Economic and industry impacts of alternative future electricity price paths

A GSM-NZ dynamic CGE analysis

Final report, 6 August 2025

SENSE PARTNERS
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Key points on a page

- Using the MDG-NZ dynamic CGE model, we explore the potential economic impacts of electricity prices being higher or lower than expected, based on hypothetical scenarios.[1]

Electricity price changes can have material, long-lived macroeconomic impacts

- If 2026-2030 electricity prices are around 30% higher than the baseline scenario, real GDP fall could below baseline by around 0.7% ($3.2bn) by 2030 and by 0.5% ($2.3bn) by 2040.
- Short-term electricity price increases can therefore have long-term economic impacts.
- New Zealand's industrial base sees costs increase and profits drop, leading to more subdued investment growth and a lower aggregate capital stock. Exports grow less rapidly as international competitiveness is harmed.
- Households also suffer as employment and real wages fall as the economy grows less quickly and less profitable firms are less able to consider hiring or putting up wages.
- In contrast, if real electricity prices averaged $133/MWh compared to the baseline's average of $175/MWh, real GDP could rise by 1.8% ($10.3bn) above baseline by 2030 before moderating to be 0.8% ($5.1bn) above baseline by 2040.

Primary metals production and pulp & paper manufacturing are the most impacted industries; most industries only see small changes, however

- In our low price scenario:
    - o Primary metal production GDP would grow by 11.7% above baseline by 2030 and 7% above baseline by 2040.
    - o Pulp and paper manufacturing GDP would be 5.3% above baseline by 2030 and 2.6% above baseline by 2040.
- Other industrial users such as the chemicals, ethanol, non-metallic minerals and fabricated metal manufacturing industries would also benefit from lower electricity prices.
- Most other industries experience relatively small changes in output when electricity prices change.
- The services sector accounts for over 70% of the New Zealand's GDP, and electricity is (on average) just 1.5% of their intermediate input costs, compared to 19.4% for primary metals and 5.5% for pulp and paper. For the services sector, and indeed most industries, labour costs are far more important than electricity costs.

Real GDP is considerably more sensitive to sustained changes in electricity prices than one-off shocks

- We calculate – illustratively – the elasticity of real GDP to electricity prices to be between -0.02 and -0.04, depending on the size of the price shock, whether it is a one-off level shift or a change in the price growth path, and the time period involved.

[1] These scenarios do not purport to analyse specific policy or regulatory settings. They are illustrative only.

- These estimates are not econometrically determined and are conditional on the structure, database and behavioural parameters embodied in our CGE modelling framework.
- The table below shows the real GDP impacts of +/-2% changes in electricity prices in 2025 only and of +/-2% changes every year, relative to the baseline.[2]

TABLE 1 REAL GDP IMPACTS OF ELECTRICITY PRICE CHANGES

Change in electricity prices, relative to baseline	Change in real GDP from baseline, 2035	Change in real GDP from baseline, 2050
-2%, 2025 only	$0.33bn (0.06%)	$0.35bn (0.05%)
-2% every year	$3.76bn (0.57%)	$15.55bn (1.44%)
+2%, 2025 only	-$0.33bn (-0.06%)	-$0.34bn (-0.05%)
+2% every year	-$3.88bn (-0.59%)	-$13.55bn (-1.32%)

- This indicates even single year shocks can have long-lasting and material impacts. This is largely a capital stock story: changes in investment lead to the productive capacity of the economy being permanently higher or lower than the baseline.

[2] The baseline price path is derived from average settlement prices over the past year for futures contracts expiring 12, 18, 24 and 30 months ahead from Q4 2025.

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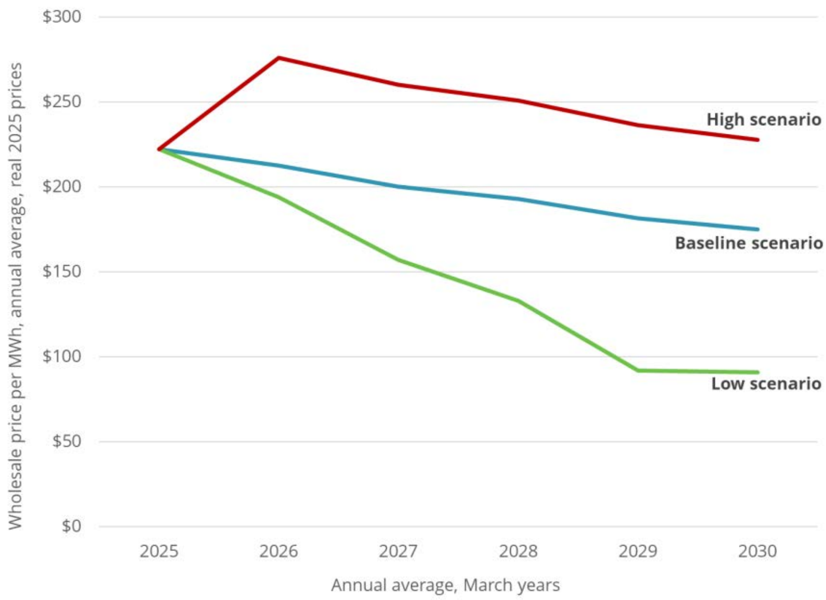
1. Purpose, scope and caveats

1.1. Purpose of research

Recent high electricity prices have led to concerns over the competitiveness of New Zealand's industrial base.

MBIE has commissioned Sense Partners, supported by its US-based partner Phylleos, to analyse the economic and industry impacts of alternative future electricity price paths.

FIGURE 1 WHOLESALE ELECTRICITY PRICE PATHS IN MODELLED SCENARIOS



MBIE also asked Sense Partners to explore the overall sensitivity of GDP to changes in electricity prices.

1.2. Scope and caveats

The price paths for the baseline and alternative future scenarios are not forecasts of what prices *will* be out to 2030, rather what they *could* be under certain assumptions and worldviews. The price projections are not intended to analyse the impact of specific policy settings.

We analyse the economy out to 2040 to allow the model's capital, labour and external dynamics to play out for a decade after the price paths are imposed between 2026 and 2030. Projecting the economy and its structure out 15 years at a time of rapid technological change is challenging, as we cannot predict when 'new' industries or technologies might emerge.

The precise assumptions and mechanisms used to generate the future electricity price paths can be debated (see section 2.2 for a discussion). These matter for the composition of the electricity sector but are largely immaterial for the wider economic impacts we are most interested in for this project.

The estimates presented on the sensitivity of GDP to different electricity prices provide an indication of how aggregate GDP changes with changes in electricity prices, over different timeframes, *conditional on the structure of, and behavioral parameters in, our dynamic CGE model*. They are not econometrically determined elasticities.

Other caveats are as reported in our Stage 1 report on the impact of historical electricity prices, and we do not repeat them here.[3]

[3] Sense Partners. 2025a. 'Historical impacts of high electricity and gas prices on the New Zealand economy and industries: A GSM-NZ dynamic CGE model analysis'. Final report to MBIE, 20 July 2025.

2. Methodology and scenarios

2.1. Overview of GSM-NZ model

We use the Global Systems Model of New Zealand (GSM-NZ) for this analysis. GSM-NZ is an advanced dynamic CGE model of the New Zealand economy. It was developed for Sense Partners in 2019 by Dr Ashley Winston of Phylleos Inc. in Washington, D.C.

