

Our Modelling Results: C-PLAN & DIM-E

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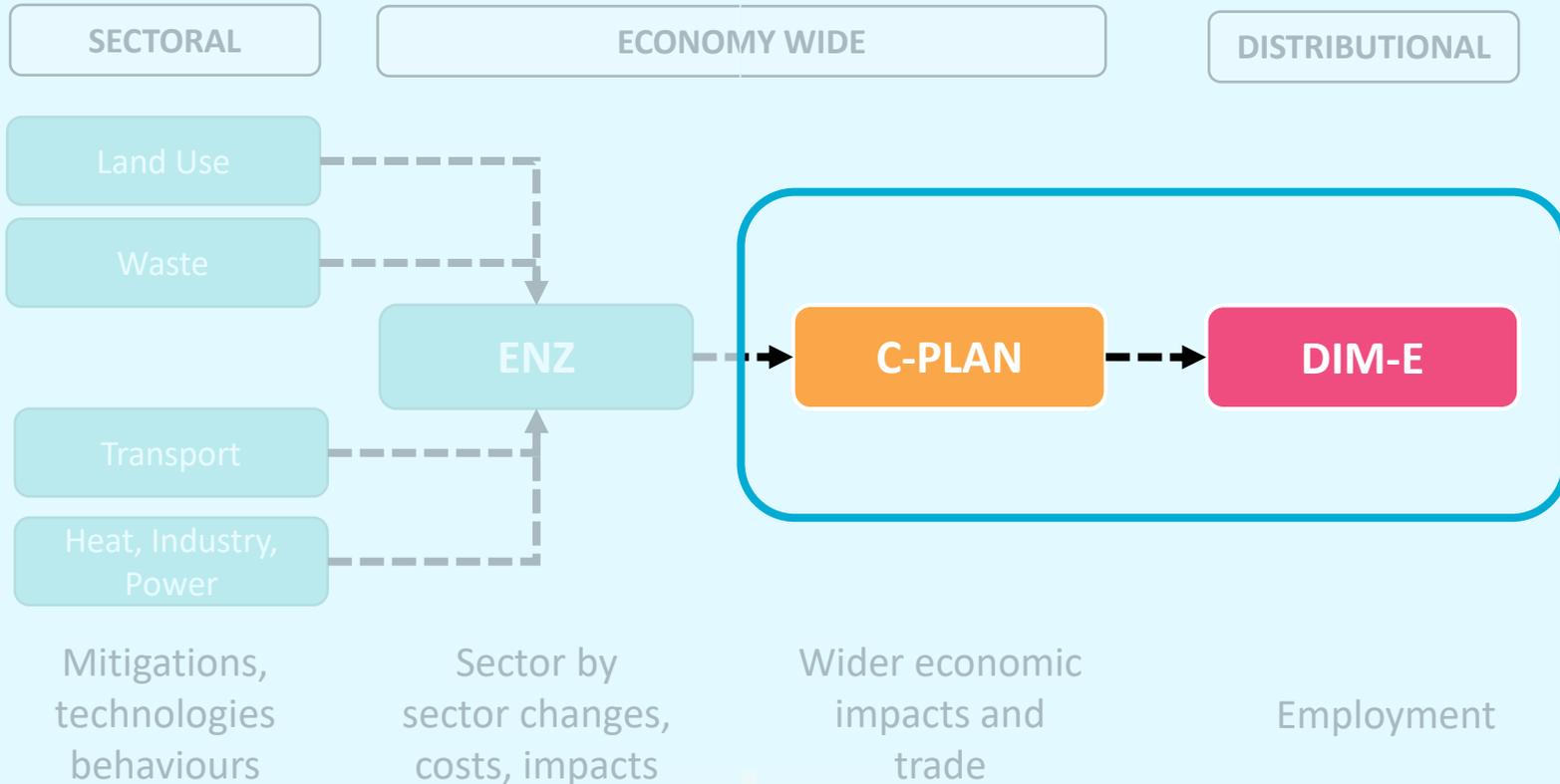
- Our Modelling System
- C-PLAN Results: Whole-of-economy
- DIM-E Results: Distributional employment impacts

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Our Modelling System

The Commission's models, and how we use them

Today's focus



C-PLAN: Climate Policy Analysis Whole-of-Economy Model

- Whole-of-economy mathematical model
- Based on GTAP and NZ data
- Shows flow-through effects of emissions caps and other policies
- Includes a variety of ways to reduce emissions
 - Explicit technologies
 - Fuel switching
 - Price-driven energy efficiency
 - Additional energy efficiency and emissions intensity improvements
 - Reducing output

DIM-E: Distributional Impacts Model - Employment

- Statistical model (data rich) based on Stats NZ data (IDI and LDB)
- Helps explore employment impacts based on C-PLAN results
- Looks at the distribution of employment effects
 - Sector can gain or lose employment in any given year
 - What is the expected quality of jobs being lost vs. those being gained?
 - What are the characteristics of workers in industries with the largest effects?
 - Will some areas/regions be affected more than others?

