The Superpower Institute

The Case for *Pricing Pollution*

Reducing emissions, strengthening the economy, and delivering a fair share for Australians

About The Superpower Institute

Founded in 2023 by economist Ross Garnaut and public policy expert Rod Sims, The Superpower Institute is a not-for-profit organisation dedicated to helping Australia seize the extraordinary economic opportunities of the post-carbon world.

The Institute's focus is on developing the policy settings, market incentives and practical knowledge necessary for Australia to become a major exporter of renewable energy and green industrial products. By leveraging the nation's comparative advantage, the Institute aims to elevate Australia's economic and climate ambition and secure its place as a leader in a decarbonised global Economy.

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superpowerinstitute.com.au/work/the-case-for-pricing-pollution

This report was authored and edited on the Traditional Lands of the Wurundjeri People of the Kulin Nation and the Whadjuk People of the Noongar Nation. We pay our respects to their Elders past and present, and acknowledge the enduring strength of their cultures, knowledge and custodianship.

As Australia advances toward a new era of clean energy trade, we recognise the vital importance of First Nations voices, rights and leadership. A just transition must ensure that First Nations communities share equitably in the benefits of new industries, and that their deep connections to Country inform how we shape a more sustainable and inclusive future.

Foreword

“Nothing is more powerful than an idea whose time has come”, Victor Hugo.

The Superpower Institute (TSI) is delighted to release this report that clearly, and we think convincingly, makes the case for both a Polluter Pays Levy and a Fair Share Levy.

Many extremely clever people within TSI contributed to this report. We also benefitted from input provided by those we liaised with. My thanks go to everyone involved for this vital contribution to Australian public policy.

TSI was motivated to produce this report because Australia faces significant, seemingly intractable, challenges. Our real household disposable income per capita has been largely flat for 10 years and has underperformed against the OECD average. We will not meet our emission reduction objectives with current policies. And we face what appears to be permanent budget deficits on current policies, which require either higher taxes or difficult spending reduction decisions. The latter is challenging because there are many pressures for increased spending in health and other social spending, and in defence.

The Polluter Pays Levy is the most efficient way to reduce our emissions towards our targets. It is fair to say that all public policy experts support polluter-pays policies. Australia faces three choices: miss our emission reduction targets, meet them in ways that increase costs to consumers, or let the polluter pay for the damage they cause to our environment. The choice is obvious.

There is a further benefit. Australia’s current emission reduction policies are largely inefficient and send confusing signals to our electricity sector, and so damage our productivity. A Polluter Pays Levy would also see resources diverted to more productive uses, along with the financial resources to facilitate this.

Raising tax revenue is always difficult given that no one wants to pay more tax. But Australia massively under-taxes our gas sector by any comparison with world standards. This is surely the lowest hanging tax “fruit”. Our gas producers know they are in an advantageous position that would not be tolerated in other gas producing countries. Simply raising our taxation of gas producers to around world average levels would raise significant revenue in what is clearly the least controversial way. And as the Norwegian approach shows, which our recommendations largely mirror in form while being much less onerous in levels, the design of the proposed Fair Share Levy will not deter any future investment companies may wish to make.

Combined the Polluter Pays Levy and the Fair Share Levy will raise on average $35.6 billion per annum over the next 25 years. This can cover generous compensation to Australian households, which we have recommended, that sees them clear financial winners. The levies involve a transfer from Australia’s gas and to a lesser extent coal producers to all other Australians. They will significantly reduce cost of living pressures, boost productivity, see Australia meet its emission reduction targets, help address the current under-investment in our electricity sector, and allow the Government to deal with the very real budget pressures Australia faces.

The only alternatives to adoption of the Polluter Pays Levy and the Fair Share Levy are either measures that are damaging to Australia’s prosperity or inaction. But Australia’s challenges cannot be ignored.

Rod Sims
Chair, The Superpower Institute.

Executive summary

Australia faces three significant challenges to its long term economic prosperity and environmental sustainability. First, we are not on track to achieve our appropriate contribution to the world achieving net zero by 2050. Second, Australia has a structural budget deficit but needs significantly more revenue for housing and other social policy. Third, Australia's economic fundamentals are weak: productivity is low, and future prosperity requires increased investment in industries where Australia has a comparative advantage.

This report makes the case for two new taxes on fossil fuels, which together deal with all three problems economically; we do not believe that a better combination of policies is available. The first is a 'Polluter Pays Levy' (PPL), which would tax firms for the carbon embedded in fossil fuels extracted or imported for consumption in Australia. The second is a 'Fair Share Levy' (FSL) on the very high profits made by gas producers, which are grossly undertaxed by international standards.

The PPL would deliver additional carbon emission abatement, achieving about 100 million tonnes of additional annual carbon abatement from 2036. Within its first decade, total reductions would be around 2.3 times what we can expect under current policies. Further, it would allow the removal of many current inefficient and complex emission reduction policies which are a drag on productivity and costly to the budget.

The PPL is based on the logic of 'polluter pays.' Polluter-pays taxes are favoured by economists as the lowest-cost way to reduce pollution. They have strong public support and are supported by majorities of voters of both major parties.[1] They reduce emissions by levelling the playing field between products that pollute and those that do not. The levy will incentivise reductions in the fossil fuel emissions that are doing substantial damage to the global climate and our environment.

Our proposed FSL is a 40 per cent levy on the cashflow of Australian gas and oil producers, and is an extremely economically efficient way to raise revenue. This form of tax does not increase export prices or deter investment, has strong international precedent in Norway, and brings large benefits to Australians. It secures a tax rate well within the range observed in other fossil-fuel producing countries.

The FSL is also fair: Australia's gas production is undertaxed, generating high private returns to an activity that damages the climate and the environment. The FSL will give Australians a fairer share of the value of gas resources that belong to them, while providing the government with revenue to reduce further damage by investing in green industries and adaptation to climate change.

Together the taxes would collect an average revenue of $35.6 billion dollars each year between 2026 and 2050. Part of the revenue can be used to generously compensate households for higher energy and fuel prices – we propose a payment worth an average of $4.1 billion each

[1] A survey of 3,000 voters found that nearly 60 per cent agree or strongly agree with polluter-pays levies: market research conducted for The Superpower Institute. This is consistent with other survey results; see, for example: Morison et al., *Climate of the Nation 2024*.

year, through to 2050, leaving an average of $31.4 billion each year for strengthening the budget, and investing in green industries, social policies such as housing, and appropriate tax reform. In addition to compensation payments, we recommend that a share of PPL revenue is put towards a support package targeting households that are more exposed to energy costs; we suggest a package worth an average of $4 billion each year for the first decade of the PPL, with the value reviewed in 2030. We also propose that the federal government uses PPL revenue to introduce a Small Business Energy Compensation Payment worth $325 per year for eligible small businesses.

This package amounts to a transfer from fossil fuel industries to all Australians. It would lift Australians' standard of living, improve productivity and strengthen the budget. Australians have, in effect, been subsidising fossil fuel producers by allowing them to extract Australia's natural wealth without sufficient compensation. If Australia taxed fossil fuel production as most other countries do, Australians would be tens of billions of dollars better off per annum.

Our proposed FSL would raise substantial revenues with large net welfare benefits for Australians. Alternatives, such as increasing the GST or lifting income taxes, would instead be damaging to national welfare.

Current policies aren't working to reduce emissions

Australia has a patchwork of inefficient emissions-reduction policies, delivering slow – and recently negligible[2] – progress on emissions reductions, making it unnecessarily expensive for the budget and consumers to reach net-zero.

Since 2005 emissions have barely decreased outside the land-use sector, and in some sectors they have increased. Stronger incentives are needed to achieve Australia's goals of reducing emissions 43 per cent below 2005 levels by 2030, and between 62 and 70 per cent by 2035. The annual rate of emission reductions needs to more than double from its historical average of 9 Mt each year, and negligible rates since 2022, to between 19 and 24 Mt each year from now through to 2035.[3]

Even if current policies are expanded and tightened, at significant cost to the budget and consumers, Australia will struggle to deliver emissions reductions at the deeper end of this range.[4]

There is a risk current policies for the electricity sector will not support Australia's economic and environmental objectives. New-generation investment is needed in the form of firmed renewables, but this is not occurring at a rate that will meet the target of 82 per cent renewable energy by 2030, or at a rate that will see supply meet anticipated levels of rising demand. Some analysts suggest that Australia is on track for only 60 per cent renewables by 2030.[5] An efficient, stronger incentive for renewable generation is needed while electricity demand grows to

[2] Department of Climate Change, Energy, the Environment and Water, *Quarterly Update of Australia's National Greenhouse Gas Inventory - December 2024*, 4.

[3] Climate Change Authority, *2035 Targets Advice*, 7.

[4] Climate Change Authority, *2035 Targets Advice*, 8.

[5] Parkinson, 'No New Wind, Slow Transmission and a Buyer's Strike: Why Australia May Miss Its Renewable Energy Target'.

accommodate electrification, and new green industries including data centres. Our proposed PPL provides this.

Current policies for decarbonising the electricity sector do not price carbon emissions. The main policy, the Capacity Investment Scheme, subsidises selected renewable energy generation and storage projects through government tenders. Only a very small amount of generation capacity has commenced construction under the scheme,[6] it creates significant contingent liabilities for the budget, and it risks chilling investment outside the scheme by distorting competition between participants and non-participants.

For industrial emissions, the main policy instrument is the Safeguard Mechanism, covering only around 30 per cent of national emissions. It has drawn broad criticism and calls for reform.[7]

The Productivity Commission has proposed that the Government expand the Safeguard Mechanism's coverage to mid-sized emitters, and others have called for its application to the electricity sector.[8] But the Safeguard Mechanism has inherent limitations and weaknesses that make it far inferior to carbon pricing. The first is that it does not generate revenue. The second is that it relies on complex, centrally-determined emissions-intensity limits, which will generate large distortions across the Australian economy that will persist to 2050 and beyond. A third issue, related to the lack of revenue, is the limited scope to address the Mechanism's equity, or 'distributional', implications.

Extending the Safeguard Mechanism would lock in these limitations.

Proponents typically argue that expanding the Safeguard Mechanism is a politically achievable, rather than optimal, policy step. Such an approach distorts the discussion Australia should be having. We cannot afford to jeopardise achieving our climate, budget, and economic goals because we choose poor policy instruments. And without ambitious, credible policies, Australia cannot play its appropriate role in global emissions reductions and use the international stage to urge the world to reach net zero emissions by 2050. Decarbonising the global economy by 2050 is important for avoiding the insecurity and disorder from unmanageable climate change. It is also necessary for future prosperity, capitalising on Australia's comparative advantage in zero-carbon exports.

Australia needs the Polluter Pays Levy

The PPL is a simple, efficient, and effective policy for reducing carbon emissions. It would improve welfare, provide a clear investment signal across 80 per cent of the economy, and raise $22.6 billion a year for the budget.

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[6] As of November, 2025: Dixon, '24 GW in 24 Months, a Race against Time for the NEM'.

[7] Productivity Commission, *Interim Report - Investing in Cheaper, Cleaner Energy and the Net Zero Transformation*; Wood and Reeve, *The Safeguard's Role in Making Australia a Renewable Superpower*; Carbon Market Institute, *Future Opportunities for Australia's Safeguard Mechanism*.

[8] Carbon Market Institute, *Future Opportunities for Australia's Safeguard Mechanism*; Investor Group on Climate Change, 'Response to the Economic Reform Roundtable'; Hammerle and Phillips, *Targets, Pathways and Progress: CPD Submission to the Climate Change Authority*; Spender, 'Here Are Four Ways the Treasurer's Roundtable Could Deliver for Climate'; Reeve et al., *Bills down, Emissions down: A Practical Path to Net-Zero Electricity*.

The Government could introduce the PPL now, or use the 2026 Safeguard Mechanism Review as an opportunity to transition from the Safeguard Mechanism to the PPL. This would significantly deepen emissions reductions compared to current Safeguard trajectories, raise welfare, and raise revenue.

A Fair Share Levy on fossil fuel producers would be good for Australians

Between the 2019-20 and 2023-24 financial years, Australian state and federal governments took only 30 per cent of fossil fuel companies' profits,[9] through a combination of the corporate tax, royalties, and the Petroleum Resource Rent Tax (PRRT). Fossil fuel resources are owned by Australians, and allocated to private parties for exclusive use; this generates profits that are higher than the returns needed to attract investment. Other major fossil fuel exporting countries took a much larger share of these profits —typically between 75 and 90 per cent.

Our proposed FSL would replace the PRRT, and lift Australia closer to international practice: we estimate that the average tax rate over 2020 to 2024 would have reached 49 per cent, yielding about $80 billion in additional revenue. The FSL, as a cashflow tax, is economically neutral. It neither reduces nor increases incentives to invest in Australian gas extraction, will not raise prices, and therefore does not impact our trading partners' energy security.

The FSL would increase government revenues by $13 billion dollars a year on average from 2026-2050, while raising Australian welfare, investment, and GDP. These revenues would further strengthen the budget and support public investments in future prosperity. At its peak, annual benefits from the FSL are equivalent to about $1,541 per household.

As with carbon pricing, there is a long history of political debate about resource rent taxes in this country. Most notably, a Resource Super Profits Tax was recommended to the Rudd Government within the Henry Tax Review in 2010.[10] There was fierce opposition from firms that were asked to share their unusually large profits with Australians. A much weaker version of the tax was accepted by the mining industry and introduced as the Minerals Resource Rent Tax by the Gillard government in 2012. This version of the tax was repealed by the Abbott government in 2014.

Interest groups argue that they already pay a fair share of tax and that a resource rent tax will chill investment. This report, and the experience of Norway, shows that they are wrong. We expect to receive opposition to our Fair Share Levy from some of the same interest groups. They owe that duty to their mainly international shareholders, but they are not representing Australians' best interests when opposing this policy.

We recommend that the government introduce a Fair Share Levy, supported by five years of transitional arrangements.

[9] "Profit" refers to economic profit, calculated on a cashflow basis – the appropriate benchmark when comparing to peer countries, such as Norway and the UK.

[10] Henry et al., *Australia's Future Tax System*.

The challenge and the opportunity

Australia needs new and better policies to reduce its carbon emissions. It needs a stronger budget. And it needs to achieve these goals urgently and as efficiently as possible, to lift productivity and enhance Australians' welfare.

This report shows that a Polluter Pays Levy and a Fair Share Levy would address all three policy challenges. Together they would generate enough revenue to lift household consumption, and to invest in the green industries that will be the source of future productivity and prosperity.

In Chapter 1 we describe the policy challenges. Chapter 2 describes the features of a productivity-raising tax reform, and shows why a well-designed tax on fossil fuels is a particularly good way to reduce emissions and raise revenue. Chapter 3 shows how gaps in the current tax and policy mix are contributing to slow emission reductions, an unsustainable budget deficit, and low productivity. Chapter 4 introduces our proposed Polluter Pays Levy, and Chapter 5 the Fair Share Levy. Chapter 6 explains how to implement a Polluter Pays Levy and Fair Share Levy.

Glossary of Terms

Cashflow tax	A form of rent tax that applies to net cash flows – revenues minus operating and investment costs – allowing immediate deduction of investment expenses so that only returns above normal profits are taxed.
Carbon Capture and Storage (CCS)	Technology for capturing carbon dioxide emissions, mainly from fossil fuels combusted in power plants or industrial processes, and storing them underground to prevent release into the atmosphere.
Carbon Price	A cost imposed on emitting carbon to incentivise lower emissions. A price on carbon helps shift the burden for the damage from emissions back to those who are responsible for it.
Common-User Infrastructure	Infrastructure where capacity is shared between multiple users under a defined set of terms.
Comparative Advantage	A country with comparative advantage can produce a good or service relatively more cheaply than others (more precisely, at lower opportunity cost), such that specialising in and exporting that product generates gains for all. Australia has a comparative advantage in renewable energy production.
Consumption equivalent welfare	A welfare measure based on changes in real household consumption due to a tax, without valuing the welfare households gain by substituting between goods. It is easier to apply but typically overstates welfare losses relative to marginal excess burden by a factor of two or more.
Corrective or 'Pigouvian' taxes	Taxes designed to correct market failures by pricing harmful side effects (externalities) of market actors' activities, such as pollution. Corrective taxes ensure that private decision-makers face the social cost of their actions, so engage in fewer harmful, and more beneficial, activities.
Economic rents	Returns in excess of *normal profits* – above the required return to capital – which do not affect investment decisions, and can therefore be taxed with minimal impact on economic activity. Extractive industries are associated with large rents. Not to be confused with "rent" in the sense of leasing.
Efficiency	An outcome is efficient when resources are allocated to their best possible uses, maximising total social value. In economic terms, this means that there is no change in resource allocation that could make anyone better off without making someone else worse off.
Externalities (Positive/Negative)	The unintended side effects of an economic activity that impact others and are not reflected in market prices. Positive externalities (e.g. innovation spillovers) provide value to others, while negative externalities (e.g. pollution) impose costs on others.
Green Iron	Iron produced using renewable energy and green hydrogen, with near-zero emissions
Green Premium	The cost gap between carbon-intensive products and green equivalents.
Marginal Abatement Cost	The cost of avoiding one additional unit of emissions, usually expressed per tonne of CO_2-equivalent. In an efficient economy, the marginal abatement cost begins low as firms pursue the cheapest options for avoiding emissions, and rises as deeper and more difficult emissions reductions are pursued.

Marginal Excess Burden (MEB)	The net loss in household welfare per dollar of revenue raised by a tax, measured by the reduction in real consumption after accounting for behavioural and price adjustments. Typical Australian taxes reduce consumption by between 20-60 cents per dollar of revenue raised, though taxes on "economic rents" may have impacts around zero or bring net benefits.
Market Failure	When markets fail to allocate resources efficiently, due to incomplete property rights, misaligned incentives, and/or asymmetries in information. The non-pricing of harmful CO_2 emissions is a classic example.
NEM (National Electricity Market)	Australia's main electricity grid and wholesale market, covering the eastern and southern states. It interconnects five regional markets – Queensland, New South Wales, Victoria, South Australia and Tasmania – allowing electricity to be traded across state lines.
Normal profits	The minimum rate of return to capital – usually the minimum level of profit – needed to keep capital invested in an activity, covering opportunity costs and risk. Returns above this level are typically described as *economic rents* or excess profits.
Rate of return	The percentage gain earned on an investment over a given period, including profits and capital appreciation, often compared against required returns – most notably the cost of capital, including both debt and equity – to assess investment attractiveness.
Rent tax	A tax designed to target *economic rents*, so that revenue is raised with little or no distortion to investment decisions. They may potentially have a zero marginal excess burden, or even bring net benefits, as in the case of the Petroleum Resource Rent Tax and the proposal in this report.
Royalties (ad valorem)	A charge levied as a fixed percentage of the value of production or sales, commonly used in resource sectors, regardless of profitability, operating costs, or capital investment levels.
Superpower Trade	The trade in clean energy embedded in energy-intensive goods, that relies on export countries' comparative advantage in clean energy production.
Social cost of carbon	An estimate of the total economic damage caused by emitting one additional tonne of CO_2-equivalent, including impacts on productivity, health, ecosystems, and asset risk over time.
Welfare	A measure of economic well-being used in policy analysis, typically defined in terms of the level of household real consumption, after accounting for changes in prices, incomes, and behaviour across the economy.

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01.

The Stakes: Climate, Revenue, and Australia's Future

Australia faces a trifecta of policy challenges. The first is that greenhouse gas emissions are not declining fast enough to meet our net-zero commitments (Section 1.1). The second is that the budget is under sustained pressure, with no emergency reserves to insulate Australians' employment and incomes from inevitable international shocks (Section 1.2). The third is that Australia's future prosperity requires improved productivity and sound, but substantial, public investments (Section 1.3).

1.1 Emissions reductions are too slow and too narrow

1.1.1 Slow progress is bad for the environment

Climate change is a grave and growing threat to global ecosystems and to economic life. Average global temperatures will rise until the world reaches net zero greenhouse gas emissions. The longer it takes to reach net zero, and the larger the accumulation of emissions along the way, the higher average temperatures will be.

Warming above 1.5ºC, even temporarily, will damage the environment and many parts of the economy. Some effects will be irreversible,[11] and the risks to people and natural systems increase with average temperatures.[12] The window to secure a safe, liveable future is closing. The world has to achieve net zero to preserve the prospect of holding temperature increases close to 1.5 degrees.

Australia is a signatory to the international Paris Agreement and has committed to net-zero greenhouse gas emissions by 2050.[13] Under the Paris Agreement's framework of 'Nationally Determined Contributions' (NDCs), Australia has pledged to reduce emissions 43 per cent below 2005 levels by 2030, and to reduce emissions between 62 and 70 per cent below 2005 levels by 2035.[14]

But Australia's emissions are falling too slowly. Between 2006 and 2024 the average decline in emissions was 9 Mt each year. To meet its 2030 target, emissions need to fall about 80 per cent

[11] Lee, 'Opening Remarks by the IPCC Chair'.

[12] Intergovernmental Panel on Climate Change (IPCC), 'Framing and Context'.

[13] Australia's net-zero target has been registered with the UNFCCC under the Paris Agreement and has also been legislated; see Department of Industry, Science, Energy and Resources, *Australia's Nationally Determined Contribution Communication 2022*, 3 and Albanese, 'Australia Legislates Emissions Reduction Targets'.

[14] Department of Climate Change, Energy, the Environment and Water, *Australia's 2035 Nationally Determined Contribution*.

faster than they have over the last two decades – an average of 16 Mt each year.[15] To achieve its 2035 targets, Australia needs to speed up emissions reductions even more dramatically: for emissions to fall 62 to 70 per cent below 2005 levels, Australia needs to more than double its rate of emissions reductions, achieving declines between 19 and 24 Mt per year between now and 2035.[16] This requires much more rapid progress towards net zero than Australia has achieved in the past.

Progress is even slower when measured against Australia's Paris Agreement commitment to efforts that "limit the temperature increase to 1.5°C above pre-industrial levels".[17] An emissions-reduction pathway consistent with this pledge requires 67 per cent reductions by 2030, compared to 2005 emissions, and net-zero by 2038.[18] (Figure 1).