GSM-NZ explores how the entire economy adjusts over time to changes in policy settings or shifts in the economic environment. For this research, we use a 79-industry database that captures the interlinkages between industries, households, government, workers, investors, export markets, etc ('economic agents') and the greenhouse emissions associated with production and consumption.

We first project the New Zealand economy and its industry composition out to 2040 in a baseline or BAU scenario.

We then introduce 'shocks' to the economy in 'policy'[4] scenarios – in this case higher or lower than baseline electricity price paths. Economic agents respond to changes in relative prices by adjusting their behaviour (production, consumption, inter-industry trade, investment, overseas trade, employment, etc.). Supply and demand iteratively adjust across all commodity and factor markets until a new equilibrium is reached.

The economic impact results are reported as deviations – that is, as the difference between the baseline results and the policy simulation results for each variable. This enables us to report results that capture only the impact of the scenario shocks themselves.

The model produces results for every year, including macroeconomic aggregates (e.g. GDP, household spending, exports, etc.) and a huge amount of detail at the industry level – output, value added, exports, employment and wages, capital investment, etc.

We have used GSM-NZ[5] for several New Zealand clients including MBIE (on historical electricity prices, Accelerated Depreciation and biofuels mandates), Transpower, MoT, KiwiRail, Oji Fibre Solutions, New Zealand Carbon Farming, The Treasury, Auckland Airport, and a group of Economic Development Agencies.

For more information on what dynamic CGE models do, how they are constructed and key assumptions, as well as more details on GSM-NZ, see our earlier report on historical price impacts.

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[4] This is a generic CGE modelling term for scenarios that incorporate different assumptions to the baseline. The shocks incorporated do not have to represent actual policy changes. They can reflect changes in technology, changes in preferences, changes in population growth or any number of factors not directly related to policy settings.

[5] Earlier versions of GSM-NZ were called MDG-NZ.

2.2. Scenario description

2.2.1. Baseline scenario

The baseline scenario incorporates known policies and 'normal' expectations around the domestic and international economic environment. The aim is to project the economy out to 2040 on the basis that there won't be significant shifts in policy direction, technology or the way New Zealand produces and consumes goods and services.

We take Treasury's latest macroeconomic forecasts (i.e. in their Budget Economic and Fiscal Update) for the first 5 years, and then Treasury's Long-Term Fiscal Model projections out to 2040. This gives us economic growth projections that determine the overall size of the economy.

We then apportion the economy between the 79 industries in our model. We do this using historical trends in industry growth rates plus assumptions around technological change in each industry. The projections are therefore essentially a continuation of historic trends in the composition of the economy, without any large structural change or disruptive technologies being introduced. For the timeframes we are analysing this light-handed approach is appropriate, as opposed to making bold assumptions about rapid changes in the structure of the economy.

The wholesale electricity price in the baseline gradually declines from around $220/MWh in 2025 to $175/MWh in 2030 (in real terms). This price path is based on average settlement prices over the past year for futures contracts expiring 12, 18, 24 and 30 months ahead from Q4 2025, extrapolated using the rate of decline between 12 and 24 months ahead contracts. Beyond 2030 we let the model determine the price.

2.2.2. Low and High price scenarios

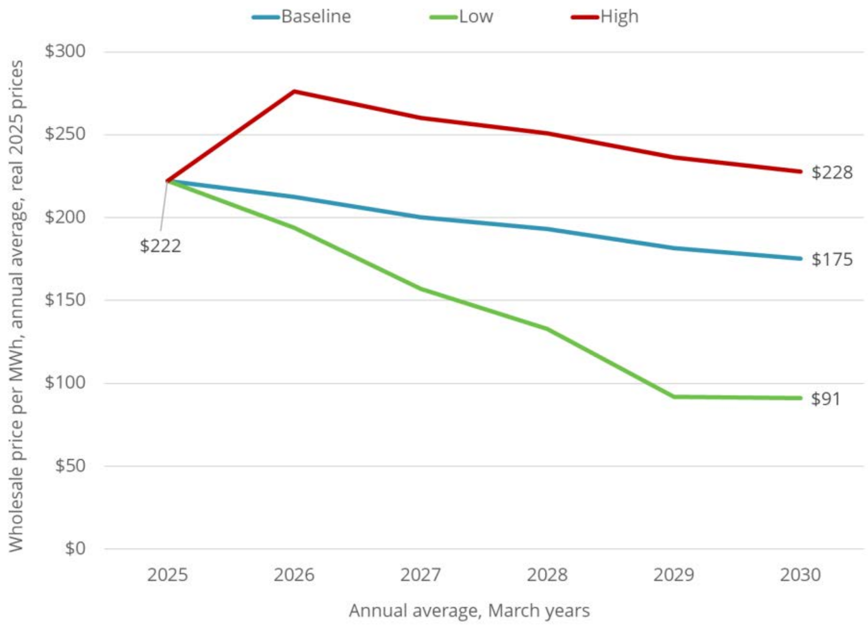
The only change we impose on the model in the Low and High scenarios is the electricity price between 2026 and 2030. After 2030, we let the model determine the price path based on demand and supply patterns.

The **Low** scenario electricity prices draw on analysis in Jarden (2025).[6] The price track is based on generation investment in the pipeline and a long-run cost of generation assumption of ~$105/MWh. It averages $133/MWh (real) over 2026-2030.

The **High** scenario represents a worsening of capacity constraints and fuel supply shortages seen in recent years, so that prices are higher in future years than they were in March year 2025. Prices average $250/MWh (real) for the 2026-2030 period – a 30% increase above baseline in all years.

[6] Jarden. 2025. 'Low risk of lights out, buying on rebound year expectation'. Industry Update, 27 March 2025.

FIGURE 2 WHOLESALE ELECTRICITY PRICE PATHS ACROSS SCENARIOS



To impose the future price paths we adjust variable a1i – all-input augmenting technological change – in all eight of the electricity generation industries in our database.[7] This variable is used to mimic productivity changes spread equally across both intermediate inputs (i.e. goods and services used in production) and primary factors (natural resources, labour, capital, etc.) used in generation.

We take this approach to effectively scale up or down aggregate electricity generation to deliver the price paths in the Low and High scenarios, without making any assumptions about changes in cost structures or precisely what is causing efficiency changes.

Alternative approaches and assumptions could have been used to derive the price paths but doing so will have no material impact on the macroeconomic impacts and electricity-using industry impacts, which are the focus of this research. Ultimately users focus on the wholesale electricity price, not which types of generation determine it.[8]

2.2.3. Closure assumptions

The 'closure' of a CGE model refers to the elements that we tell the model about (exogenous variables) and those which we want the model to tell us about (endogenous variables). As in the historical analysis, we use a standard set of core closure assumptions, including:

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[7] Hydro, geothermal, wind, solar, coal, gas, oil, biomass.
[8] In addition, as noted in section 1.2, we were not asked to examine the effects of specific policy changes that might drive efficiency improvements and hence affect future prices.