How we use C-PLAN & DIM-E

- First, we decide our scenarios/budgets
- Next, we put them in C-PLAN & DIM-E as constraints
- Then, we see what the implications are using C-PLAN, DIM-E, and other analysis
- Finally, we feed this back into our budget decisions

Scenarios

- CPR: Current Policy Reference – doesn't meet targets
- TP1: Target Pathway 1: More Removals
- TP2: Target Pathway 2: Methane Technology
- TP3: Target Pathway 3: Less Removals
- TP4: Target Pathway 4: Faster Reductions

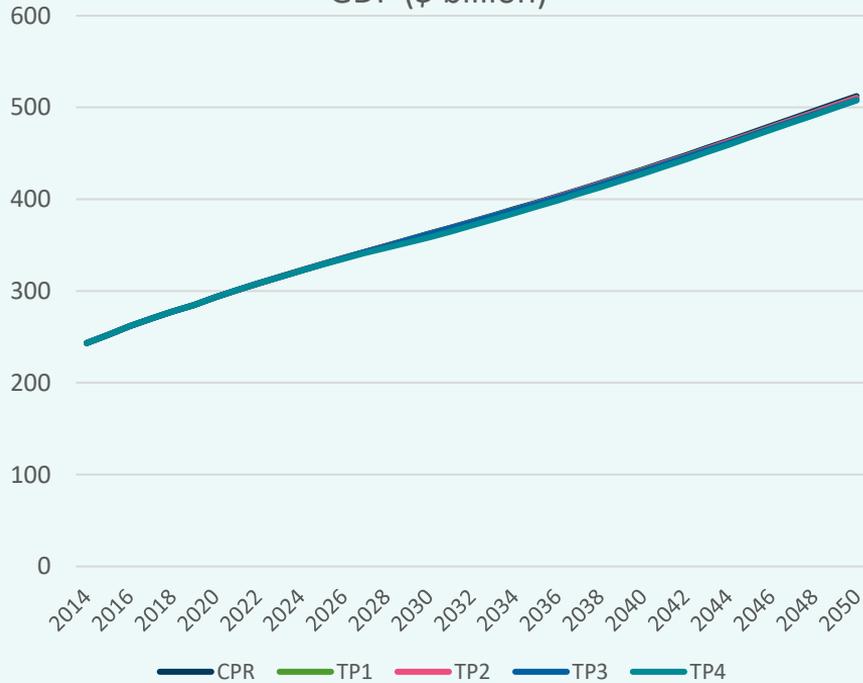
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C-PLAN

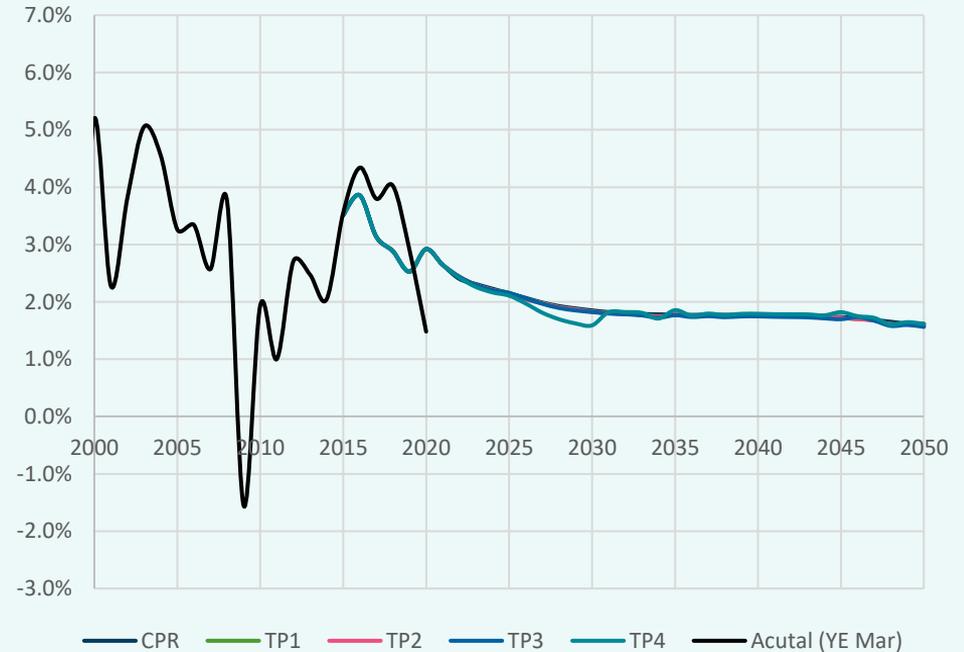
Results on the economic impacts, from the C-PLAN model