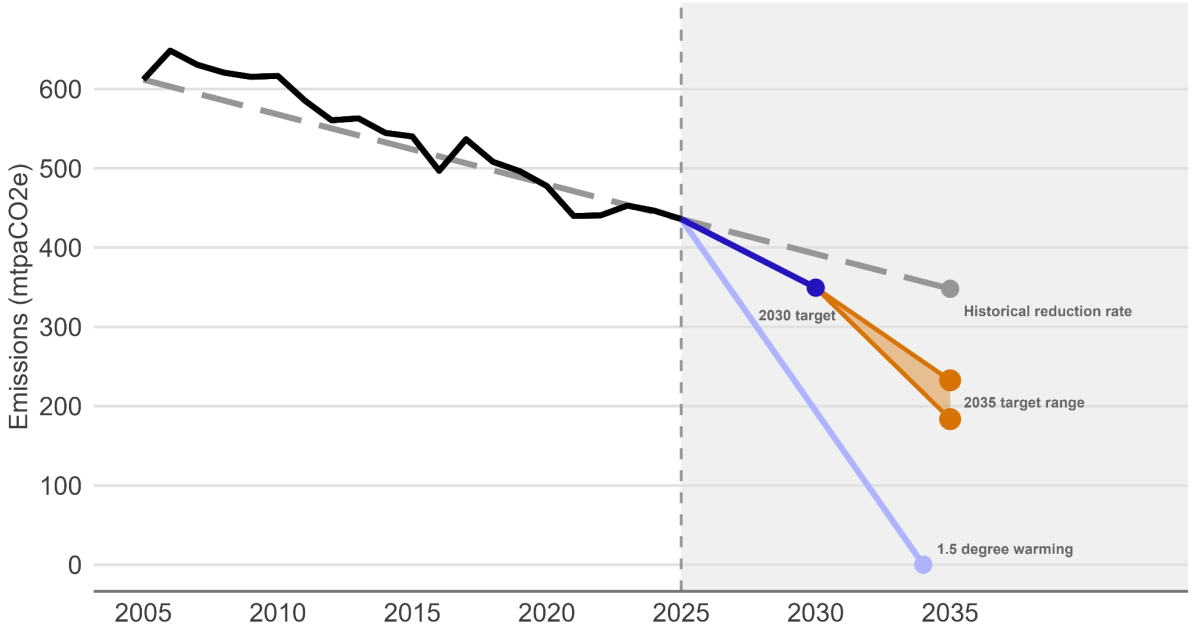

Figure 1: Emissions reductions are too slow

Notes: Australia's Nationally Determined Contributions commit to 43 per cent emissions reduction on 2005 levels by 2030 and between 62 per cent and 70 per cent by 2035.

Sources: 1.5, degree emissions budget: Meinshausen and Nicholls (2023).[19] Emissions data: DCCEEW National Greenhouse Gas Inventory: December 2024.[20] Historical average and required rate of reduction: TSI analysis. Climate Change Authority (2024).[21]

[15] Climate Change Authority, *2024 Annual Progress Report*, 29.

[16] Climate Change Authority, *2035 Targets Advice*, 7.

[17] UNFCCC, 'The Paris Agreement'.

[18] Meinshausen and Nicholls, *Updated Assessment of Australia's Emission Reduction Targets and 1.5°C Pathways*, 3.

[19] Meinshausen and Nicholls, *Updated Assessment of Australia's Emission Reduction Targets and 1.5°C Pathways*.

[20] Department of Climate Change, Energy, the Environment and Water, *Quarterly Update of Australia's National Greenhouse Gas Inventory - December 2024*.

[21] Climate Change Authority, *2024 Issues Paper: Targets, Pathways and Progress*.

To meet its 2030 reductions target, to make progress towards 2035 targets, and to honour the Paris Agreement, Australia requires faster emission reductions across all sectors except the 'land-use, land-use change and forestry' sector (LULUCF).

Sectors representing nearly 40 per cent of emissions in 2005 have not achieved any emission reduction. Emissions from the transport sector, representing about 15 per cent of emissions in 2005, have risen more than 20 per cent. Emissions from the industry sector, representing 5 per cent of emissions in 2005, have risen about 7 per cent. And emissions from stationary energy represented about 13 per cent of emissions, and have risen more than 20 per cent. Australia's emission reductions have been achieved almost entirely through LULUCF, with moderate reductions in the electricity sector (Figures 2 and 3).[22]

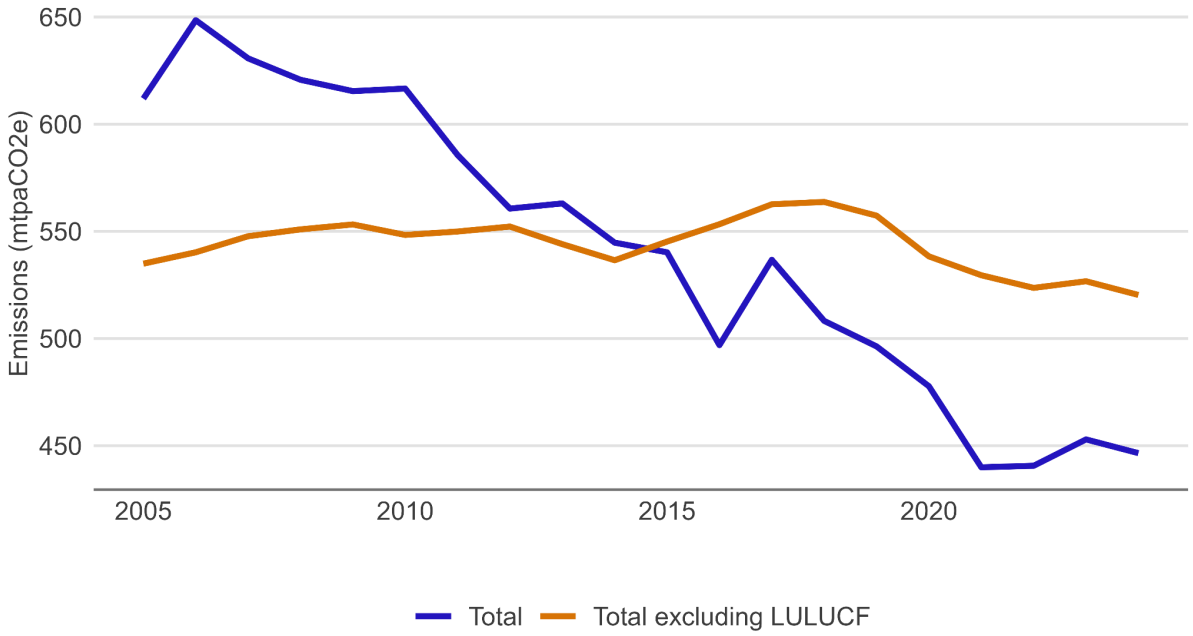

Figure 2: Emissions have hardly fallen outside the land-use sector

Notes: LULUCF = 'Land use, land use change and forestry' sector

Sources: DCCEEW National Greenhouse Gas Inventory: March 2025[23]

[22] Sectors representing 37.6 per cent of emissions; 13.1 from transport; 4.8 from industry; 12.9 from stationary energy. Data from Department of Climate Change, Energy, the Environment and Water, *Quarterly Update of Australia's National Greenhouse Gas Inventory - December 2024*.

[23] Department of Climate Change, Energy, the Environment and Water, *Quarterly Update of Australia's National Greenhouse Gas Inventory - March 2025*.

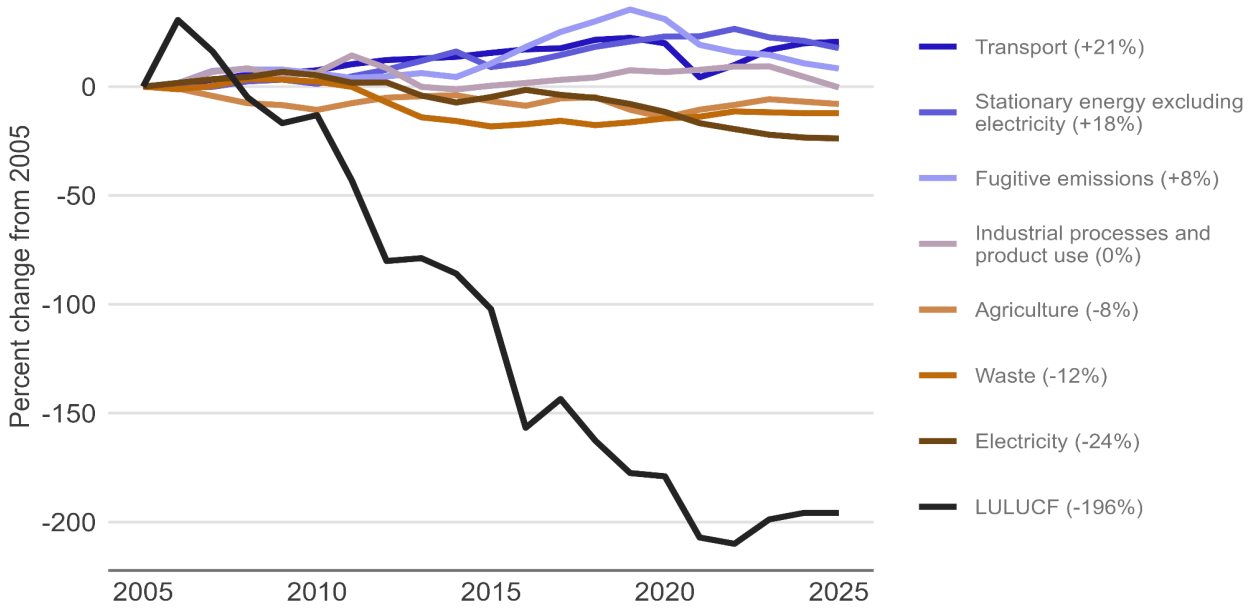

Figure 3: Emissions have risen in the industrial, transport, and stationary energy sectors, and from fugitive emissions

Notes: LULUCF = 'Land use, land use change and forestry' sector
Sources: DCCEEW National Greenhouse Gas Inventory: March 2025[24]

Although it is efficient and expected for sectors to decarbonise at different rates, a complete lack of progress across the transport, industry, and stationary energy sectors is not consistent with Australia's commitment to the Paris Agreement.

Because Australia depends on emissions reductions in the LULUCF sector to meet its international commitments, it is crucial that these reductions are credible. The quality of abatement through LULUCF has been questioned by Australia's National Audit Office,[25] and public confidence in these emissions reductions requires greater transparency and rigour in measurement and accounting.

Australia needs to achieve faster and more credible emission reductions.

1.1.2 Slow global progress is bad for the environment, the economy and people's welfare

The risks to the environment and the economy from climate change were recently described in significant detail in the Government's National Climate Risk Assessment. It concludes that Australia is already experiencing significant economic costs and threats, and that costs will intensify as temperatures rise. More frequent and severe weather events and natural disasters will push up the cost of insurance, damage productivity, and threaten lives.[26]

[24] Department of Climate Change, Energy, the Environment and Water, *Quarterly Update of Australia's National Greenhouse Gas Inventory - March 2025*.

[25] Australian National Audit Office, *Accounting and Reporting of Australia's Greenhouse Gas Emissions Estimates and Projections*.

[26] Department of Climate Change, Energy, the Environment and Water, 'Assessing Australia's Climate Risks'.

Extreme weather events and natural disasters cause supply shocks that reduce output and increase prices. Australia's agricultural sector is particularly vulnerable; historically, severe droughts have reduced GDP by up to 1 per cent.[27] Extreme weather also creates direct costs by disrupting transport systems and electricity networks, and by increasing pressure on emergency services. The 2009 heatwave in Southeastern Australia, for example, led to direct financial costs estimated at $1.15 billion,[28] while the total economic impact of the Black Summer bushfires was estimated to be a $4.6 billion reduction in GDP, representing a 1.8 per cent decrease in the GDP of affected regions.[29]

Because climate change increases the severity and frequency of natural disasters, it increases the private cost of property insurance. Estimates suggest that more than one in twenty properties will face insurance premiums that are 'effectively unaffordable,' costing as much as 1 per cent of the property's value every year.[30]

Recent modelling suggests that by 2050, 2°C warming would increase the cost of floods, bushfires, cyclones, and storms by 500 per cent compared to scenarios excluding climate change,[31] and costs of this scale will dramatically undermine economic stability and weaken government budgets.

More frequent and more damaging natural disasters will also undermine productivity,[32] directly and indirectly. For example, heatwaves are a direct drag on people's productivity, with costs estimated at 0.33-0.47 per cent of GDP.[33] It is estimated that by 2050, the cumulative cost of reduced agricultural and labour productivity will reach $211 billion.[34] The indirect costs of natural disasters are a by-product of the huge costs of recovery, which make it harder for firms and governments to invest scarce funds in productivity-enhancing technology, education, and infrastructure.

Australia cannot prevent warming exceeding 1.5°C or 2°C by itself—but Australia matters. The countries of the Paris Agreement have agreed to do their fair shares. Developed countries are disproportionately responsible for historical emissions, and have agreed to reduce emissions more rapidly than developing countries. Australia has among the highest emissions per person in the world.[35] When developed countries like Australia drag, it discourages action in other countries.

Australia's role as a potential superpower economy in a decarbonised world, exporting zero-carbon goods, is undermined if we are not committed to robust domestic net-zero policies.

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[27] Steffen et al., *Compound Costs: How Climate Change Is Damaging Australia's Economy*, 1.

[28] Steffen et al., *Compound Costs: How Climate Change Is Damaging Australia's Economy*, 13. All costs are reported in 2024 dollars, adjusted for inflation using 'All groups CPI'.

[29] SGS Economics and Planning Pty Ltd, *Economic Recovery after Disaster Strikes - Volume Two*.

[30] Steffen et al., *Compound Costs: How Climate Change Is Damaging Australia's Economy*, 7.

[31] Estimated costs excluding climate change are $40.3 billion in 2049-2050 and $201 billion including 'moderate' levels of global warming: Colvin, *Independent Review of Commonwealth Disaster Funding*, 13 and 79.

[32] Department of Climate Change, Energy, the Environment and Water, 'Assessing Australia's Climate Risks'.

[33] Australian Climate Service, *Australia's National Climate Risk Assessment*, 107; Zander et al., 'Heat Stress Causes Substantial Labour Productivity Loss in Australia'.

[34] Steffen et al., *Compound Costs: How Climate Change Is Damaging Australia's Economy*, 11.

[35] European Commission. Joint Research Centre., *GHG Emissions of All World Countries*, 11; Our World in Data, 'Per Capita Greenhouse Gas Emissions'.

Domestic failure would leave Australia with no authority to influence the global rules, standards, and markets that will govern the green trade (Section 1.3). Faster progress would align Australia more closely with European policies, strengthen its credibility, and put it in a position to press major emitters to lift their ambition.

1.2 Australia's budget is under pressure

Under current policies, Australians can expect a decade of budget deficits.

Apart from a brief period between 2022 and 2024, Australia has not enjoyed a sustained or substantial budget surplus since 2007-08. The budget projections do not point to a surplus until 2034-35, and assume that large commitments will sunset on their scheduled dates (Figure 4).

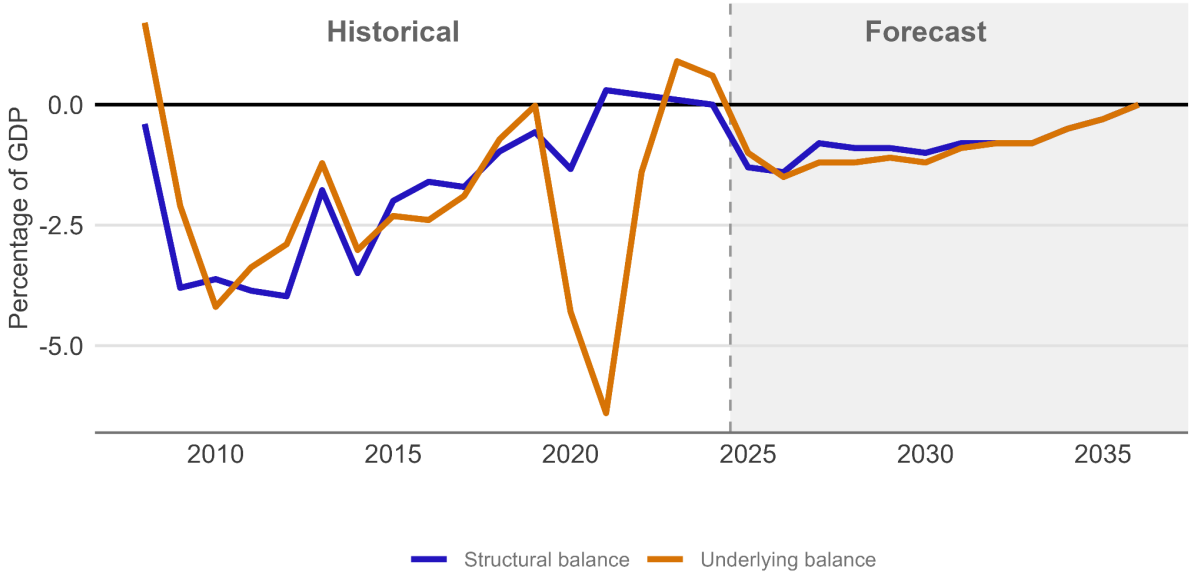

Figure 4: The Budget is not expected to reach a surplus until the mid 2030s

Notes: Budgets provide figures and forecasts for the 11 years preceding, and 10 years following the release of the budget. To show values from 2008 to 2035, budgets for the 2018-19, 2020-21 and 2025-26 financial years are used. These are chosen as 2018-19 is the most recent to include the 2008 surplus, 2020-21 is the first to explicitly disaggregate the deficit into cyclical factors and temporary fiscal measures, and 2025-26 is the most recent. Any conflicting historical values have been averaged.

Sources: Budget Strategy and Outlook 2018-19[36], Budget Strategy and Outlook 2020-21[37], Budget Strategy and Outlook 2025-26[38]

Sustained structural budget deficits are a warning that the economy is not built on strong foundations, because government expenditure regularly exceeds government revenues. When annual deficits are not balanced by surpluses through time, the government accumulates debt.

[36] Treasury, *Budget 2018-19, Budget Paper No. 1*.

[37] Treasury, *Budget 2020-21, Budget Paper No. 1*.

[38] Treasury, *Budget 2025-26, Budget Paper No. 1*.

The Federal Budget is forecast to add nearly $152 billion to gross debt over the next four years, at a rate of between $35b and $42b per year.[39]

Structural pressures include rising interest payments on government debt, and rising expenditure on the NDIS, defence, hospitals payments, medical benefits payments, the Child Care Subsidy and aged care payments.[40] (Figure 5)

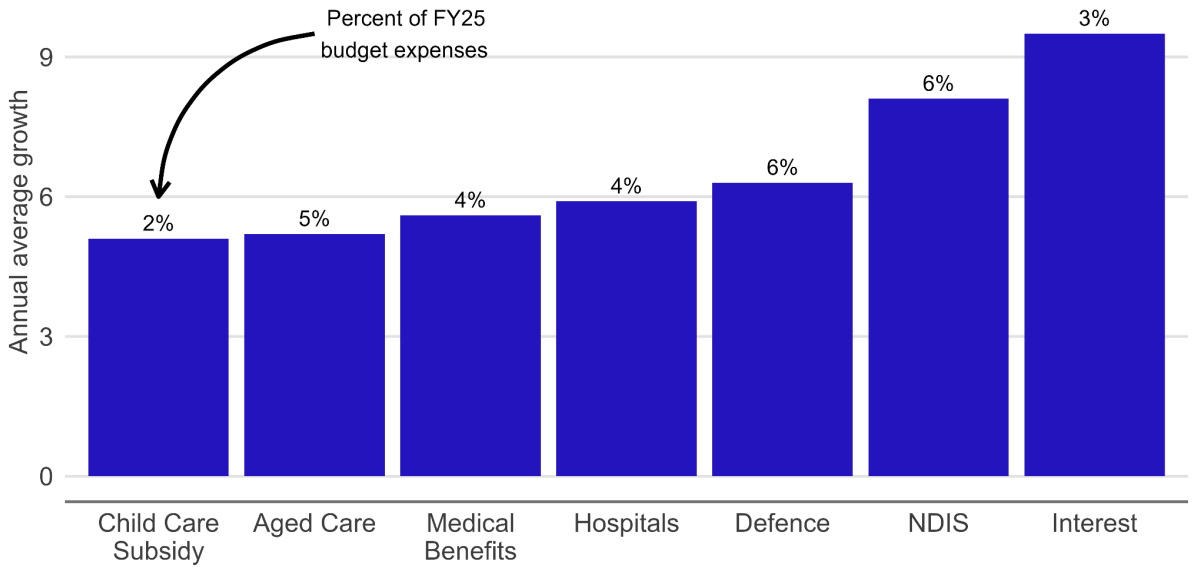

Figure 5: Expenditure is growing more than 6 per cent each year in programs representing more than 30 per cent of budget expenditure in 2024-25

Notes: Terminology differs across Budget documents. The share of budget attributed to interest payments is based on the share attributed to "Commonwealth debt management"; the share of budget attributed to Hospitals is the sum of "Assistance to the states for public hospitals" and "Hospital services."
Sources: Budget Strategy and Outlook 2025-26[41]

The forecast return to surplus requires the Government to hold expenditure steady – by finding savings elsewhere – and for economic growth to lift revenue. If the government cannot hold expenditure steady, or if revenues do not increase, the return to budget surplus will not occur.

[39] Treasury, *Budget 2025–26 Overview*, 6.
[40] Treasury, *Budget 2024-25, Budget Paper No. 1*, 73.
[41] Treasury, *Budget 2025-26, Budget Paper No. 1*.

1.3 Australia has a productivity problem, and future prosperity requires public investments

1.3.1 Australia has a productivity problem

Productivity growth is the engine that lifts wages and living standards over the long-term.[42] A more 'productive' economy can turn a given set of resources—labour, skills, energy, and materials—into a greater volume and quality of goods and services. All else equal, this raises general living standards.

Australia has had a persistent productivity problem over the past decade.[43] In the past 10 years, productivity grew by less than a quarter of its 60-year average.[44] Measures of long-term productivity growth, based on a twenty-year average, have been falling steadily since the early 2000s.[45]

Low levels of investment lead to 'capital shallowing', weakening productivity growth. One reason Australian labour productivity has fallen is the low level of capital investment in non-mining sectors.[46] Long-term low levels of investment in capital expenditure has contributed to almost flat labour productivity over the past decade.[47]

Australia's weak productivity leaves no room for wasteful policies: policies to reduce emissions and raise revenue need to be 'productivity neutral' or 'productivity positive.'

1.3.2 Australia cannot rely on export revenues from fossil fuels

Australia's revenues from fossil fuel exports will shrink and eventually dry up as the world decarbonises.

Most major economies have committed to achieving net-zero between 2045 and 2070, with commitments covering three quarters of global greenhouse gas emissions.[48] Based on international commitments, forecasts suggest coal use will decline 35 per cent by 2040 and nearly 50 per cent by 2050 compared with 2023 consumption. Announced pledges suggest an even steeper decline of 62 per cent by 2040 and nearly 80 per cent by 2050.[49]

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[42] Productivity Commission, *Australia's Long Term Productivity Experience - PC Productivity Insights 2020*, iii.

[43] Productivity Commission, *Quarterly Productivity Bulletin – June 2025*, 1.

[44] Productivity Commission, *Growth Mindset: How to Boost Australia's Productivity*, 1.

[45] Australian Bureau of Statistics, 'Productivity'.

[46] The second is a slowdown in 'multi-factor productivity (MFP) growth': Hambur and Andrews, 'RDP 2023-03'; MFP growth has dropped below the average for the late 1990s and early 2000s, partly because of falling innovation and technology adoption: Productivity Commission, *Growth Mindset: How to Boost Australia's Productivity*.