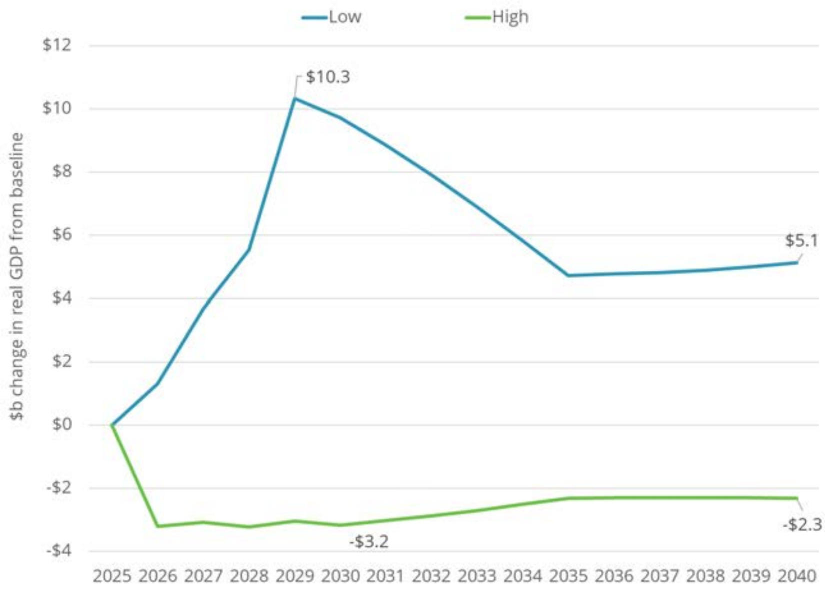
- The fiscal balance as a share of GDP in the policy scenarios remains the same as in the baseline, with indirect taxes as the adjusting variable.
- The balance of trade as a share of GDP in the policy scenarios remain the same as in the baseline, with the real exchange rate adjusting to ensure this holds.
- The economy is linearly transitioning to its Net Zero targets, with economy-wide ETS emissions exogenised and the ETS unit price varying to clear the emissions market (i.e. how much emissions can be generated by each industry).

3. Results

The results below should be interpreted as the potential economic impacts of electricity prices being at lower or higher levels than the baseline and those prices being driven by changes in the efficiency of electricity generation.

3.1. Macroeconomic impacts

FIGURE 3 REAL GDP IMPACTS, $BN CHANGE FROM BASELINE



3.1.1. Low price scenario macroeconomic impacts

As Figure 3 shows, the Low price scenario would see real GDP rise by $10.3bn (1.8%) above baseline by 2030.

In the Low scenario, household spending drives the GDP impacts, on the back of better labour market outcomes (Figure 4, Figure 5). Employment rises by about 1.2% or 1,900 FTE roles by 2029 and real wages increase above baseline by a peak of 1.7% by 2034 as the demand for labour grows in an expanding economy.[9]

Additional investment also supports stronger economic outcomes in the Low price scenario. As electricity prices decline relative to the baseline, industry users' costs decrease for a given level of output. This boosts profits and lifts rates of return on capital, incentivising greater capital expenditure. As production expands, especially amongst heavy industrial users, exports rise too.

[9] With our sticky wage dynamic adjustment, higher demand for labour is first seen through more jobs, then later on in higher real wages as employment returns to the baseline.

As the electricity price increases back to the baseline level after 2030, the GDP benefits moderate somewhat. But they persist even out to 2040 because the lower electricity prices improve profitability and drive additional capital investment across the economy, especially in heavy industrial users. This in turns expands the productive capacity of the economy.

FIGURE 4 EXPENDITURE GDP IMPACTS, $BN CHANGE FROM BASELINE, LOW SCENARIO

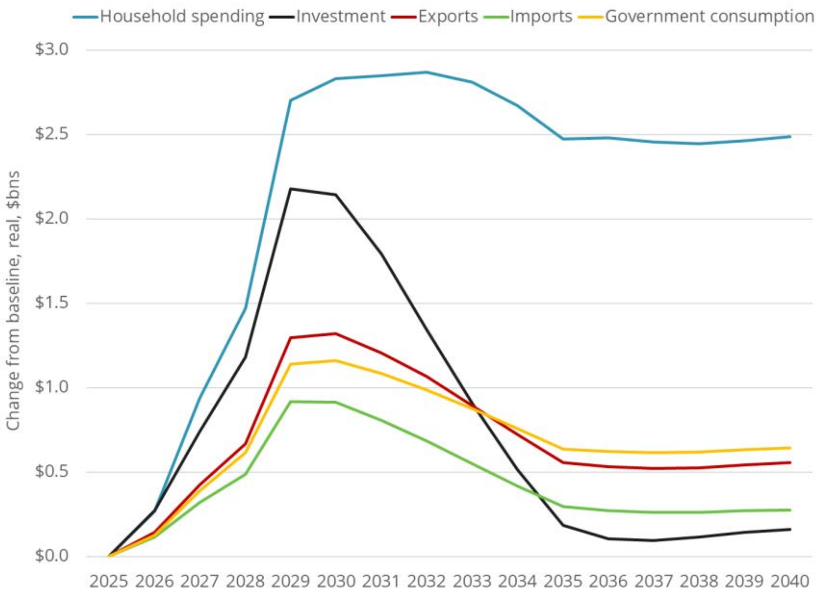
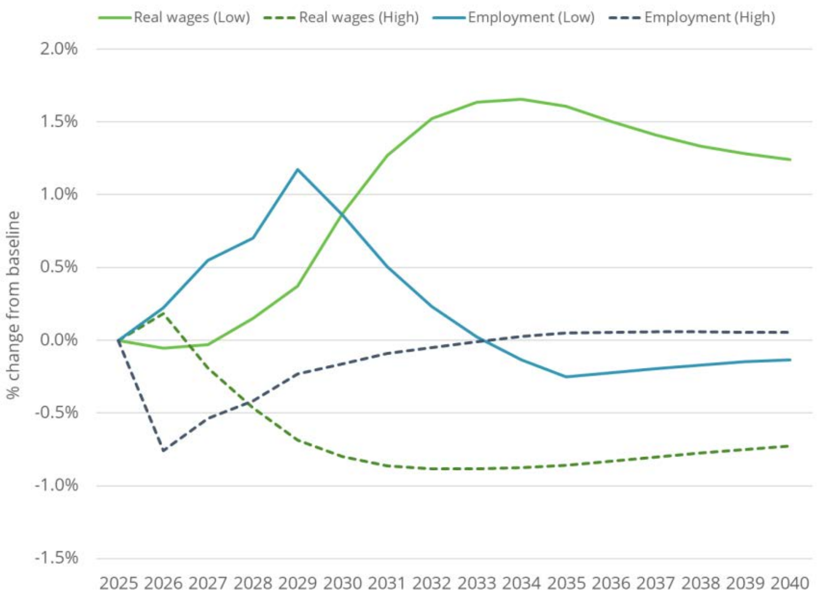


