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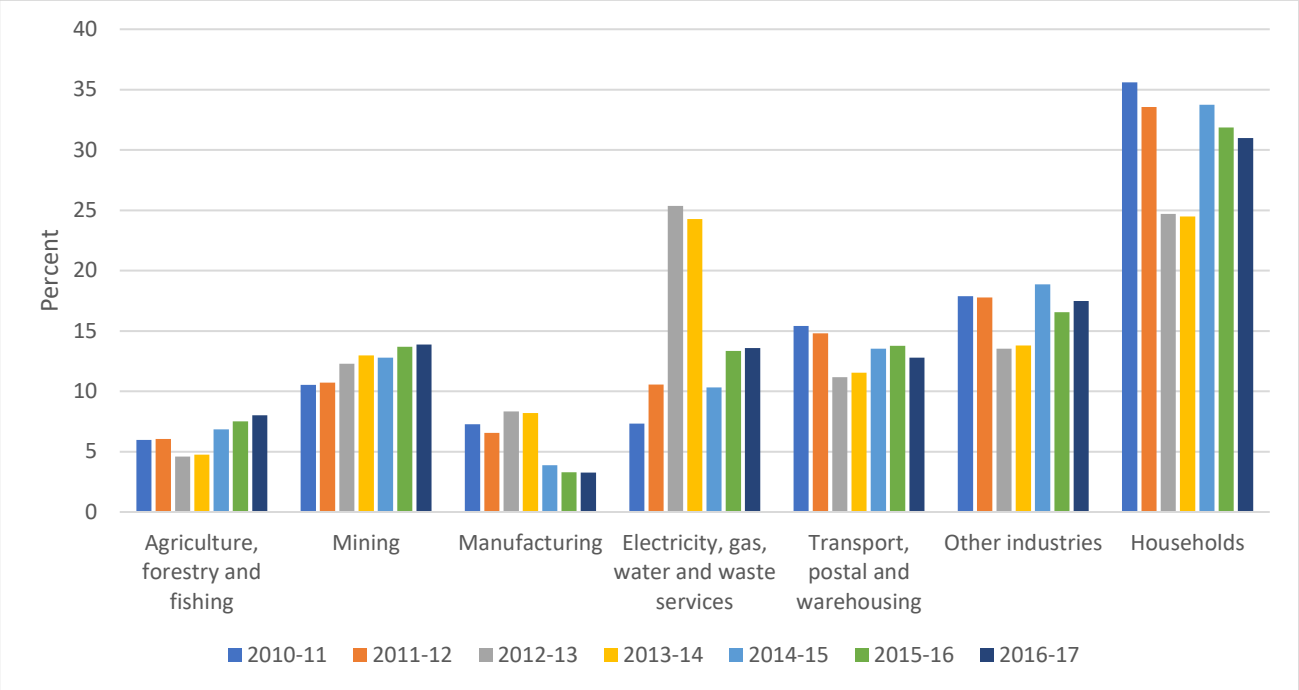
** This Policy Brief is based on work commissioned by the Australian Conservation Foundation (ACF). The work is independent research and the options and recommendations do not necessarily reflect the views of the ACF.*

This policy brief discusses tax and the production and consumption of energy. The brief outlines elements in the Australian tax system that may affect incentives for production of polluting or non-renewable energy sources (such as coal, oil and gas), rather than clean, or renewable, energy sources. The brief then discusses the elements of the tax system that may affect the consumption of energy, especially the incentives or disincentives for households and businesses for excessive energy consumption and that may discourage transition to the consumption of renewable energy.

The tax system is a powerful driver of Australia's economy. Taxation can change the price of a good or service making it more or less financially attractive to consumers and investors. It can shift a market to prefer one technology or another especially if they are directly substitutable. It can encourage or discourage wasteful or sustainable behaviour. Tax rules may distort price signals and contribute to the externalisation of costs, which are ultimately borne by the environment and society.

Under current policy settings, environmental taxes in Australia are borne largely by households. Environmental taxes include, most importantly, fuel excise on crude oil and liquefied petroleum gas (LPG), which raised $18.4 billion in 2016-17; stamp duty on vehicle registration and other motor vehicle taxes raising $10.3 billion in 2016-17; renewable energy certificates and the luxury car tax. Figure 1 shows that in all years, from 2010-11, households bore between 24% to 35% of these taxes, while agriculture, mining, manufacturing and the electricity sectors bore lower proportions.

Figure 1. Environmentally-related taxes paid by industry and households, energy taxes, share of total, 2010-11 to 2016-17 (a)



Own construction. Source: Australian Bureau of Statistics, Australian Environmental-Economic Accounts 2019. (a) Includes Excise on Crude oil and LPG, Carbon pricing mechanism, Renewable energy certificates, Energy Savings Scheme, Greenhouse Gas Reduction Scheme, The Queensland Gas Scheme, The Retailer Energy Efficiency Scheme and Victorian Energy Efficiency Target scheme.