[47] There was a productivity 'bubble' during Covid that did not reflect structural features of the economy: Productivity Commission, *Growth Mindset: How to Boost Australia's Productivity*.

[48] Reported coverage of net-zero commitments accounts for President Trump's withdrawal of the US from the Paris Agreement, and treats the US as having no formal net-zero commitment: Climate Action Tracker, 'CAT Net Zero Target Evaluations'.

[49] IEA, *World Energy Outlook 2024*; The Stated Policies scenario in IEA, *World Energy Outlook 2025* forecasts a slightly smaller decrease in coal use: 31 per cent by 2040 and 46 per cent by 2050; differences versus Outlook 2024 estimates are largely driven by changes to US energy policy. The Announced Pledges scenario was not included in the 2025 Outlook; If the world achieves the goal of holding global warming to 1.5 degrees, coal

The global shift to green energy will hit established Australian exports harder than most other economies.[50] Australia is the world's top exporter of metallurgical coal and top combined exporter of thermal coal and Liquified Natural Gas (LNG).[51] Coal and gas are Australia's second and third most valuable export industries,[52] with coal exports typically worth about $70 billion and LNG about $50 billion.[53]

Although the pace of global decarbonisation is uncertain, the direction is very clear. Australia needs to hedge against the loss of its fossil fuel export revenues.

1.3.3 With the right policies, Australia can prosper in a decarbonising world

Australia's long-term productivity will depend on it producing and exporting goods that reflect its comparative advantage in a decarbonising world.

Australia can capitalise in new ways on its remarkable renewable energy, mineral, and other natural resources. These resources underpin Australia's comparative advantage in the production and export of zero-carbon, energy-intensive goods, including green iron, aluminium, silicon and polysilicon, ammonia, and fuels.[54] We call these the 'superpower' export industries.

As a medium-sized economy with open trade, Australia will maximise its living standards by exploiting its comparative advantage.

If Australia exports 40 per cent of the world's green iron, mirroring its 40 per cent of iron ore global trade, revenues could reach over $300 billion a year in 2060 – an increase of over $200 billion compared to exporting unprocessed iron ore. If Australia exports 30 per cent of the world's green aluminium in place of its 30 per cent share of trade of the world's bauxite, it could potentially secure an additional $77 billion a year in 2060. And if Australia can secure 25 per cent of the world's green silicon, polysilicon, ammonia and urea, methanol, and shipping and aviation fuels, they could be worth up to $356 billion in 2060.[55]

In the short term, first-of-a-kind producers will need innovation support to compensate for the shared knowledge they generate at private cost. The government will also need to help cover the 'green premium' price gap between carbon-intensive products and low-carbon products,

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consumption needs to be largely eliminated by the 2040s, or by the 2050s to limit warming to 2 degrees: see Clarke et al., 'Energy Systems', sect. 6.7.4.

[50] Treasury modelling projects that total Australian coal production will decline at least 42 per cent to 2035 and 71 per cent to 2050; Australian gas and LNG production will decline by 66 to 68 per cent by 2050. These reductions reflect domestic policies and changing global demand. See Treasury, *Australia's Net Zero Transformation: Treasury Modelling and Analysis*, 37.

[51] IEA, *Coal 2023 - Analysis and Forecast to 2026*, 60; Geoscience Australia, *Australia's Energy Commodity Resources 2023*.

[52] The main markets for Australian coal and gas are Japan, China, South Korea, Taiwan, and - for coal - India, with total exports worth $220bn in 2022-23: see Department of Industry, Science, and Resources, *Resources and Energy Quarterly - September 2024*, 38; Office of the Chief Economist, 'Resources and Energy Quarterly September 2024: Historical Tables', tbl. 2 (2).

[53] AUD dollar values, using 5-year average exchange rate: USD/AUD = 1.45, EUR/AUD = 1.6. See Reserve Bank of Australia, 'Historical Data'; The peak value of fossil fuel exports was around $220 billion in 2023, reflecting global supply constraints. The value is expected to settle back to a combined $110-130 billion. Finighan, *The New Energy Trade*, 104.

[54] Finighan, *The New Energy Trade*.

[55] Finighan, *The New Energy Trade*, 104.

while trade partners progressively introduce policies reflecting the damage caused by carbon. Policies in trade-partner countries might take the form of an economy-wide carbon price, or product-specific policies that help Australia's green exports compete on a level playing field.[56]

Superpower industries will also require substantial investments in common-user infrastructure such as roads, transmission lines, pipelines and storage, and upgraded ports. When these assets have strong spillover benefits that private investors cannot capture, the private sector will not invest at an efficient scale, or provide third-party access at efficient prices. This creates a role for the government, including some public investment to complement private investment. We estimate around $100 billion of public investment will be required through to 2050 – about $4 billion a year, on average, representing a very small share of total investments.[57]

Australians' current wealth is built on generations of export-led revenue and income: gold and wool in the mid-to-late 1800s, wool and other agricultural and pastoral products in the post-war period, metallic minerals from the 1960s, fossil fuels in the 1980s and 1990s, and metallic minerals and fossil fuels from the turn of the century.

Many of these industries required significant public investment at important stages of their development. In the nineteenth century, the wool industry developed on the back of investments in railways. In the late nineteenth and early twentieth centuries, major goldfields were established with water and rail services, and new Victorian and NSW agricultural industries were developed with investments in irrigation. Throughout the twentieth century, there have been huge investments in Tasmanian hydro-electricity for metals smelting, and in Queensland's railways, ports, water and electricity for the coal sector. In the 1980s, massive investments in electricity transmission developed aluminium smelting in Victoria, NSW, and Queensland. Proportionally smaller, but substantial, public investment will be required so Australia's future wealth can be built on green exports.

Superpower exports can not only lift Australia's long-term productivity and prosperity, but can also contribute to global emission reductions.

Greenhouse gas emissions from energy-intensive industries and the production of transport fuels represent about 22 per cent of global emissions. If Australia achieves green exports on the scale described above, it could help cut global emissions by 7 to 10 per cent.[58]

Superpower exports would make Australia the third most significant contributor to global climate mitigation, ahead of the EU and after China and the US. The public investments in infrastructure that will lift Australian prosperity will also underpin Australia's outsized contribution to global mitigation.

[56] We discuss these efficient forms of public support in Chapter 5 of *A Green Iron Plan for Australia: Securing prosperity in a decarbonising world.* Green trade benefits exporting and importing countries, and ideally costs will be shared between Australia and its trade partners.

[57] Preliminary estimates; TSI analysis.

[58] 6.7 per cent based on industry shares of global emissions in 2021; 9.6 per cent based on estimates of future mitigation taking 2021 emissions as a baseline. See Finighan, *The New Energy Trade*, 103.

02.

What Makes a Good Tax?

Australia has a structural budget deficit, and future prosperity requires prudent but substantial public investment. To balance the budget, on average and over the short and mid-term, the Federal Government needs to make substantial cuts to forecast spending or raise additional tax revenue.

Choices about the design and rate of taxation will affect Australia's productivity. In turn, productivity not only affects Australians' standard of living, but also feeds back to affect tax revenues.

Guiding principles for a tax and transfer system are efficiency, simplicity, and equity. There are usually tradeoffs between these goals for each stand-alone tax or transfer mechanism – for example, a very simple tax might also be regressive or inefficient. The tax mix therefore evolves to reflect society's changing views on the best, or 'optimal', way to balance these goals.[59]

2.1 The principles of efficient taxation

Taxes are often described by their 'base', and their 'rate'.

A tax base is 'what' is being taxed – for example, personal income, company income, or consumption (the latter in the case of the GST). Many income taxes allow deductions, which reduces the tax base. For example, companies can deduct the cost of rent from their company income.

The tax rate is the share of a tax base that is owed to the government.

Taxes influence economic behaviour, changing how people and businesses save, borrow, invest, work, and consume. Economists often call these effects "distortions" when they shift decisions away from what would occur in an ideal, well-functioning market without the tax. The cost of the distortion is sometimes called the 'excess burden' of taxation. Some taxes cause far greater distortions than others. For each dollar raised, taxes with a higher excess burden cause greater reductions in economic activity and welfare.[60]

An efficient tax system has a low excess burden.[61] Taxes typically have a lower excess burden if they are broad-based and imposed at a low rate, as in the case of the GST. Taxes on 'economic rents'—which should not be confused with the more common understanding of rent as income from leasing—have the lowest and potentially even negative excess burdens.

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[59] Parliamentary Budget Office, *Australia's Tax Mix*, 22.

[60] Cao et al., *Understanding the Economy-wide Efficiency and Incidence of Major Australian Taxes*, 2.

[61] An efficient system has a low excess burden 'at the margin', with the burden measured at the point of raising an *additional* dollar of revenue.

That is, taxes on rents can potentially increase welfare, as in the case of the Petroleum Resource Rent Tax (Figure 6).[62]

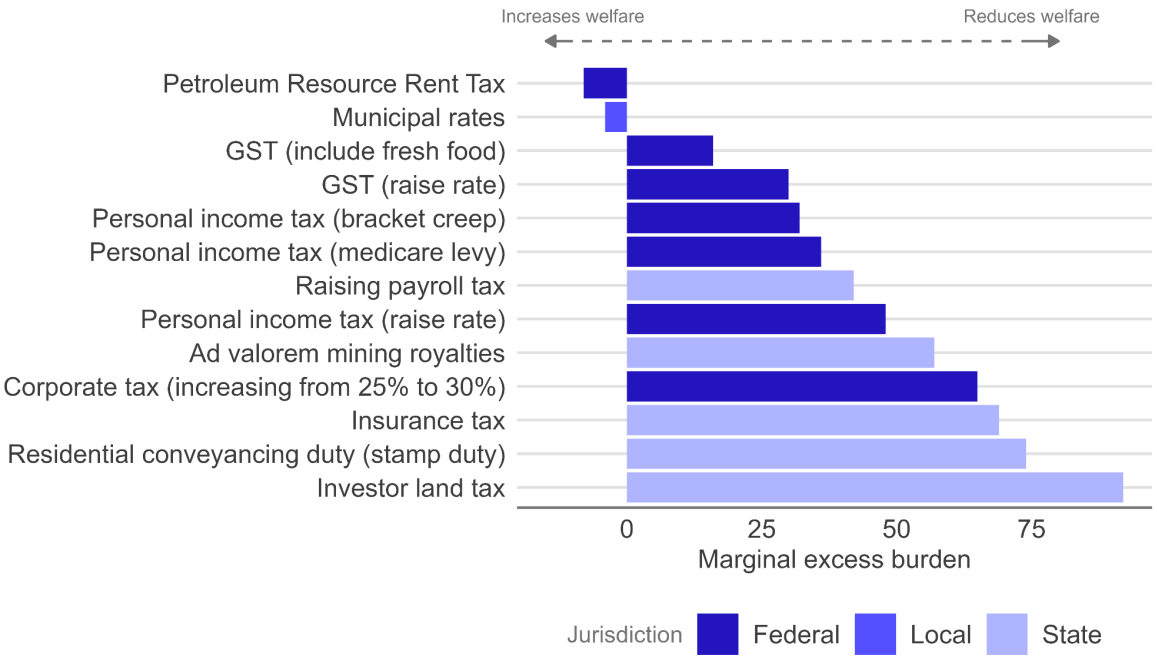

Figure 6: Taxes on economic rents impose the lowest welfare burden on society

Notes: The marginal excess burden (MEB) of 'bracket creep' is created when growing incomes push people into higher tax brackets, holding tax rates fixed. The MEB of 'personal income tax' (raise rate) is based on a 0.28 per cent across-the-board increase in income tax (a 1 per cent increase in the average income tax of 28 per cent). 'PRRT' = Petroleum Resource Rent Tax.

Sources: Productivity Commission (2025)[63]

2.1.1 Taxes on economic rents

Efficient taxes on companies minimise any distortions to businesses' incentive to borrow, produce, and invest. The most effective way to avoid distortions is to tax economic rents, which are financial returns on investments above the 'normal', or competitive, rate-of-return (Box 1).

[62] Parliamentary Budget Office, *Australia's Tax Mix*, 25.

[63] Murphy, *Corporate Tax Reform Modelling Scenarios: First Stage Report*, 13.

Box 1: Economic rents[64]

Businesses must earn at least a 'normal' rate of return to attract and retain the capital required to maintain or expand production —typically the prevailing risk-free interest rate plus a risk premium. If returns fall below this level in a competitive market, the business will be unable to compete for capital, choking off investment.

If businesses consistently earn returns above the normal rate of return for a particular activity, it suggests that they are operating in a market where there are barriers to entry: high returns should attract competing businesses, which should drive down average returns through time. These above-normal returns are known as 'economic rents'. Examples of industries with barriers to entry, and persistent rents, include:

- Natural monopolies, where large fixed costs or overwhelming economies of scale make it cheaper for a single firm to serve the market than multiple competing firms. Examples include electricity distribution, water supply, and rail infrastructure.
- Network monopolies, in which network effects and high switching costs lock in users. This occurs when the value of a product grows with the number of users, making it hard for new entrants to attract customers away from an existing network – for example, digital platforms, and operating and payment systems.
- Legal or administrative monopolies, where regulation shields firms from competition – for example, patent rights and exclusive operating licenses.
- Mining of especially rich or well-located deposits, where the government allows economically efficient development of the resource by granting a single firm a monopoly, rather than allowing the resource to be wasted in a 'gold rush.'
- Land rent, from the exclusive right to use favourably located or endowed land.

When taxes are applied to normal returns, a business or project that is economically viable before tax may be forced below the rate of return that is required to justify investment. This discourages investment and reduces productive economic activity.[65]

A well-designed rent tax leaves normal returns untouched, so after-tax returns remain high enough to justify investments. For this reason, rent taxes can raise revenue without affecting firms' investment decisions.[66]

[64] See Garnaut and Clunies Ross, *Taxation of Mineral Rents*.

[65] See, for example, the example in the Productivity Commission, *Interim Report - Creating a More Dynamic and Resilient Economy*, 61–64.

[66] There was widespread support from Australia's economists for a tax on mineral resource rents on the grounds of efficiency. See: Quiggin et al., 'Statement in Support of a Mining Resources Rent Tax'.

The Petroleum Resource Rent Tax (PRRT), for example, has a positive impact on welfare and GDP in Australia (and so a negative 'marginal excess burden', see Figure 6). The more that Australia can raise revenue by taxing rents rather than productive economic activity, the higher Australian living standards will be.

2.1.2 Taxes on 'public bads'

Tax systems are usually designed to minimise their impact on economic activity, because most such activities benefit society. But some economic activities create 'public bads' alongside private gains.

When people and businesses do not pay for the damage inflicted by public bads, private incentives to produce and consume are distorted. Economic activity will create 'negative externalities,' which are not reflected in conventional economic metrics like Gross Domestic Product (GDP).

'Corrective taxes' deliberately discourage activities that impose social costs, by putting a price on public bads. When well-designed, they are the most economically efficient type of tax, because they improve welfare by correcting existing economic distortions.

Corrective taxes have had an important place in mainstream economics since the 19th century.[67] They are sometimes called Pigouvian taxes after the work of Pigou a century ago.[68] They are recognised as being necessary for markets to work efficiently even by advocates of free markets, such as Hayek and Friedman.[69]

Carbon pricing is a paradigmatic case of an efficient corrective tax: it is the least-cost, most efficient way to address the social harms caused by carbon emissions. It is the core measure of any economically rational approach to climate mitigation. The revenue raised also reduces the need for distortionary taxes with a higher excess burden. Amongst other things, it can help to fund positive externalities and public goods that are necessary for climate change mitigation. Carbon pricing policies are strongly supported by economists,[70] and by voters.[71]

Distortions from negative externalities can also be removed by subsidising activities that compete with socially harmful activities. For example, governments can subsidise products with low or zero carbon emissions. But unlike corrective taxes, which efficiently raise revenue, corrective subsidies increase pressure on the budget and the need to raise more revenue with other taxes.

[67] Marshall, *Principles of Economics*.

[68] Pigou, *The Economics of Welfare*.

[69] McMahon, 'What Would Milton Friedman Do About Climate Change?'

[70] Martin, 'Reintroduction of the Carbon Price'.

[71] A survey of 3,000 voters found that nearly 60 per cent agree or strongly agree with polluter-pays levies: market research conducted for *The Superpower Institute*.

2.2 Taxes affect productivity

Taxes can affect productivity by altering the incentive to invest, innovate, and work. They do so through two main channels.

First, taxes may affect productivity through an investment channel. This is broadly a question of investment quantity – how many firms will invest capital, and how much. Some taxes reduce productivity by discouraging investment. The corporate tax, for example, tends to inefficiently fall on the 'normal' rate of return in competitive sectors of the economy.

International analysis suggests that every percentage point reduction in the corporate tax rate attracts about 3.3 per cent more foreign direct investment.[72] When corporate tax falls on economic rents rather than normal profits, it does not create these costly distortions.

Second, taxes may affect productivity through an 'allocative efficiency' channel. Allocative efficiency concerns whether resources are directed to their most productive uses.

Taxes can reduce allocative efficiency by distorting private incentives. For example, when the tax system favours one form of finance over another—such as allowing interest to be deductible but not dividends—capital may be channelled into debt rather than equity, even when equity would provide broader social benefits by lowering the risks of financial fragility.

Corrective taxes improve allocative efficiency by reducing distortions from negative externalities: they decrease the returns to investments in public bads, and increase the relative returns on investments that improve social welfare.

Any new tax proposal in Australia is especially attractive if it is 'productivity neutral' or 'productivity positive'. Corrective taxes on negative externalities are productivity positive, with carbon pricing easily the most significant opportunity. Rent taxes are neutral, with the taxation of fossil fuel rents one of the largest revenue opportunities in Australia.

[72] This result is an average; the reduction varies from country to country: De Mooij and Ederveen, 'Taxation and Foreign Direct Investment'.

03.

Taxing Fossil Fuels: Current Settings and Missed Opportunities

3.1 Current policies increase the costs of decarbonisation and are expensive to the Budget

3.1.1 Emissions reduction policies are narrow, fragmented, and expensive

Current emissions reduction policies are inefficient because they are narrow and fragmented, with large gaps in coverage. Some facilities and sectors are required to reduce emissions while others are not. When firms face different abatement requirements and bear different costs of abatement, it increases the total cost of abatement.

The current policy mix is also expensive for the budget. Individual policies are at best budget neutral, and they are collectively expensive. None contribute revenue that would help cover the costs of decarbonisation.

Australia's most important instrument for reducing emissions over the past decade has been the Renewable Energy Target (RET). The RET's impact has been declining as it approaches its end date of 2030.

The main Australian policies for reducing greenhouse gases are now the Safeguard Mechanism, the Capacity Investment Scheme, and the New Vehicle Emissions Standard.[73] However, these policies do not put Australia on a coherent, credible, efficient path to net zero.

The Safeguard Mechanism

The goal of the Safeguard Mechanism is to reduce emissions from facilities that emit more than 100,000 tonnes of carbon dioxide-equivalent each year.

A firm's total emissions must not exceed an emissions-intensity baseline, multiplied by the number of units produced. For example, if a facility has a baseline emissions intensity of 15 tonnes of carbon emissions per tonne of production, and produces 100 tonnes, the facility's total carbon emissions must not exceed 15,000 tonnes. Emissions-intensity baselines will ratchet down 4.9 per cent each year to 2030, and are indicatively suggested to decline by 3.285 per cent each year after 2030.[74]

[73] Department of Climate Change, Energy, the Environment and Water, 'Net Zero'.
[74] Department of Climate Change, Energy, the Environment and Water, *Safeguard Mechanism*.

If a firm's emissions are less than the total permitted by their baseline, these savings are recorded as Safeguard Mechanism Credits (SMCs), which can be sold or banked for future compliance. If a firm exceeds the total number of emissions associated with their baseline, they can buy Australian Carbon Credit Units (ACCUs) or SMCs to offset excess emissions.

The Safeguard Mechanism in its current form captures only 30 per cent of Australia's emissions. But even if it is broadened, fundamental problems mean the pathway to reform will be slow and uncertain.

First, the Safeguard Mechanism policy package doesn't generate revenue, but creates substantial costs to the budget. Although the scheme itself is budget-neutral, complementary funding helps Safeguard facilities reduce their emissions, including funding under the Powering the Regions Fund, which has a dedicated Safeguard Transformation Stream ($600 million) and Critical Inputs to Clean Energy Industry Stream ($400 million).[75]

Second, the Safeguard Mechanism creates economic distortions: it undermines market allocations of resources by using centrally-determined emissions-intensity limits to set companies' 'baseline' allocations. There are already 89 products with specified emissions-intensity benchmarks;[76] this list will need to grow substantially if the Mechanism is expanded. It is not possible for agencies to specify these accurately and fairly, amid economy-wide technological change, in a manner that does not distort market decisions. And because emissions-intensity baselines determine 'free' emissions allocations for firms, this process acts as a wealth transfer from some industries and sub-industries to others, and distorts investment across industries. It also encourages lobbying by firms to seek advantageous settings, the effect of which can be to make the mechanism even less effective.

A third issue, related to the lack of revenue, is that the Mechanism will have equity, or 'distributional', implications. This is equally true of any carbon price. Yet because the Mechanism does not generate revenue, these equity issues cannot be corrected without further imposition on the budget.

The Safeguard Mechanism is due to be reviewed in 2026-27. The review can be expected to seek improvements on current arrangements. Extending the Safeguard Mechanism, either in duration or scope, will also lock-in its shortcomings, making it harder and more expensive for Australia to achieve its net zero, budget, and productivity goals.

The Capacity Investment Scheme (CIS)

The Capacity Investment Scheme (CIS) is the main policy for delivering emissions reductions in the energy sector, and for achieving the Federal Government's 82 per cent renewable energy target for 2030. It aims to deliver 40 GW of new renewable energy capacity and storage.[77]

The CIS is a tender-based process. Successful bidders are awarded contracts reducing their exposure to price variation in the east-coast National Electricity Market and the west-coast Wholesale Electricity Market. Contracts can last up to 15 years, with the government retaining

[75] Department of Climate Change, Energy, the Environment and Water, *Carbon Leakage Review*.

[76] Clean Energy Regulator, 'Emissions-Intensity Determination Data'.

[77] Department of Climate Change, Energy, the Environment and Water, 'Capacity Investment Scheme'.

50 per cent of earnings above a price ceiling, and bearing 90 per cent of losses below a price floor.[78]

Less than 3GW of capacity has commenced construction or been commissioned under the scheme as of November 2025, while projects representing over 20 GW of capacity have been awarded contracts through the tender process.[79] Very little of this investment relates to power generation, except where storage provides the main incentive for investment.

Aside from the uncertainty over whether the CIS will actually deliver the capacity it targets, the CIS suffers from a number of other shortcomings.

First, the CIS acts as a handbrake on any investments outside the Scheme. Competition is distorted between participants and non-participants. Projects not in receipt of CIS support – including projects built in the past – compete on uneven terms with CIS recipients. It has therefore become difficult for firms to justify generation investment that is not supported by the CIS.