FIGURE 5 LABOUR MARKET IMPACTS, % CHANGE FROM BASELINE



3.1.2. High price scenario macroeconomic impacts

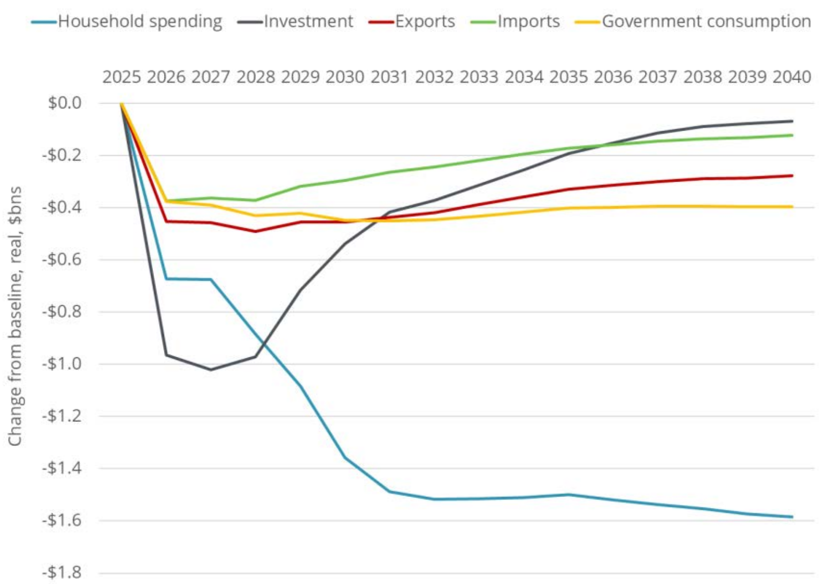
In the High price scenario where prices are around 30% higher than the baseline, real GDP falls by around 0.7% below baseline by 2030, or $3.2bn. Further out, this higher price path results in New Zealand's real GDP being around 0.5% or $2.3bn lower than the baseline (Figure 3 above).

The main driver of this result, especially in the short term, is a reduction in investment due to lower returns in capital intensive industries.

Note that the High scenario has a price change (+30%) that is smaller – in absolute terms – than the Low price scenario (-50%). So, the magnitude of economic effects is also smaller, in absolute terms, in the High price scenario compared to the Low price scenario.

Even as electricity price increases ease and start to move in line with the baseline after 2030, real GDP remains persistently lower. This is due to higher prices chilling capital investment over time, reducing the productive capacity of the economy.[10] This can be seen in the dark blue line in Figure 6, which falls sharply as firms' costs rise and never makes it back to the baseline by 2040.

FIGURE 6 EXPENDITURE GDP IMPACTS, $BN CHANGE FROM BASELINE, HIGH SCENARIO



In the short term, employment drops by around 0.7% below baseline in 2026 (see Figure 5 above). Facing higher electricity prices, electricity-intensive firms need to reduce output in the short term by shedding staff.

[10] A small part of this result is due to the shock design, which changes efficiency in electricity generation and hence influences generation investment.

Real wages also decline, albeit with a lag. The combined effect of lower employment and real wages is to reduce average household disposable incomes and hence spending on goods and services.

Longer term, as investment impacts moderate with an easing of electricity prices after 2030, household spending becomes the main driver of real GDP declines relative to baseline. The long run effect of the shock to productive capacity is lower incomes.

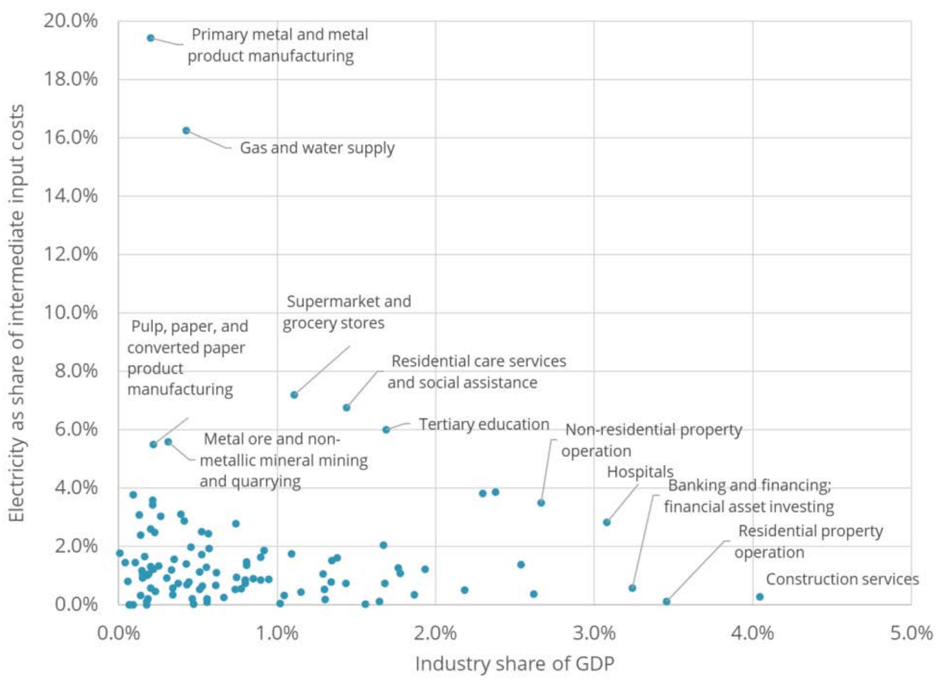
3.2. Industry impacts

3.2.1. What drives industry impacts of changes in electricity prices?

The industry impacts of higher or lower electricity prices are primarily determined by the share of electricity in each industry's cost base. Drawing on the most recent official input-output tables from StatsNZ[11], from which our 79-industry database is constructed, Figure 7 shows 109 industries' share of aggregate GDP (horizontal axis) and electricity costs as a share of all intermediate input costs (i.e. excluding factor payments like wages).

The average electricity intermediate input cost share across all industries is 3.8%. The majority of industries with higher electricity intensities tend to be relatively small in GDP terms. In contrast, many of the larger industries to the right of the chart – mainly in the service sector, which accounts for around 2/3 of GDP – tend to be less electricity-intensive.

FIGURE 7 THE IMPORTANCE OF ELECTRICITY BY INDUSTRY

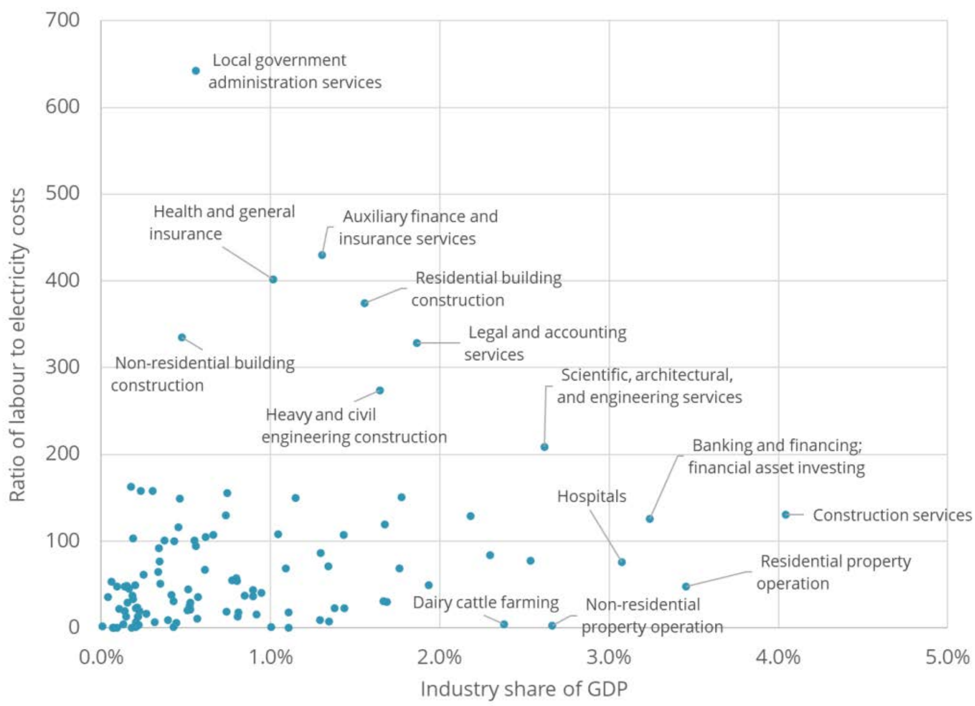


[11] Released in December 2021, benchmarked to March 2020.

