

Ināia tonu nei: the Commission's advice

June 2021

Alexandra Aimer-Seton, Sean
Buchanan, Briana Yee, Tal Yochay,
Kennie Tsui

INĀIA TONU NEI: THE TIME IS NOW

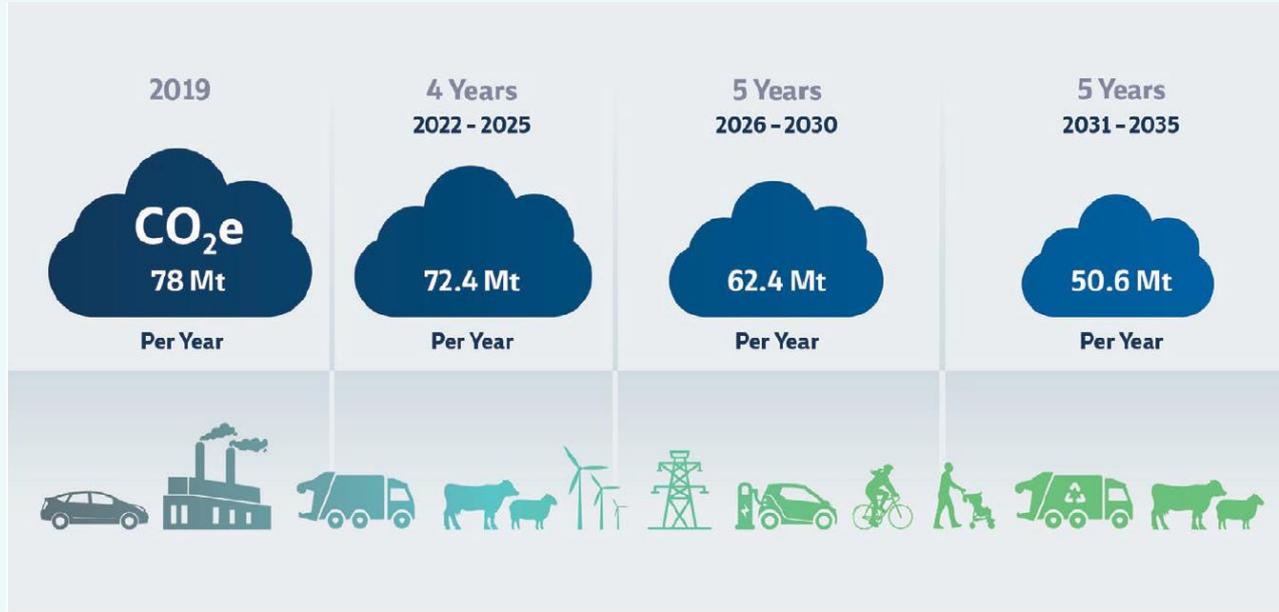
- Aotearoa has committed to reaching net zero emissions of long-lived gases by 2050 and reducing biogenic methane emissions between 24-47% by 2050
- We have delivered ambitious, achievable and equitable paths Aotearoa can take to meet its climate targets
- Our advice shows comprehensive climate action is affordable
- It is based on the Commission's impartial judgement and assessment of the evidence
- The technology and tools Aotearoa needs to reach its climate targets exist today

OUR ADVICE

- 1) The levels of the first three emissions budgets out to 2035
- 2) Direction on the policies and strategies needed in the emissions reduction plan
- 3) Advice on:
 - the Nationally Determined Contribution (NDC); and
 - the eventual reduction in biogenic methane as requested by the Minister of Climate Change.

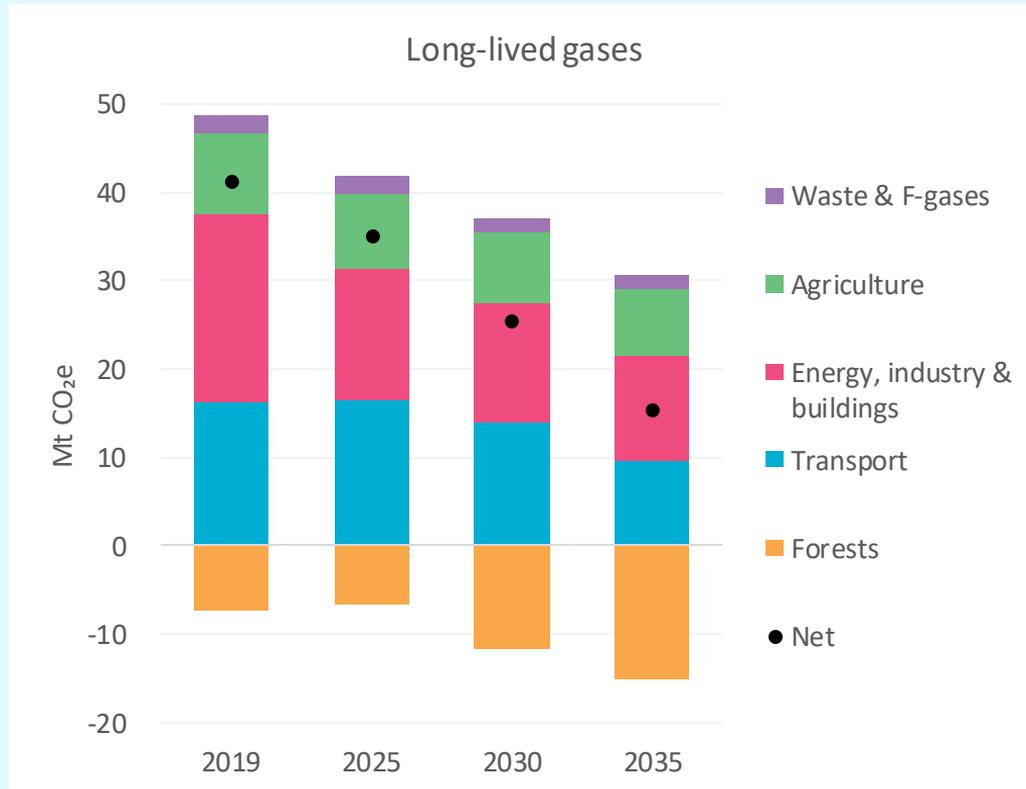
The Government must have set the first three emissions budgets out to 2035 and released its first emissions reduction plan by 31 December 2021.

EMISSIONS BUDGETS



Emissions budgets 2022 - 2035 (AR5) annual average emissions

DEMONSTRATION PATH TO 2035 – EMISSIONS REDUCTIONS BY SECTOR



KEY TRANSITIONS ALONG THE DEMONSTRATION PATH

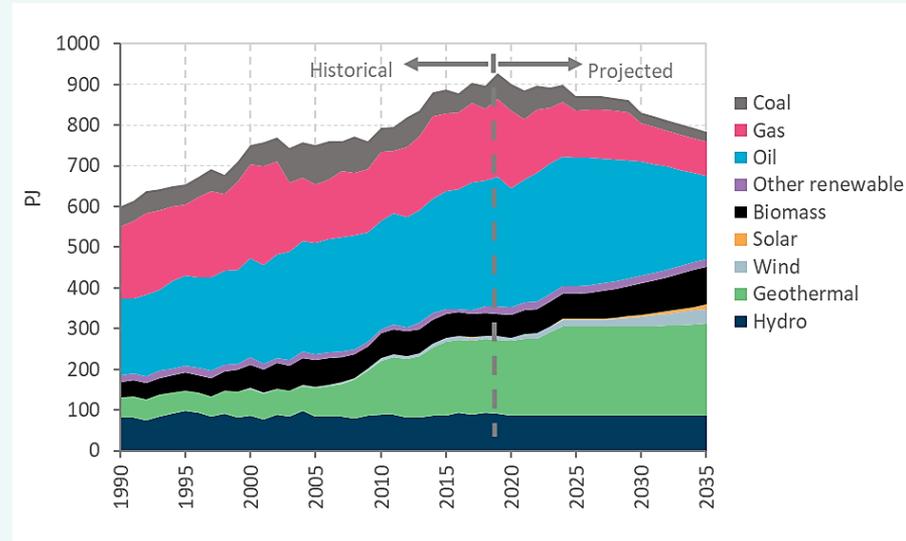
		Budget 1 (2022-2025)	Budget 2 (2026-2030)	Budget 3 (2031-2035)
Transport	Lower-emissions vehicles	<ul style="list-style-type: none"> Accelerate uptake of electric and low-emissions cars, buses and trucks Improve efficiency of vehicles and freight movement 		Phase out imports of internal combustion engine light vehicles
	Reducing vehicle trips	<ul style="list-style-type: none"> Switching to walking, cycling and public transport Reduce demand for travel Increase use of rail and coastal shipping for freight 		
	Aviation and shipping	Improve efficiency	Start electrifying ferries and coastal shipping	Start electrifying short-haul flights
	Low carbon liquid fuels		Increase use of biofuels	
Energy, industry and buildings	Buildings	No new fossil gas heating systems installed after 2025		Start phasing out existing fossil gas use in buildings
	Electricity	Phase out fossil base-load generation	Expand renewable generation base and network upgrades	Achieve ~95% renewable generation
	Industrial process heat	Replace coal with biomass and electricity		Replace coal and fossil gas with biomass and electricity