Second, if the government misjudges the required quantity of capacity or storage, or where projects should be built, total investment will be lower or higher than it should be. The government, and electricity users, are exposed to that risk; in contrast, a market-based mechanism would place more of that risk on the private investors who are best placed to carry it.

Third, the CIS creates substantial financial exposure risks for the government. The costs and revenues generated by the CIS will depend on individual contracts and future market prices. Estimates are not published to protect commercial sensitivity.[80] But there are large contingent liabilities for the budget from the scheme. If sales revenues are suppressed, for example, in a year that is windier and sunnier than usual, the government will be required to make large payments to the private owners of the assets. This reflects the transfer of price risk from private investors to the government.

The CIS is scheduled to end in 2027. In November 2024, the Australian Government announced a review of the National Electricity Market (NEM) wholesale market settings by an independent expert panel ('Expert Panel'), supported by the Department of Climate Change, Energy, the Environment and Water (DCCEEW), and led by Associate Professor Tim Nelson ('the Nelson Review'). The review was given the task of examining:

> *...market settings to promote investment in firmed, renewable generation and storage capacity in the National Electricity Market (NEM) following the conclusion of Capacity Investment Scheme (CIS) tenders in 2027.*[81]

[78] Department of Climate Change, Energy, the Environment and Water, *Capacity Investment Scheme Tender 1 – National Electricity Market Generation Guidelines*, 12.

[79] Dixon, '24 GW in 24 Months, a Race against Time for the NEM'.

[80] Treasury, *Budget 2025-26, Budget Paper No. 1*, 208.

[81] Nelson et al., *National Electricity Market Wholesale Market Settings Review*, 6.

The Expert Panel was given instructions to consider:

> *…the importance of decarbonising Australia's electricity system for achieving the Australian Government's legislated commitments to achieving a 43 per cent reduction in emissions on 2005 levels by 2030 and net zero emissions by 2050.*[82]

However the Expert Panel was also prohibited under its terms of reference from considering options that involve implementation of 'carbon trading schemes [or] carbon markets'.[83]

On 6 August 2025 the draft report of the Nelson Review was published. It included a number of recommendations and, notably in relation to post-CIS arrangements, included a recommendation for the creation of a new 'Electricity Services Entry Mechanism' (ESEM).

The ESEM is intended to address the so-called 'tenor gap' for new investment: 'a mismatch between the long-term contracts needed by sellers to finance capital-intensive assets (often 10 to 30 years) and the short-term contracting of buyers (typically three to seven years).'

The ESEM would help to improve liquidity in long term supply contracts. But the ESEM, if implemented, is not designed to address a carbon emissions externality. It would be complementary to our recommended Polluter Pays Levy (PPL). In combination, the ESEM and the PPL would provide effective incentives for efficient investment by addressing the dual problems of the tenor gap and the carbon emissions externality.

The New Vehicle Emissions Standard (NVES)

The NVES targets the 10 per cent of emissions produced by light vehicles – cars, utes, vans, and SUVs. The NVES places an emissions ceiling on the emissions-per-kilometer associated with the average of all new light vehicles sold each year.[84] The ceiling ratchets down until emissions from cars and SUVs are reduced by more than 60 per cent by 2030, and emissions from vans and utes by 50 per cent over the same period.

The NVES is a step in the right direction for light vehicles, but suffers from two problems. First, there is no clear pathway to net zero, because the emissions ceiling is only prescribed through to 2030, with a review of the standard scheduled for 2026. Second, the NVES does not create any incentive for drivers of existing vehicles to reduce their emissions.

Reflecting the fragmented nature of abatement policies, the NVES coexists with expensive tax exemptions for EVs. EVs purchased under novated lease arrangements do not pay Fringe Benefit Tax,[85] while the price threshold for the Luxury Vehicles Import Tax is about $11,000 higher for hybrid cars and EVs, compared to internal-combustion cars.[86]

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[82] Nelson et al., *National Electricity Market Wholesale Market Settings Review*, 6.

[83] Nelson et al., *National Electricity Market Wholesale Market Settings Review*, 6.

[84] Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts, 'New Vehicle Efficiency Standard - Information for Drivers'.

[85] Australian Taxation Office, 'Electric cars exemption'.

[86] Australian Taxation Office, 'Luxury car tax rate and thresholds'.

These tax exemptions will not reduce emissions from new light vehicles – these emissions are capped by the NVES – but the Parliamentary Budget Office estimates that they will cost about $3.2 billion over the next four years and $23.4 billion over the coming decade.[87]

3.1.2 Fuel taxes and rebates aren't aligned with Australia's decarbonisation goals

Despite the fact that more than 20 per cent of Australia's emissions are from transport, the cost of fuel does not reflect the cost of carbon emissions.[88] If it did, all drivers would pay the same levy per litre of petrol, and – reflecting its higher emissions intensity – a slightly higher levy per litre of diesel. The current approach to fuel excise does not create an efficient incentive to buy hybrid or electric vehicles, to decarbonise the heavy vehicle fleet, or to drive emissions-intensive vehicles less often or shorter distances.

If taxes on fuel reflected the damage inflicted by carbon, the federal government would be able to tailor road-use charges to better reflect the way different vehicles degrade public roads.[89]

3.1.3 A carbon price would reduce the cost of decarbonisation and raise revenue

Australia's current policies create different incentives to decarbonise across sectors and businesses. This raises the cost of reaching net zero. Current policies also create major expenses borne by the budget and consumers, which will get more expensive as decarbonisation efforts escalate.

A carbon price is the most effective and efficient signal for guiding investments in decarbonisation – including zero carbon energy generation and energy storage.

A carbon price would send a clear signal about Australia's emissions targets, so businesses across the economy can anticipate and plan for a net-zero carbon future. And unlike current policies, a carbon price can deliver the revenue needed to compensate households for price changes, to support adaptation, and to invest in green industries. Other policies can support carbon pricing, but they are not a substitute.

3.2 Australians undertax fossil fuel companies compared to peer countries

High-quality fossil fuel reserves are scarce resources, and their extraction and processing tends to generate vast economic rents—profits in excess of those required by the investor to justify the project.

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[87] Parliamentary Budget Office, *Tax Breaks for Electric Vehicle – Reverse*, app. A.

[88] Australians pay 51 cents of fuel excise for every litre of petrol or diesel they put in their car or truck: Australian Taxation Office, 'Excise duty rates for fuel and petroleum products'; Vehicles larger than 4.5 tonnes are exempt from fuel excise, and instead pay the Heavy Vehicle Road User Charge. This is implemented as a partial rebate, known as a partial Fuel Tax Credit, worth 20.3 cents per litre; vehicles driven off-road qualify for a full rebate: Australian Taxation Office, 'Fuel Tax Credit Rates: 1 July 2024 to 30 June 2025'.

[89] *Vanderstock v Victoria*.

These resources are the public property of the countries in which they are found. As such, most major fossil fuel exporting countries capture the large majority of rents through heavy taxes on fossil fuels and/or direct ownership, converting them into national wealth. Australia, however, captures a much smaller slice.

To allow comparison across countries' different fiscal regimes—including their mixes of royalties, corporate taxes, cashflow taxes, and state ownership—we combine these instruments to estimate rent capture.[90] "Profit" below refers to economic profit (rents), rather than the accounting profit defined under particular tax regimes.

In the Middle East, Africa, the Americas, Norway and in the UK, governments typically take around 75-90 per cent or more of fossil fuel profits (Figure 7).

Australia, by contrast, took only 30 per cent of coal and LNG profits, overall, between the 2019-20 and 2023-24 financial years, as a combined effect of the corporate tax, royalties, and the Petroleum Resource Rent Tax (Box 2).[91]

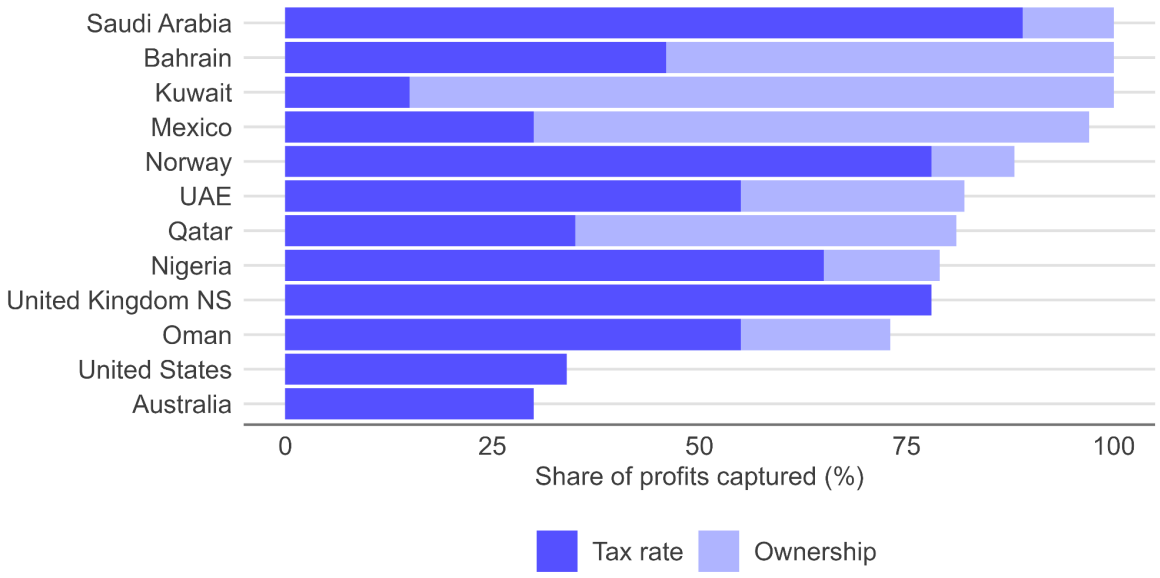

Figure 7. Other countries retain a much higher share of fossil fuel profits than Australia

Notes: "Profits" refers to economic profits (rents) calculated on a cashflow basis, not accounting profits – the appropriate benchmark when comparing to peer countries, such as Norway and the UK. Share of profits attributed to ownership are based on a nation's ownership share of major fossil fuel companies and those companies' share of national production. Estimate for Australia based on data for financial years 2019-20 to 2023-24. See Appendix for further detail.
Source: TSI analysis.

[90] Comparisons are most precise between Australia, Norway, and the United Kingdom.
[91] Although countries use different statutory tax bases, economic rent is conceptually defined on a cash-flow basis, as the NPV of project returns after compensating capital for time and risk. Cashflow is therefore the appropriate base for evaluating economic rent capture. Using this benchmark, Australia's government take is around 30 per cent (see Appendix A.2 for detailed analysis). This figure is most directly comparable to the Norwegian and UK cashflow tax regimes. Fossil fuel firms typically present tax paid over a corporate tax base that is made smaller by various deductions, and this would increase the apparent rate of taxation to around 38 per cent over the period. However, this would overstate Australia's share in fossil fuel economic profits relative to international peers.

Box 2. Three main taxes paid by fossil fuel companies in Australia

1. Company Tax: Companies pay tax on their income, which is their sales revenue less approved expenses. The main approved expenses are:

- state royalties and most state taxes[92]
- interest payments on money borrowed to invest in assets[93]
- depreciation, which spreads the costs of long-lived capital assets over time, reflecting their use in producing income. [94]

Companies with turnover below $50 million are typically eligible for a 25 per cent corporate tax rate.[95] High-turnover companies, including most fossil fuel companies, are subject to a 30 per cent rate.

2. State royalties: Royalties are payments for resources. They are levied by states, or by the Commonwealth Government if a resource is located between three nautical miles of the coast and the edge of Australia's specific economic zone, 200 km offshore. Royalties are mostly 'ad valorem', based on percentage of sales and the value of a resource.[96]

3. The Petroleum Resource Rent Tax (PRRT): The PRRT is applied to offshore oil and gas. It is applied to 40 per cent of project profits, calculated as:[97]

- PRRT taxable profit = assessable receipts – deductible expenditure – transferred exploration expenditure

Deductible expenditure includes exploration, development, and operating costs. There are no deductions for interest or other financing costs. If a project's costs exceed its revenue in a given year, the excess costs are carried into the next year with 'uplift' to offset future revenue. Uplift is intended to reflect the risk-adjusted weighted cost of capital. Uplift rules are complex and have changed through time. Broadly, for example:[98]

- Until 2019 exploration costs were uplifted at the long-term bond rate,[99] plus 15 per cent.
- Since 2019 exploration costs have been uplifted by the long-term bond rate plus 5 per cent, until 10 years after the costs were incurred.

These uplift rules mean that deductible costs are larger, and persist for longer, than would otherwise be the case, shrinking taxable income.

[92] See for example the Commonwealth's submission in *Fortescue Metals Group Limited and Ors v. The Commonwealth of Australia*, 8.

[93] Australian Taxation Office, 'Deductions for other operating expenses'.

[94] Australian Taxation Office, 'Deductions for Depreciating Assets and Capital Expenses'.

[95] Australian Taxation Office, 'Changes to company tax rates'.

[96] For examples of fossil fuel royalties, see Appendix A.3

[97] Australian Taxation Office, 'How to Work out Your PRRT Liability'.

[98] Australian Taxation Office, 'PRRT Deductible Expenditure'.

[99] Australian Taxation Office, 'PRRT Augmentation and Gross Domestic Product Factor Rates'.

Because the high tax rates imposed by the world's major fossil fuel exporters mostly fall on rents, high rates have neither deterred investment in these countries, nor prevented them from exporting at vast scale. This is a critical feature of rent taxation, though one often mischaracterised by firms subject to these taxes, which tend to present rent taxes as distortionary.

Norway's petroleum tax, on which our recommended Polluter Pays Levy (PPL) is based, is regarded by taxation economists as international best practice—the most efficient rent-capturing system in the world.[100] It has allowed Norway to build the world's largest sovereign wealth fund, valued at AU$2.7 trillion in 2025, without harming the economy.

Given the choice between conventional taxation and the neutral taxation of rents, firms prefer the latter. As the AFR wrote in 2010, the oil sector "loves high-tax Norway"[101]—and the sector expresses an even greater preference for the purer Brown tax that Norway introduced in 2022 (Box 3).[102]

Box 3. Norway's petroleum tax is a two-way cashflow tax[103]

Norway applies a "special" 71.2 per cent tax to petroleum companies' net cashflow. This is on top of the standard 22 per cent corporate tax. The combined marginal tax rate is 78 per cent.

Norway's special tax is a 'two-way' cashflow tax, often referred to as a 'Brown' tax.[104]

The government takes 71.2 per cent of profits or losses as they occur each year.

In 2022 the tax base was shifted to a purer cashflow system, with investment expenses deducted in the tax year they are incurred. This contrasts with tax systems that depreciate the value of assets through time.

The two-way cashflow structure is designed to be economically neutral, taxing only economic rents, so that "an investment project that is profitable before tax is also profitable after tax."[105] This avoids the problem of the special tax distorting economic outcomes.

Norway's standard corporate tax does not use a cashflow base: assets are depreciated through time and losses are carried from one year into the next.

[100] There is a "clear preference among many tax researchers" for Norway's cashflow tax, the same design recommended in this report. See Ahi et al., 'Investment Neutrality in Resource Rent Taxation – Revealed Preferences of Norwegian Oil & Gas Companies'.

[101] Winestock, 'Oil Sector Loves High-Tax Norway'.

[102] Ahi et al., 'Investment Neutrality in Resource Rent Taxation – Revealed Preferences of Norwegian Oil & Gas Companies'.

[103] Norwegian Petroleum, *The Petroleum Tax System*.

[104] The description as a 'Brown' tax is a reference to E. Cary Brown, who was the first to formally propose a tax on net cash flows, calculated as revenue, minus operating costs and capital expenditure. Interest and other finance costs are excluded, so the 'Brown' tax does not distort firms' incentives to raise capital with debt or equity: 'Business-Income Taxation and Investment Incentives'; See Garnaut et al., 'Replacing Corporate Income Tax with a Cash Flow Tax'.

[105] Norwegian Petroleum, *The Petroleum Tax System*; Also see Ahi et al., 'Investment Neutrality in Resource Rent Taxation – Revealed Preferences of Norwegian Oil & Gas Companies'.

While Australian and Norwegian fossil fuel industry revenues were of comparable scale in 2023, Australian government receipts were less than a third of Norway's. In the more ordinary years prior to the windfall profits of the early 2020s, Australia reaped less than 10 per cent of Norway's revenue (Figures 8a and 8b).

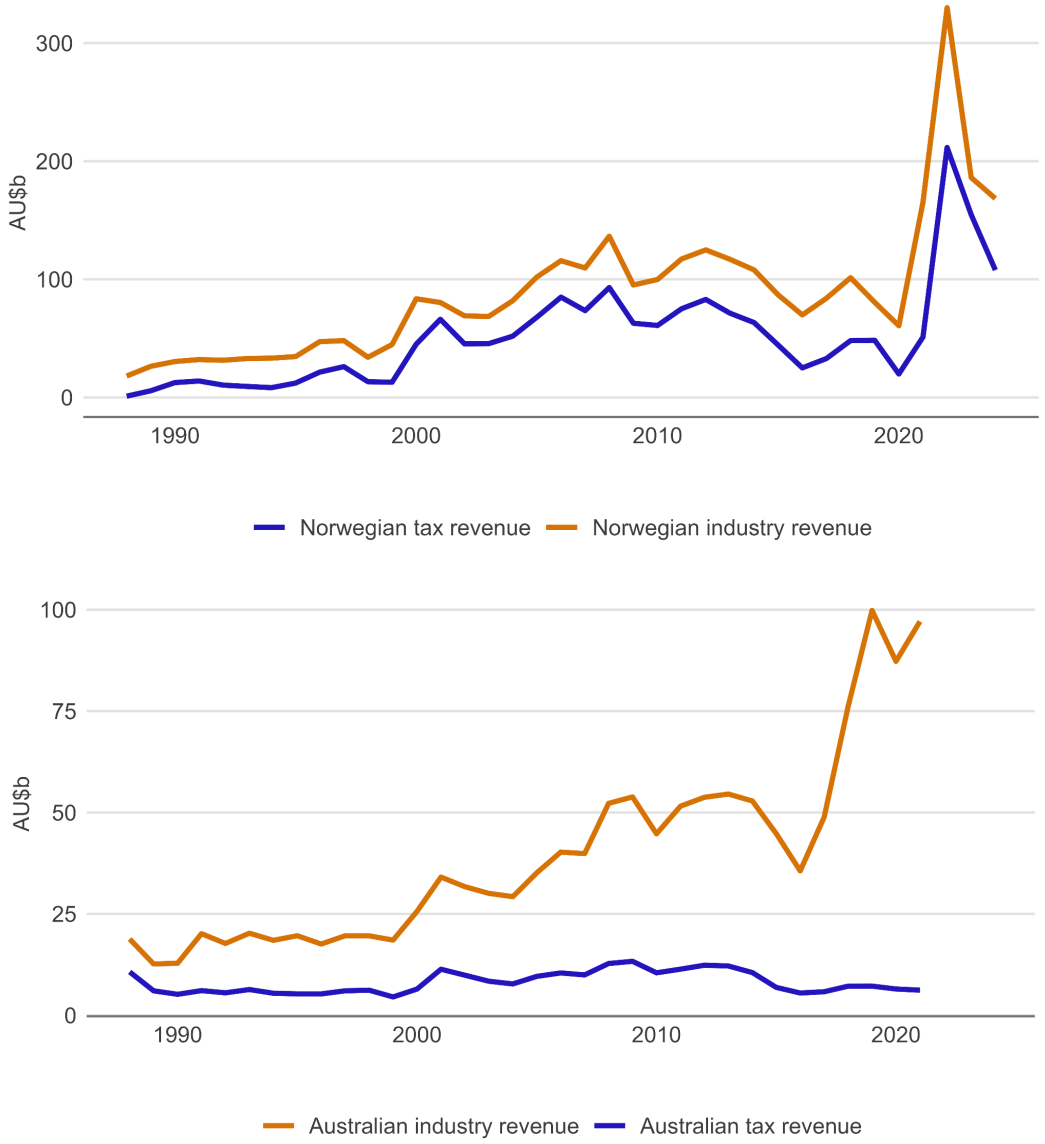

Figure 8a: Norway retains a large share of fossil fuel revenues

Notes: Norwegian revenue only includes exports of oil, gas and condensate by calendar year. Norwegian tax revenue includes corporate tax, "special tax", royalties, area fees, and dividends from State-owned producers. Revenue is given in 2025 NOK multiplied by 0.15 (the current NOK/AUD exchange rate). The sharp lift in revenue in 2021-22 reflects the effects of the Ukraine War.
Source: Norsk Petroleum (2025)[106]

Figure 8b: Australia does not retain a large share of fossil fuel revenues

Notes: Australian tax revenue includes PRRT, production excise, royalties and fees, corporate taxes, and other taxes and fees. This accounts for total revenue and taxes paid by oil and gas companies surveyed by the Australian Energy Producers Financial Survey by financial year. Revenue is given in 2024-25 AUD.
Source: Australian Energy Producers (2022)[107]

[106] Norwegian Petroleum, 'The Government's Revenues'; Norwegian Petroleum, 'Exports of Norwegian Oil and Gas'.
[107] Australian Energy Producers, 'APPEA Oil and Gas Industry Financial Survey: Results from 1987-88 to 2020-21'.

Australia's approach to fossil fuel taxation cannot be defended on economic grounds.[108] Most Australians who are familiar with the facts also see moral issues in the disproportionate private benefits from use of sovereign mineral resources. These resources are owned by Australians,[109] with firms granted monopoly licenses. Yet unlike other major exporters, most of the benefits flow to foreign investors. This has reduced—greatly—the wealth of almost all Australians.

While the losses of the past cannot be recovered, the future is still ours to shape. As global decarbonisation advances, the window to correct these policy failures is closing. Reforming Australia's approach would restore fairness, help repair the budget, and provide the capital needed to build the new industries of the post-fossil era.

[108] A number of Australia's tax specialists have also advocated for reform of the PRRT. See, for example, Kraal, 'Senate Inquiry into Corporate Tax Avoidance'; and Treasury, *Petroleum Resource Rent Tax Review*.

[109] The question of equity, or fairness, is also reflected in economists' work on fossil fuel rent taxes in Australia. See, for example: Kraal, 'Petroleum Industry Tax Incentives and Energy Policy Implications'.

04.

The Polluter Pays Levy: Making Polluters Accountable for Emissions

Chapter 1 introduced three major policy challenges: reducing Australia's greenhouse gas emissions, fixing the budget, and lifting productivity. Chapter 2 argued that taxes correcting existing distortions, or minimising new distortions, are better for the economy and productivity than taxes with high 'marginal excess burdens.' Chapter 3 showed that current emission-reduction policies are inefficient and don't raise badly-needed revenue.

This chapter shows why a polluter-pays tax on fossil fuels is the best way for Australia to reduce domestic emissions and to efficiently raise revenue.

To evaluate the effects of our proposal, The Superpower Institute commissioned modelling by Professor Philip Adams from the Centre of Policy Studies.