Another way to think about what drives industry impacts is to consider electricity's share of industry costs compared to the cost of another key input like labour.

Figure 8 below shows industry size on the horizontal axis, and the ratio of each industry's spending on wages to its spending on electricity on the vertical axis. A ratio of 100 means the industry spends $100 on labour for every $1 it spends on electricity.

FIGURE 8 THE IMPORTANCE OF LABOUR RELATIVE TO ELECTRICITY BY INDUSTRY



The average economy-wide ratio of labour costs to electricity costs is 11.5. Many services industries spend multiple hundreds more on wages than they do electricity.

The ratios for the most electricity-intensive manufacturing industries include 0.9 (Primary metal and metal product manufacturing), 3.2 (Pulp, paper, and converted paper product manufacturing), 6.1 (Petroleum and coal product manufacturing) and 9.3 (Non-metallic mineral product manufacturing).

So, aside from primary metals, even the industries most sensitive to electricity price changes of X% will likely be more affected by changes in labour costs of X%.[12]

Another factor determining the impact on an industry of a change in electricity prices will be the degree to which it can pass on higher costs to buyers without reducing the demand for its output. For industries selling primarily in international markets, and especially for commodity

[12] For a similar assessment from a different angle, see Sense Partners. 2025. 'Industrial demand flexibility: Sizing the potential of useful demand response' in Electricity Authority. 2025. 'Rewarding industrial demand flexibility: Issues and options paper'.

products with readily available substitutes from other sources, the price elasticity of demand is likely to be relatively high.

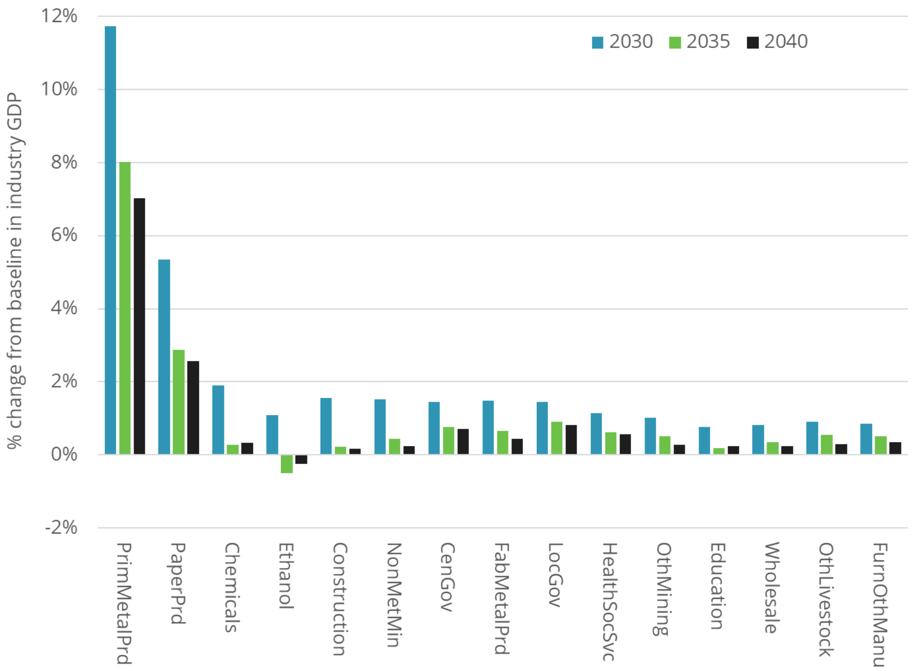
Lastly, the extent and speed with which an industry can substitute away from higher-priced electricity to another intermediate input or primary factor will also influence industry output outcomes. As outlined in the previous stage of this research, MDG-NZ considers electricity use to be a complement to, rather than substitute for, other inputs, and the substitution elasticities are generally very low.[13]

3.2.2. Industry results

As would be expected, the main industry 'losers' from higher than baseline electricity prices are the same as those 'winning' from lower electricity prices. The qualitative narrative just flips. As such we focus solely here on the industry impact of lower prices.[14]

Figure 9 shows the industry GDP impacts in 2030 (the last year when we tell the model how much higher electricity prices are relative to the baseline), 2035 and 2040 (as electricity prices return to the baseline and the economy adjusts via the labour market and investment dynamics in our model).

FIGURE 9 SELECTED INDUSTRY WINNERS FROM LOWER ELECTRICITY PRICES

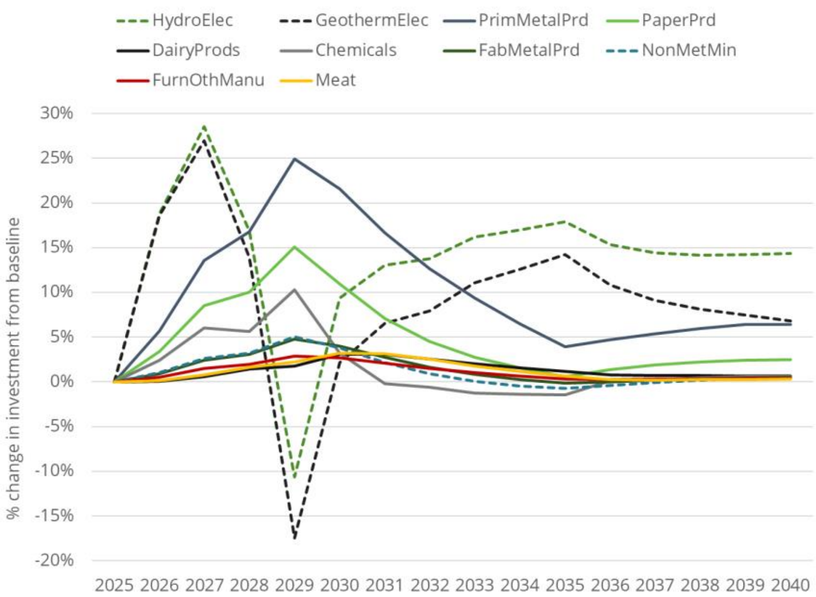


[13] See Sense Partners and Phylleos. 2025. 'Technical note on production nests and elasticities'. Note to MBIE, 7 July 2025.
[14] Detailed results for all scenarios will be delivered in a spreadsheet. We present here just the main downstream users of electricity.