GDP

GDP (\$ billion)

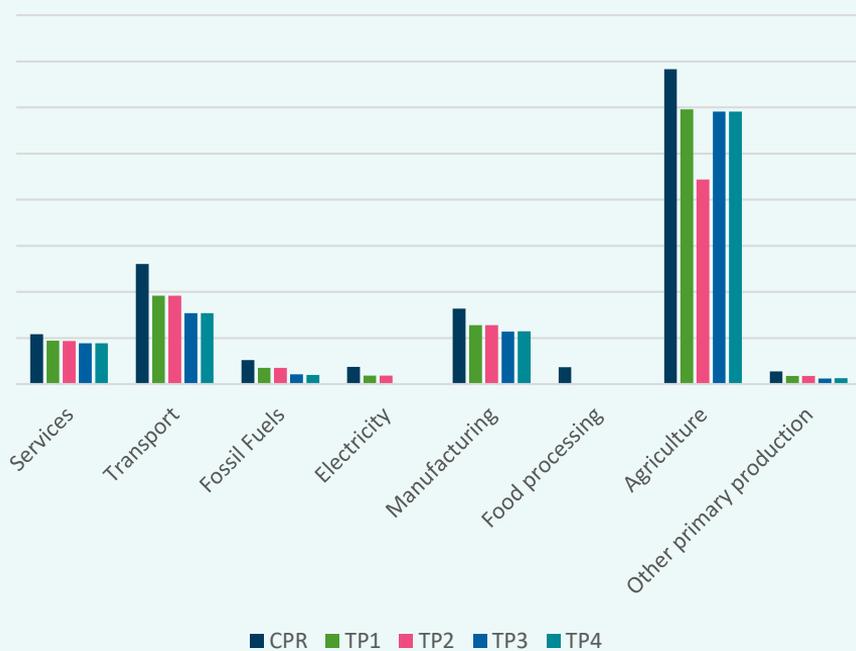


GDP Annual Growth Rate

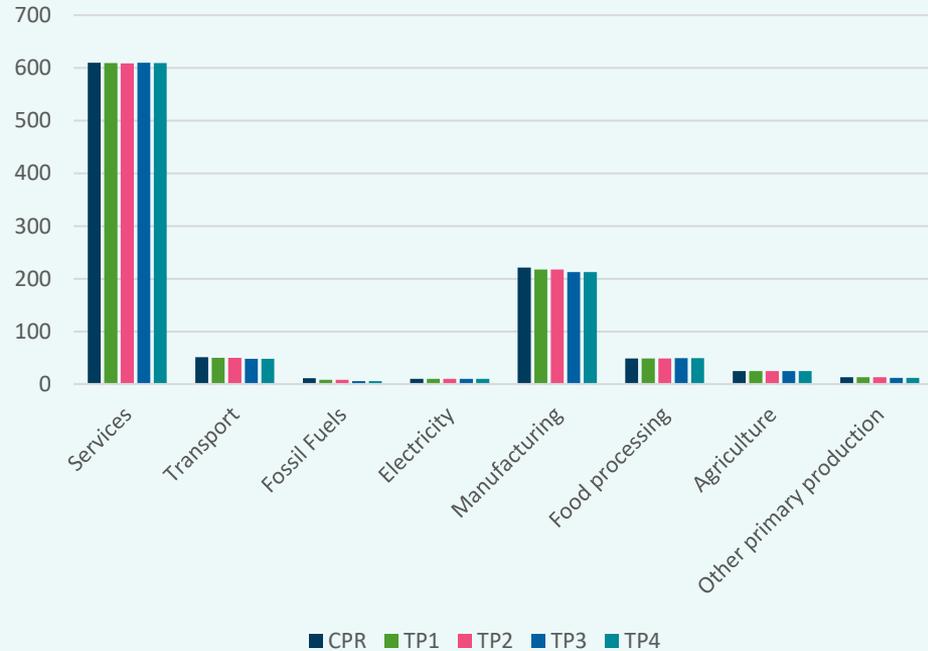


Sectors: Emissions & Output

GHG Emissions 2050 (Mt CO2e)