Figure 1 also shows the effect of the Carbon Pricing Scheme during 2012-13 and 2013-14 in helping to shift some of the tax burden from households towards industry, particularly electricity, manufacturing and mining.

Resistance to energy transition out of coal, mining and gas into renewable sources is often based on arguments in support of sectoral employment. Government expenditure could be redirected away from tax subsidies for fossil fuels, such as accelerated depreciation for polluting heavy vehicles or equipment, or fuel subsidies, towards transitional job support, retraining schemes and strengthened regional industries in renewables. This can be a successful, people-focused mechanism in Australia's transition towards greener energy production, with the International Renewable Energy Agency (2020) identifying the potential for 220,000 new jobs to be created in Oceania in the next three decades. This transition will also help economic resilience. Due to COVID-19, the International Energy Agency (2020) finds that energy demand has contracted by 6%, the largest reduction in 70 years in percentage and the largest ever in absolute terms, especially affecting oil, coal, gas and nuclear energy; only renewables posted growth in demand and this is expected to increase further. The Australian Energy Market Operator (2020) estimates that the National Energy Market could be operated securely with 75% of energy originating from wind and solar by 2025.

Policy options addressing tax and energy should be addressed to both production and consumption. This brief presents some policy options as a dual strategy, seeking to change pricing and incentives towards more neutral or more environmentally aware tax goals for both producers and consumers. A key issue is whether tax reform might bring down the cost of production and consumption of renewable energy sources for households and businesses, in a way that is efficient, equitable and sustainable.

SUMMARY OF POLICY OPTIONS

Policy option 1. Introduce accelerated depreciation or investment allowance to support upgrade of plant and equipment to assets that meet specified energy efficiency goals.

Policy option 2. Wind back accelerated depreciation for fuel-consuming and producing heavy equipment, and reduce immediate capital deductions for mining and use of fossil fuels.

Policy option 3. Strengthen concessional finance for clean technologies.

Policy option 4. Explore an income tax deduction or offset to incentivise home owners or businesses to invest in equipment that utilises renewable energy or is more energy efficient.

Policy option 5. Explore an income tax deduction or offset to incentivise landlords to upgrade to renewable-energy based or energy efficient equipment.

Policy option 6. Explore a stamp duty concession for homes with higher energy efficiency (star ratings).

Policy option 7. Explore federal or State tax concession for equipment used to charge electric vehicles.

Policy option 8. Explore federal or State tax concession for use of public transport and remove income tax and Fringe Benefits Tax concessions for cars.

Policy option 9. Increase GST on non-essential personal air travel and international air and sea freight emissions and waste.

TAX AND ENERGY PRODUCTION

More than 75% of electricity generation in Australia is produced from coal and gas. Electricity production from renewable sources in Australia lags significantly behind other countries. Although estimates vary, just between 19% (in 2018, Australian Government) to 24% (in 2019, Clean Energy Council) of the country's electricity supply comes from renewable energy sources including wind, solar and hydropower. In contrast, renewable sources account for close to 40% of electricity production in Germany and New Zealand and 99% in Norway. This is partly a result of Australia's geography and economy but is also a consequence of disincentives in economy policy settings, including the tax system.

Energy production: Tax depreciation and expense deductions

Australia's income tax law is neutral as between polluting or renewable energy production. The income tax law provides general rules for deductions for business expenses under Section 8-1 and Section 40-730 of the Income Tax Assessment Act 1997 (ITAA 1997). The income tax law contains a uniform capital allowance system which applies general depreciation (deductions) for the cost assets and other capital expenditure incurred by businesses or income-producing activity (such as rental real estate). There are no specific income tax rules for energy production in Australia, whether from fossil fuels or renewable sources.

The capital cost of plant and equipment used in a business or other income-producing activity is depreciable over the effective life of the asset (Division 40 of ITAA97). The depreciation rate does not draw distinctions based on pollution prevention, environmental or clean technology features of capital plant and equipment. Taxpayers may follow the Commissioner's schedule of depreciation rates or may choose to depreciate an asset by estimating its effective life as used in that business. These income tax rules apply to energy producers, as for other businesses.

Small businesses are eligible for an 'instant asset write-off' which is an immediate deduction for plant and equipment. This is a generous concession which is not targeted based on energy-reduction or pollution prevention goals. It is utilised by many businesses to purchase vehicles (four out of five examples on the ATO website refer to purchase of a motor vehicle). These vehicles are mostly fossil-fuel based.