ENERGY, INDUSTRY, BUILDINGS

We have recommended three areas for the Government to focus on:

1. Decarbonise the energy system and ensure the electricity sector is ready to meet future needs

- National energy strategy
- Investment in energy efficiency
- Evolution to a low-emissions electricity system fit for future technologies
- Regulatory settings that meet diverse needs
- Fast-paced and sustained build of renewable electricity generation and infrastructure
- Provision of low emissions fuels
- Eliminate fossil gas use in buildings

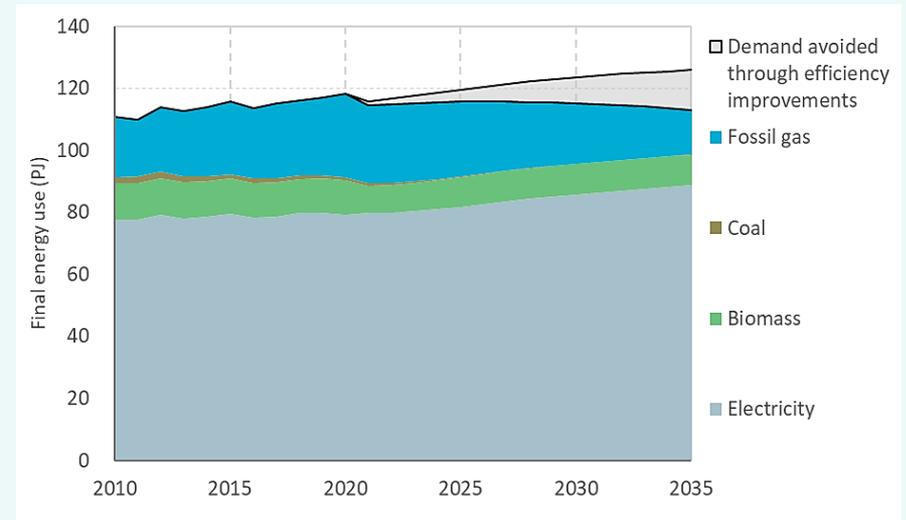


For more detail see Chapter 15: Aronga Kaupapa – Ahungao, Ahumahi, Ahuwhare Policy direction for energy, industry and buildings

ENERGY, INDUSTRY, BUILDINGS

We have recommended three areas for the Government to focus on:

2. Reduce emissions from industry
3. Upgrade existing buildings and construct new buildings that are low emissions, healthier and climate resilient



For more detail see Chapter 15: Aronga Kaupapa – Ahungao, Ahumahi, Ahuwhare Policy direction for energy, industry and buildings

ENERGY, INDUSTRY, BUILDINGS

Changes in our final advice:

- Provided additional detail on the suggested scope of a national energy strategy
- Clarified metric for the renewable energy target
- Refined assumptions around hard to abate industries, low to medium temperature process heat and geothermal power generation
- Expanded discussion on the importance of low emissions buildings, in terms of energy efficiency and embodied emissions

TRANSPORT

We have recommended three areas for the Government to focus on:

1. Reducing reliance on light vehicles and supporting people to walk, cycle and use public transport.
2. Accelerate emissions reductions from the light vehicle fleet.
3. Beginning work now to decarbonise heavy transport and freight.

For more detail see chapter 14: Aronga Kaupapa – Te Aheinga o Ngā Rori
Policy direction for transport



TRANSPORT

Changes in our final advice:

- More emphasis on mode shift to reduce car use.
- More on focus on enabling local authorities to deliver a low emissions transport system at pace.
- Maintained the same level of ambition for reducing emissions from light vehicles.
- Broader and more ambitious approach to reducing emissions from heavy transport and freight.

BIOECONOMY

We have recommended that the Government commit to developing and delivering a strategy for a thriving, climate-resilient bioeconomy that delivers emissions reductions. This should include:

- A clear governance structure, including a lead Minister and agency
- Mechanism to enable active collaboration
- Integration of considerations across agriculture, forestry, land, transport, waste, energy, industry and buildings including provision of better data

URBAN FORM

We have recommended that the Government commit to enabling emissions reductions through changes to urban form, function and development. This includes:

- Promote urban solutions that meet the needs of Iwi/Māori
- Develop a consistent approach to quantifying the emissions impact of urban development decisions
- Improve the evidence base to support decision making
- Retrofit existing urban areas and infrastructure to facilitate low emissions choices and ensure that regulatory settings allow for and encourage densification
- Ensure that new developments are planned in a way that is compatible with a low emissions future

Over to government



Other upcoming webinars

- Agriculture, Forestry and Waste – 15 June 2021 9.30am
- The Nationally Determined Contribution – 22 June 2021 1.00pm
- Emissions Budgets and Modelling – 22 June 2021 2.00pm



Questions

Want to get in touch?
hello@climatecommission.govt.nz



He Pou a Rangi
Climate Change Commission

CONSULTATION

- 15,000+ submissions through our website, the 100CoastieVoices survey, the post and via email
- Attended around 200 events across Aotearoa, and talked with an estimated 4,000 people
- Stakeholders from community groups, unions, NGOs, business, central and local government, parliamentary groups, local government officials, and the wider public
- Met kanohi kitea with Iwi/Māori where possible and engaged online where not
- Reached more than 190,000 rangatahi aged between 13-24 through collaboration with the Hive

WHAT WE HEARD

- While views differ on what action should look like – we have seen growing momentum for change
- We refined our advice based on the evidence New Zealanders provided during consultation
- This was used to test and refine our modelling assumptions and inputs
- Judgements, conclusions and recommendations were also assessed and modified (where appropriate)
- We looked at each sector to understand how fast Aotearoa can move within real world constraints

