

Some Energy Efficiency Measures to Help Cushion Australians Against Likely Future Energy Price Rises

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Introduction

Energy prices are likely to go up in the near to medium future. (1) Rising oil prices due to increasing world demand combined with increasing costs of oil extraction from diminishing fields. (2) Rising fuel and electricity prices due to the introduction of greenhouse gas emission permit cap-and-trade schemes, with a yearly diminishing supply of emission permits auctioned against increasing demand due to rapid industrialisation in developing countries such as China and India.

Australia needs more investment in energy conserving infrastructure so that households and businesses are not caught by rising energy prices over the next ten or twenty years. Australians should have the capacity to conserve energy by modifying their consumption of energy services, without facing barriers in the form of inconvenience, loss of safety, and the need for costly investments with uncertain returns.

Energy Performance Standards for Buildings

Australia needs energy performance standards for residential and commercial buildings, because: (1) We do not have accurate signals about the future price of energy with which to make meaningful investments in energy conserving private infrastructure now. (2) Developers and builders are too eager to solve the building heating and cooling task with energy guzzling heaters and air-conditioners rather than cost effective, passive heating and cooling technology such as good insulation, thermal sinks, ventilation, ceiling fans, draft sealing, double-glazing, and shading from eaves, verandas, and nearby vegetation. (3) Retrofitting energy conserving features into existing buildings is often much more expensive than incorporating them during initial construction. (4) Tenants may not be able to secure energy savings from infrastructure investments they make in rented premises.

While the method of evaluating possible building designs may not be entirely accurate, with some designs that meet the standards not giving the energy savings predicted, and some good energy conserving designs not given sufficient credit, this is no reason to delay the introduction of energy standards. Given the likelihood of significant energy price increases in the near and medium future, and the slow turnover of building stock, we need to ensure that most, if not all, new buildings take advantage of the many predictably cost-effective energy conserving solutions that are available. There are a wide variety of building designs and features that do offer short pay-back periods even on current (low) energy prices.

Institutional Investment

Investing in energy efficient features in ones own buildings (whether owned or rented) may be limited, or offer poor financial returns, at least until energy prices go up. This can be alleviated if there are institutional arrangements for private money to search out for the best returns in energy efficiency. Thus a householder may make a better financial return by (co-)investing in the solar hot water infrastructure of a large factory rather than in their own house. The financial returns from this may offer a much faster payback period than a small solar hot water heater on their own roof. If institutional investors were better able, or better motivated, to hunt out energy conserving investments with good returns, it would help householders with limited means invest what they could to hedge against rising energy costs.

Passenger Transport

Australian cities and regions require good alternatives to car use that enable people to leave their car at home for many journeys, or not even own a car.

Excessive reliance on private cars to solve the urban passenger transport task results in loss of urban amenity due to noise and air pollution, loss of land to road and parking space, and risk to pedestrians and cyclists, eg children.

Car Use Fees

The presence of fixed prices for the privilege of taking a car onto the road regardless of kilometres travelled penalises car owners who wish to minimise their car use, and forces moderate users to cross subsidise profligate users. Fees for motor registration, insurance (eg third party person and property), and emergency roadside maintenance, should be proportional to kilometres travelled and/or fuel consumed, and hence proportional to risk of injury or damage incurred, need for emergency maintenance, and road wear. In this way, marginal prices would more accurately reflect marginal costs.

Public Transport

Large sections of Australian cities are without adequate provision of public transport. Services are often infrequent, poorly linked, unnecessarily slow, and difficult to understand. Bus/train/tram stops are often unpleasant places to wait at or disembark at. Public transport should, where feasible, offer a "go anywhere, go anytime" service, comparable in ease of use to car travel, even if slower. For example, without the need to carry a briefcase full of bus/train/tram schedules.

However it will require significant (further) investment by governments to provide frequent services (with intervals of ten minutes or less in most urban areas for at least 12 hours a day, 365 days a year), and good public transport stops and interchanges. The government could guarantee availability of services, and then let patronage levels determine how large or fast the vehicles. A public transport fleet composed entirely of people-movers would be fairly cheap to run, with larger capacity vehicles substituted where necessary, with fare revenue covering the marginal costs and helping to recoup initial outlay.

If a combination of better services is insufficient to get people out of their cars and onto public transport (although rising fuel prices may take care of that), then the government may need to reduce choice by removing urban road space and/or introducing variable urban road use charging (to ration roadspace during peak hours, or indeed around the clock). While rationing road space in order to avoid frequent but empty buses/trains/trams. While this may not be

politically popular (but who knows) it would allow Australian cities to meet their public transport task with far less energy.

Cycling

Switching journeys from car use to cycling offers great scope for cost-effective passenger transport, for both individuals and communities, with many extra benefits.

However, provision for cycling on urban roads is often unsafe, with both on and off-road cycle paths ending abruptly, dumping cyclists onto lanes shared with cars and other motor vehicles. Speed limits on urban and non-urban roads are often excessive, increasing the risk of car-cyclist collision and consequent injury or fatality. Changing speed limits, adding bicycle lanes, and consequent investments by individuals in bicycle to take advantage of such improvements for daily travel, is very cost effective. However, ensuring a continuous cycle-path network may require taking away roadspace from motor traffic. Again, politically contentious but cost effective.

Shorter Journeys and Local Urban Centres

The potential the uptake of public transport and cycling for daily travel may be limited due to the sprawling nature of Australian cities, where many people drive long distances along cross-suburban routes. Public transport and cycling will be more attractive if daily journeys are shorter. This requires bringing a greater variety of jobs and services closer to homes, for example by crowding a greater such variety into local and regional urban centres.

However, the policy of government departments and many large businesses seems to be to concentrate jobs and services in a few, highly specialised locations. For example, a few big hardware stores versus many small hardware stores in local precincts; or a few, big-building, single-department, government offices versus many, smaller, multi-department government offices in local centres. Such locational policies may be justified the added functionality and cost-effectiveness they bring. Or they may reflect obsolete thinking by management, with much of the potential functionality and cost-effectiveness of well-designed, local centres missed. This requires further investigation by planners.

Conclusion

The price of energy is likely to increase over the next twenty years. Investments in energy conserving infrastructure now can help cushion Australian's against future energy costs. But such investments require appropriate regulation, government investment, institutional investment, and a rethink of some management policies. Plus a great deal of political will.

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