During the Federal election campaign the Australian Labor Party (ALP) proposed to expand accelerated depreciation of plant, equipment and intangibles in its 'Australian Investment Guarantee', and to extend eligibility to businesses of any size. This permitted a deduction for 20% of the capital cost of new assets exceeding a cost of $20,000, in the first year of operation. There is no targeting towards energy-reduction or pollution prevention assets. Again, this would likely be used by many businesses for purchase of vehicles powered by fossil fuels. The estimated fiscal cost of this measure is about $1.8 billion each year.

There are no special deductions for capital expenditure on structural improvements or alterations to a building to use less energy or to reduce pollution; general rules for building depreciation may apply (Division 43 of ITAA97). There are also no special tax rules to support business investment in plant and equipment or other inputs for electricity production from renewable energy sources. Similarly, the cost of investment in 'clean' technology used in a business or income-producing activity, such

as equipment that will use less energy, or produce less pollution, is depreciable under the general rules and attracts no additional tax concession or subsidy relative to more polluting or wasteful equipment.

Accelerated depreciation for some polluting plant and equipment

On the other hand, some plant and equipment used in resource-intensive or polluting industries is eligible for a 'capped' effective life which provides accelerated depreciation for that plant and equipment. No environmental criteria apply to this tax concession, for example limiting it to more energy efficient equipment; the concession also subsidises the use of these fuel-consuming assets in the fossil fuel sector, relative to the renewable energy sector.

Assets eligible for the 'capped' effective life are set out in Table 1. For example, the capped effective life for an aeroplane is set by legislation at between 8 to 10 years, even though the Commissioner of Taxation estimates that an aeroplane may be expected to be in use for 20 years or more. Table 2 shows that certain assets are eligible for accelerated life only where they are used in the oil and gas industry or in agriculture.

Table 1. Assets which have a capped effective life regardless of the industry usage

Item	Asset	Effective life (years)
1	Aeroplane used predominantly for agricultural spraying or agricultural dusting	8
2	Aeroplane to which Item 1 does not apply	10
3	Helicopter used predominantly for mustering, agricultural spraying or agricultural dusting	8
4	Helicopter to which Item 3 does not apply	10
5	Bus with a gross vehicle mass of more than 3.5 tonnes	7.5
6	Light commercial vehicle with a carrying capacity of one tonne or greater and a gross vehicle mass of 3.5 tonnes or less (including utilities, vans, and light trucks)	7.5
7	Minibuses with a gross vehicle mass of 3.5 tonnes or less and seats for 9 or more passengers	7.5
8	Trailers with a gross vehicle mass greater than 4.5 tonnes	10
9	Truck with a gross vehicle mass greater than 3.5 tonnes (other than a truck that is used in mining operations and that is not of a kind that can be registered to be driven on a public road in the place in which the truck is operated)	7.5
10	Vessel for which you have a certificate under Part 2 of the Shipping Reform (Tax Incentives) Act 2012	10

Source: Section 40-102 of ITAA97.

Table 2. Assets which have a capped effective life where used in the specified industry

Item	Asset	Industry	Effective life (years)
1	Gas transmission asset	Gas supply	20
2	Gas distribution asset	Gas supply	20
3	Oil production asset (other than an electricity generation asset or an offshore platform)	Oil and gas extraction	15
4	Gas production asset (other than an electricity generation asset or an offshore platform)	Oil and gas extraction	15
5	Offshore platform	Oil and gas extraction	20
6	Asset (other than an electricity generation asset) used to manufacture condensate, crude oil, domestic gas, liquid natural gas or liquid petroleum gas but not if manufacture occurs in oil refinery	Petroleum refining	15
7	Harvester	Primary production	6 2/3
8	Tractor	Primary production	6 2/3

Source: Section 40-102 of ITAA97.

Fossil fuels: coal, oil and gas extraction

The income tax law provides special rules for mining and resource extraction businesses in Australia. These include an immediate deduction for minerals exploration expenditure and capital allowances for the cost of the production and transport of coal, oil and gas. Plant and equipment for resource extraction businesses is treated the same as for other businesses. Capital cost of coal mining and transport is deductible in a project pool over the life of the project.

Deductions for the decline in value of depreciating assets are worked out through the general rules, except when it concerns depreciating assets or capital expenditure deductions under the following concepts:

- immediate deduction for depreciating assets used in exploration or prospecting,
- immediate deduction for expenditure which does not form part of the cost of a depreciating asset,
- immediate deduction for payments of petroleum resource rent tax and for expenditure that does not form part of the cost of a depreciating asset (see Taxation Ruling TR 2017/1),
- farm-in farm-out arrangements (outlined in Miscellaneous Tax Rulings MT 2012/1 and MT 2012/2),
- deduction over time for capital expenditure associated with projects carried on (project pools).