Industries for whom electricity is a large share of the cost base benefit most, such as primary metals, paper products, chemicals, etc. Government-related services expand slightly due to higher tax revenue as the economy expands. Construction grows because of higher demand for investment from heavy manufacturing and geothermal and hydro electricity generation (see

Figure 11).

FIGURE 10 INDUSTRY INVESTMENT PATTERNS, SELECTED INDUSTRIES, LOW SCENARIO



Many of the electricity-intensive manufacturing industries are also export-intensive.

Figure 11 shows, for selected industries, the boost to exports due to improved international competitiveness as their costs of production fall.

Industries that fare less well as electricity prices fall below the baseline over 2026-2030 are shown in Figure 12 below. Electricity generating industries outside of hydro and geothermal contract relative to the baseline as lower prices retard investment due to weaker returns on capital.[15] [16]

[15] Recall that we do not incorporate any shocks other than prices in these scenarios. If solar and wind capital costs and generation costs were to fall more rapidly than assumed due to rapid technological developments or much easier consenting processes for example, as is entirely feasible, then we would expect the negative impacts to be much less pronounced or even positive.

[16] In the High price scenario, the generation industry impact results are reversed. Solar, wind, coal and gas electricity generation grow rapidly relative to the baseline, and hydro and geothermal contract rapidly.

FIGURE 11 EXPORT VOLUME INCREASES DUE TO LOWER ELECTRICITY PRICES, SELECTED INDUSTRIES

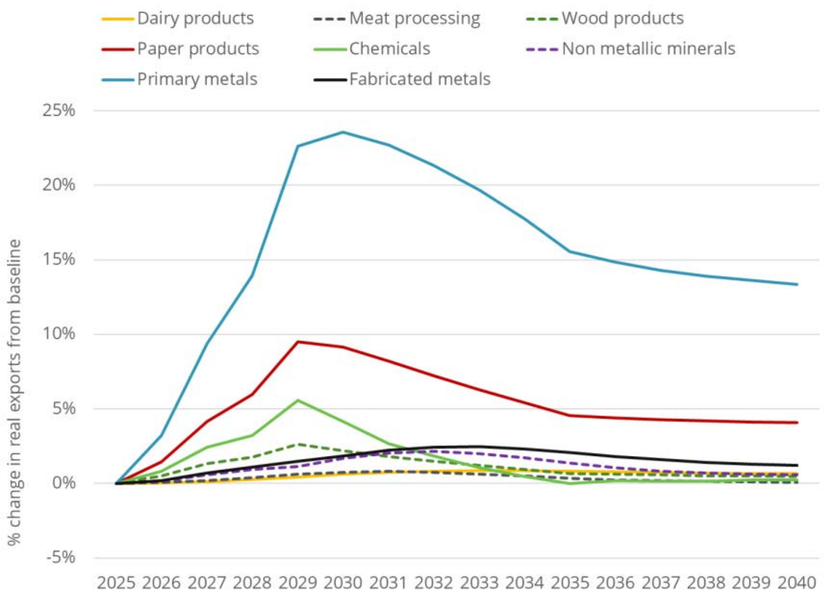
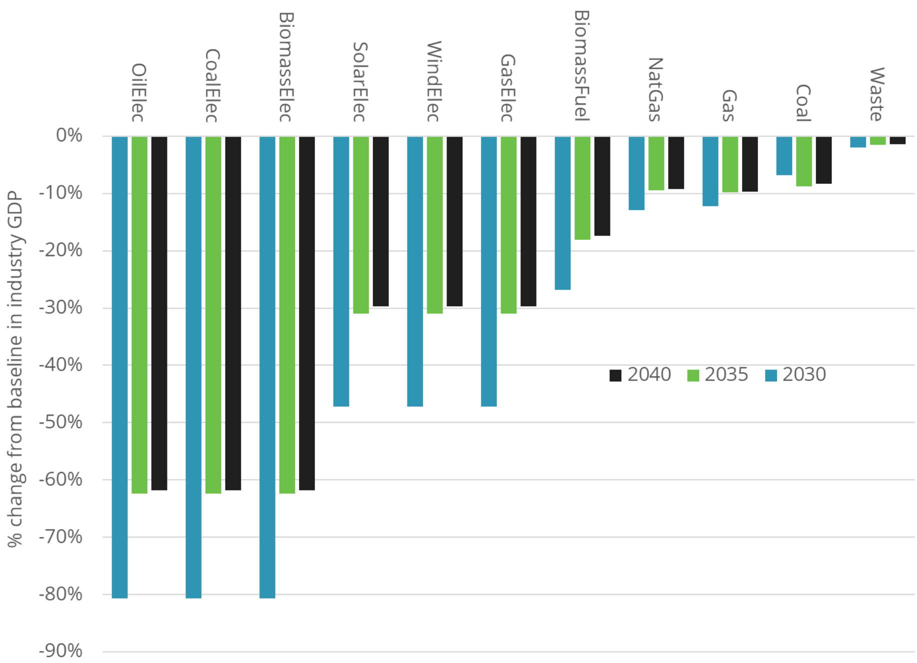


FIGURE 12 SELECTED INDUSTRY LOSERS FROM LOWER ELECTRICITY PRICES



3.3. The sensitivity of GDP to electricity prices

To get a sense of how sensitive New Zealand's real GDP is to changes in electricity prices, we ran two sets of simulations out to 2050:

- Single-year electricity price shocks of between +8% and -8% in 2025 only, after which prices move with the baseline (i.e. a one-off level shift in prices).
- Every-year electricity price shocks of between +2.0% and -2.0% per year, so a change in the growth path of electricity prices.

3.3.1. A note of caution

The sensitivity or elasticity estimates presented here are conditional on the structure of the MDG-NZ model, its database and behavioral parameters. This approach differs from the more commonly used econometric methods. It should be viewed as a complement to those other methods.

3.3.2. Sensitivity of GDP to one-off price shocks

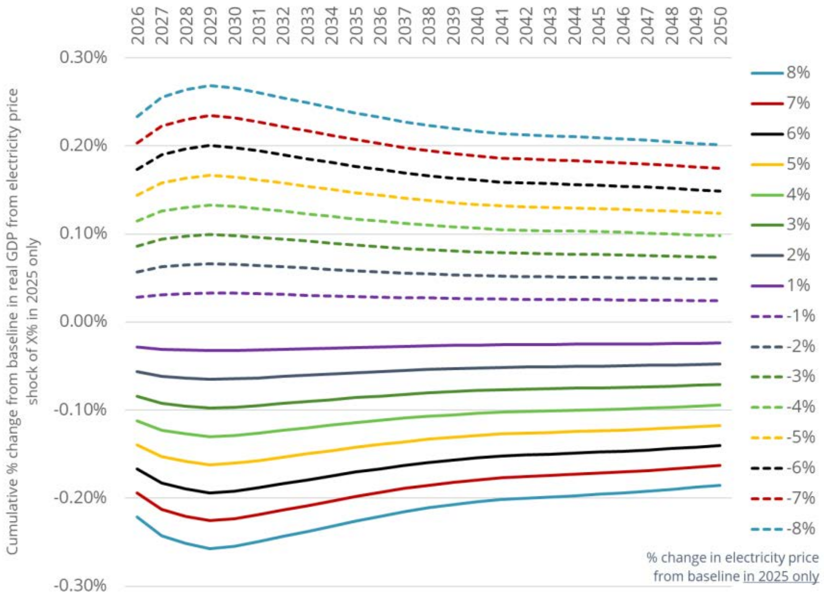
When we only shock electricity prices in a single year (2025), the real GDP impacts over time are shown in Figure 13 below and the implied elasticities in This is because the first year's shock causes changes in industry profitability, which affects rates of return and hence capital investment. Changes in industry output are also felt immediately through changes to employment, given our sticky wage dynamics.

