are added to field outputs. We assume that contingent reserves increase the lifetime of fields, rather than significantly bolstering short-term output (see **Figure 1** for an example). This exercise is completed per field and based on existing forecast production profiles and contingent reserves for each field.

Figure 1. Current and 60 per cent contingent domestic gas supply.



Despite the addition of the contingent reserves, supply projections still quickly fall below current demand levels. Based on the latest expectations of field operators (provided through reporting on petroleum reserves) we assume that it is unlikely that new supply will be found, so demand must fall in all scenarios.

2. Decreasing gas prices in response to additional supply

MBIE's gas prices are set exogenously and have been adjusted in response to increased supply. In all cases, we assume gas prices rise to within the range of the cost of importing LNG. These are then modified based on the levels of supply restriction (see **Table 2**).

Table 2. Price ceiling and the year in which this price will be reached, by scenario.

	Baseline	Contingent (30%)	Contingent (60%)
Price ceiling (NZ$/GJ)	$25	$22.50	$20
Year to reach price ceiling	2031	2030	2029

Figure 2. Non-energy emissions across all scenarios