As shown in Table 2, certain assets used in the oil and gas sector benefit from accelerated depreciation which is a tax subsidy for the sector.

Low or nil taxation on fuel inputs

As reported in an OECD country note on energy taxation in Australia (OECD 2019), fuels used for energy transformation,

including production of liquefied petroleum gas (LPG) or natural gas, and coal and coke consumption are not subject to fuel taxation (see further Policy Brief 1).

Fossil fuels used to generate electricity benefit from a full rebate of excise. This means that only some oil products used in the residential sector are taxed. Coal, which accounts for most use and carbon emissions from energy use in this sector, is not subject to a fuel excise. Electricity output is also untaxed. Fuel taxes are fully refunded for industrial and commercial users, including agriculture and fishing.

Policy options

Policy option 1. Introduce accelerated depreciation or investment allowance to support upgrade of plant and equipment to assets that meet specified energy efficiency goals

Accelerated depreciation or expensing deductions could be provided for expenditure on energy efficient assets by income-producing businesses. For instance, even if economically an asset that is energy efficient or relies on renewable energy has a useful life of 20 years, an accelerated schedule which permitted depreciation over a shorter time frame would allow for greater tax deduction in early years, incentivising this capital expenditure.

Policy option 2. Wind back accelerated depreciation for fuel-consuming and producing heavy equipment, and reduce immediate capital deductions for mining and use of fossil fuels

Current capped effective life assets, the depreciation concessions for small business and proposals such as the 2019 Australian Investment Guarantee (ALP) could be reviewed and may be focused on energy efficient outcomes, or renewable energy targets. This measure goes hand in hand with policy option 1, since an incremental approach may be more feasible for initiating change. Additionally, these policy options need to work as a dual strategy because removing tax deductions –or increasing taxes– in the production of energy from traditional sources without providing a (renewable) substitute will likely lead to higher prices being transferred onto consumers, instead of effectively changing production patterns.

Renewable Energy Target: Large scale production

Australia's Renewable Energy Target (RET) scheme is not a tax measure, but a regulatory regime which operates through Clean Energy Regulator-issued certificates, which provide a financial incentive through a price mechanism.

The Large-scale Renewable Energy Target (LRET) aims to create a financial incentive for the establishment or expansion of renewable energy power stations, such as wind and solar farms or hydro-electric power stations. It does this by legislating demand for Large-scale Generation Certificates (LGCs). One LGC can be created for each megawatt-hour of eligible renewable electricity produced by an accredited renewable power station. LGCs can be sold to entities (mainly electricity retailers) who surrender them annually to the Clean Energy Regulator to demonstrate their compliance with the RET scheme's annual targets. The revenue earned by the power station for the sale of LGCs is additional to that received for the sale of the electricity generated.

A 100% exemption from RET liability is applied to electricity used in carrying out eligible emissions-intensive trade-exposed (EITE) activities. Companies that conduct an eligible EITE activity may be issued with

an exemption certificate by the Clean Energy Regulator.

Policy options

Policy option 3. Strengthen concessional finance for clean technologies

Given Australia's reliance on traditional sources of energy, new options implemented by oil-dependent emerging economies, such as concessional finance for clean technologies, could be increasingly helpful to shift market inertia. A 2019 report, 'Clean technology fund and concessional finance: Lessons learned and strategies moving forward' pinpoints how concessional finance can make wind, solar, and batteries cost-competitive at a faster pace, accelerating the shift from fossil-fuelled power. In Australia, this falls within the scope of the Clean Energy Finance Corporation (CEFC) and the Australian Renewable Energy Agency (ARENA), driving investment towards key alternative technologies.

Renewable Energy Target: Small scale production and related consumption

Importantly, a significant part of renewable energy production comes from small systems owned by Australian families and businesses. The Department of Industry, Science, Energy and Resources notes that, as at 31 March 2020 there were more than 3.6 million small-scale renewable installations in Australia, including more than 2.37 million rooftop solar power systems, more than 1.23 million solar and heat pump water heaters, 424 wind systems and 18 hydro systems. As such, addressing home-based solar and small-scale renewables from both a production and consumption perspective is a key part in the strategy towards increased use of renewables.

The Small Scale Renewable Energy Scheme (SRES) creates a financial incentive for households, small businesses and community groups to install eligible small-scale renewable energy systems. It does this by legislating demand for Small-scale Technology Certificates (STCs). STCs are created for these systems at the time of installation, according to the amount of electricity they are expected to produce or displace in the future. For example, the SRES allows eligible solar photovoltaic (PV) systems to create, at the time of installation, STCs equivalent to the expected system output between the time of installation and the end of the RET scheme in 2030.