Results are based on the Victoria University Regional Model (VURM), the successor to the Monash Multi Regional Forecasting Model (MMRF Model).[110] VURM is a dynamic computable general equilibrium (CGE) model that distinguishes Australia's six states and two internal territories, with up to 144 different industries. It is a technically mature model employed across federal and state agencies and consultancies.

We compare a Polluter Pays Levy (PPL) with a 'business-as-usual' baseline. This baseline includes current policies, such as the Safeguard Mechanism, and expected adoption rates for low- and zero-emission technologies. Under the baseline model, current policies are assumed to achieve the government's 82 per cent renewable energy target in 2030.

The PPL is assessed against three main measures:

1. Domestic emissions in 2050.
2. Budget revenues.
3. Economic welfare, measured conventionally in terms of household consumption.

[110] Victoria University Regional Model.

4.1 A Polluter Pays Levy

4.1.1. Coverage

Our proposed PPL is a polluter-pays tax, levied at sites where fossil fuels are extracted for Australian consumption, or where fossil fuels are imported into Australia (Box 4).

Box 4. How the Polluter Pays Levy (PPL) works

Our proposed PPL would be applied to coal, oil, and gas extracted and consumed in Australia, and to fossil fuel imports, including oil, petrol, and diesel.

There are about 140 fossil fuel extraction sites in Australia, operated by fewer than than 60 companies.[111]

These companies would be liable for the 'Scope-1' fugitive emissions released when fossil fuels are extracted, and the 'Scope-3' carbon dioxide emissions from the downstream combustion of their products.[112] For example:

- When a company mines and sells a tonne of black coal, it releases 'fugitive emissions' during the mining process, in the form of methane.[113] Methane is a powerful greenhouse gas.[114] The coal will later become about 2.5 tonnes of carbon dioxide when the coal is combusted to produce electricity. A PPL makes the coal-mining company liable for the methane and carbon dioxide emissions associated with their coal.
- When a company imports a tonne of petrol, the petrol will later become about 3.1 tonnes of carbon dioxide when it is combusted in car engines. The PPL makes the importer liable for the carbon associated with the product it has imported.

The PPL would be levied on a per-tonne of CO2-equivalent basis. Our model has a starting price for the PPL at $17 per tonne of CO2-equivalent.

A PPL price should be introduced in 2026, rising gradually until it meets the EU carbon price in 2034. It should then follow the EU carbon price.

The combustion of fossil fuels in the electricity, stationary energy, and transport sectors is responsible for about 80 per cent of Australia's carbon emissions.[115] Some industrial processes

[111] Oil, gas, and coal extraction sites are from Global Energy Monitor. Aggregation of sites is consistent with the Safeguard Mechanism, informed by the CER baselines and emissions data, CER corporate emissions and energy data, CER electricity sector emissions and generation data, and other company reporting. See Global Energy Monitor, 'Global Oil and Gas Extraction Tracker'; and Global Energy Monitor, 'Global Coal Mine Tracker'.

[112] Companies' emissions are described as Scope-1, Scope-2, or Scope-3 emissions. Scope-1 emissions are produced directly by a company's operations; Scope-2 are indirect emissions associated with the electricity that a company uses. Scope-3 emissions are indirect emissions that are not associated with energy generation, often described as 'upstream' and 'downstream' emissions. See: Clean Energy Regulator, 'Emissions and Energy Types'.

[113] CSIRO, 'Fugitive Emissions Abatement'.

[114] UNEP, 'Methane Emissions Are Driving Climate Change. Here's How to Reduce Them.'

[115] Combustion of fossil fuels accounts for 78 per cent of Australia's emissions: Department of Climate Change, Energy, the Environment and Water, *Quarterly Update of Australia's National Greenhouse Gas Inventory -*

also use fossil fuels. 'Fugitive' emissions, which escape when fossil fuels are extracted and mined, would also be covered.

Together with fugitive emissions, the PPL would cover more than 80 per cent of Australia's emissions – well above the 30 per cent currently covered by the Safeguard Mechanism and the 34 per cent covered by policies for the electricity sector. This broad coverage allows the market to identify more low-cost abatement opportunities, and the end of expensive, piecemeal policies.

Recommendation 1

The Government could introduce the Polluter Pays Levy (PPL) now, or use the 2026 Safeguard Mechanism Review as an opportunity to transition from the Safeguard Mechanism to the PPL. It should be applied at the point where fossil fuels are extracted for consumption in Australia, or when fossil fuels are imported into Australia.

4.1.2 The PPL price

We recommend that the PPL should be introduced in 2026 at a price of $17 per tonne of CO2-equivalent ("CO2"),[116] with the price rising until it meets the price of EU carbon prices from 2034. We recommend that the Australian price should be pegged to the price of EU emission permits, as the EU carbon market provides a good benchmark for the social cost of carbon, is well-established, and has broad coverage. The EU carbon price trajectory reaches just over $300 per tonne of CO2 in 2050.

The domestic PPL price should be accompanied by a carbon levy applied at the border to energy-intensive imports, so domestic producers of energy-intensive goods are not disadvantaged.[117]

This border levy should be based on the European Union's Carbon Border Adjustment Mechanism (CBAM), in both design and price. The CBAM is being phased in from 2026 to 2034, when importers will incur the full price of the EU carbon price on energy-intensive products. This would coincide with our recommended PPL reaching the full EU carbon price.

December 2024, 29. Our proposed PPL would also cover fugitive emissions from sites where fossil fuels are extracted.

[116] We use the shorthand "CO_2" to describe carbon dioxide-equivalent emissions (CO_2-e emissions).

[117] The Australian Government has released a consultation paper exploring ways to prevent 'carbon leakage' in the context of current policies, led by Professor Frank Jotzo: Department of Climate Change, Energy, the Environment and Water, *Carbon Leakage Review*.

Recommendation 2

The PPL price should be based on the EU carbon price from 2034.

Recommendation 3

A mechanism based on the EU's CBAM should be implemented to apply a levy on energy-intensive imports.

4.1.3 The PPL will efficiently reduce emissions and raise revenues while improving welfare

The rest of this chapter will show that the PPL reduces emissions, efficiently raises revenue, and lifts welfare – the policy priorities introduced in Chapter 1. A PPL also has four other appealing features.

First, the PPL is simple. A small number of companies pay the levy, only the few firms that produce or import the fossil fuels that are responsible for the large majority of emissions.

Second, the protection of households is easy and comprehensive under a PPL. Australians generally support carbon pricing, but are sensitive to cost-of-living pressures.[118] The costs of the PPL are concentrated on energy: petrol, diesel, electricity, and gas. This makes it straightforward to use a portion of PPL revenues to fully reimburse households for higher energy costs, and to generously compensate households as we propose.

Third, the PPL prices the emissions sources—fossil fuels—that matter most for Australian exports avoiding carbon border tariffs such as the EU CBAM. The PPL ensures that Australia gets the revenue from carbon pricing, rather than trade partners with carbon prices.

Fourth, support for carbon pricing depends on transparent goals and implementation. The PPL tax base and payers are obvious to the public, with a recent survey of 3,000 voters finding that 68 per cent agree or strongly agree with a polluter-pays levy.[119] And the PPL is transparent and difficult to game, with no complicated permit allocations, or company-specific rules.

[118] Survey by Redbridge Research for The Superpower Institute. This result is consistent with other surveys finding 74 per cent of Australians support a polluter-pays carbon price, with support ranging from 55% to 64% over the years 2021-2025, with the recent decline likely explained by cost of living pressures; Lowy Institute, 'Potential Federal Government Policies on Climate Change'.

[119] Survey by Redbridge Research for The Superpower Institute. This finding is consistent with other surveys; see, for example, Redman, 'Majority of Australians Support Fossil Fuel Industry Paying for the Costs of Climate Change'.

In short, the PPL is a simple, transparent scheme that targets major polluters, protects households, strengthens the budget at lower cost than any other tax, and takes a decisive step towards net zero. It is the best candidate for breaking the political impasse on carbon pricing.

4.2 Reducing Australian emissions

We compare emission reductions under a PPL to a 'baseline' scenario, based on current policies and expected rates of technology adoption. Current policies include the government's 2030 target for 82 per cent target renewable energy generation, and the Safeguard Mechanism.

Policymakers have not fully specified how the Safeguard Mechanism will operate past 2030, and it is due for review in 2026. We therefore assume that emissions reductions for covered industries will decline at the indicative rate of 3.285 per cent specified in current Safeguard Rules.[120] Net emissions decline to reach 285 million tonnes per annum by 2050, a 31 per cent fall from 2026 to 2050. We also assume the government meets its 82 per cent renewable energy target.

Under the PPL, emissions decline 54 per cent from 2026 levels, falling to 188 million tonnes by 2050. Compared to current policy settings, the PPL would deliver about 100 million tonnes of additional annual carbon emission abatement after the first ten years, and around 2.3 times the total reductions we can expect under current policies. Emissions reductions are concentrated in fossil fuel consuming sectors—especially stationary energy, transport, and industry—while emissions in other sectors, particularly agriculture, continue to grow. (Table 1; Figure 9).

Table 1: Summary comparison of policies

Emission reductions	Safeguard Mechanism	Domestic PPL
2050 emissions (million tonnes per annum)	285 Mtpa	188 Mtpa
2050 reduction, versus 2025 (million tonnes per annum)	-151 Mtpa	-248 Mtpa
Reduction versus 2005[121] (per cent)	-53%	-69%

[120] Department of Climate Change, Energy, the Environment and Water, 'Safeguard Mechanism Overview'.
[121] Australian Bureau of Statistics, 'Greenhouse Gases'.

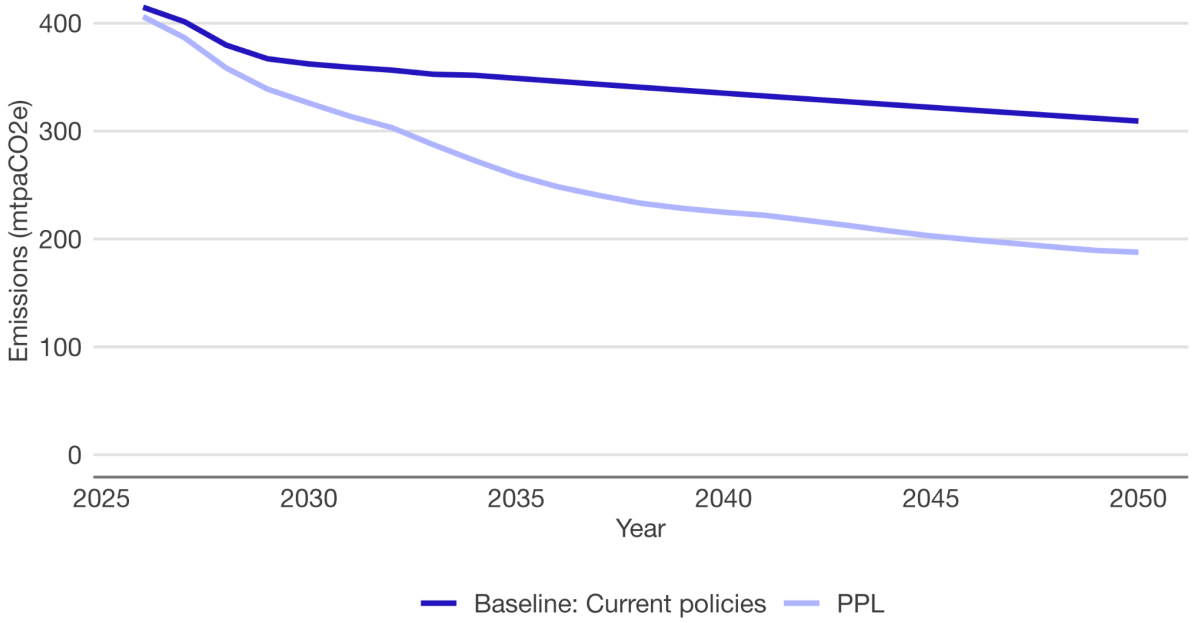

Figure 9: Emissions pathway for the two policies

Notes: PPL = Polluter Pays Levy. Baseline = emissions under current policies including the Safeguard Mechanism.
Source: TSI analysis.

4.3 Revenue, energy costs, and welfare effects

4.3.1 Revenue and compensation for households

The PPL generates an average of $22.6 billion per year, beginning at around $6 billion and peaking at $27 billion in the early 2040s. Thereafter, revenues decline as further carbon price increases are more than offset by the falling quantity of emissions.

This is more than enough revenue to compensate households for energy price increases. We recommend generous payments to households averaging $330 each year, and payments to small businesses worth $325 per year. More targeted assistance—for example, starting at $490 per year for the bottom 75 per cent of households by income—can also be paid from PPL revenue, to ease cost-of-living pressures and help with the energy transition. These payments could become progressively more targeted over time, with larger payments per household.

Australians as a whole will be beneficiaries from the PPL. We believe it is important that this is immediately and directly visible to people.

It is important to note that alternative decarbonisation policies that do not raise revenue—such as the Safeguard Mechanism—also impose costs on households and businesses. But they do not provide the revenue needed to fund compensation or support payments.

The PPL and energy prices

The PPL is levied on 'upstream' companies extracting and importing fossil fuels combusted in Australia. Some of the costs will be borne by these fossil fuel firms and some will be passed on.

To the extent that firms pass on the costs of pollution, the price of gas, petrol, and diesel will increase.

The effect of the PPL on electricity prices will be more complex, because there is a mix of zero-carbon and carbon-intensive energy generators in the grid. Electricity generated by gas and coal will become more expensive. Over time, the zero-carbon share will increase and the price impact of the PPL will fall towards zero.

Recent models of net-zero pathways in the electricity sector provide helpful insight on price impacts. Wholesale electricity prices are expected to fall in the short term, before rising briefly in the early 2030s, then stabilising at similar prices to today (Box 5).

Box 5. Electricity prices and demand on the path to net zero

Recent models of the electricity sector show how demand, generation, and electricity prices are expected to change as Australia moves to net-zero emissions in 2050.

Electricity demand will increase as households and businesses electrify their transport, heating, cooling, and cooking. These increases will be curbed by technology that improves energy efficiency, as well as rooftop solar and household batteries. The Australian Energy Market Operator's Step-Change scenario suggests that reaching net zero in 2050 will nearly double electricity demand on the NEM.[122]

Firmed renewable energy is the cheapest source of new electricity generation.[123] Current supply of low-cost electricity from ageing coal generators will decline as maintenance costs climb and plants retire. Gas is likely to have a role as an occasional source of 'peaking' power.

Modelling of a net-zero consistent electricity market by Treasury and the Grattan Institute projects that wholesale prices will initially fall as renewables meet increasing demand, followed by a transient price increase in the early 2030s as coal generators close and the balance between demand and supply of electricity tightens.[124] Thereafter, prices are expected to stabilise at similar levels to today.

Treasury modelling finds that delays to the net-zero transition, and higher reliance on gas, would see wholesale prices 17 per cent higher on average in the 2030s and 54 per cent higher in the 2040s.

[122] AEMO, *Draft 2026 Integrated System Plan*.

[123] CSIRO, 'GenCost'.

[124] Treasury, *Australia's Net Zero Transformation: Treasury Modelling and Analysis*; Reeve et al., *Bills down, Emissions down: A Practical Path to Net-Zero Electricity*; Australian Energy Market Commission, *AEMC Residential Electricity Price Trends 2025*.

Household energy bills reflect the interaction between energy prices, and the composition of energy use – how much electricity, gas, and petrol or diesel a household consumes.

Electrification – the substitution of gas and liquid fuels to electricity, through take up of heat pumps, electrical appliances and electric vehicles – will help reduce household bills. Consumer energy resources, such as rooftop solar and batteries, are also expected to reduce bills by shifting electricity demand away from peaks, reducing the instances of peak prices, and decoupling consumers from the retail market.

Treasury and Grattan Institute modelling projects that, due to these factors, typical households in 2050 will be between $700 and $4,300 better off each year compared to households today.[125]

A household's exposure to the effects of the PPL—as for any other policies that make fossil fuels more expensive on the path to net zero—will be reduced by electrification and access to rooftop solar and batteries. But electrification and energy self-sufficiency will not occur evenly. Some households will insulate themselves from energy price increases faster than others. Other households face substantial barriers due to income constraints, rental status, or the physical constraints of housing (such as some apartment buildings).

While fossil energy is still widely used, households will require compensation for any PPL costs passed on, and many households will need support to make electrification faster and more accessible. The large amount of revenue raised by the PPL is more than enough to ensure households will not be worse off under the PPL.

A Household Energy Compensation Payment

We recommend that alongside the PPL, a Household Energy Compensation Payment is introduced to cover conservative estimates of increases in energy bills, as well as a Household Support Package to cover cost-of-living concerns and to support the net-zero transition.

Households will be exposed to higher gas, petrol, and diesel prices until they have electrified. People will electrify their houses progressively, adopting new technologies as costs fall.

We estimate that it will cost an average of $4.1 billion each year, between 2026 and 2050, to compensate for higher energy costs. In total this package would be worth an average of $330 per household between 2026 and 2050, peaking at about $500 per household in 2033.

Our estimate is based on expected increases to gas, petrol, diesel, and electricity prices under the PPL, together with a shift to electrified households. We use two approaches to estimate electricity price increases for households. One approach uses the outputs from the CGE model described in Chapter 4. The other builds on a more granular model of the electricity sector, using analysis by Grattan. Both are highly conservative and likely overstate bill increases for consumers. Through time, compensation for gas and petrol declines (Figure 10).[126]

[125] Treasury, *Australia's Net Zero Transformation: Treasury Modelling and Analysis*, 104; Reeve et al., *Bills down, Emissions down: A Practical Path to Net-Zero Electricity*, 22.

[126] See Appendix A.4 for details on how we calculated the expected cost of the Energy Compensation Payment.

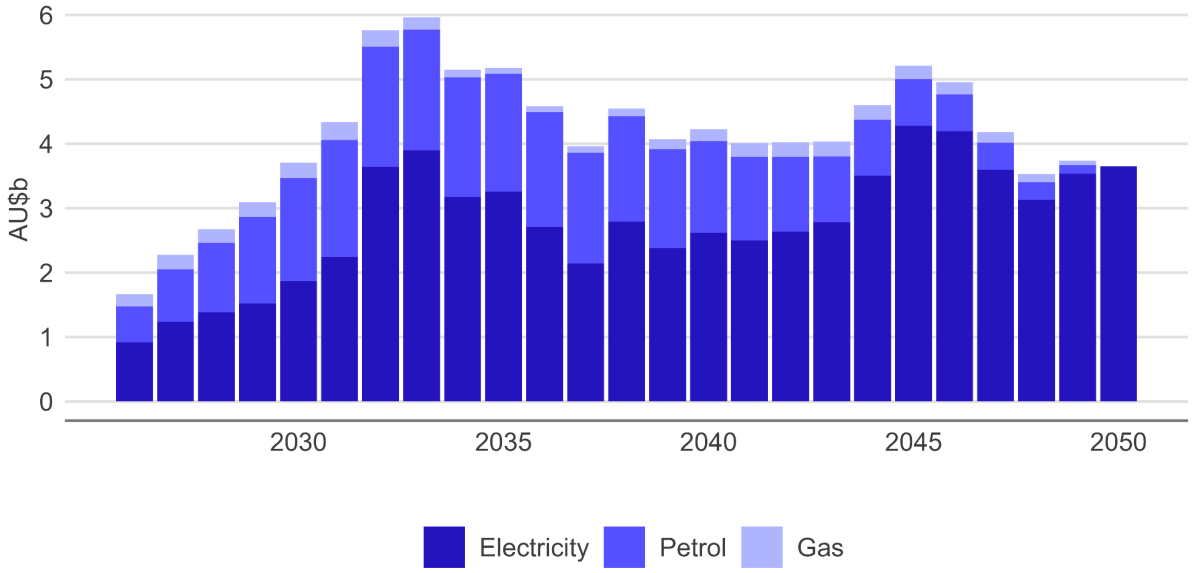

Figure 10: Our proposed compensation package reflects a shift to electrified households

Notes: The compensation package applies two estimation approaches and assumes households electrify on average to 2050; see Appendix A.4 for further details.
Sources: TSI analysis, DCCEEW (2025)[127], AEMO (2025)[128], Grattan Institute (2025)[129].

We suggest the government delivers this compensation as a quarterly lump-sum 'PPL payment' to all households, with all households receiving the same amount.

At an average of $4.1 billion each year, the Household Energy Compensation Payment consumes less than a fifth of PPL revenue (Figure 11; Table 3).[130]

[127] Department of Climate Change, Energy, the Environment and Water, 'Australia Energy Statistics'.
[128] AEMO, *Draft 2026 Integrated System Plan*.
[129] Reeve et al., *Bills down, Emissions down: A Practical Path to Net-Zero Electricity*.
[130] See Appendix A.4 for further detail.

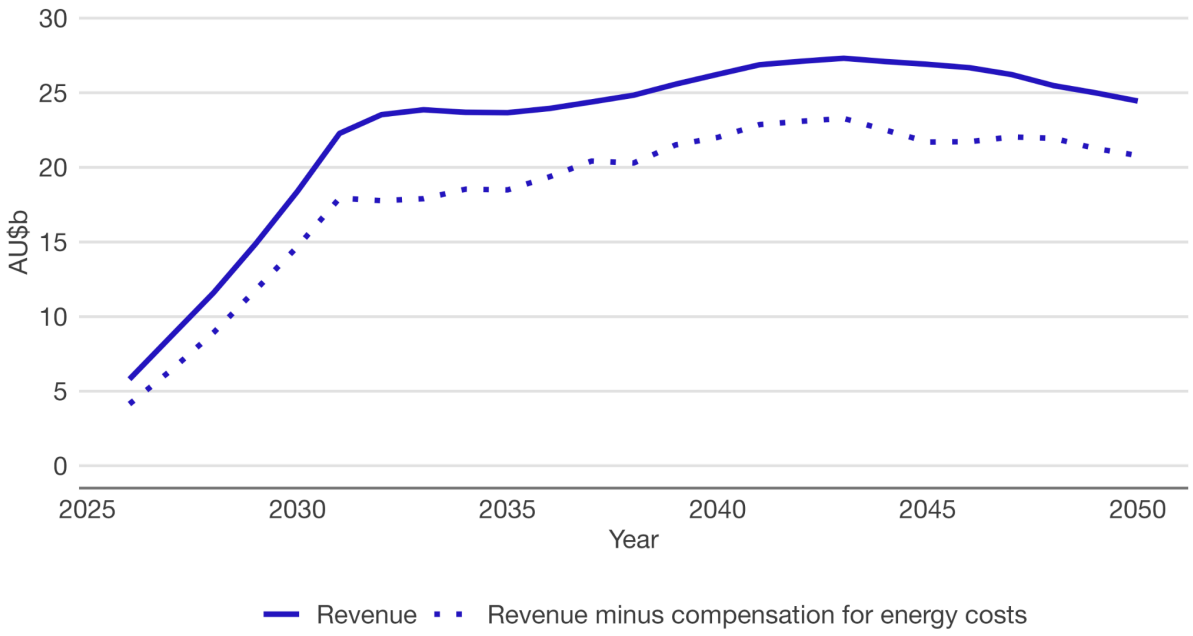

Figure 11: Revenue from the Polluter Pays Levy before and and after compensation

Notes: PPL = Polluter Pays Levy.