Once the initial relative price impulse has faded, investment and employment impacts wane and the economy gradually heads back towards its baseline growth path.

However, the economy doesn't get back to the baseline even 25 years after the electricity price shock. This is largely a capital stock story: changes in investment lead to the productive capacity of the economy being permanently higher or lower than the baseline.

Figure 14. The short-term impacts are larger than the long-term impacts (i.e. the elasticities are larger).

FIGURE 13 SENSITIVITY OF REAL GDP TO ONE-OFF ELECTRICITY PRICE SHOCKS



This is because the first year's shock causes changes in industry profitability, which affects rates of return and hence capital investment. Changes in industry output are also felt immediately through changes to employment, given our sticky wage dynamics.

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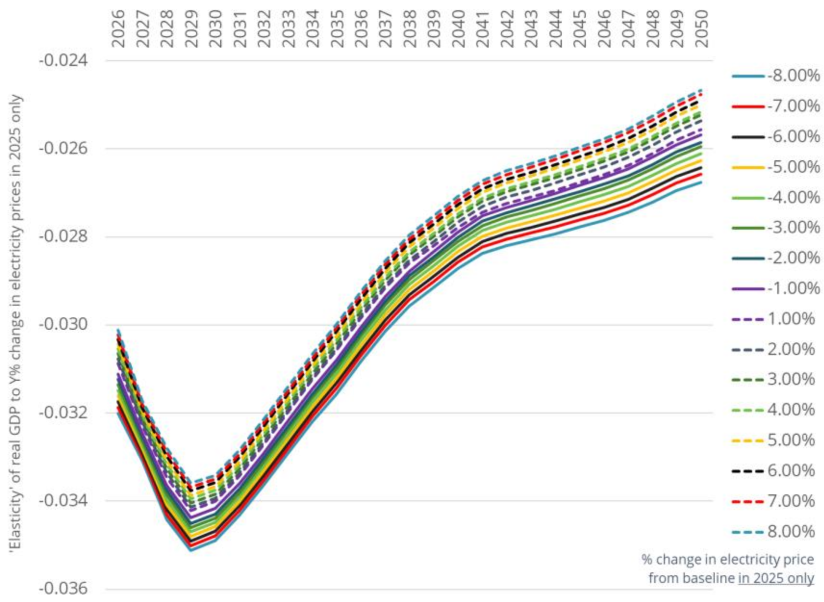
However, the economy doesn't get back to the baseline even 25 years after the electricity price shock. This is largely a capital stock story: changes in investment lead to the productive capacity of the economy being permanently higher or lower than the baseline.

FIGURE 14 ELASTICITY OF REAL GDP TO ONE-OFF ELECTRICITY PRICE SHOCKS



3.3.3. Sensitivity of real GDP to changes in the growth path of electricity prices

Inevitably, the real GDP impacts of changes to the growth rate of electricity prices are materially larger than the response to a one-off price shock (Figure 15 and Table 2):

TABLE 2 REAL GDP IMPACTS OF ELECTRICITY PRICE CHANGES

Change in electricity prices, relative to baseline	Change in real GDP from baseline, 2035	Change in real GDP from baseline, 2050
-2%, 2025 only	$0.33bn (0.06%)	$0.35bn (0.05%)
-2% every year	$3.76bn (0.57%)	$15.55bn (1.44%)
+2%, 2025 only	-$0.33bn (-0.06%)	-$0.34bn (-0.05%)
+2% every year	-$3.88bn (-0.59%)	-$13.55bn (-1.32%)

The investment and employment impacts of the two types of upwards price shock are shown in Figure 16 and Figure 17 respectively. As the green lines show, after a one-off price increase, investment and employment gradually return to their baseline levels over time. With a change in the price path every year – and no additional assumptions on technological change – both labour and capital accumulation are suppressed below their baseline levels each year.

The elasticities of real GDP to changes in electricity price growth are commensurably higher, as shown in Figure 18.

FIGURE 15 SENSITIVITY OF REAL GDP TO SUSTAINED ELECTRICITY PRICE SHOCKS

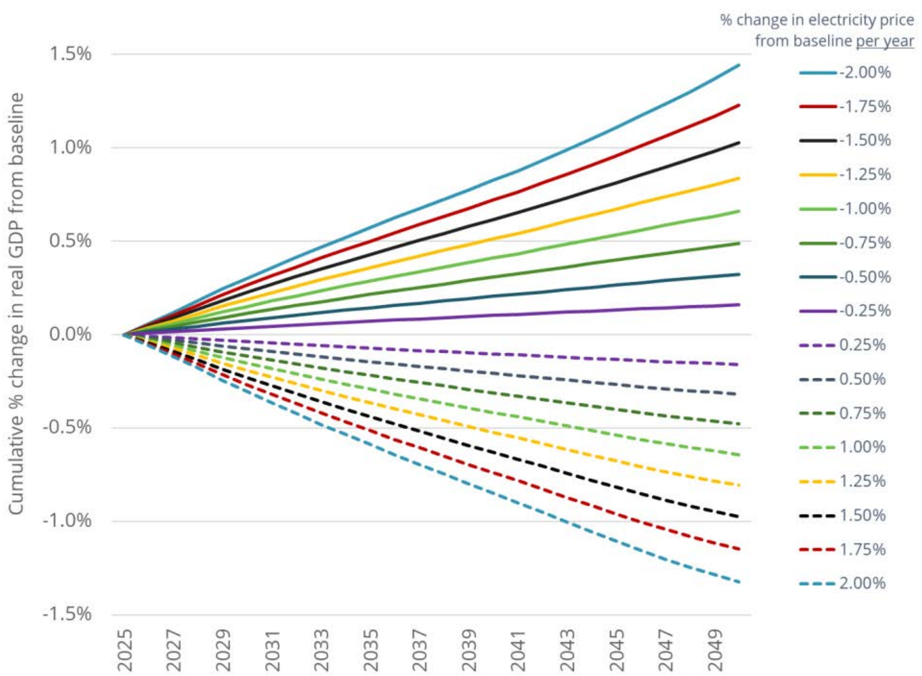


FIGURE 16 CHANGE IN INVESTMENT FROM A ONE-OFF 2% PRICE INCREASE VS. A 2% INCREASE IN THE GROWTH PATH OF PRICES EVERY YEAR