Small scale renewable systems which may be eligible for certificates include:

- solar photovoltaic panels,
- wind turbines,
- hydro systems,
- solar water heaters, and
- air source heat pumps.

RET-liable entities with an obligation under the LRET also have a legal requirement under the SRES to buy STCs and surrender them to the Clean Energy Regulator on a quarterly basis. While it is possible for owners of renewable energy systems to create and sell the STCs themselves, in practice, installers of these systems usually offer a discount on the price of an installation, or a cash payment, in return for the right to create the STCs.

Solar feed-in tariffs

Solar feed-in tariffs for household-produced solar energy fed into the national electricity grid previously operated as a subsidy in a number of States and Territories. That is, the feed-in tariffs for excess solar energy

produced were greater than the prices received by large-scale generation. These feed-in tariffs have now been substantially reduced.

For example, in the ACT, the Feed-in Tariff scheme (a 20-year scheme from date of connection) stopped intakes in July 2011 (ending on 2036); currently, a non-government buyback scheme is available from supplier ActewAGL. Small-scale systems in the ACT at the time of introduction of the program were eligible to apply for a rate of 50.05c/kWh –almost 12 times the annual volume weighted average spot prices in the same year. In Victoria, a premium feed-in tariff closed in 2011 (ending in 2024) and customers on the current scheme receive either a single-rate minimum feed-in tariff of 12 cents per kilowatt hour (c/kWh) or a time-varying feed-in tariff. A 12 cent feed-in tariff, for instance, is consistent with Victoria's annual volume weighted average spot prices received by a large-scale electricity generator in 2018-19.

Schemes of this kind operate as cross-subsidies, where the electricity retailer is effectively required to purchase small-scale electricity above the wholesale price. These subsidies are not government expenditure, but rather operate as a regulatory redistributional mechanism. The cost is passed onto other customers; this may include lower-income households or renters who cannot benefit from such schemes because they cannot afford the capital costs of installing solar. It is important to note, however, that 'green scheme' costs are the smallest component of an average residential customer bill across the National Electricity Market, at 6% –and lower than the retail margin, which is estimated at 8% (excludes GST; ACCC 2018, p. 5).

The 2015 review of the ACT's rooftop solar scheme found that the scheme fulfilled its objectives and contributed to a significant increase in the uptake of rooftop solar in the ACT, but the subsidised tariffs were regressive between households. CSIRO's statistical analysis of aggregate South-East Queensland and Australia wide energy data (2017) revealed that higher energy users tended to be those in the higher income brackets, those owning their own property and those in large separate houses.

The design and implementation of future household renewable energy schemes through positive incentives or subsidies requires an assessment of the price and income elasticity of Australian energy users – that is, whether changes in price lead to different quantities being supplied or demanded, and if changes in income alter the consumption behaviour of households. A review of electricity use and income by the California Public Utilities Commission, for instance, found different elasticity results internationally and across regions within the United States. A distributional analysis would also be needed, relative to other options to support renewable energy production and consumption, or compensation payments would be required for low-income households who cannot benefit from the feed-in tariff.

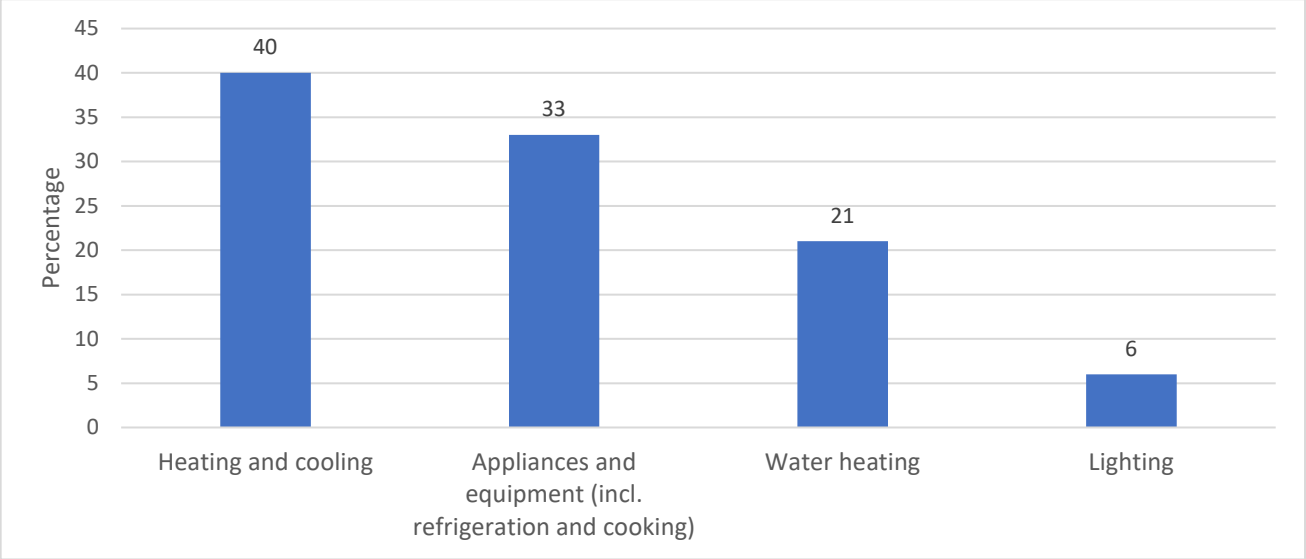
In March 2019, the Treasurer announced a one-off energy payment of $75 for singles and $125 for eligible couples receiving government payments, exempt from income tax and paid automatically before the end of the financial year. However, this type of incentive does not address the underlying issue of high energy prices, nor does it prompt behavioural change from households or consumers, so it is not an effective, long-term strategy.