Source: TSI analysis.

Table 3: Average annual tax revenue and energy compensation from 2026 to 2050

	Annual direct revenue	Household energy cost compensation	Net revenue after compensation
Current policies	$0	$0	$0
PPL	$22.6 billion	$4.1 billion	$18.5 billion

Recommendation 4

The federal government should introduce a Household Energy Compensation Payment, averaging $330 through to 2050, alongside the Polluter Pays Levy, using PPL revenue to compensate households for increased energy bills. The compensation package will be sufficient to cover increases in household electricity, gas, and petrol prices.

A Household Support Package

In addition to the Household Energy Compensation Package, there is a case for further payments to households that are more exposed to energy bill increases. Even in the earliest years of the PPL, and even with Energy Compensation Payments, there is plenty of revenue that can be returned to households.

We recommend that a further $4 billion each year is committed to household support for the first decade of the PPL, targeting households that are most exposed to energy-related cost of living pressures. This includes households facing practical barriers to electrification, and households on lower incomes who spend a larger share of their income on energy.

Household electrification will be essential to managing rising energy costs as Australia moves to net zero, and our estimated compensation payment is based on households progressively electrifying. But about 60 per cent of households face at least one barrier to electrification, which makes it harder to respond to increasing energy costs. For example, people in apartments might find it harder to install EV charging equipment, and people who rent cannot switch from gas to electric appliances as easily as people who own their homes.

This policy needs to strike a balance between effective targeting and simplicity. The simplest option is to allocate payments based on household income. We propose that the income threshold should initially be set quite high, and decrease through time. This approach progressively increases the value of payments to a smaller share of households, tightening income-based targeting and increasing support through time. This reflects the expectation that households will electrify progressively, with higher-income and lower-barrier households electrifying sooner.

For example, the support package could initially target 75 per cent of households, only excluding the top 25 per cent of households. This allocation of funding would support payments of $490 for 75 per cent of households. By the end of the first decade, the support package could be restricted to the bottom 25 per cent of households – equivalent to about $1300 per year. This approach supports low-income households with substantial income, to support electrification and cost of living generally.

Progress will need to be monitored to identify barriers to electrification that need tailored policies – for example, where multi-unit dwellings face coordination challenges and substantial fixed costs.

Recommendation 5

The federal government should introduce a Household Support Package alongside the Polluter Pays Levy, to assist households facing greater risk of higher energy bills. We propose a package worth $4 billion a year for up to a decade, with the value reviewed after five years of operation.

PPL revenue can be used to support small businesses

The PPL will lead to higher energy prices which will lead to higher gas, petrol, diesel and electricity costs for businesses. Small businesses are particularly vulnerable to increased energy costs as these can comprise a large share of overall business costs and the ability to avoid such cost increases can be limited.

From 2023 to the end of 2025, the federal government has provided eligible small businesses with access to the Energy Bill Relief Fund (EBRF).[131] The EBRF was paid to eligible businesses at a rate of $325 per year in the 2023-24 and 2024-25 financial years, and $150 for the period 1 July 2025 to 31 December 2025. Eligible businesses were defined by state and territory definitions of electricity 'small customer', which contain upper thresholds that vary between 40 MWh up to 160MWh depending on the state or territory. Around 1 million small businesses were expected to be eligible for the EBRF.[132]

In December 2025 the federal government confirmed that the EBRF would not be extended beyond 2025.[133]

To insulate eligible small businesses from energy bill increases that will occur because of the PPL, we recommend that the federal government should deploy $325 million per year of PPL revenue towards a Small Business Energy Compensation Payment of $325 per eligible small business per year, which is likely about 1 million small businesses. This would, in effect, continue the payments made under the EBRF beyond 2025.

> *Recommendation 6*
>
> **The federal government should introduce a Small Business Energy Compensation Payment. We propose a value of $325 per year per eligible small business, with the value reviewed after five years of operation.**

4.3.2 Efficiency and welfare

Treasury has reported various measures of the welfare impacts of major Australian taxes. The marginal excess burden (MEB) and average excess burden (AEB) show how much economic welfare is sacrificed for each dollar of net revenue raised. Example rates are shown in Figure 6 in Chapter 2.

Treasury also reports the "consumption loss per unit of net revenue", and this is the welfare metric we use. For example, a particular tax may generate consumption losses of $0.50 per dollar of net revenue raised. This can be benchmarked against other forms of taxation that will have lower or higher impacts on welfare.

[131] Department of Climate Change, Energy, the Environment and Water, 'Energy Bill Relief Fund'.
[132] Chalmers et al., 'New Power Bill Relief'.
[133] Chalmers, 'Press Conference, Parliament House, Canberra'.

Because the 'consumption losses' measure does not account for consumer substitution between low- and high-taxed products, it is not directly comparable to an MEB: consumption losses for various taxes tend to be around two times higher, or more, than the associated MEB.[134] To compare apples with apples, we benchmark the consumption impact of the PPL against Treasury's estimates of the consumption effects of a flat personal income tax.

It is important to note, however, that consumption-based measures of welfare are designed to compare conventional taxes, and do not include the welfare benefits of corrective ('Pigouvian') taxes (see Section 2.1.1). In conventional taxation, a 'deadweight loss' arises from taxes that negatively distort activity without generating offsetting increases in social welfare. For a corrective tax, there is an offsetting social gain: the apparent loss is actually the reduction of an unpriced external harm.

The complication in this case is that climate change is a global public goods problem. If major emitters act in concert, then Australia reaps its fair share of the Pigouvian benefits from global climate mitigation. But, if Australia acts alone, it bears the local costs of Pigouvian taxation – the PPL – without a proportionate share in the global benefits. This may justify interest in the efficiency of these taxes, both with and without Pigouvian benefits.

We calculate two welfare measures:

- The cumulative household consumption impact, per dollar, of net revenue imposed by carbon pricing, relative to the distortions embedded in the baseline scenario. This follows Treasury's methodology.
- The same, but with the addition of Pigouvian welfare benefits. These benefits are calculated as the reduction in emissions under a PPL, multiplied by the US EPA's international benchmark social cost of carbon.

The US EPA's 2023 analysis of global damages per tonne of emissions to 2050 is regarded as a best-practice approach and is intended for utilisation in the UNFCCC/IPCC process. Damage calculations remain partial and "likely underestimate the marginal benefits of abatement."[135]

The results are shown in Figure 12. Positive values indicate that the tax raises welfare, while negative values—typical of conventional taxes—indicate losses.

[134] Cao et al., *Understanding the Economy-wide Efficiency and Incidence of Major Australian Taxes*.

[135] See National Center for Environmental Economics, Office of Policy and Climate Change Division, Office of Air and Radiation, *Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances*; For comparison to other benchmarks, see Molocchi and Mela, 'Social Cost of Carbon as an International Benchmark to Drive Countries' Carbon Pricing during the Transition'.

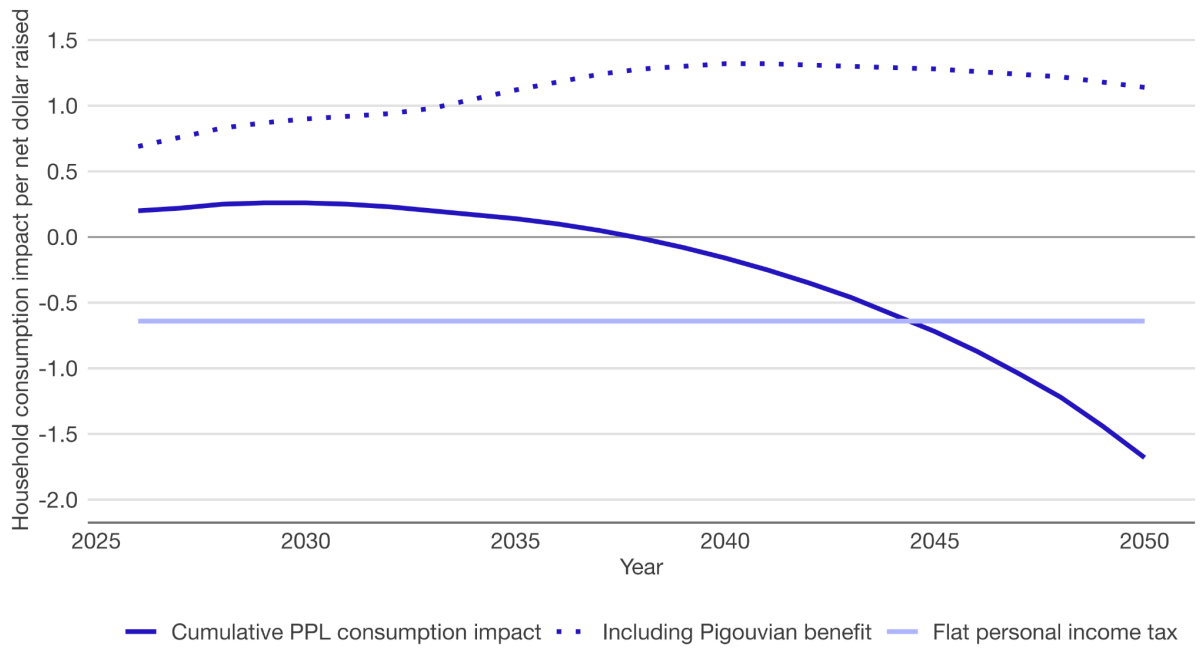

Figure 12. PPL cumulative consumption impact per unit of net revenue, compared to a flat personal income tax

Notes: PPL = Polluter Pays Levy. AEB = Average Excess Burden
Source: TSI analysis, Treasury (2015)[136].

Looking at the dark blue solid line—welfare based on consumption—the PPL introduces net welfare benefits for the first 12 years of its implementation. These welfare gains are relative to the 'current policies' baseline. That is, the PPL would be worth implementing, as a substitute for the Safeguard Mechanism, even if climate benefits were ignored altogether. When the benefits of climate change mitigation are included, the welfare effects are consistently positive. The PPL is also a more economically efficient way of raising revenue than the Personal Income Tax – the negative line shown in light blue – until 2044.

The dotted line provides a more complete account of tax efficiency, by including the corrective ('Pigouvian') welfare benefits of reducing carbon emissions. If the social benefits of emissions reductions are included in the welfare analysis, the PPL is welfare-positive for the entire period.

These welfare estimates are conservative, because they do not account for the additional efficiency gains possible where the PPL allows other costly decarbonisation mechanisms, such as EV subsidies, to be repealed.

The less that other countries reduce emissions, the more the solid-line case is relevant. The more that other countries reduce emissions, the more the economic reality is captured by the dotted line.

Larger potential efficiency losses only arrive in later years, by which time uncertainty about international action will have diminished. If carbon pricing is more internationally widespread at this stage, there will also be two main benefits from domestic carbon pricing that are not captured in our model:

[136] Cao et al., *Understanding the Economy-wide Efficiency and Incidence of Major Australian Taxes*.

- Carbon pricing allows Australian exports to avoid carbon border taxes, which would impose the efficiency losses from carbon prices on exporters without Australia reaping the revenue.
- Carbon pricing directs innovation towards emissions-intensive sectors, especially as prices rise. Historical experience with market-based mechanisms for other pollutants, such as sulfur dioxide and CFCs, shows that costs may fall significantly faster than anticipated.[137] These innovation effects are only weakly captured in CGE models.

4.4 Credible reductions and delivering on net-zero

The PPL is an efficient way to raise substantial revenue, and it helps Australia take a decisive step towards net zero.

To further reduce the cost of compliance, and to encourage efficient investments, robust and rigorous carbon offsets should be allowed under the PPL: liable companies should be allowed to reduce their tax obligation by buying carbon reductions in other sectors.

Our 'robust and rigorous' offset caveat is important. The credibility of Australia's current offset scheme – Australian Carbon Credit Units (ACCUs) – has been widely questioned. Restoring the credibility of offsets is essential.

Carbon offsets will become increasingly important as Australia moves closer to net zero. Reliable measurement and accounting is essential so carbon 'credits' are only awarded to offset projects where genuine abatement has occurred. If carbon offsets do not deliver their promised emission reductions, Australia will discover it has not made the progress it expected, requiring more dramatic and expensive emissions reductions in later years. Large-scale, efficient monitoring will become increasingly important, particularly in the 'land use, land use change and forestry' (LULUCF) sector.

> *Recommendation 7*
>
> **The PPL should recognise carbon offsets, subject to development of more robust and credible monitoring and accounting of offsets, particularly in the 'land-use, land-use change and forestry' (LULUCF) sector.**

As the 2050 deadline for reaching net zero draws closer, Australia will need a policy mix that covers emissions from all sectors, including agriculture, waste, and industrial emissions that are

[137] Ex ante estimated costs of cutting SO2 emissions were US$370-800 per ton, with an average of US$550. In practice, permit prices reached only US$250 per ton, below the lower-end estimate and less than half the anticipated average (outside of a fleeting speculative boom in 2005); Chestnut and Mills, 'A Fresh Look at the Benefits and Costs of the US Acid Rain Program'.

not from fossil fuel. Without full coverage, emissions will expand dramatically in uncovered sectors – particularly agriculture.

There are different ways to reach net zero, with an economy-wide emissions trading scheme, or an expanded PPL, providing the essential backbone of any policy mix.

As noted in Chapter 3, current policies lapse by 2030, with the Safeguard Mechanism due for review in 2026. There are no clear investment signals, and there is no policy certainty to steer emission reductions over the next decade or through to the 2040s. The PPL is the best policy for addressing this gap while the government develops its longer-term policy mix.

05.

A Fair Share Levy on Gas Exports

Chapter 2 explained that taxes on economic rents—profits above the level required to maintain investments—are economically neutral. They do not affect incentives to invest or trade, and they do not increase prices. As described in Chapter 3, economic rents in the Australian fossil carbon sector are vast and, compared to the international norm, greatly undertaxed.

This chapter proposes a Fair Share Levy (FSL), a form of cashflow tax that targets economic rents generated by the gas industry in Australia. It would redistribute some of the very large profits earned by gas producers back to Australians. Most of these profits are from exports.[138]

The FSL is designed to correct for the profound failures of the existing Petroleum Resource Rent Tax (PRRT), which was introduced to capture 40 per cent of the rents of the oil and gas industry in the 1980s. As Treasury has noted, the PRRT is poorly suited to Australia's LNG industry, and will never capture the expected revenues:

> *The PRRT has been found to be better suited to oil projects rather than LNG projects since the accumulation of a large stock of carry-forward deductions, compounded by uplifting, can defer the payment of PRRT indefinitely.*[139]

The FSL would realise the original intention of the PRRT, giving Australians a fairer share of the value created from Australian resources. It would do so without affecting the international competitiveness of any future investment.

Average annual revenue is expected to be $13 billion to 2050, yielding a total of $325 billion over the period. Revenue is lower in the first five years to accommodate PRRT transition payments, beginning at $8.6 billion in 2026, before rising quickly in the 2030s, remaining relatively steady into the late 2030s, then gradually declining as global mitigation reduces gas exports.

Revenue estimates are based on a detailed analysis of oil and gas industry accounts over the financial years 2020-19 to 2023-24, drawn from the ABS and state and federal records.[140] This is combined with changes in industry output over time, drawn from CGE modelling conducted by Professor Philip Adams from the Centre of Policy Studies. Unanticipated supply or demand shocks will raise or lower revenues relative to those projected here.

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[138] For example, in 2023-24 about 74 per cent of natural gas was exported. See Department of Climate Change, Energy, the Environment and Water, 'Energy Trade'.
[139] Treasury, *Petroleum Resource Rent Tax: Review of Gas Transfer Pricing Arrangements - Final Report to the Treasurer*, 4.
[140] See Appendix A.2 for detailed modelling.

5.1 A Fair Share Levy

One way to raise revenue from Australia's fossil fuel production is to impose a tax on exports. Yet this would increase the price of Australian exports in world markets. Trading partners' concerns about energy security make this politically difficult at a time of heightened geopolitical sensitivity, and Australia's new green industries depend on trust and deepening cooperation with our trade partners.

We therefore favour a tax on large fossil-fuel profits as an economically efficient and more geopolitically sensitive way to raise revenue. Specifically, we favour a tax on gas industry profits, as explained in the next section.

Because the FSL is a neutral tax on economic rents, it neither raises prices nor encourages trading partners to switch from Australia to other countries supplying LNG.

The downside of the FSL is that it does not shift incentives towards green industries, because it leaves the relative prices of gas and renewable energy-based industries unchanged.

Nonetheless, considerable revenue is required to balance Australia's budget while establishing emerging green industries, and rent taxation should be one of the critical pillars supporting the green transition. It can therefore indirectly support global abatement, if FSL revenues help Australia to provide support for emerging green industries.

The FSL is summarised in Box 6, and detailed in Sections 5.1.1 to 5.1.5.

Box 6. How a Fair Share Levy (FSL) works

The FSL is a form of two-way cashflow tax – the same structure as Norway's petroleum tax (see Box 3, Section 3.3). The FSL would be applied to the net cash flows generated from the extraction, processing, and sale of Australian oil and gas resources, including LNG, on a project basis. It would replace the PRRT.

Because oil industry profits are small compared to gas and especially LNG profits, our terminology for the FSL in this report focuses on its core target: the gas industry.

The FSL is designed to collect 40 per cent of the large profits that gas companies secure through time. It has a 'two-way' structure, with the government sharing equally in project profits and losses, such that the government effectively takes a 40 per cent share in overall profits over the remaining life of gas projects (see Box 7 for detail). Profits are extremely large for these projects, derived from exploiting Australia's internationally competitive resources. This symmetric 'two way' structure makes it a very efficient tax, which eliminates distortionary effects on firms' investment decisions.

The FSL is a cashflow tax, based on expenses and revenues in the year they are incurred.

Like the PRRT that it replaces, the FSL would be applied in addition to the standard corporate tax. The corporate tax and state royalties would be deductible for the FSL.

5.1.1 A tax on profits from gas production

There is a particularly strong case for taxing rents from fossil-fuel resources: Australians bear the cost of emissions in the form of climate change, polluters should make a contribution to climate mitigation, and Australia grossly undertaxes its fossil fuel exports compared to the international average.

Both coal and gas producers should be considered for potential rent taxes.

The coal industry, however, currently pays significant royalties in Queensland and New South Wales that effectively act as a substitute for the FSL. If these are lifted at any stage in future, the FSL should be expanded to the coal industry.

Gas royalties are a small fraction of coal royalties, especially when expressed as a share of total profits, and flaws in the PRRT mean that it has failed to fill the gap (see Section 3.3). The addition of the FSL would lift gas industry taxation levels to around those of the coal industry.

We propose that state royalties, like the corporate tax, should be deductible under the FSL.

Recommendation 8

While state royalties on coal are high, TSI recommends that a new tax on fossil fuel rents, a Fair Share Levy, should apply only to oil and gas projects. Coverage should be reviewed if states reduce their royalties on coal. The Fair Share Levy should replace the PRRT.

Recommendation 9

State royalties should be deductible under a Fair Share Levy.

5.1.2 A two-way cashflow tax

The proposed FSL is a 'Brown-type' two-way tax on gas firms' cashflows (Box 7).

Box 7: 'Two-way' taxes on cashflows

Two-way cashflow taxes are designed to take a fixed share of net profits over the lifetime of a company's investments, from the point of implementation. To do this, the government takes a fixed share of profits or losses as they occur each year. It is the gold standard for efficient rent taxation, superior to royalties and superior to less pure cash-flow taxes such as the PRRT.[141]

Under a two-way tax, a tax refund to a firm in a loss-making year is not a subsidy. It is necessary for the government to take a fixed share—40 per cent for the FSL—in a project's lifetime profits. It also creates the 'two-way' symmetry required for the tax to be economically neutral. Under a 40 per cent two-way tax, for example, a firm would pay 60 per cent of the investment cost and reap 60 per cent of the profits, receiving a rate of return on investment identical to the pre-tax rate of return. Projects that are attractive pre-tax are equally attractive post-tax.

Fossil industries are vastly profitable, with industry revenues outweighing firms' occasional loss-making investments.[142]

Profits and losses are based on 'cashflows' in and out of the company. Cashflow taxes treat investments in assets as an immediate expense, rather than using complex rules to depreciate assets through time. Large investments will therefore create losses in the early years of a project, before new assets generate income. When projects do generate profits, there are no depreciation deductions to reduce taxable income.

Depreciation under the corporate tax already works in a way that resembles risk-sharing, if imperfectly. When a firm invests $100, the 30 per cent corporate tax allows deductions for depreciation over time. After full depreciation, the government will have foregone $30 in corporate tax revenue. In present-value terms, this is equivalent to the government having funded roughly 30 per cent of the original investment.

A two-way cash flow tax makes this implicit cost-sharing explicit and immediate. Unlike the corporate tax system, this treatment is symmetric (applies equally to losses), immediate (no waiting for deductions to be claimed), and unconditional (not dependent on future profitability). It is a more complete, transparent, and efficient version of the same underlying logic.

[141] Freebairn, 'Reconsidering Royalty and Resource Rent Taxes for Australian Mining'; *Minerals Resource Rent Tax Act 2012 - Explanatory Memorandum*.

[142] Garnaut and Clunies Ross, *Taxation of Mineral Rents*; 'Business-Income Taxation and Investment Incentives'.

There are important differences between the FSL and the resource cash flow tax recommended in the 2009-10 Henry Tax Review, as well as the broader cash flow tax recently recommended by the Productivity Commission.

A central design challenge for rent taxes is how to define 'normal' returns for a given investment, and so know where 'normal' ends and economic rents begin. The Henry Review's proposed "super profits" tax effectively imposed a normal profits benchmark of around 6 per cent, while the PRRT opted for the long-term bond rate plus 5 to 15 per cent. Only profits above these levels would be taxed. These thresholds are contested, because the normal rate of profits varies with risk, which in turn varies considerably across projects and stages of project development.

The Brown-type tax proposed by TSI elegantly avoids such guesswork. There are no thresholds. The government simply takes an equal share in all firm profits and losses, in the year they are realised (see Box 7 on why government shares in losses). If an investment earns exactly 'normal' profits—just enough to cover costs—the tax take is zero. Whatever the differences between projects, it automatically taxes only economic rents.

A two-way cashflow tax has a successful precedent in Norway's "special tax on petroleum income," introduced in 2022, which is levied on top of standard corporate taxes (Box 3 in Chapter 3).

5.1.3 A 40 per cent FSL that is additional to the standard corporate tax

We suggest an FSL rate of 40 per cent—the same rate as the PPRT and the super profits tax in the Henry Review.

This would apply above standard corporate taxes.