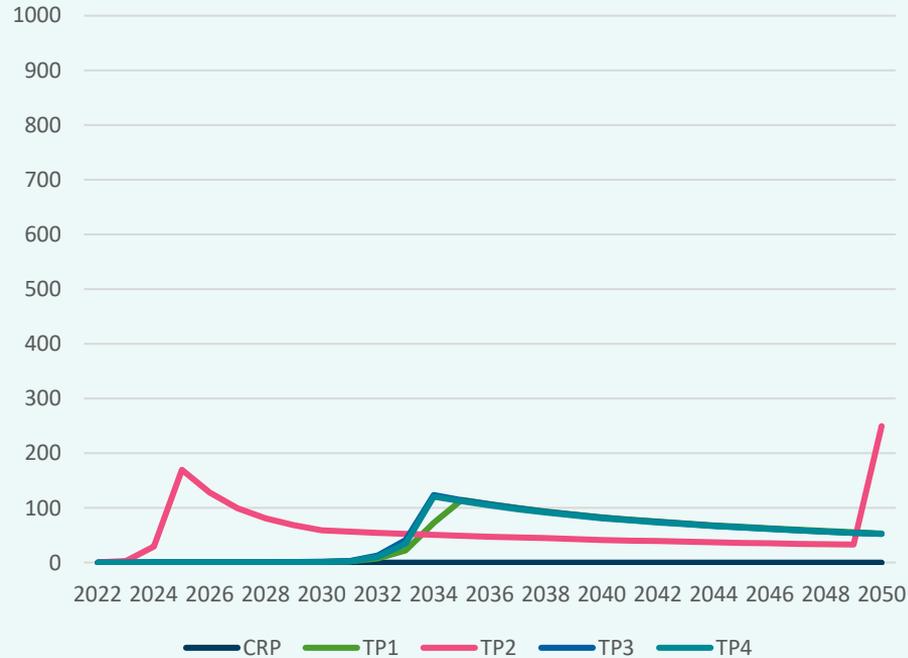


Sector Output in 2050 (NZ\$billion)

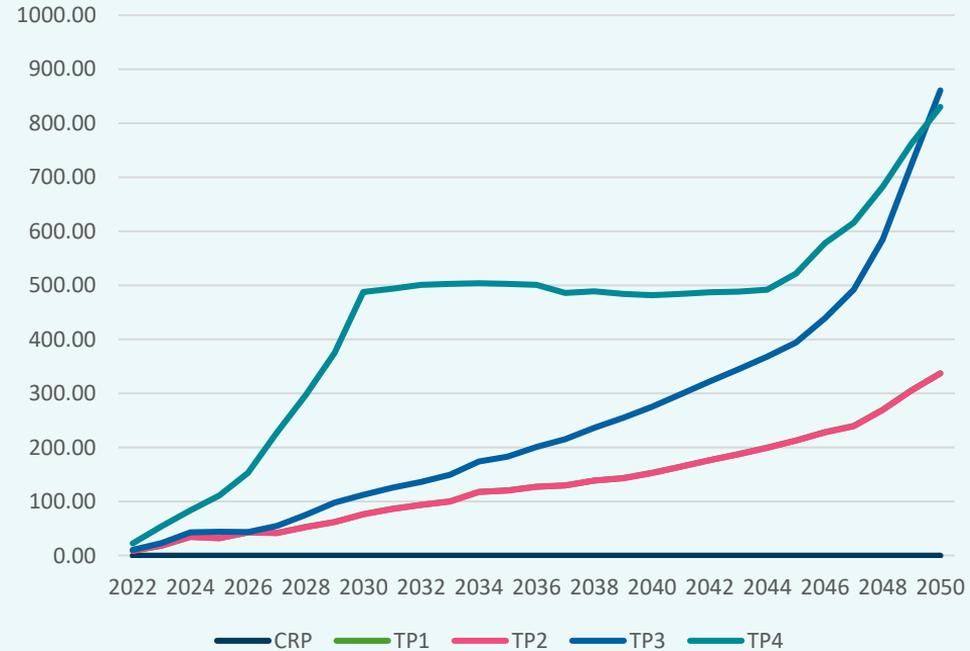


Emissions Values

Emissions Values (biogenic methane, NZD/t CO2e)



Emissions Values (all other gases, NZD/t CO2e)