A recent option to create sustainable energy networks is development of community solar microgrids, which allow communities to generate, store, and transact energy locally for household, business and electric-vehicle use, leading to more efficient, resilient and sustainable electricity production. An Australian example is the Microgrid Demonstration Initiative in Victoria. Measures of this type could improve energy security and resilience in regional Australia. The Government in Budget 2019-20 introduced a new budget allocation for supporting reliable energy infrastructure. This includes $50.4 million to support feasibility studies into the development of microgrids in regional and remote communities. Establishment and evaluation of pilot projects would be a valuable input to policy decision-making based on these feasibility studies.

TAX AND ENERGY CONSUMPTION

Most electricity consumption in Australia is still reliant on fossil fuels. Most households in Australia used mains electricity as a source of energy (ABS 2014). One half of households (50%) used mains gas, one in five households used solar energy (20%), one in five households used LPG/bottled gas (20%), and 14% of households used another source of energy.

Figure 2. Energy use of Australian households



Own construction. Source: Australian Government, Your Home: Australia's guide to environmentally sustainable homes.

As Figure 2 shows, in the average Australian home, energy is used for three main functions: heating and cooling (40% of household energy use), appliances (33%), and hot water service (21%). Appliances account for almost half of the greenhouse gas emissions in an average Australian home and the largest single source of emissions are hot water systems (22% of a household's emissions). In particular, electric water heaters contribute to these high emissions.

Australia does not have special tax rules to address incentives for reducing energy consumption or for adoption of energy-efficient plant, equipment and transport, for businesses or households. Private consumers are not entitled to deductions or tax subsidies on capital costs (buildings, plant or equipment) used for their own consumption or enjoyment, such as in their own home.

This is a timely opportunity to evaluate the uptake of renewables: due to increasing electricity prices, renewables become comparatively more economic than in previous years. Additionally, use of gas systems relative to electricity (the two main options used by Australian homes) does not necessarily lead to greener outcomes: although gas can be used as an alternative to electricity for household use, it cannot be offset by solar (electricity use can be substituted by solar, but gas heating, for instance, cannot).

Energy efficiency for households

Currently, Australian federal and State governments do not give tax incentives for households or businesses to purchase and use equipment that draws on renewable energy sources, or is energy-efficient (although, presumably the households or businesses that use energy-efficient equipment do use less energy and hence benefit from lower costs).

For homeowners or renters, upgrading of an appliance, such as heating or hot water systems, to a renewable or energy-efficient source is not tax deductible. For example, there is no tax incentive to support households whether owner-occupied, tenants or landlords, seeking to upgrade hot water systems from gas to electric powered by or offset by solar.

For landlords, under the current tax system, the capital cost of installing systems such as heating, hot water and solar panels can be depreciated over time (ATO Rental Property Guide for 2019). The cost of these depreciating assets is eligible to be deducted over the estimated effective life of the asset. According to the Commissioner's estimates, solar hot water systems are depreciable at a slower rate (over 15 years) than gas or electric hot water systems (over 12 years). Solar-powered generating system assets are depreciable over a period of 20 years. The cost of water pumps is depreciable over 20 years and water tanks are capital improvements depreciable over 40 years. The cost of upgrades for solar photovoltaic panels and efficient heating and cooling for rental properties would be a capital improvement to the property and may be depreciable over the plant's effective life, or only over the life of the building (40 years). The installation of second-hand equipment is not depreciable.

In contrast, the cost of repairs to old, inefficient or non-renewable systems may be immediately deductible as a rental property expense. This means that landlords have an incentive to repair old, inefficient systems rather than to upgrade to renewable-based or more energy efficient ones.