WHAT'S NEXT

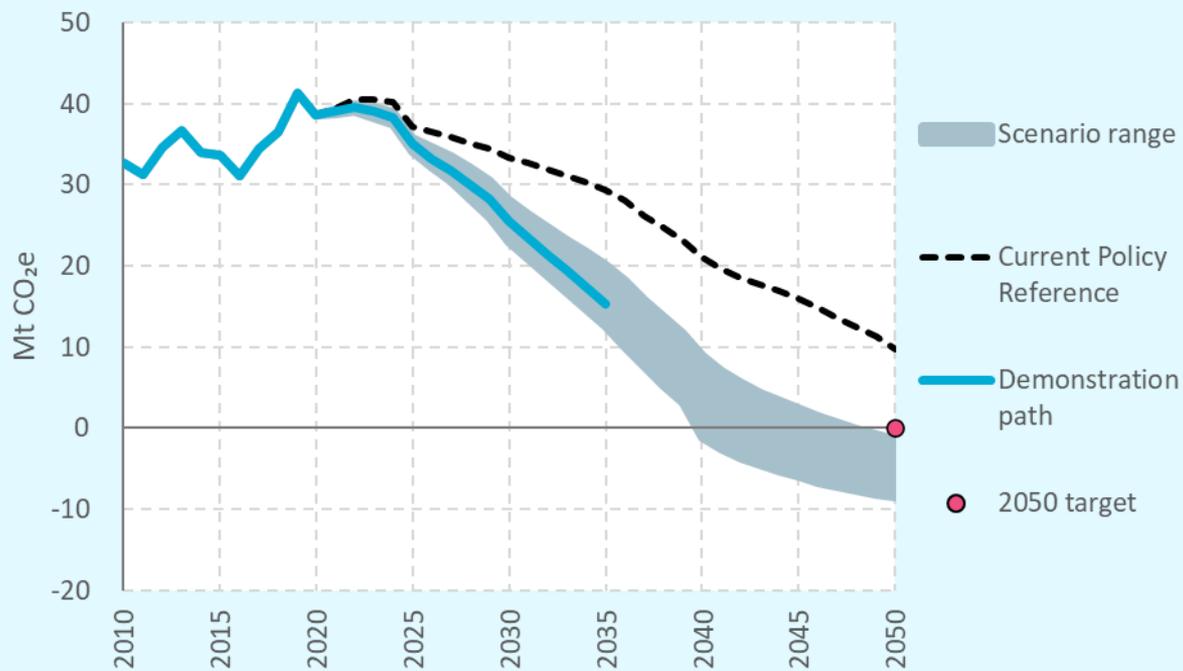
Our future work programme:

- Monitoring how the emissions reduction plan is implemented
- Begin a piece of advice on adaptation
- Advising on price control and unit settings for the NZ ETS
- Assessment of He Waka Eka Noa's progress towards farm-level accounting and readiness of sector for pricing emissions
- Advice on level of assistance to agriculture sector as part of pricing scheme

WHAT WE CHANGED

- Changes to the level of emissions budgets
- Further integration of Te Tiriti o Waitangi/Treaty of Waitangi partnership
- Further explanation of alternative paths to show budgets can be met under a range of circumstances
- Reflected feedback around cost and pace of transition
- Further analysis of the costs of budgets and impact on GDP, including additional sensitivities
- Checked compatibility of NDC and recommended domestic budgets with contributing to the global 1.5°C effort
- More detailed analysis of distributional impacts, more emphasis on co-benefits such as health and more detail on how the transition could affect employment

Demonstration path to 2035

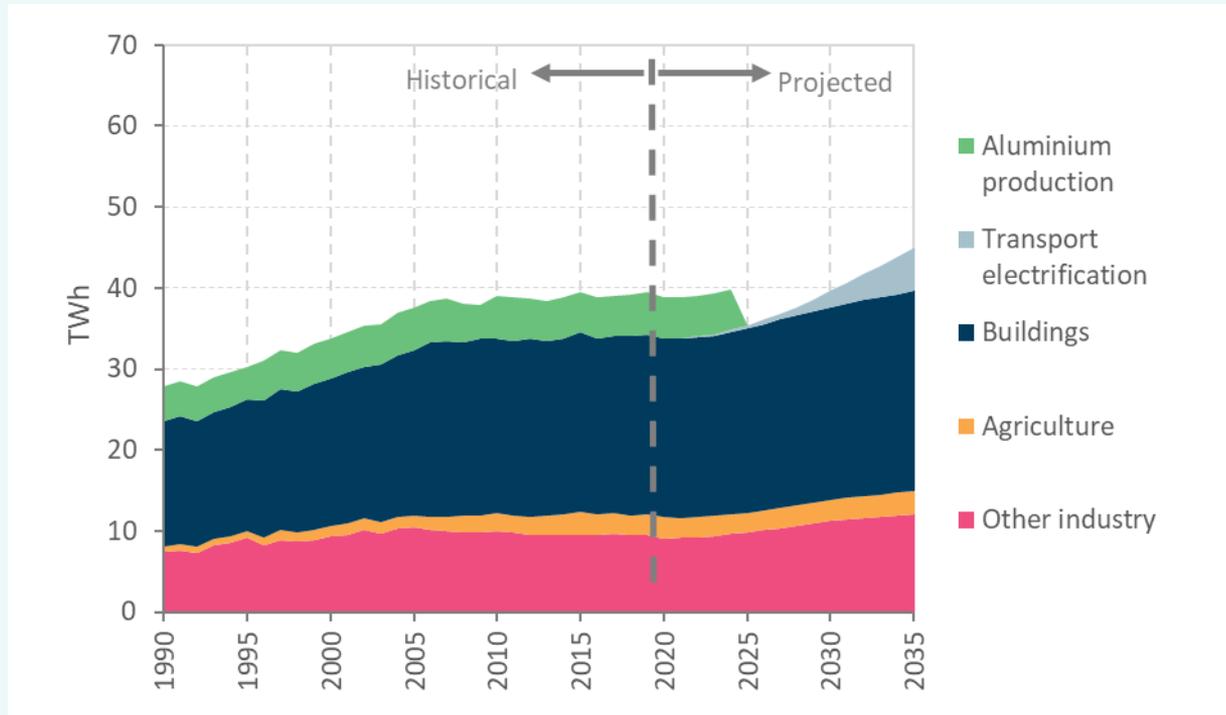


Net emissions of long-lived gases in our demonstration path compared with the scenario range and reference case

SECTOR EMISSIONS PROFILES

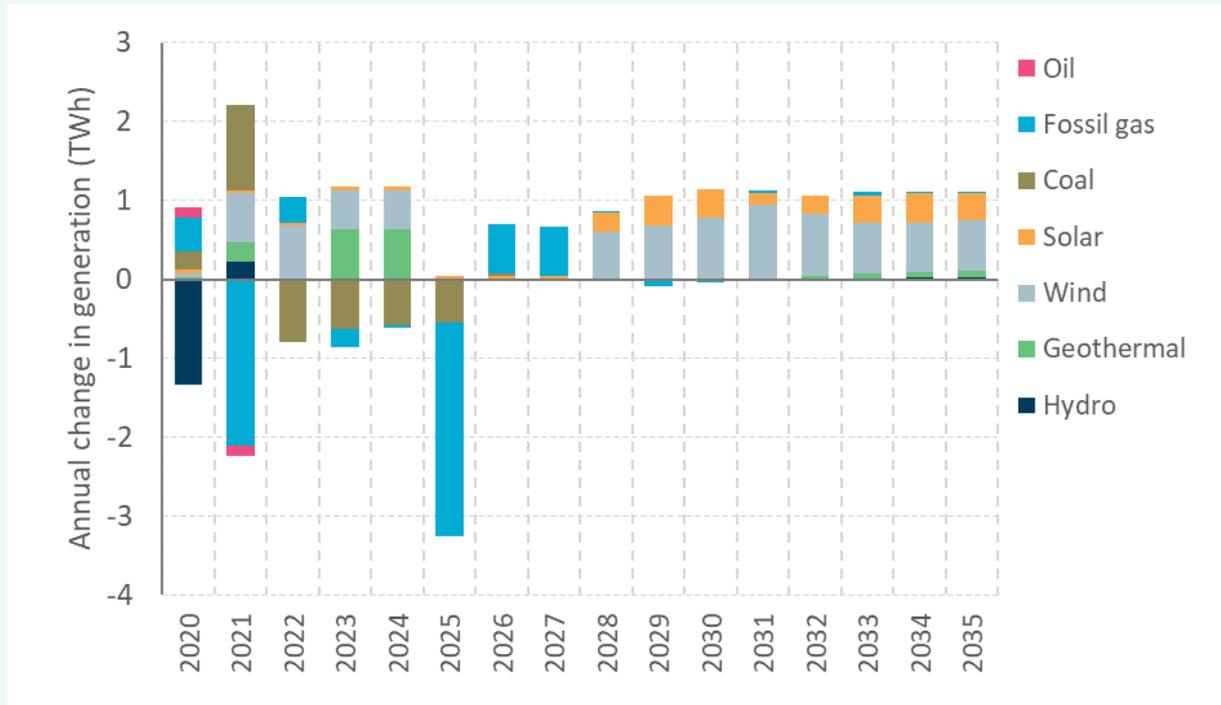
	2019	2035 Demonstration path
Transport	16.2 MtCO ₂ e	9.5 MtCO ₂ e
Energy, industry and buildings	21.4 MtCO ₂ e	12 MtCO ₂ e
Proportion of long-lived gases	77.4%	70.6%