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DIM-E

Results on employment distributional effects, from the DIM-E model

Stats NZ Disclaimer

- The results in this presentation are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI), managed by Statistics New Zealand. They are the results of simulations.
- The opinions, findings, recommendations, and conclusions expressed in this presentation are those of the authors, not Statistics NZ or Inland Revenue.
- Access to the anonymised data used in this study was provided by Statistics NZ under the security and confidentiality provisions of the Statistics Act 1975. Only people authorised by the Statistics Act 1975 are allowed to see data about a particular person, household, business, or organisation, and the results in this [report, paper] have been confidentialised to protect these groups from identification and to keep their data safe.
- Careful consideration has been given to the privacy, security, and confidentiality issues associated with using administrative and survey data in the IDI. Further detail can be found in the Privacy impact assessment for the Integrated Data Infrastructure available from www.stats.govt.nz.
- The results are based in part on tax data supplied by Inland Revenue to Statistics NZ under the Tax Administration Act 1994. This tax data must be used only for statistical purposes, and no individual information may be published or disclosed in any other form, or provided to Inland Revenue for administrative or regulatory purposes.
- Any person who has had access to the unit record data has certified that they have been shown, have read, and have understood section 81 of the Tax Administration Act 1994, which relates to secrecy. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

Fossil Fuel Sectors – Average Annual Employment Change



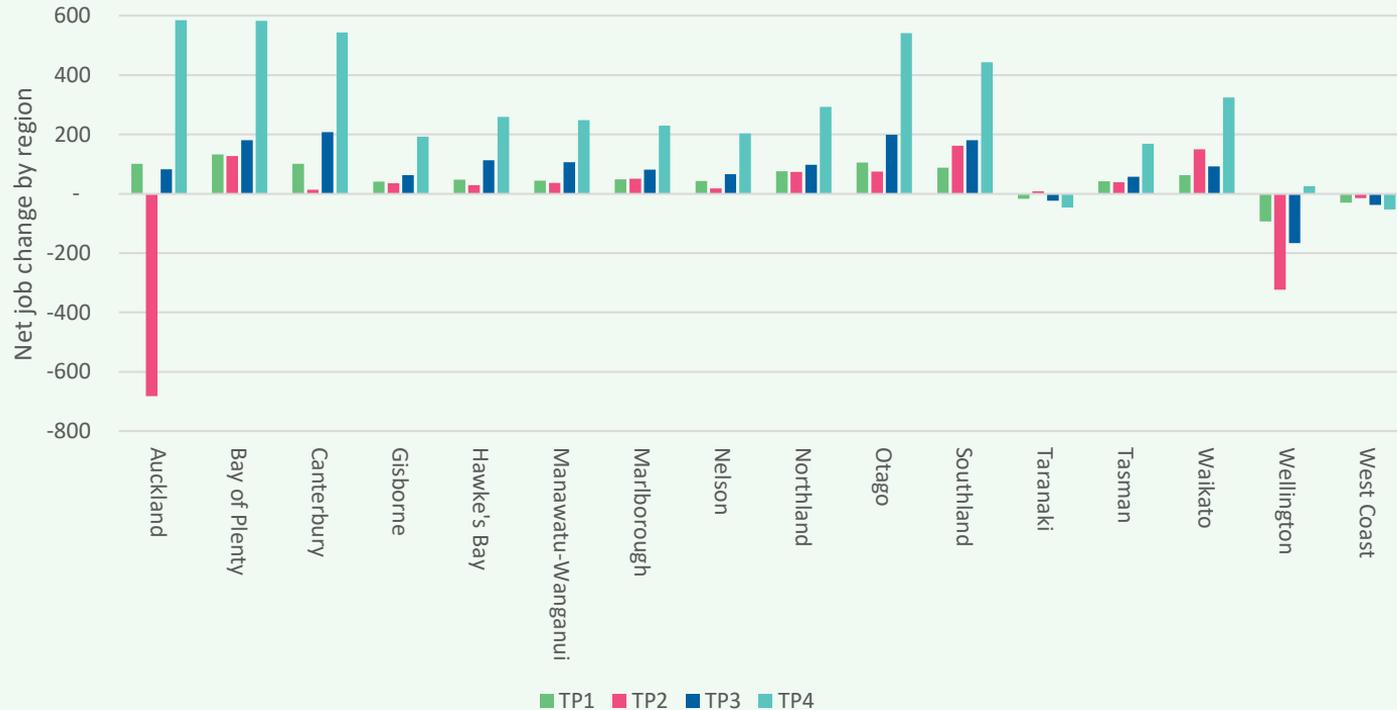
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Grain, Sheep and Beef Cattle Farming – Average Annual Employment Change



[UNCLASSIFIED]

Regional Impacts – Net Job Change Relative to CPR



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Thanks



Want to get in touch?
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He Pou a Rangi
Climate Change Commission