The standard 30 per cent corporate tax would be deductible, such that the combined rate with the cash flow tax would be 58 per cent: companies' 30 per-cent tax, based on the standard corporate tax base, would be subtracted from their taxable income, and the 40 per cent FSL applied to remaining cashflow losses or profits. This is still at the lower end of international norms (Chapter 3).

To match the 78 per cent tax rate applied in Norway and the United Kingdom would, accounting for corporate tax deductibility, require an FSL rate of 68.6 per cent on top of the corporate tax. This option would remain economically neutral and generate initial annual revenues of around $30 billion.

The 40 per cent rate we propose, however, aligns with established Australian precedents for rent taxation, and specifically with the PRRT rate under which existing investments were made. It offers a pragmatic balance.

5.1.4 The FSL replaces and is an improvement on the PRRT

As described in Box 2 in Chapter 3, Australia already has a narrower tax focused on gas and oil extraction: the Petroleum Resource Rent Tax, or 'PRRT'. The proposed FSL is a new tax that would replace the PRRT, cover the oil and gas industry more broadly—including LNG—and better achieve the goal of raising revenue from Australian-owned resources.

Treasury has observed that the PRRT is poorly suited to the gas industry. There are two reasons: First, large initial capital expenditures are carried forward and uplifted annually at the long-term bond rate plus 5-15 per cent, as a means of defining the 'normal' rate of return. Compound growth turned CAPEX outlays into around a $200 billion tax shield, which may see some projects never pay tax.

The second is that the PRRT covers rents generated from gas extraction, but not from the rest of the LNG supply chain. As indicated in the 2017 Callaghan Review of the PRRT, this provided large opportunities for transfer pricing—for integrated firms to sell gas cheaply to LNG projects, thereby shifting the rents from gas to LNG.[143] This has been partially corrected, but is difficult to eliminate completely.

The FSL corrects both of these issues:

- It avoids specifying any 'normal' rate of return, taxing the rent component of project income simply by taking an equal share in all profits and losses. Immediate expensing of investment avoids the possibility of compounding deduction pools.
- It covers both upstream gas extraction and downstream LNG liquefaction, capturing the overall rent in the total supply chain. This eliminates transfer pricing within the supply chain.

5.1.5 Transitional arrangements: Striking a balance

Transitional arrangements under the FSL are also simplified relative to the Henry Review's Resource Super Profits Tax. The transition involves moving from a tax system with depreciation to one without it. Companies invested under the old rules, and have unrealised depreciation on their books.

To switch fairly to the new system, we propose a 'settle up' to cover unrealised depreciation: this involves recognising the value of past investments so that the new rules apply cleanly going forward. Norway did exactly this when it introduced its petroleum cash flow tax in 2022, with a one-time payout. The model here would spread this payout, as a transitional deduction, over five years to minimise immediate budget risk and macroeconomic impacts.

Transitional compensation must be carefully specified. In the past, arrangements that are excessively generous to firms have undermined otherwise well-designed taxes.[144] Generous uplift provisions have also turned CAPEX blowouts into permanent tax shields, and incentivised transfer pricing to enlarge the depreciation shield.

The transition must find a balance between recognising past investment, ensuring that Australians receive a fair return for granting firms monopoly access to finite national resources, and securing revenue to undo the damage caused by fossil fuel producers.

[143] Treasury, *Review of the Petroleum Resource Rent Tax - Issues Note*.

[144] The MRRT transition allowed firms to seek deductions for the market value of projects, including the value of the resource itself. Market value thereby internalises the resource rent, and explicitly protects the rent from ever being taxed. It is, as Prof. Crommelin observes, 'absolute anathema to the very concept of a resource-based tax': Treasury, *Review of the Petroleum Resource Rent Tax - Issues Note*.

Our approach uses firms' own tax-depreciation schedules as the measure of remaining capital. These schedules represent the capital values declared to, and audited and accepted by, the ATO for corporate tax purposes, and they form the legal basis for the remaining tax value of past investments. Using these values avoids opportunistic revaluation, ensures administrative simplicity, and keeps the transitional credit grounded in firms' own statements rather than subjective estimates of economic life. In this way, the FSL transition respects past tax treatments while moving to a simpler, neutral system going forward.

This approach is less favourable to gas firms than previous tax regimes—which guaranteed minimal revenue collection—but more favourable to firms than alternatives such as adding a royalty, applying an export levy, imposing an export carbon price, increasing the corporate tax rate, or implementing a cashflow tax without transitional compensation. The UK's recent Energy Profits Levy cashflow tax, for example, offered no compensation.[145]

Based on ABS, ATO and other official data sources, we estimate the total value of undepreciated capital and unutilised carry forward losses to be recognised at $113.5 billion in 2023-24. After further deductions expected to 2026-27, applying a 33 per cent uplift, and recognising the Australian Government's 40 per cent share under the FSL, the estimated transitional payout is $44 billion. Spread over a five-year period and indexed, the annual transitional deduction is approximately $9.5 billion. Tax authorities, with access to detailed project-level information, will be able to refine these figures further.

Our proposed approach to transitional arrangements strikes an appropriate balance between recognising past investments, made in a different taxation environment, and generating a fair share of revenue for the Australian public from very large profits from the gas industry.

5.2 The revenue and welfare benefit of an FSL

The average revenue for the FSL from 2026-2050 is $13 billion, including adjustments for transition payments. During the five year transitional payout period, using the method described in Section 5.2.5 and Appendix A.5, average revenue is $8.2 billion.[146] Thereafter, revenue reaches its peak of $18.2 billion in 2031, before gradually declining to around $8.3 billion in 2050. The decline is strictly due to global decarbonisation; export volumes are unaffected by the FSL and follow the baseline pathway (Figure 13).

[145] The legislation does not make any provision for compensation: see Energy (Oil and Gas) Profits Levy Act 2022 (c. 40).

[146] The payout for undepreciated assets in the initial five years is estimated at $11.6 billion, compared to initial revenues of $34.8 billion.

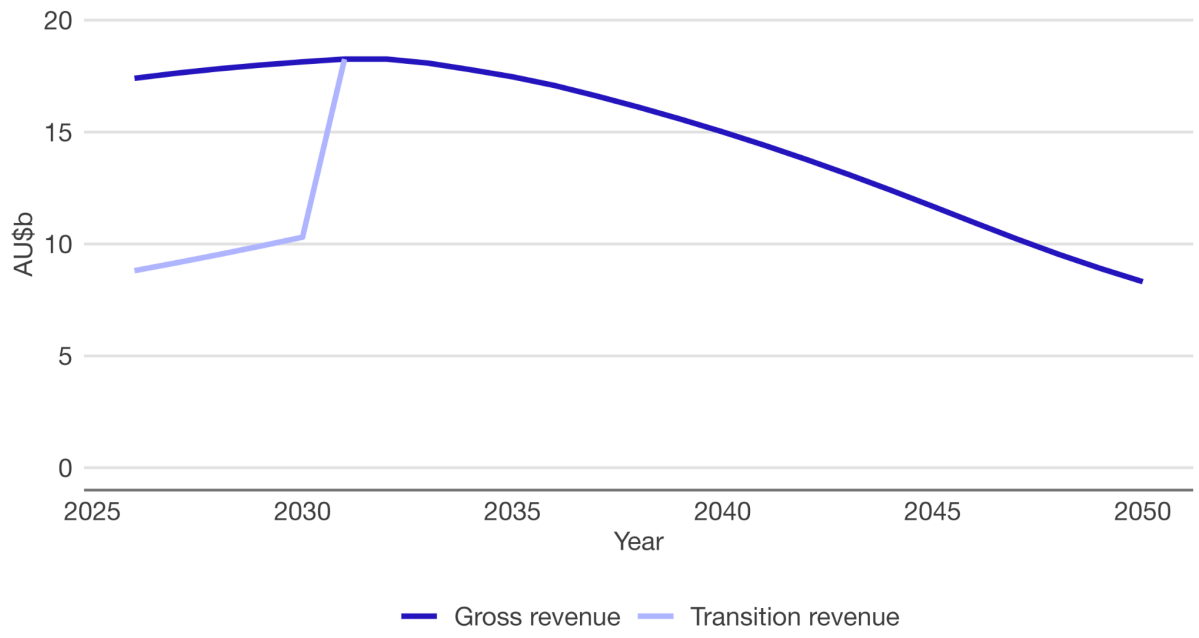

Figure 13. Gross revenue from a Fair Share Levy

Notes: See Appendix for details on transition adjustments.
Source: TSI analysis.

The effective tax rate on fossil fuel industry cashflow is greatly increased through imposition of the FSL. In the financial years 2019-20 to 2023-24, the Australian Government took around 18 per cent of cashflow from the oil and gas sector through the corporate tax, royalties, and the PRRT. Had the proposed Fair Share Levy been in place, the average tax rate would have reached just under 50 per cent, yielding about $80 billion in additional revenue over those four years.

Unlike conventional taxes, there are no appreciable efficiency losses. In fact, because the tax burden is substantially shared by foreign investors, the welfare impact of the FSL is exceptionally positive. For conventional taxes, full redistribution of the net revenues leaves households worse off due to economic distortions—for example, Treasury estimates that for every dollar raised by the GST and personal income tax, Australian households are about $0.50 and $0.60 dollars worse off respectively.[147] We estimate that every dollar raised via the FSL, in contrast, leaves Australians $1.20 better off.[148]

This is because profits from the Australian oil and gas industry are overwhelmingly exported to foreign shareholders. When these profits are taxed, Australians get the welfare benefits from

[147] Cao et al., *Understanding the Economy-wide Efficiency and Incidence of Major Australian Taxes*, 20.

[148] With foreign ownership of fossil fuel firms at least 85 percent. As Murphy writes, "An increase in tax on oligopoly rents has an MEB equal to the negative of the share of the capital stock owned by foreign investors… the additional tax on foreign investors represents a gain in national income. Thus, there is a gain in consumer welfare equal to the share of foreign-owned capital in the total capital stock. This makes it highly efficient to tax oligopoly rents." Murphy, *Efficiency of the Tax System: A Marginal Excess Burden Analysis*. The gain from the FSL exceeds $1 of consumption per dollar of FSL revenue because of fiscal multiplier effects: raised consumption induces increased economic activity, further raising consumption.

public revenue as well as an additional fiscal multiplier effect—each dollar of tax circulating in the economy generates additional economic activity.[149]

At its peak, annual benefits from the FSL are equivalent to about $1,541 per household.

[149] Treasury reports that the PRRT, as a rent tax, has a marginal excess burden of -0.1, based on an assumed 10 per cent foreign-owned share across all industries. Foreign ownership is higher in the oil and gas industry. The CGE result for the FSL, measured in welfare gain per dollar of revenue, reflects the combination of a high share of foreign ownership of firms exploiting Australian resources, as well as an additional fiscal multiplier effect.

06.

Making It Work: Policy Design and Integration

Chapter 4 showed why Australia should introduce a Polluter Pays Levy (PPL) and Chapter 5 made the case for a Fair Share Levy (FSL). Together these taxes are the best way to reduce emissions, strengthen the budget, and lift Australians' welfare. These benefits will start accumulating as soon as the policies are introduced, and they should be implemented at the earliest possible date.

6.1 A tax package that delivers emission reductions, revenue, and strengthens Australia's future

Together the PPL and the FSL would raise an average annual revenue of $35.5 billion between 2026 to 2050, with a total yield of nearly $890 billion (Figures 14 and 15). Revenue from the PPL can finance a more ambitious and generous policy agenda, and ensure that no household is worse off or left behind.

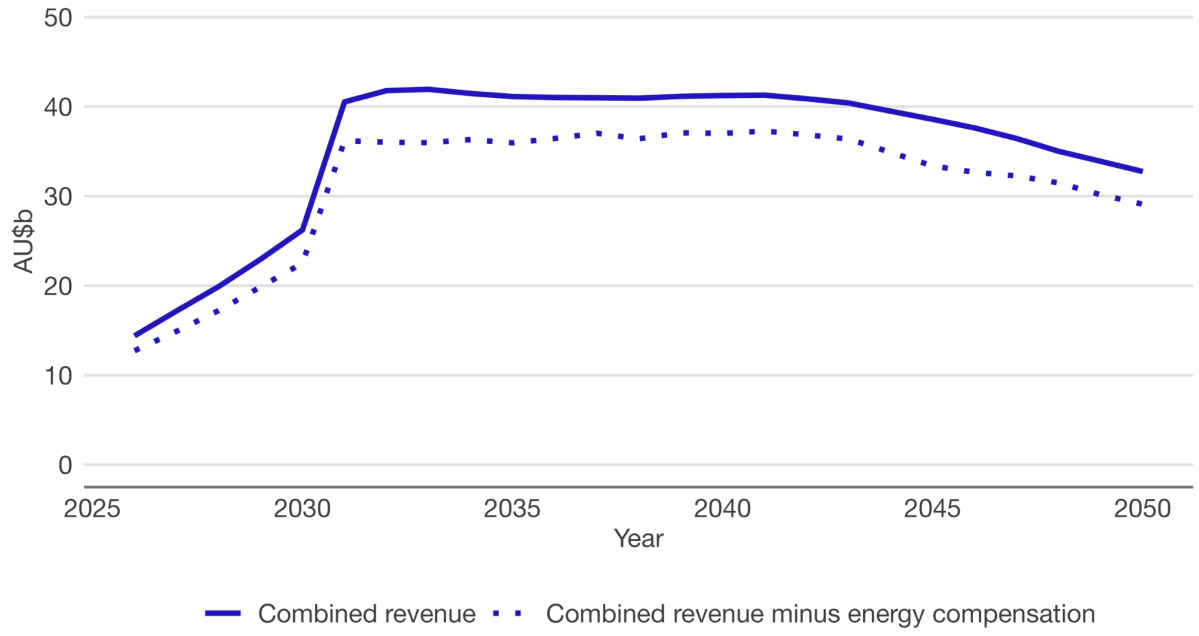

Figure 14. Combined Domestic PPL and FSL

Notes: FSL = Fair Share Levy ; PPL = Domestic Polluter Pays Levy

Source: TSI analysis.

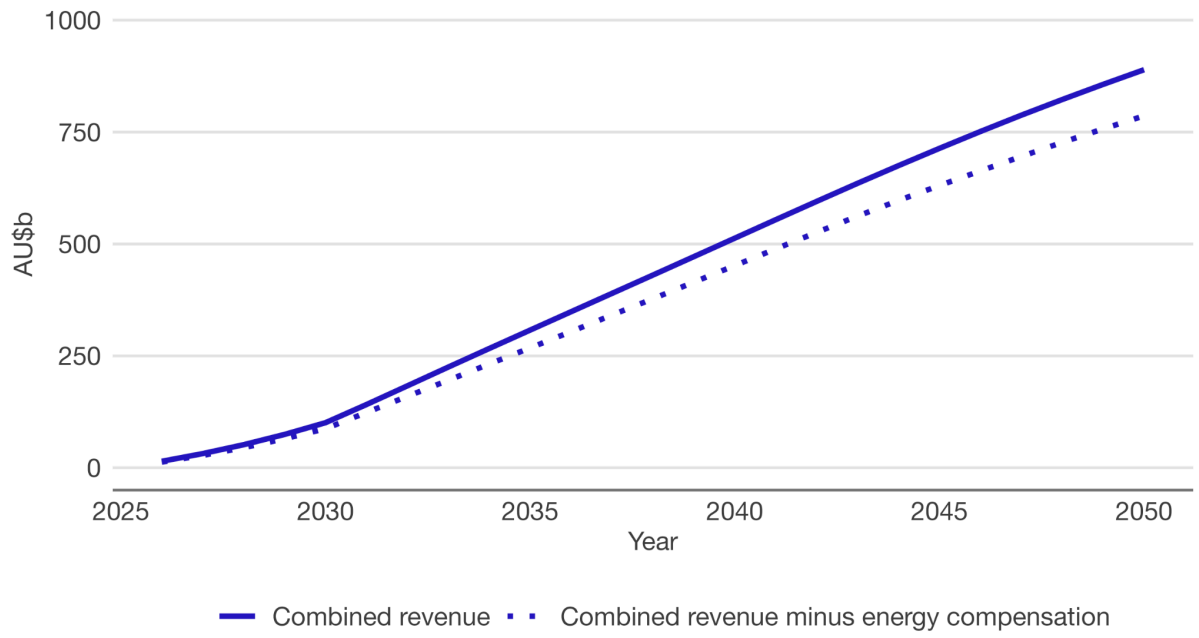

Figure 15. Cumulative revenue for the Domestic PPL and Fossil Fuel FSL

Notes: FSL = Fair Share Levy; Domestic PPL = Domestic Polluter Pays Levy
Source: TSI analysis.

After payments to compensate households for energy costs, costing an average of $4.1 billion through to 2050 (Chapter 4), average annual revenue from both taxes is $31.5 billion. Even with our proposed Household Support Package, proposed for the first decade of the PPL, this leaves large revenues for strengthening the budget, policies to support green exports, social and defence policies, adaptation and resilience support, and business tax reform.

Our proposed tax package also has excellent economic welfare properties.

Even before considering Pigouvian gains, the combined welfare impact of the package is positive for the whole period to 2050—compared to negative welfare impacts of conventional taxes, such as the personal income tax. Including Pigouvian benefits, the extremely strong benefits of the initial period continue through to 2050 (Figure 16).

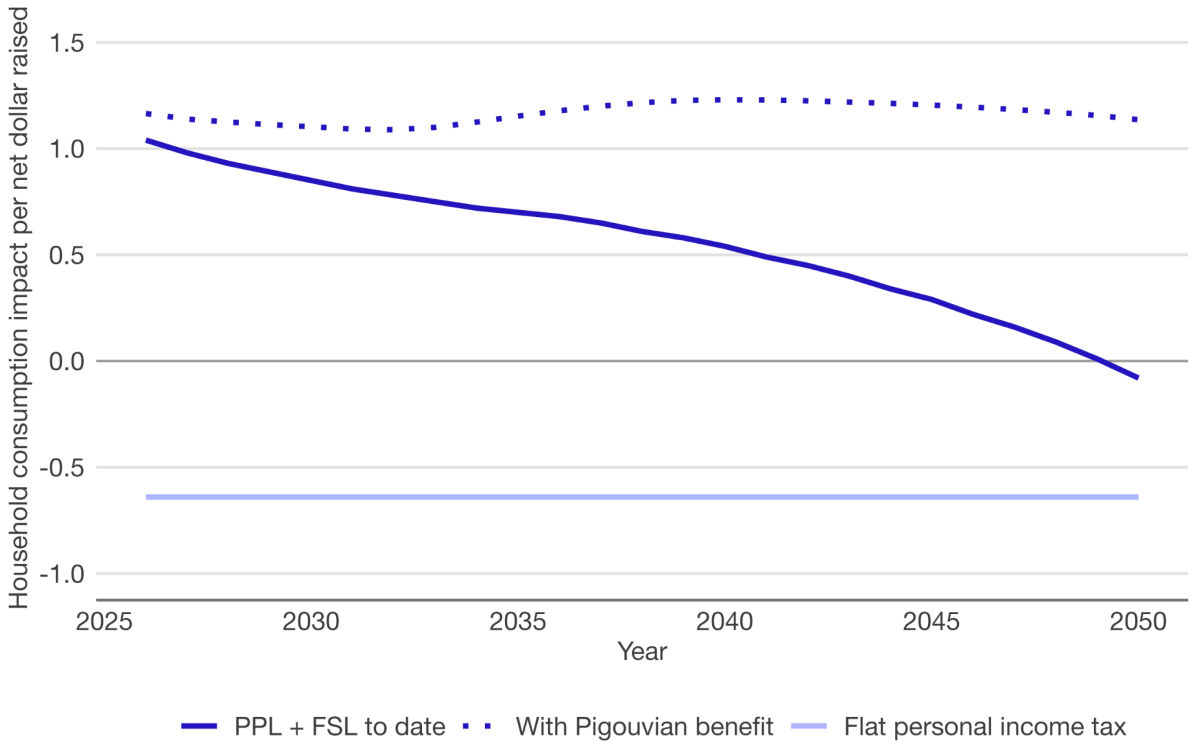

Figure 16. Consumption impact per unit of net revenue from the PPL and FSL tax package, with and without Pigouvian benefits

Notes: FSL = Fair Share Levy; PPL = Domestic Polluter Pays Levy.

Source: TSI analysis, Treasury (2015)[150].

6.2 Implementing a Polluter Pays Levy

We recommend that the Government introduce the PPL now, or use the 2026 Safeguard Mechanism Review as an opportunity to transition from the Safeguard Mechanism to the PPL. The PPL would ultimately supersede the Capacity Investment Scheme and the Safeguard Mechanism.

Ceilings for the New Vehicle Emissions Standard (NVES) are only legislated through to 2030. In the meantime, the PPL complements the NVES by progressively lifting the price of petrol and diesel and encouraging the purchase of low and zero-carbon vehicles, while also discouraging the consumption of fossil fuels by drivers of existing cars, utes, vans, and trucks.

The Capacity Investment Scheme is currently scheduled to run until 2027, while the Renewable Energy Target scheme ends in 2030. Transitional arrangements will be important; investments underwritten by the CIS should not be rewarded by both price support under CIS contracts and energy market prices that reflect a carbon price.

The 2026 review of the Safeguard Mechanism is an opportunity to introduce arrangements for a transition to the PPL. This would be a shift away from the Mechanism's role as the primary instrument for decarbonisation outside the electricity sector. It would also mean a shift away from the expectation that the Safeguard Mechanism's role will be expanded.

[150] Cao et al., *Understanding the Economy-wide Efficiency and Incidence of Major Australian Taxes*.

There would also be benefits from transitioning to a PPL in sectors currently covered by the Mechanism. To facilitate the transition from the narrow, complex Safeguard Mechanism to a broad, simple PPL, Safeguard Mechanism Credit Units (SMCs) should be credited against PPL liabilities for a limited period of time—say, five years.

An important benefit of the PPL is that, together with reformed road user charges, it could also replace the fuel excise and its complex rebate arrangements.

As people increasingly buy and drive EVs, and as heavier vehicles transition away from diesel, revenues from fuel excise will be eroded. With petrol and diesel's carbon externality covered by the PPL, a road user charge could be tailored to address other externalities—for example, by varying charges based on vehicle size and weight, which are correlated with damage caused to road infrastructure.

Under the PPL, EV take-up will be incentivised as these vehicles, unlike conventional vehicles, will generate fewer or zero carbon emissions. Any remaining financial support for EV take-up should be carefully targeted, so that support does not flow to the high-income households that can more easily adopt EVs.

6.3 Introducing a Fair Share Levy

We recommend that the government introduces an FSL as soon as possible, superseding the PRRT for oil and gas producers. The sooner an FSL is introduced, the sooner Australians can receive a fair share of the revenues from Australian fossil fuel resources, and the sooner the budget can return to strength.

The transition to a cashflow tax means fossil fuel producers will shift from a tax that depreciates investments through time, to a system that writes off investments immediately. When the FSL is introduced, producers will still have assets on their books that have not been fully depreciated.