Maximise the use of electricity as a low-emissions fuel



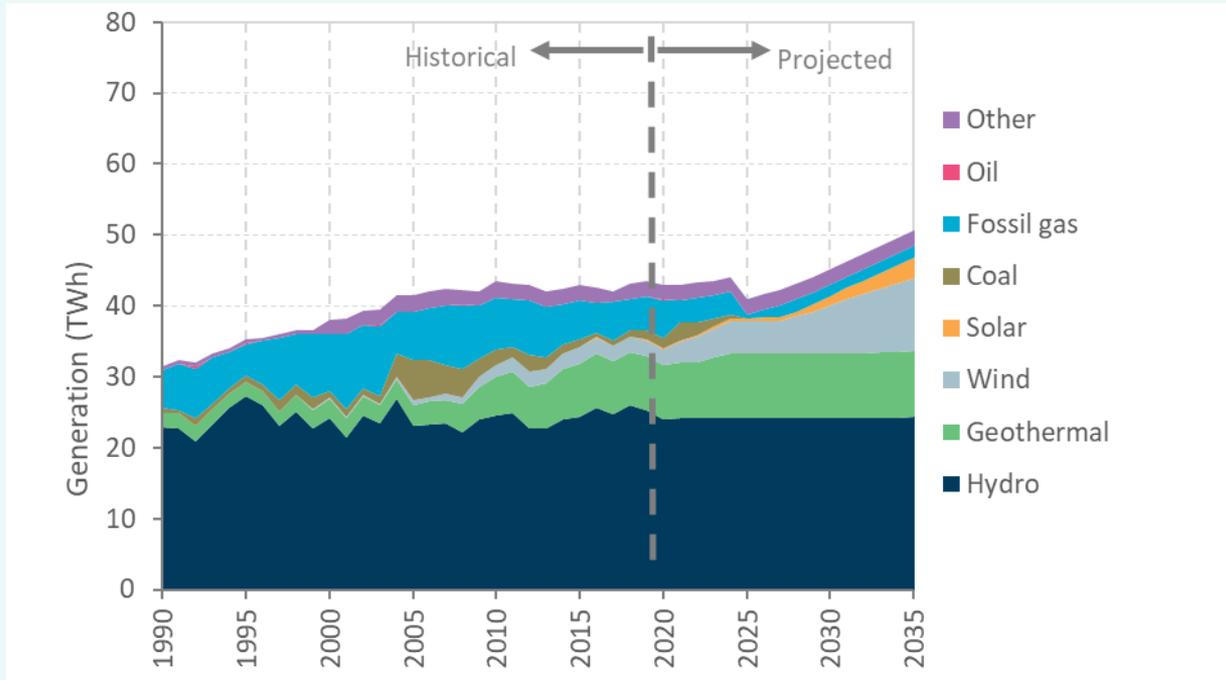
Electricity demand in our demonstration path

New generation will be needed to meet increased electricity demand



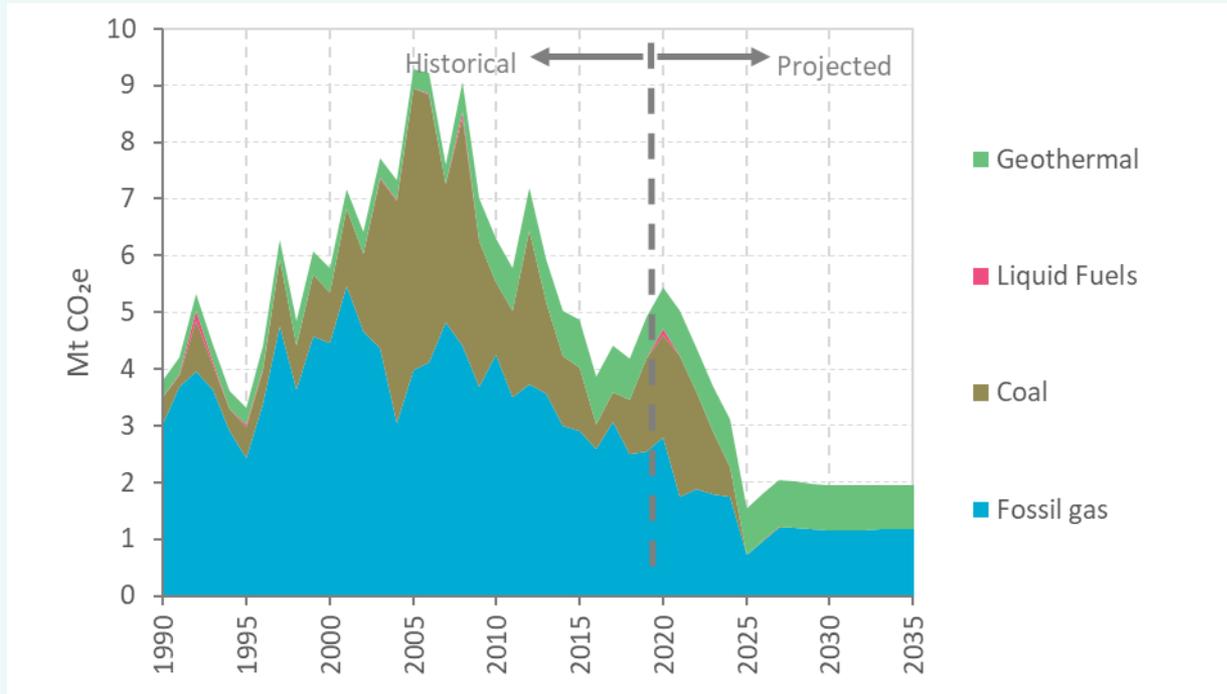
Annual change in electricity generation in our demonstration path

New generation will be needed to meet increased electricity demand



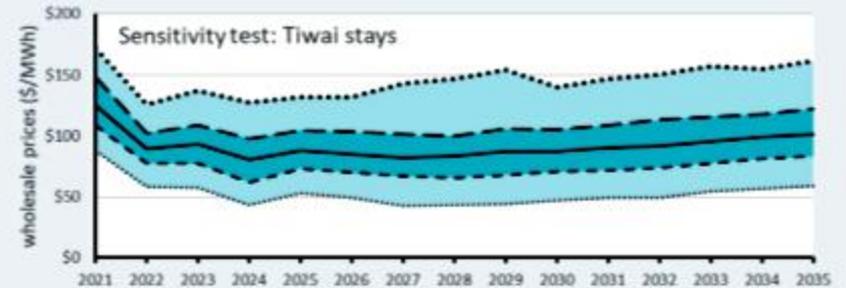
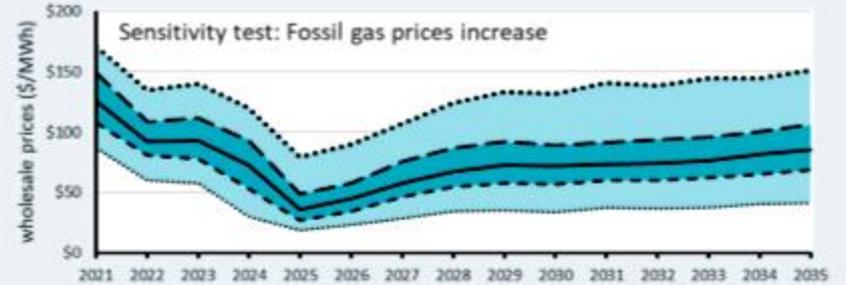
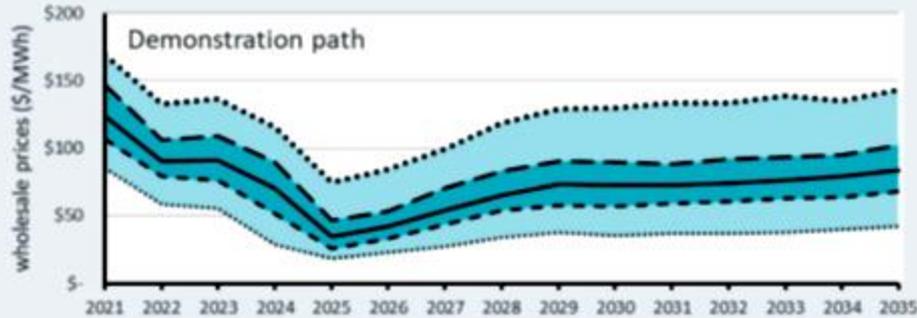
Electricity generation in our demonstration path