State-based regulatory schemes require electricity retailers to deliver increased energy efficiency for customers, partly to achieve this goal. Retailers subsidise the capital cost of conversion or upgrade to energy efficient products for households, then recover this cost through charging higher electricity prices (the Government generally does not give tax incentives for owner-occupiers, rather, this is pursued through State-based obligation schemes by providers). For example:

- The Victorian Energy Upgrades Program provides rebates on energy saving products and upgrades, for households and businesses who work with accredited suppliers, including for lighting, heating, solar energy and other equipment.

- In the Australian Capital Territory, ACT Smart provides rebates and subsidies for households for air conditioning, battery storage, solar installation, hot water heat pumps, replacement of old appliances, fridge buybacks, utilities support, and an Energy Efficiency Improvement Scheme, as well as rebates for businesses.
- New South Wales has established energy savings scheme certificates in its Energy Savings Scheme, providing financial incentives for households and businesses to install energy efficient equipment and appliances.
- Last year, Queensland provided a battery storage registration incentive, and is currently running a trial for landlords and tenants to install solar photovoltaic (PV) systems.

A full list of State and Territory rebates and programs is available here for households and including and diverse programs for business energy efficiency (every State and Territory); feed-in tariff schemes; and household incentives for energy-efficient systems and appliances.

Policy options

Policy option 4. Explore an income tax deduction or offset to incentivise home owners or businesses to invest in equipment that utilises renewable energy or is more energy efficient

One policy option is to provide a tax incentive to use renewables such as solar energy, or to adopt energy-efficient equipment in Australian households. A tax concession for the cost of such an investment could be designed as an income tax deduction or offset for households or businesses in the income tax. The GST applies at a standard 10% rate to the purchase by consumers of household appliances and systems. A reduced rate of Goods and Services Tax (GST) could be applied for energy efficient purposes or for solar or other renewable energy sources.

Alternatively, a tax could be levied on plant or equipment for businesses or households that does not use a renewable energy source or is less energy efficient. For example, a higher GST rate could be applied to less efficient appliances.

It would be important for policy makers to carry out appropriate cost-benefit analysis and policy design for any such targeted income tax concession for households, which may have wider efficiency and redistributional effects or add complexity to the tax system. Experience with the solar feed-in tariff demonstrates that there are pros and cons of this kind of subsidy, with potential efficiency and equity consequences. There are also disadvantages in moving towards multiple rates or additional concessions in the GST. Administration and compliance costs may be substantial and there may be unintended consequences. Subsidies may be better delivered as direct grants or price regulation than in the tax system.

Policy option 5. Explore an income tax deduction or offset to incentivise landlords to upgrade to renewable-energy based or energy efficient equipment

A more targeted policy option focused on the household sector is to provide a tax incentive to landlords deriving rental income, to upgrade energy efficiency or invest in renewable energy-based equipment in rental investment properties. Australian owner-occupied households

have relatively high take up of solar energy and hot water supplies, but rental properties are lagging behind.

The proportion of people living in private rental housing rose from 23% to 28% between 2001 and 2016 (according to the HILDA survey). Rental housing will become more important over time. Research by the Australian Housing and Urban Research Institute (AHURI) has found that private rental housing is the second largest tenure after owner occupation, and Parliamentary research finds that the proportion of households living in owner-occupied dwellings has declined.

An example of a proposal to create a rental property energy efficiency tax offset was introduced in Treasury Laws Amendment (Improving the Energy Efficiency of Rental Properties) Bill 2018. The Bill sought to amend the ITAA97 to introduce a new energy efficiency tax offset for landlords. Landlords would be eligible to claim the tax offset of up to $2,000 per year during a three-year trial period, for energy efficiency upgrades to certain rental properties leased at $300 per week or less.

The Bill aimed to reduce the so-called 'split incentive' between landlords and renters, where tenants do not have the resources or ability to invest in energy efficiency improvements, while landlords –who do not directly experience the benefits of improved energy performance– have little incentive to invest in these improvements for their tenants (it would not apply to owner-occupiers because it is not an investment expense). The Senate Committee report (2019) on the Bill ultimately recommended against the reform but noted various arguments for and against the proposal. Evidence was provided to the Committee that the majority of rental properties have zero or low energy efficiency and much rental housing stock is of poor quality.

Policy option 6. Explore a stamp duty concession for homes with higher energy efficiency (star ratings)

Stamp duty is a State tax payable by the purchaser when purchasing real estate. Australian studies have found that properties that achieve a 7-star energy efficiency rating can sell for up to 9.4% more than an equivalent 3-star home. Where stamp duty increases with the value of the property, this may represent a tax disincentive for more energy efficient homes.