We propose a balanced five-year transitional arrangement, with the government recognising the value of past investments based on depreciation reported under firms' corporate tax filings, and settling 40 per cent of undepreciated value. This arrangement avoids the zero-compensation extreme of alternative tax strategies, while raising revenue to help repair the damage caused by fossil fuel production, and ensuring that Australians receive a fair return on their resources.

Appendix

A.1 How we compared the share of rent governments collect from the fossil fuel industry

Rents from fossil fuel production can be captured through royalties, taxes, or direct ownership of the companies extracting fossil fuels.

We assess tax rates based on federal royalties, standard corporate income taxes, and any additional or alternative taxes that are specific to fossil fuels. We assess government ownership based on the share of public ownership of reserves, production facilities, or projects across a country, based on publicly-available data.

Saudi Arabia

Saudi Arabia is the second-largest producer of oil globally, after the US.[151]

Private companies pay up to 85 per cent company income tax, while the national company, Saudi Aramco, pays 50 per cent.[152] Royalties depend on the price of oil, ranging from 15 per cent for prices below USD$70 per barrel to 80 per cent for prices above USD$100 per barrel.[153] We apply a conservative 15 per cent royalty based on the five-year average barrel price of Dubai Fateh, which is just over USD$80.[154] We report a tax rate of 87 per cent reflecting the 85 per cent tax rate and 15 per cent royalty rate.

Saudi Aramco is the only major producer in Saudi Arabia,[155] and the government owns more than 97 per cent of the company.[156]

Kuwait

The tax rate is 15 per cent.[157]

Kuwait Petroleum Corporation is the only major producer in Kuwait,[158] and it is entirely government-owned.[159]

[151] US Energy Information Administration, 'Frequently Asked Questions (FAQs)'.

[152] Lexis Nexis, 'Saudi Arabia: Corporate Tax Rates for Hydrocarbon Companies Amended'.

[153] ArgaamPlus, 'Saudi Arabia Amends Aramco Concession Deal, Royalty on Crude Oil Output Cut to 15% from 20%'.

[154] World Bank, 'Commodity Price Data (The Pink Sheet)'.

[155] Raymond, 'Top Oil and Gas Companies in Saudi Arabia'.

[156] Aramco, 'Saudi Aramco Announces Breakdown of Shareholding Post Allocation'.

[157] KPMG, *Middle East & South Asia (MESA) Tax Guide*.

[158] Raymond, 'List of Top 10 Oil and Gas Companies in Kuwait'.

[159] International Trade Administration, 'Kuwait - Oil and Gas'.

Bahrain

The standard company tax rate is 0 per cent; the tax rate on the oil and gas industry is 46 per cent.[160]

The Bahrain Petroleum Company (Bapco) is responsible for production from the country's single oil field,[161] and is entirely owned by the Bahrain Government.[162]

UAE

UAE has a standard tax rate of 9 per cent, but 55 per cent for the oil and gas industry.[163]

The largest oil companies in the UAE include the government-owned Abu Dhabi National Oil Company (ADNOC).[164] ADNOC has at least a 60 per cent stake in projects yielding nearly all the UAE's crude oil production,[165] representing more than 97 per cent of production in 2023.[166] Other large producers such as Dubai Petroleum, and Emirates National Oil Company (ENOC),[167] are also government-owned. We report 60 per cent government ownership.

Oman

Oman has a standard tax rate of 15 per cent, and 55 per cent for oil and gas.[168]

Oil is about 80 per cent of fossil fuel exports; gas is about 20 per cent.[169]

Government ownership of oil is at least 42 per cent: Petroleum Development Oman (PDO) produces more than 70 per cent of Oman's crude oil production, with the government holding a 60 per cent share.[170] The government wholly owns the OQ Exploration and Production company,[171] which has ownership stakes varying between 10 and 60 per cent across Oman's gas fields.[172] We use a mid-point of 35 per cent ownership of gas resources. We report government ownership across oil and gas of 40 per cent.

Qatar

Qatar is the world's third-largest LNG exporter,[173] with plans to expand production.

Government shares of companies are not taxed. Non-government shares of company earnings are taxed a standard 10 per cent; oil and gas companies are taxed at 35 per cent for oil and gas.[174]

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[160] KPMG, *Middle East & South Asia (MESA) Tax Guide*.
[161] Prono, 'Bahrain's Declining Oil Reserves'.
[162] World Economic Forum, 'Bapco Energies'.
[163] KPMG, *Middle East & South Asia (MESA) Tax Guide*.
[164] World Benchmarking Alliance, 'Abu Dhabi National Oil Company'.
[165] Mordor Intelligence, 'UAE Oil and Gas Upstream Market - Size, Share & Companies'.
[166] The Energy Year, *Abu Dhabi - Oil and Gas Industry*.
[167] Lamya, *Top 10 Oil and Gas Companies in UAE*.
[168] KPMG, *Middle East & South Asia (MESA) Tax Guide*.
[169] Lloyds Bank, 'Foreign Trade Figures of Oman - International Trade Portal'.
[170] US Energy Information Administration, 'Background Reference: Oman'.
[171] OQEP, 'Home'.
[172] OQEP, *OQ Group Prospectus*, 274.
[173] Statista, 'LNG Export Market Share by Country 2024'.
[174] KPMG, *Middle East & South Asia (MESA) Tax Guide*.

State-owned QatarEnergy exports all of Qatar's gas,[175] with a majority stake of at least 60 per cent in all production.[176] A survey of projects indicates ownership rates of 75 per cent,[177] 70 per cent,[178] 100 per cent,[179] with 70 per cent ownership typical of liquefaction capacity.[180] We report 70 per cent government ownership.

Nigeria

About 85 per cent of Nigeria's fossil fuel exports are oil; the remaining 15 per cent are gas.[181]

For companies established before 2021 the tax rate on oil is 50 per cent for government projects. Private projects are taxed 66 per cent in the first five years, then 85 per cent. The tax rate on gas projects is 30 per cent.[182] Nigeria's tax regime changed in 2021, replacing the previous Petroleum Profit Tax (which had tax rates varying between 50 and 85 per cent). New projects are now subject to the standard corporate income tax rate of 30 per cent, and a Hydrocarbon Tax varying between 0 and 30 per cent based on the location of production. The maximum 'headline' tax will therefore be 60 per cent for new producers.[183] Further royalties based on the price of oil (0 to 10 per cent) are also levied,[184] and production location -- 7.5 to 10 per cent for very small volumes of production, and 16 and 18 per cent for shallow offshore and onshore sites.[185] Our estimated tax rate is based on the pre-2021 regime, which captures a much larger share of total production.

The government owns about 37 per cent of oil production and 53 of gas production,[186] with an overall share of 39 per cent across both industries.

We therefore report a tax rate of 65 per cent, reflecting:

- Gas, representing 16 per cent of tax revenue:
    - taxed at 30 per cent
- Oil, representing 84 per cent of tax revenue:
    - 37 per cent of revenues taxed at the public rate of 50 per cent;
    - 63 per cent of revenues taxed at the private rate of 85 per cent

[175] Total Qatargas production is Qatar's national production: see Qatar Energy LNG, 'About Us'; and Dargin, 'LNG Giant and Solar Dreams'.
[176] JOGMEC, *QatarEnergy*.
[177] North Field Project: Al Jazeera, *Qatar Secures Second Major LNG Supply Deal with China | Oil and Gas News*.
[178] *NS Energy*, 'Al-Shaheen Oil Field, off the Coast of Qatar'.
[179] Qatargas 1 LNG project: Dourian, 'Qatar Petroleum Comes of Age as It Assumes Sole LNG Ownership'.
[180] Dourian, 'Qatar Petroleum Comes of Age as It Assumes Sole LNG Ownership'.
[181] Yeboua and Cilliers, 'Nigeria'.
[182] PWC, 'Nigeria - Corporate - Taxes on Corporate Income'.
[183] PWC, 'Nigeria - Corporate - Taxes on Corporate Income'.
[184] Erikume et al., *Nigeria Introduces Amendments to Increase Royalties on Deep Offshore and Inland Basin Operations*.
[185] Okusami et al., *Petroleum Industry Bill Overview Series - Part 2: A Summary of the New Fiscal Provisions*.
[186] Manley et al., 'National Oil Company Profile', 24 April 2025.

The United Kingdom (UK)

The UK tax rate for non-fossil fuel companies is 25 per cent.[187] Fossil fuel companies pay a 30 per cent 'ring fence' corporate tax rate, a 10 per cent 'supplementary charge,' and a 38 per cent Energy Profits Levy.[188] There is no cross-deductibility, so the total is additive, totalling 78%.

Strong limits on deductions are important for keeping the 'effective' tax rate close to the headline rate.[189] Only the ring-fence corporate tax allows for interest deductions,[190] and decommissioning costs are non-deductible.[191] The regime allows immediate expensing of investment, consistent with the goal of the tax applying after investment.

The UK government does not have an ownership stake in any companies.

Mexico

Mexico's tax structure recently changed to a 30 per cent tax on oil.[192]

More than 95 per cent of Mexico's oil and gas is produced by state-owned Petroleos Mexicanos (Pemex),[193] with private-sector exploration. Recent changes to ownership and tax structures mean that private companies can now share in up to 10 per cent of production profits.[194] Based on current ownership structures we report government ownership of 95 per cent.

The United States (US)

The US has a complex mix of federal and state taxes.

Companies pay corporate tax of 21 per cent.[195] Federal royalty rates have varied under recent administrations; they stood at 12.5 per cent before 2022, were increased to at least 16.7 per cent and up to 18.75 during the Biden Administration.[196] Under the Trump Administration the offshore gas and oil rate has been reduced to a range between 12.5 and 16.7 per cent; the onshore rate has been returned to a minimum of 12.5 per cent.[197]

Many states have their own oil taxes, including Texas at 4.6 per cent of market value, and North Dakota 10 per cent of market value (5 per cent production plus 5 per cent extraction). States can also apply corporate income taxes and equivalents, such as the Texas franchise tax, which typically add another 5-8 per cent. In Alaska, 35 per cent tax on net proceeds applies, plus 9.4 per cent corporate tax rate. States also have gas production taxes,including Texas, Oklahoma, and Wyoming.

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[187] HMR&C, 'Corporation Tax Rates and Allowances'.

[188] HMR&C, 'Energy Profits Levy — Reforms 2024'.

[189] Because of non-deductibility of decommissioning costs, there is concern that the effective tax rate may even exceed 78 per cent in some cases: The National Decommissioning Centre, 'The Potential Effects of the Energy Profits Levy (Windfall Tax) on Investment in the UK Continental Shelf'; Coleman, 'UK Softens North Sea Oil and Gas Tax Hike, Retaining Capex Allowance'.

[190] HMR&C, 'OT21720 - Energy Profits Levy'; HMR&C, 'OT22005 - Interest and Financing'.

[191] HMR&C, 'OT21765 - Energy Profits Levy'.

[192] Martinez et al., 'Mexico to Simplify Taxes on Pemex in Bid to Fix State Oil Producer'.

[193] Manley et al., 'National Oil Company Profile', 12 November 2024.

[194] Squires, 'Pemex to Share up to 10% of Production Profits with Private-Sector Partners'.

[195] PWC, 'United States - Corporate - Taxes on Corporate Income'.

[196] The Associated Press, 'Biden Increases Oil Royalty Rate and Scales Back Lease Sales on Federal Lands'.

[197] US Department of the Interior, 'Interior Department Advances Energy Dominance through the One Big Beautiful Bill Act | U.S. Department of the Interior'.

To gauge the resulting 'effective' tax rate we use American Petroleum Institute figures, which reports the industry's overall effective tax rate from 2013–2017 was about 34 per cent.[198] The net effect of subsequent changes to federal royalties is hard to gauge; in the absence of more recent data we report an effective tax rate of 34 per cent.

The US government does not have an ownership stake in production companies.

Norway

Equinor produces about 70 per cent of Norway's oil,[199] and is 67 per cent state-owned.[200] We report government ownership of 47 per cent.

Companies pay a standard 22 per cent tax rate; this is then deducted from the oil and gas special tax rate of 71.8 per cent, resulting in a marginal tax rate of 78 per cent.[201]

We classify Norwegian companies as largely government owned.

We report a tax rate of 78 per cent.

How we calculated the share of profits captured under Australian taxes

'Profit' refers to economic profit, the appropriate measure when comparing to peer countries, such as Norway and the UK. The combined share of profits captured by Australia's corporate tax, royalties, and the Petroleum Resource Rent Tax was about 30 per cent of coal and LNG profits between the 2019-20 and 2023-24 financial years. Australia took less than 20 per cent of gas profits.

[198] Australian Petroleum Institute, 'Oil & Natural Gas: Supporting the Economy, Creating Jobs, Driving America Forward'.

[199] Equinor, 'About Oil'.

[200] DCFmodeling, 'Equinor ASA (EQNR)'.

[201] Norwegian Petroleum, *The Petroleum Tax System*.

A.2 How we calculated tax rates

In Chapters 3 and 5 we report estimates of tax rates and government revenues.

Abbreviations

EBITDA = Earnings before interest, taxes, depreciation and amortisation. These earnings exclude royalties, which are treated as a cost for Commonwealth tax purposes.
CFC = consumption of fixed capital (depreciation)
GFCF = gross fixed capital formation
NFCF = net fixed capital formation = GFCF - CFC
PRRT = Petroleum Resource Revenue Tax
Net interest payments = income from interest – interest expenses

Definitions

$$Cashflow\ tax\ base = EBITDA + Royalties - GFCF$$

EBITDA as reported is after payment of royalties, which are treated as a cost rather than a tax. We account for royalties as part of overall taxation. Therefore, to identify pre-tax earnings relevant to a cashflow tax, we must add royalties back to EBITDA. Finally, because investment is fully expensed, Gross Fixed Capital Formation (GFCF) must be deducted from the base.

$$Cashflow\text{-}equivalent\ tax\ rate = \frac{Corporate\ tax\ paid + royalties + PRRT}{EBITDA + royalties - GFCF}$$

The 'total' tax rate applied to fossil fuels includes corporate tax, royalties, and the PRRT, with the PRRT only being paid by oil and gas companies.

$$Corporate\ tax\ base = EBITDA + Royalties - CFC - net\ interest\ payments$$

The corporate tax base does not allow expensing of investment (GFCF), but instead allows deduction of depreciation (approximated by CFC) and net interest payments.

Data sources

Tax data is from the annual ABS Mining Industry data cubes:[202] EBITDA is in Table 1; Interest Revenue and Interest, Depreciation, and Amortisation expenses are in Table 4; Gross Fixed Capital Formation is in Table 5.

Corporate tax paid by gas companies is from ATO data on large companies from the gas sector, 2018-19 to 2023-24.[203]

Data on PRRT paid by gas companies is from the Commonwealth Government's Corporate Tax Transparency datasets, covering Australian public and foreign-owned corporate tax entities with a total income of $100 million or more; and Australian-owned resident private companies with a total income of $200 million or more.[204]

[202] Australian Bureau of Statistics, 'Australian Industry'.
[203] Australian Taxation Office, 'Tables - Tax Compliance of Australian Corporations'.
[204] Australian Taxation Office, 'Corporate Tax Transparency'.

Data on royalties for Queensland, Western Australia and New South Wales are the vast majority of state-based royalties and the basis of our royalty estimates.[205]

- Western Australian Royalty data: 2017-18, 2018-19, 2019-20;[206] 2020-21, 2021-22, 2022-23, 2023-24, 2024-25[207]
- Queensland Royalty data: Table 4.5 (Table 4.6 in 2022-23) in Budget Paper 2[208]
- New South Wales Royalty data.[209]

A.3 Examples of state-based royalties

In Box 2, Chapter 3 we refer to state-based royalties. Examples include:

- In Queensland the royalty rate on coal increases progressively with the price of the coal, from 7 per cent for prices below $100 per tonne, up to 40 per cent for prices above $300 per tonne.[210] The royalty rate on gas depends on the type of gas and the value per gigjoule, and ranges from 2 per cent to 12.5 per cent.[211]
- In New South Wales the rate varies with the type of coal mining; 8.8 per cent for deep underground coal, 9.8 per cent for underground coal, and 10.8 per cent for open cut coal.[212] Petroleum producers pay royalties at a rate of 10 per cent of the well-head value.[213]
- In Western Australia the royalty rate on coal is 7.5 per cent if the coal is for export, or varied but low rates if used domestically.[214]
- In Victoria, royalty rates for Latrobe Valley coal are set at about 20 cents per tonne, equivalent to an extremely low ad valorem rate.

[205] See Tunny, 'Riches from Royalties'.

[206] Government of Western Australia, 'Previous Budgets 2019-20', Budget Paper 3, Chapter 4.

[207] Western Australia Budget Part 3, Finance Data, DAT tab, available at: Government of Western Australia, '2020-21 Budget Agency Data'; Government of Western Australia, '2021-22 Budget Agency Details'; Government of Western Australia, '2022-23 Budget Agency Details'; Government of Western Australia, '2023-24 Budget Agency Details'; Government of Western Australia, '2024-25 Budget Agency Details'.

[208] Queensland Budget Paper 2, Table 4.5 (exceptions: Table 4.6 in 2022-23; table 3.4 in 2025-26): Queensland Government, *Budget Strategy and Outlook: Budget Paper No. 2* (2019); Queensland Government, *Budget Strategy and Outlook: Budget Paper No. 2* (2020); Queensland Government, *Budget Strategy and Outlook: Budget Paper No. 2* (2021); Queensland Government, *Budget Strategy and Outlook: Budget Paper No. 2* (2022); Queensland Government, *Budget Strategy and Outlook: Budget Paper No. 2* (2023); Queensland Government, *Budget Strategy and Outlook: Budget Paper No. 2* (2024); Queensland Government, *Budget Strategy and Outlook: Budget Paper No. 2*.

[209] NSW Resources, 'Paying Royalties'.

[210] Queensland Revenue Office, *Mineral Royalty Rates*.

[211] Queensland Revenue Office, *Petroleum Royalty Rates*.

[212] NSW Resources, 'Royalties'.

[213] NSW Resources, 'Paying Royalties'.

[214] Mining (Royalties) Regulations 2025.

A.4 How we calculated household compensation

Our Household Compensation Payment is designed so that households are generously compensated for increases in energy costs under the Polluter Pays Levy (PPL). Our estimates are based on:

- Expected consumption of electricity, gas, petrol, and diesel as households electrify.
- Expected changes to the price of electricity, gas, petrol, and diesel.

We use a combination of two cost estimates and compare energy costs under a PPL to those under a baseline scenario. For each estimate described below we calculate a cost differential:

$$Total\ cost\ differential_y = (price_y \times total\ energy\ consumed_y) - (price_y \times total\ energy\ consumed_y)_{baseline}$$

‘Mixed-energy households’

We use cost estimates from our *Centre of Policy Studies* (COPS) CGE model – the economy-wide model described in Chapter 4. We compare ‘baseline’ prices and consumption of gas, electricity, and petrol, versus prices and consumption under the PPL.

‘Electrified households’

We use retail electricity prices from Grattan's recent ‘bottom up’ model of the electricity sector, comparing the ‘no new policies’ model and their ‘2-degree’ scenario to capture the effects of net-zero emissions [YJ3] on the electricity retail prices and consumer behaviour. We add a 10 per cent buffer to this price difference so our estimated compensation payment is conservative.

To calculate electricity consumption we start with ‘total residential electricity consumption’ in 2023-24, from the Australia Energy Statistics. We then ‘grow’ this consumption through time by indexing the Australian Energy Market Operator’s (AEMO’s) demand projections from the 2025 ESOO step-change scenario; this assumes that residential electricity demand in Australia grows in line with projections for the National Electricity Market. Residential electricity demand includes expected changes to demand from lighting and appliances, degree of electrification, electric vehicles, and energy efficiency measures. It does not include supply and use of rooftop PV and is therefore a conservative estimate of total demand.

The transition from mixed-energy to electrified households

Households will initially use a mix of energy sources, before progressively electrifying. To capture this transition, we use a weighted average. This is done to reflect consumer responses to the PPL, which are better captured in a bottom-up modelling exercise.

Initially we base our compensation estimate on the ‘mixed-energy’ cost estimate from our COPS model, before progressively placing greater weight on our ‘electrified households’ price estimate. By 2050, the compensation estimate is based entirely on the ‘electrified household’ cost estimate.

With $'PPL'_y$ used to describe the weight placed on the ‘electrified households’ price:

$$Compensation_y = (1 - PPL_y) \times 'Mixed - energy\ household'_y + PPL_y \times 'Electrified\ household'_y$$

For example, in 2030, the total Household Energy Compensation payment can be calculated as:

$$'PPL'_{2030} = 0.23$$

$$Compensation_{2030} = 0.77 \times \$4.17\ billion + 0.23 \times \$2.2\ billion = \$3.7\ billion$$

A.5 Defining and estimating transitional payments under the Fair Share Levy

To estimate the value of undepreciated capital and unutilised carry-forward losses remaining in the oil and gas sector, we begin with ABS data on gross fixed capital formation (GFCF) between 2011–12 and 2023–24. Total investment over this period amounts to $391 billion, of which around $28.5 billion reflects exploration expenditure. Although most exploration is immediately expensed for tax purposes and therefore would not normally remain in the asset pool, we conservatively allow the full value of exploration to remain in the base that attracts transitional compensation. Over time, this accumulated capital stock is either claimed as tax depreciation or converted into carry-forward losses of equivalent value. The key task is to estimate how much of these deductions have been utilised by 2023–24. We infer this by calculating "implied depreciation": that is, all non-interest deductions required to reconcile EBITDA with the taxable base implied by corporate tax actually paid. Formally, implied depreciation in any given year is calculated as

EBITDA – net interest – (corporate tax paid ÷ 0.30).

This captures the value of deductions overwhelmingly attributable to depreciation or past-year losses stemming from depreciation.

Corporate tax payments by the oil and gas industry are available for the years 2019-20 to 2023-24. Values before 2019–20 are imputed using 2019–20 receipts, when corporate tax from the LNG sector was $1.3 billion and dominated by mature pre-existing projects. To remain conservative, this figure is uplifted by 50 per cent to $1.95 billion and carried backwards to earlier years. Aggregating across the period yields an implied total of $277.9 billion in depreciation deductions. Subtracting this from the accumulated asset pool of $391.3 billion leaves $113.5 billion in undepreciated capital or unutilised carry-forward losses in 2023–24. Assuming that deductions continue to be used at the 2023–24 rate of $15.4 billion per year, a further two years of utilisation reduces the balance to $82.8 billion by 2025-2026. To account for the time value of money, this is uplifted by 33 per cent, giving a transitional asset value of $110.1 billion in July 2026.

Under a 40 per cent cash-flow tax, the government's share of this remaining capital is therefore $44 billion. We assume a five-year transition period, over which this amount is delivered as an annual transitional deduction of $8.8 billion before indexation. These transitional deductions are then indexed at the Treasury bond rate of 4 per cent, rising from $8.8 billion in 2026–27 to $10.3 billion in 2030–31. This method provides an indicative estimate; in practice, tax authorities would be able to make use of more detailed and project-specific information to calibrate transitional entitlements more precisely.

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