Generation emissions



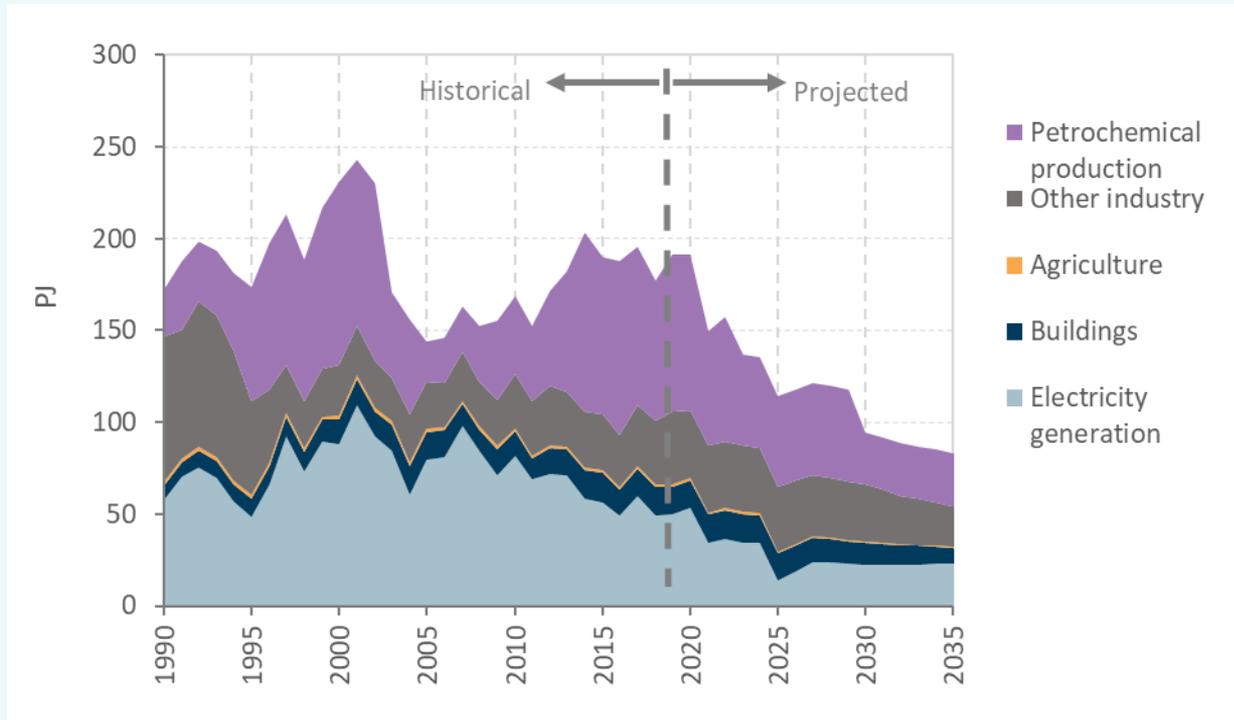
Emissions from electricity generation in our demonstration path

Wholesale electricity prices



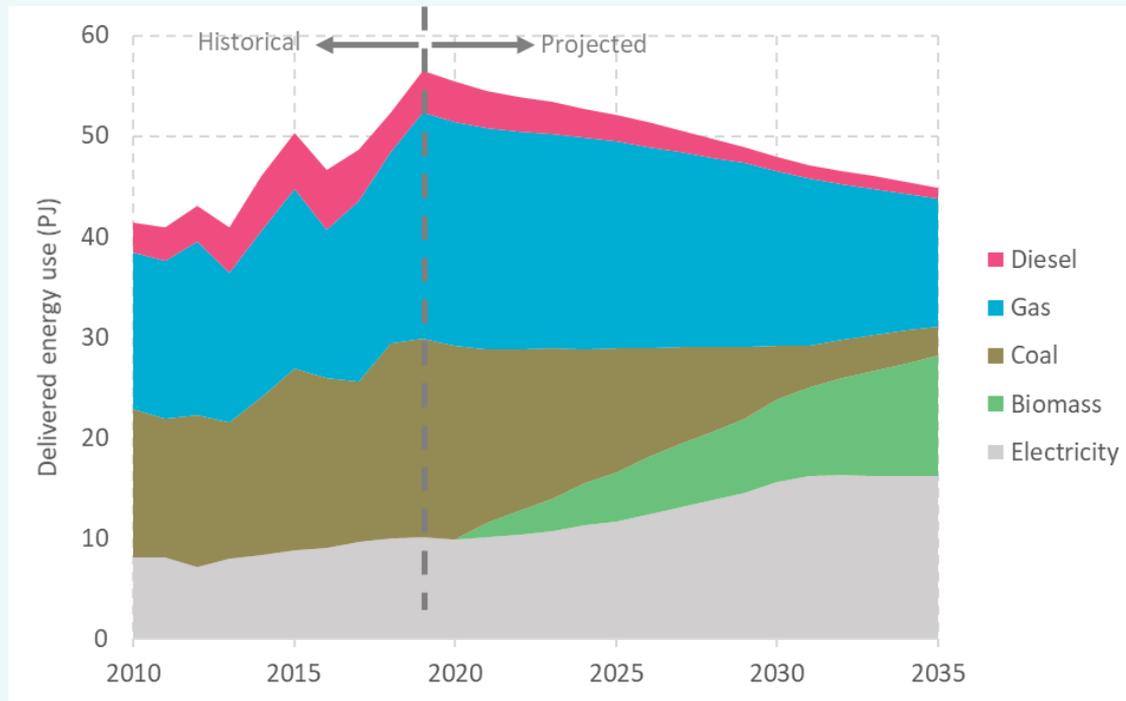
..... 5th percentile
- - - 25th percentile
- - - 75th percentile
..... 95th percentile
— median