A specific State tax measure to support energy efficiency or renewable energy use could be implemented such as a discount or offset for stamp duty on purchase. Concessions could also be considered in local government or council rates, or for land tax purposes, for residential or commercial property that meets a suitable energy efficient standard.

As for other tax concessions, introduction of any additional concession should be evaluated fully with reference to efficiency and equity effects. More generally, the structure of State taxes on land and housing should be reformed as a matter of tax and housing policy (see Policy Brief 3). The proposal of a concessional for stamp duty is independent of considerations of the desirability or efficiency of residential stamp duty relative to alternative policies such as land tax.

Transportation

It was noted in Policy Brief 1 that the market share of electric vehicles in Australia is small, with 0.2% of purchases in 2017. Of these, businesses bought 63%, private buyers purchased 34% and the government bought the remaining 3%. Australia has no special income tax rules to support take-up of electric or energy efficient vehicles, bicycles or other forms of energy efficient transportation, and to create disincentives for "gas guzzlers", apart from the fuel taxes described above. In general, the GST applies at a flat rate of 10% (1/11 price-inclusive rate) to all vehicle purchases.

Policy options

Policy option 7. Explore federal or State tax concession for equipment used to charge electric vehicles

An income tax deduction, tax offset or accelerated depreciation could be provided for the cost of equipment purchased by a household and used to charge an electric vehicle, such as solar panels, battery storage or charging equipment. A depreciation or expense deduction would already be available for a landlord to invest in such equipment.

Policy Brief 1 identified several policy options to support adoption of electric vehicles, including modifying the luxury car tax to provide a greater incentive for electric vehicles (Policy options 9 and 10). It is important to consider the revenue and equity implications of these measures – since those on higher incomes are most likely to be able to afford electric vehicles– and the choice of energy sources. There remains a compelling argument for improving incentives for the use of cleaner energy sources in general, in Australia.

Policy option 8. Explore federal or State tax concession for use of public transport and remove income tax and Fringe Benefits Tax concessions for cars

Commuting between home and work is considered private travel, and these expenses are not eligible for an income tax deduction. An alternative to incentivise a shift towards more sustainable transportation could be a tax deduction or credit for the use of public transportation. Employers could be provided with an exemption from Fringe Benefits Tax for public transport subsidies and in addition, Fringe Benefits Tax concessions for the provision and use of cars and car parking should be wound back (see Policy Brief 1).

Such an approach is adopted in some countries. Canada, for instance, had a public transit tax credit until June 2017. It was a 15% non-refundable tax credit available to an individual in respect of the cost of eligible transit passes, with the option to include transit passes from the individual's spouse or common-law partner or children under 19 at the end of the taxation year. In the Netherlands, the use of public transport can be a deductible item in social security contributions (public transport commuting allowance; fixed annual amount for commuting by public transport relating to earning employment income).

A similar scheme has been proposed in Australia by national organisation, Bicycle Network. It has suggested paying Australians $5 every time they ride a bike to work, to incentivise people to lower their

use of cars, reducing the demand for fossil fuels and congestion in urban areas.

Air travel and freight in a post-COVID world

As noted in Policy Brief 1, tax policy may be used to increase the price of consuming goods and services for carbon producing sectors, through levying a tax (or increasing the tax) on consumption. In Australia, taxes on consumption are low relative to other OECD countries.

Although the effects of COVID-19 on the travel industry are yet to be determined, the devastating 2019-2020 bushfires evidenced the possible future impacts of climate change in Australia. In the wake of the pandemic, the United Nations has exhorted governments to 'build back better' systems that take into account the wellbeing of the population and the environment. The policy options in these briefers aim to be useful pointers in this endeavour. They also coincide with the strategies outlined by the International Monetary Fund towards sustainable, resilient economic recovery post COVID-19: governments should mandate climate commitments when providing financial support to industry, promote green finance, and put the right price on carbon.

Policy options

Policy option 9. Increase GST on non-essential personal air travel and international air and sea freight emissions and waste

In the future, environmental taxes or levies on air travel (such as Sweden's Airline Passenger Tax), cruise tourism and air and sea freight may be suitable measures to curb the related energy and fuel use and individual greenhouse emissions, as well as those originated by business (for instance, business air travel not otherwise necessary, such as short meetings that could be done electronically).

The OECD and the International Transport Forum (2015) found that international trade-related freight transport accounts for around 30% of all transport-related CO_2 emissions from fuel combustion, and for more than 7% of global emissions.

As an alternative, the measure could also take the form of emissions offsets for air or cruise travel, since consumers have shown a more positive response towards offsets than taxes.

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