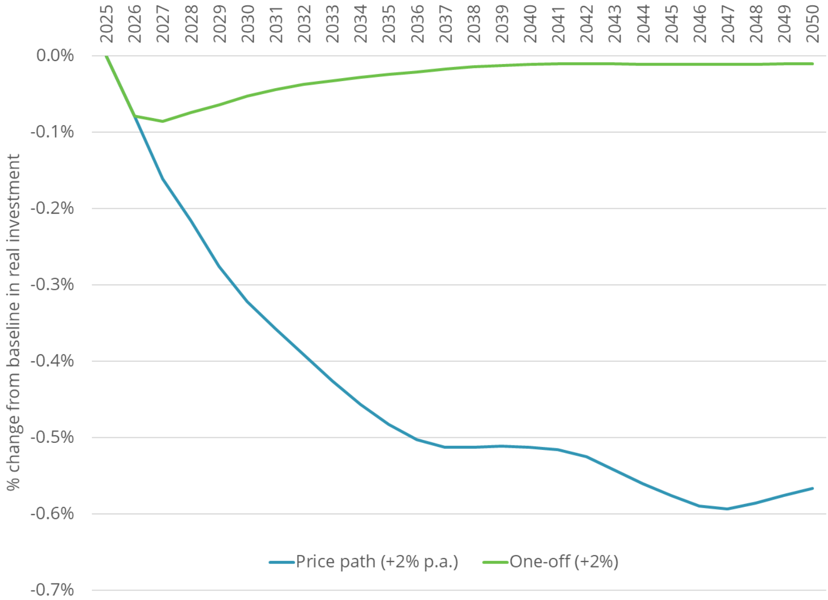


FIGURE 17 CHANGE IN EMPLOYMENT FROM A ONE-OFF 2% PRICE INCREASE VS. A 2% INCREASE IN THE GROWTH PATH OF PRICES EVERY YEAR

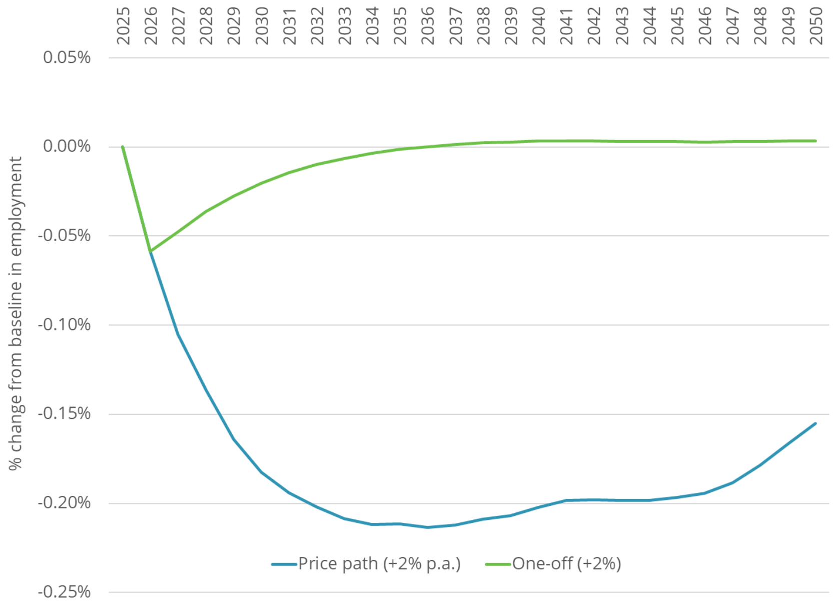
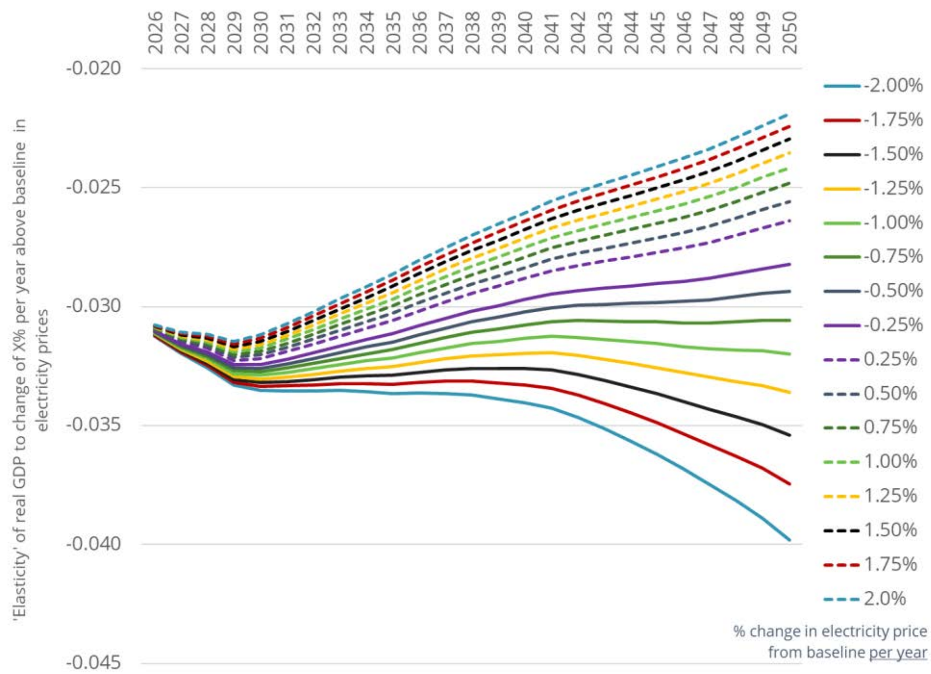


FIGURE 18 ELASTICITY OF REAL GDP TO CHANGES IN ELECTRICITY PRICE PATH SHOCKS



4. Conclusion and implications

Our dynamic CGE analysis of future electricity price paths suggests:

- The direct impacts of price shocks are felt most in a narrow set of industries: primary metals, pulp and paper manufacturing, chemicals and non-metallic minerals manufacturing.
- Other industries are less sensitive as they are less electricity-intensive – especially professional services – but experience indirect effects through changes in investment patterns and household spending.
- On average, industries spend around 11.5 times as much on labour as they do on electricity, so factors other than electricity prices matter much more for the bulk of the economy.
- Industry and macroeconomic impacts from electricity price shocks can be long-lived, primarily due to their impact on profitability and hence investment and the aggregate capital stock in the economy.
- Higher electricity prices pose challenges for an economy – especially in the short-term – as it is hard to switch between energy types or substitute from electricity to other intermediate inputs or factors of production.
- Without the ability to adjust production techniques, higher electricity prices lift industries' cost base for a given amount of output. This in turn reduces the international competitiveness of New Zealand's export sector – especially in heavy manufacturing. This could pose challenges for New Zealand's current efforts to double exports over the next decade.
- These results illustrate the potential long-lived effects on living standards of policies that impede investment in electricity generation or otherwise cause electricity to become a scarcer (more costly) resource. We have not analysed policy here, so will refrain from commenting further other than to say, be careful how you go. The returns to finding ways to improve market function seem high but the costs of misguided efforts would equally be high.
- A key to reducing the economic impacts of fluctuations in electricity prices over the medium- to long-term will be the extent of technological change in both electricity generation and industry production techniques.
- While we do not explore regional economic impacts here, significant changes to New Zealand's industrial output will likely have a disproportionate impact on regional New Zealand given the location of (for example) pulp and paper manufacturing and primary metals production plants. Examining these impacts may be a useful option for further analysis.

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