Fossil gas demand



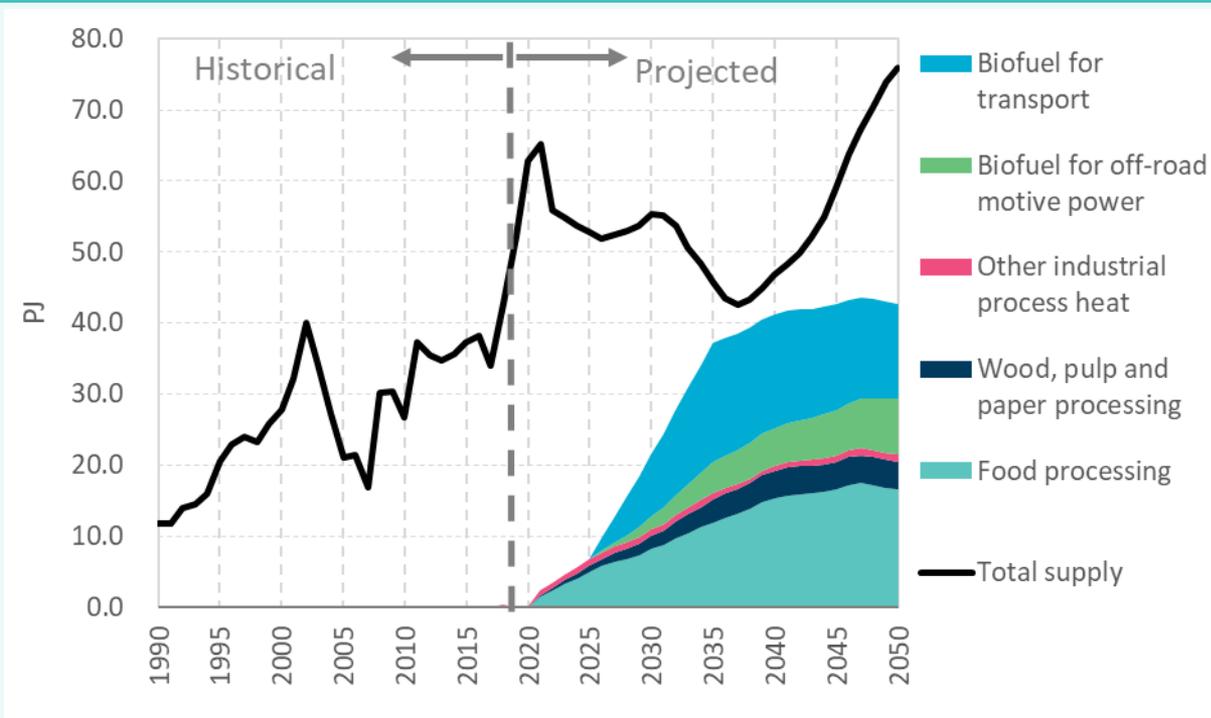
Fossil gas use in our demonstration path

Accelerate emission reductions from process heat



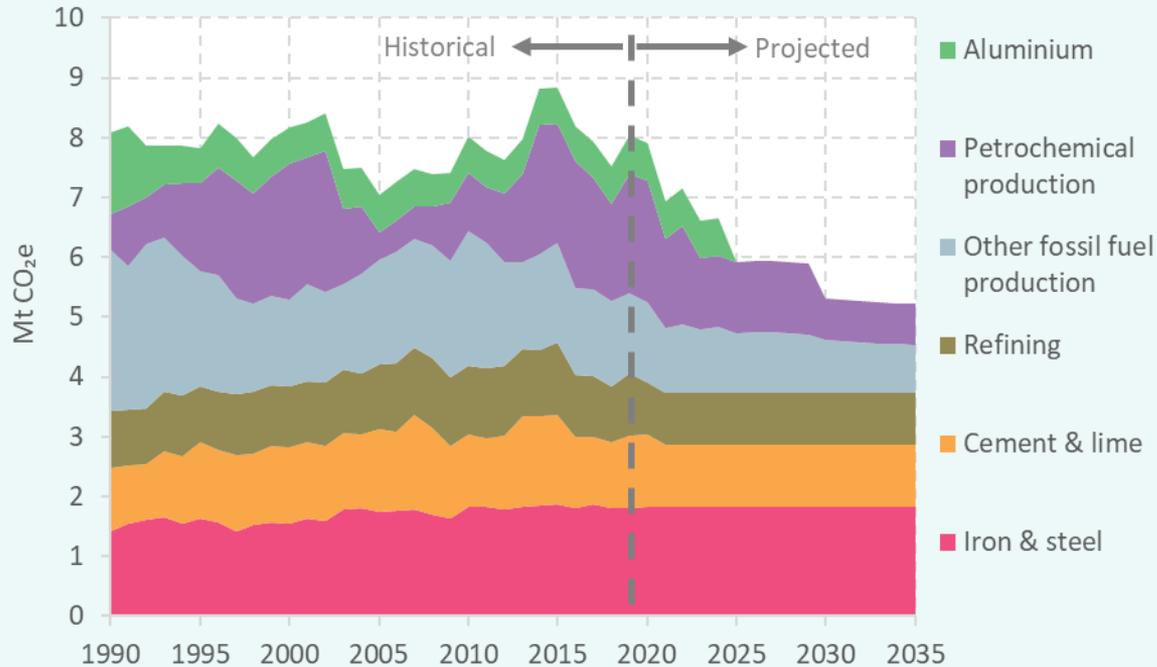
Fuel mix in the food processing industry in our demonstration path

Scale up the provision of low emission fuels



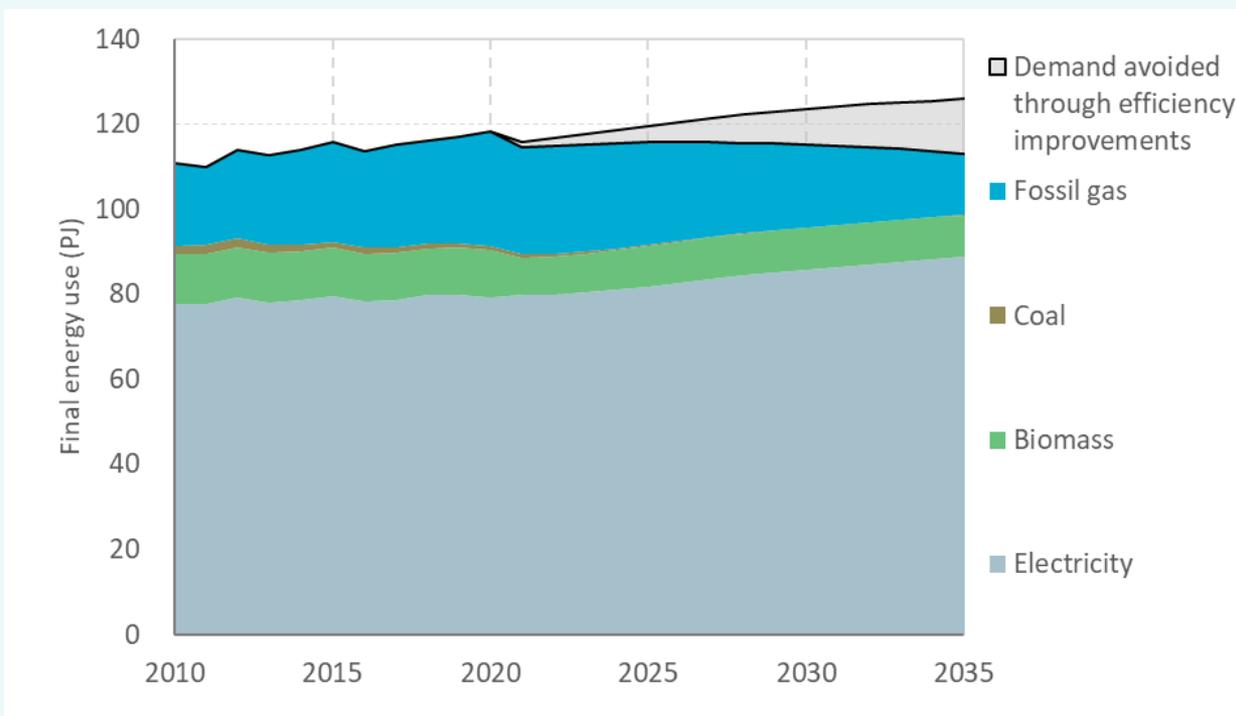
Biomass use and supply to 2035 in our demonstration path

