ELECTRICITY PRICES: SORTING FACT FROM FICTION

In recent years, power prices have become one of the most talked about issues in Australia. But separating fact from fiction - *What causes them to increase? Where do renewable energy and coal fit in?* - that's complicated! This guide cuts through the complexity and provides answers to some common questions on electricity prices.

1 WHAT AM I PAYING FOR WITH MY POWER BILL?

The average Australian household electricity bill is made up of four main components:

1. The cost of **generating electricity** (wholesale electricity, 34%)
2. The cost of **transporting electricity** through power lines (network, 43%)
3. The cost of **selling electricity** to consumers, including a profit margin for the electricity company, or retailer (retail costs and margin, 16%).
4. Electricity companies also pass on a small cost for **environmental schemes** (environmental, 6%). This includes the Renewable Energy Target.

2 WHY HAVE POWER PRICES GONE UP?

It's true that Australian electricity prices are higher than comparable countries (apart from in the Australian Capital Territory), with the cost of electricity increasing by 56% on average over the past decade.

The four largest contributors to increased power prices include:

1. **Increased network costs** (the cost to transport electricity through power lines; 38% of the increase).
2. **Increased retail costs, as well as increased retailer profit margins** (21% of the increase).
3. **Increased wholesale electricity prices** (27% of the increase), driven up by:
   - higher gas prices in heavily gas dependent states, as a result of exporting the majority of Australian gas offshore at prices linked to the international oil price,
   - higher coal prices in New South Wales and Queensland, as a result of higher prices for exporting coal overseas,
   - lack of competition between generators, and
   - lack of investment in new power supply in advance of coal closures. This leads to tight supply-demand conditions when coal power stations close.
4. **Increased cost of environmental schemes** (15% of the increase).

3 CAN RENEWABLE ENERGY HELP REDUCE ELECTRICITY PRICES?

Yes! In lots of ways.

Rooftop solar is helping Australian households and businesses take back control of their power bills and reducing their reliance on electricity from the power grid, reducing the cost of their electricity bills.

Over two million rooftop solar systems have been installed on households and businesses in Australia. These solar systems produce electricity throughout the day, reducing or eliminating the need for additional electricity from the grid during these times. Excess solar power can then be either:

- stored in an onsite battery, for the homeowner to use later, or
- sent into the electricity grid, providing a cheap, clean source of energy for other people to use.

Large-scale renewable energy power stations such as **wind and solar farms** are now the cheapest form of new energy generation (BNEF 2018). Once built, wind and solar farms have no fuel costs and very low operating costs. When coupled with energy storage, wind and solar power can provide a reliable supply of electricity 24/7 and are the cheapest source of new 24/7 power supply, as confirmed by the CEO of Snowy Hydro. A recent study by the Victorian Energy Policy Centre (2018) found wind and solar generation reduces wholesale electricity prices.

In fact, falling prices for renewable energy and higher prices for coal mean that is is now cheaper to build a new solar or wind farm than to run an ageing coal power station.

4 WHAT ABOUT THE COST OF BUILDING A NEW COAL POWER STATION?

Building a new coal power station is expensive. A new coal power station would require substantial government (taxpayer-funded) subsidies (a payment made by government to support a private company) to have any chance of being built. This is because most private companies will not take this risk. Investing in a new coal power station is risky because these power stations are expensive, take many years to build, will struggle to recover their costs and are vulnerable to policies that strongly reduce greenhouse gas pollution. In contrast, renewable energy like wind and solar are the cheapest forms of new generation (refer to Table 1; BNEF 2018).

Table 1: The cost of energy for different sources of power generation. Wind and solar are the cheapest.

Power technology	Cost of energy (Levelised cost of energy $USD/ megawatthour)
Utility-scale solar	$37 - 66
Wind	$40 - 74
Wind and storage	$45 - 113
Solar thermal	$60 - 207
Gas (combined cycle)	$68 - 83
Gas (open cycle)	$153 - 326
Coal	$112 - 147

Source: BNEF (2018).

5 WHAT ABOUT SUBSIDIES?

A "subsidy" is a payment made by government (or forgone tax income) to support a private company with the provision of a good or service. Subsidies can include direct payments, concessional loans, tax rebates, and grants.

Australian governments provide large subsidies to the fossil fuel industry. The International Monetary Fund estimated Australia subsidised coal, petroleum and gas consumption by $41 billion AUD in 2015. Examples of subsidies to the fossil fuel industry in Australia include funding for exploration in some states and higher tax deduction rates for exploration expenses, assistance packages and discounted access to state services.

Coal power stations in Australia alone create health costs of $2.6 billion annually. However, power station owners do not have to pay for this or any of the other costs associated with polluting – this is a massive subsidy for the fossil fuel industry. While electricity retailers pass on a small cost to electricity users for environmental schemes such as the renewable energy target, the resulting reduction in wholesale electricity prices from wind and solar power is more than three times this amount.