Innovation will be required to reduce emissions from hard-to-abate sectors



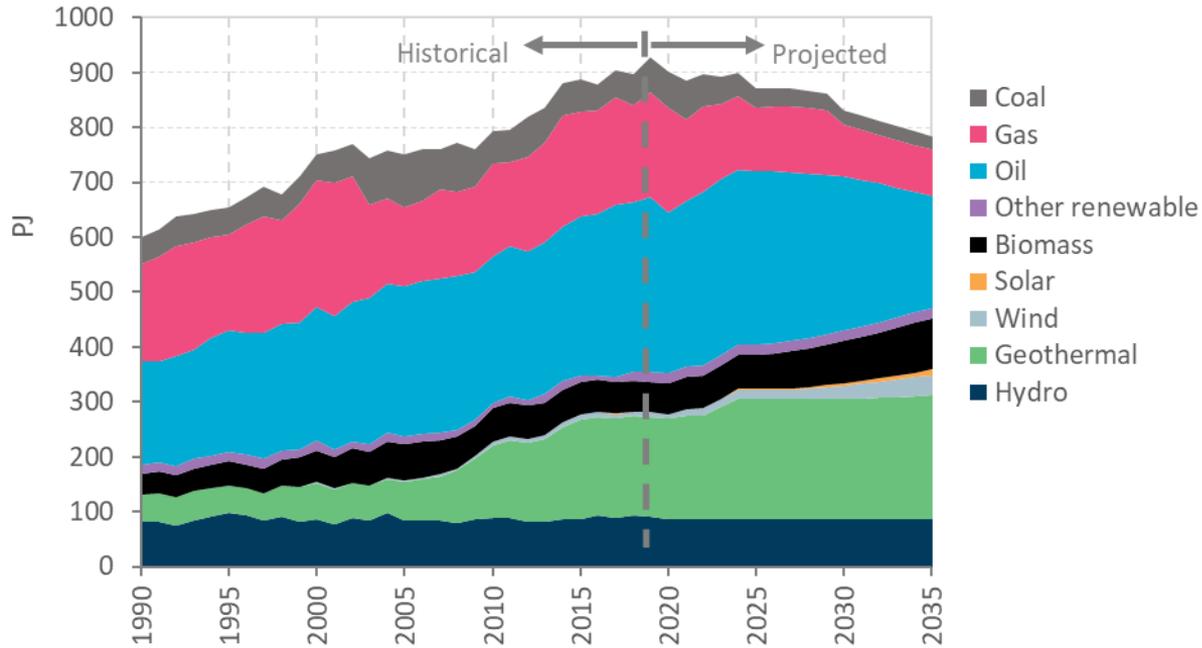
Emissions of long-lived gases from heavy industry in 'demonstration path'

Fossil gas needs to be phased down in buildings



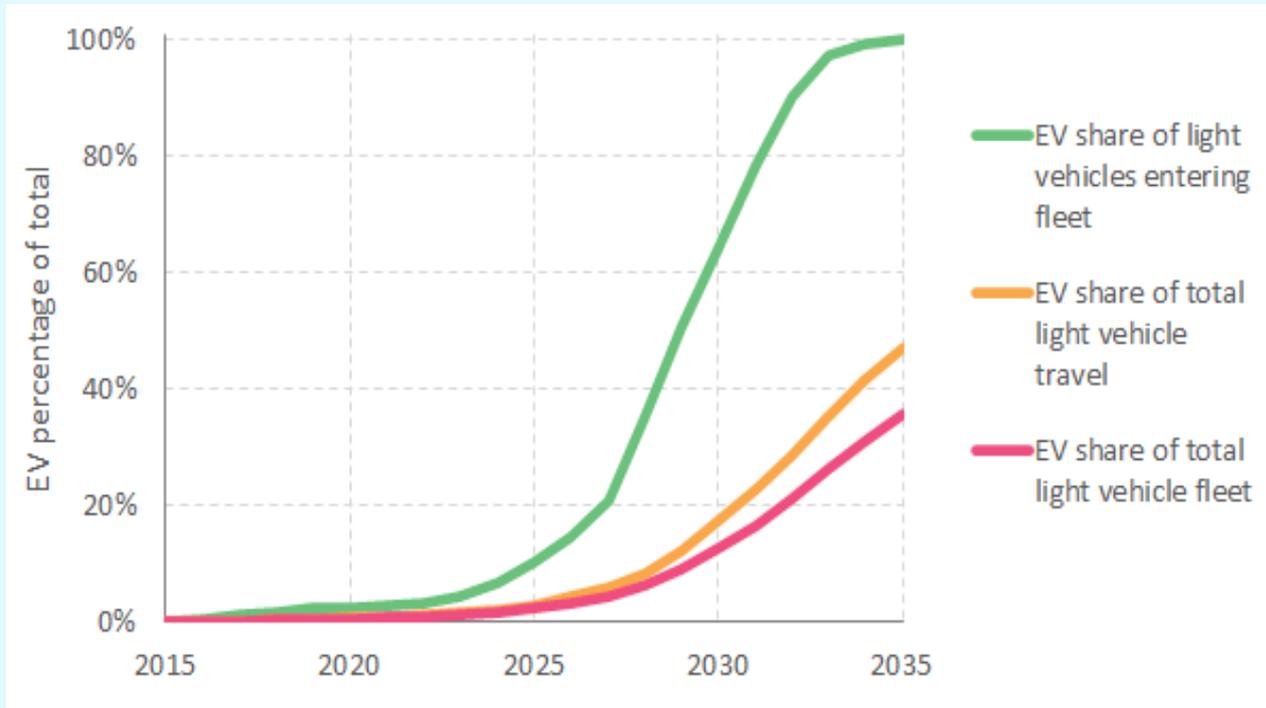
Final energy use (PJ) in buildings in our demonstration path

Decarbonising the energy system



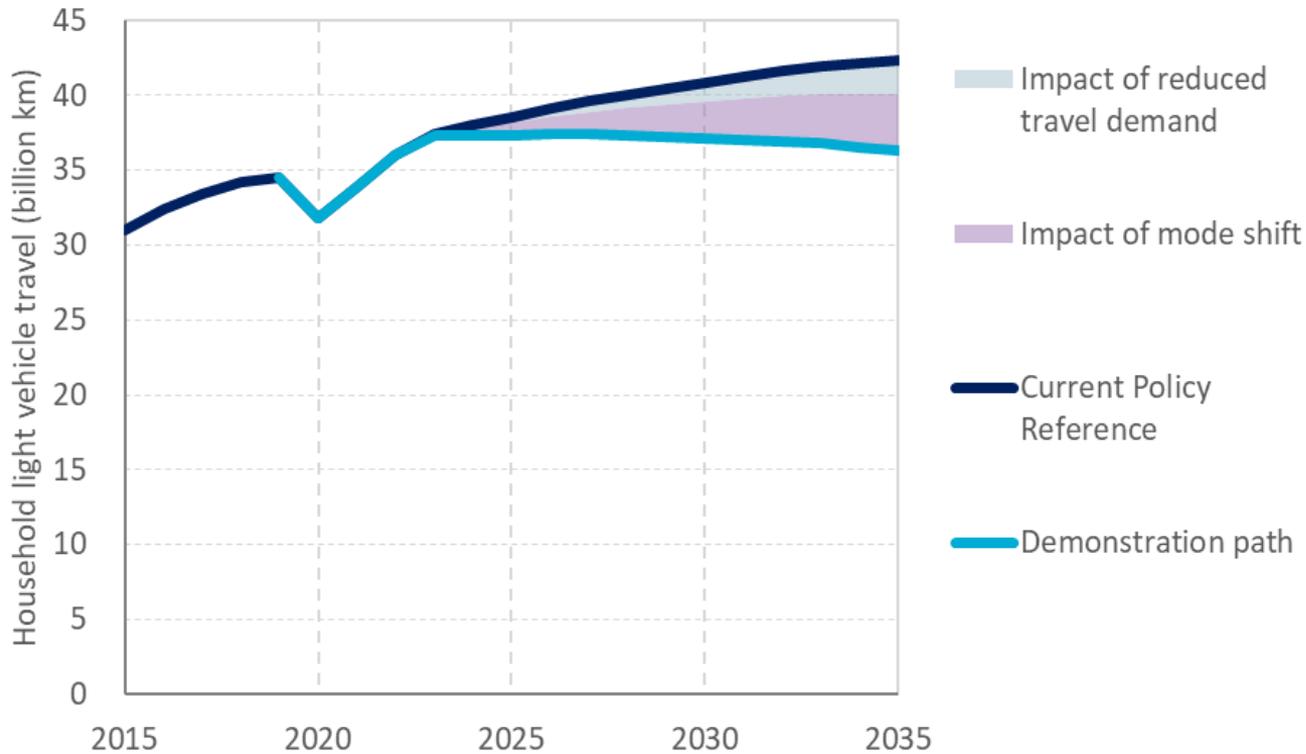
Total primary energy supply in our demonstration path

Demonstration path to 2035 - Transport

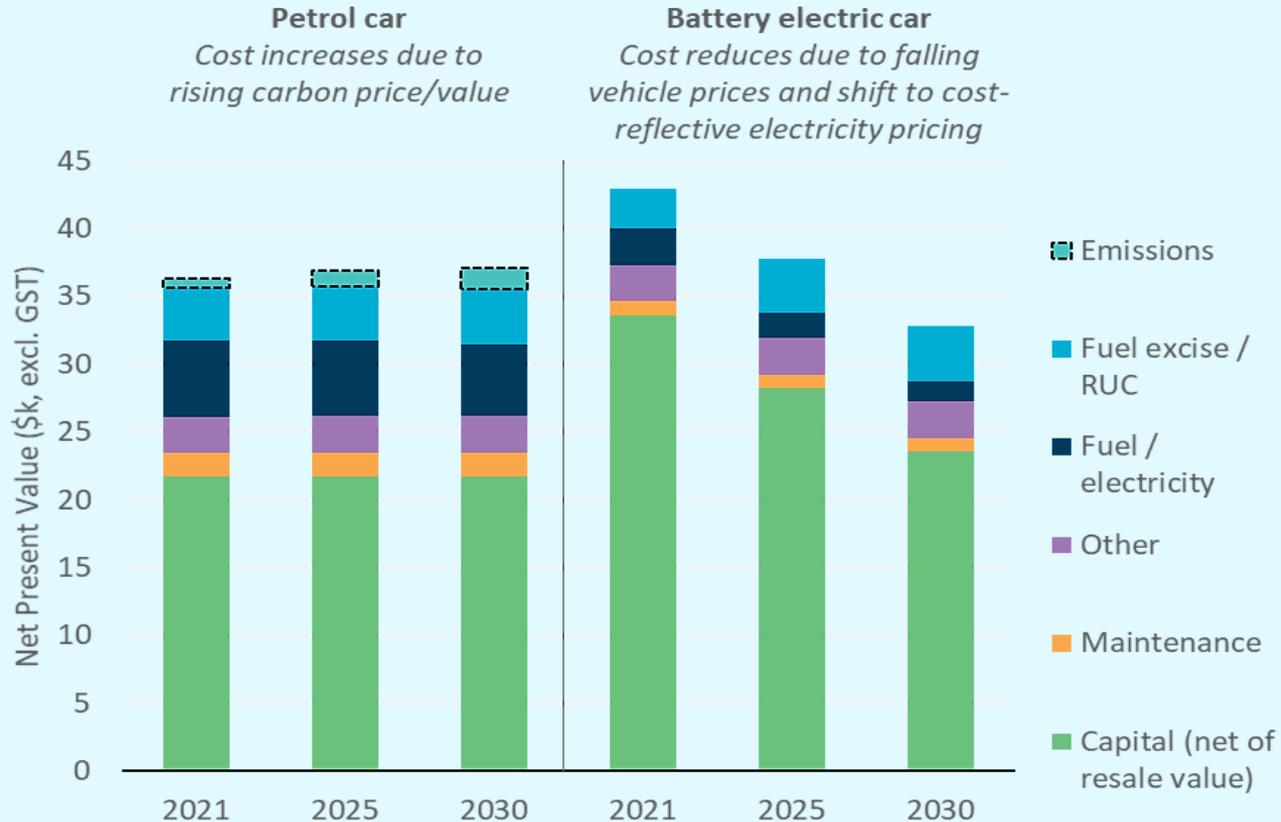


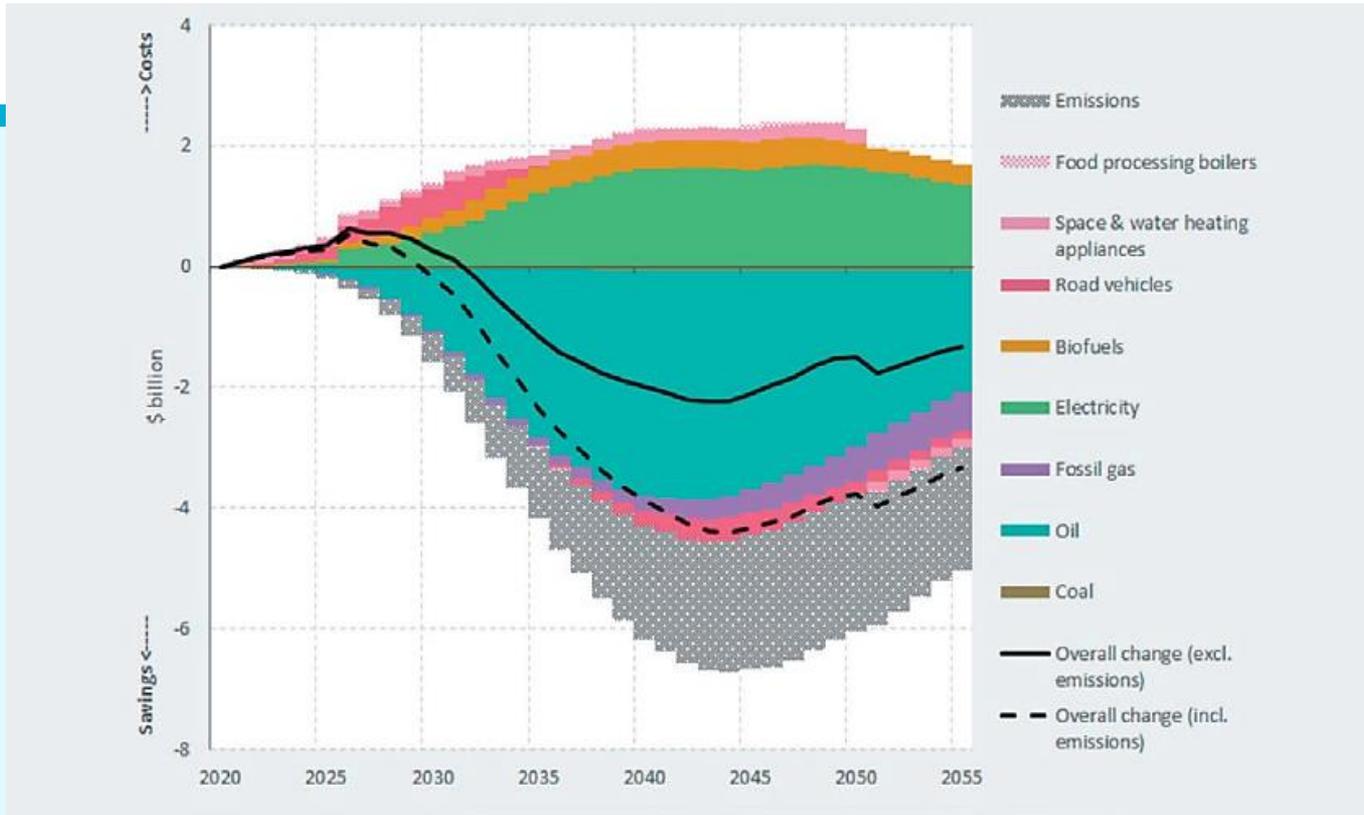
EV share of vehicles entries, fleet and vehicle-kilometres travelled in our demonstration path

Behaviour change can play a significant role in reducing light vehicle emissions



Cost comparison – projected five-year total cost of ownership.





Projected annual increase and decrease in costs from fuel switching across the road transport, buildings and food processing sectors in the demonstration path compared to the current policy reference

SENSITIVITY ANALYSIS

