

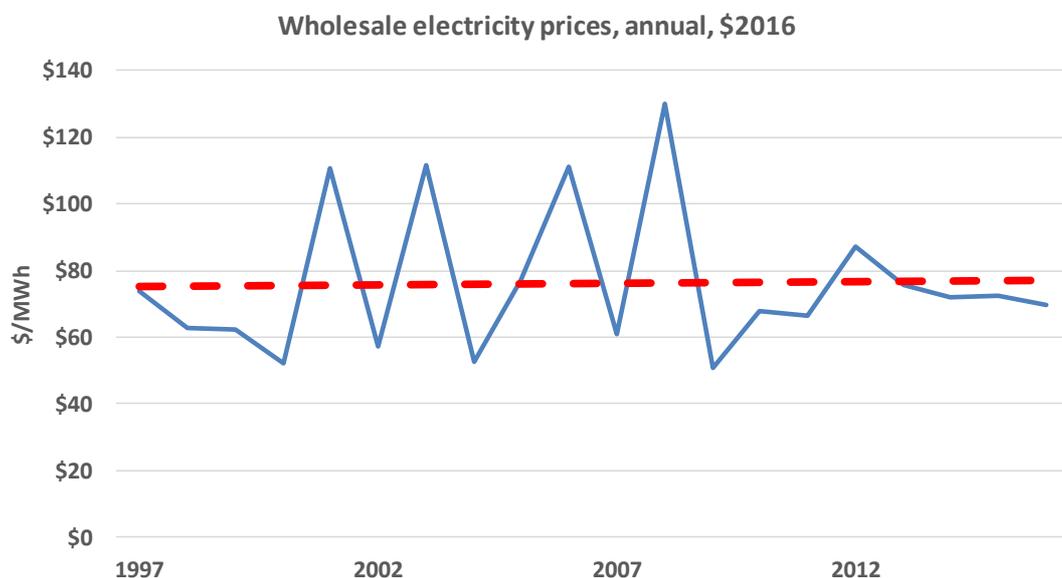
Where Are Electricity Prices Headed?

Phil Barry

Baseball Hall of Famer Casey Stengel once said, “I never make predictions, especially about the future”. Casey was right - predicting the future is fraught – especially when making predictions about the future path for prices of commodities like electricity. But people need to make forecasts for electricity and other prices, either explicitly or implicitly, when making investment decisions and valuing the assets.

Conventional wisdom over the past thirty years or so in the New Zealand electricity industry has been that electricity prices will rise over time faster than the general rate of inflation. The line of reasoning has been twofold. Firstly, that as the country’s population grows, the demand for electricity will grow, putting upward pressure on prices. And secondly, that the resources the country has to produce electricity are limited and therefore, as demand grows, we will need to access increasingly more expensive sources of supply. Electricity prices will rise as a result.

Looking back, albeit with the considerable benefit of hindsight, what has happened to electricity prices over the last two decades and what can be taken from that experience? The graph below illustrates the path of wholesale prices, over the last twenty years. It shows that real (ie, inflation adjusted) wholesale prices, while volatile, have not risen across the period as a whole.



The volatility in wholesale market prices largely reflects changing hydrological conditions. The dry years of 2001, 2003, 2006, 2008 and 2012 saw prices rise sharply for sustained periods. But the overall trend (as indicated by the dotted line) has been remarkably flat, with average prices remaining around \$75/MWh in real (2016) dollars.

In part the outturn in electricity prices can be explained by demand being weaker than expected. Electricity demand has grown - from around 33,000 GWh in 1997 to 43,000 GWh in 2015 - but not as fast as was expected. Growth in demand averaged a little over 1.2% p.a. over the period (while most forecasts were for growth averaging around 2% p.a.).

Institutional reforms – including the corporatisation and subsequent break-up and partial privatisation of the former state-owned monopoly electricity supplier and the establishment of the wholesale electricity market - are likely to have helped keep pressure on costs and thus wholesale prices down. Much of the electricity generation and retail sectors is now exposed to commercial and competitive disciplines in a way that wasn't possible when a single, state-owned, government department was responsible for the planning, development and operation of almost all generation and transmission across the country.

Retail (rather than wholesale) electricity prices have risen in real terms over the period, especially for residential consumers. The increases in residential prices reflect the rebalancing of tariffs from commercial and industrial users and increases in transmission and distribution costs rather than increases in the cost of generation.

Projections about the future pattern of wholesale electricity prices matter. The major generating companies like Meridian, Genesis, Mighty River Power and Contact can invest hundreds of millions of dollars on the basis of their assumptions and judgements about the outlook for electricity prices. Similarly, investment decisions made by aluminium, forestry, dairy and other major consumers of electricity will depend critically on their outlook for electricity prices.

Despite the fact that the trend in average wholesale electricity prices has remained remarkably stable over the last twenty years, the conventional wisdom in the industry remains pretty much the same. One leading forecaster, for example, is projecting wholesale prices to increase by around 60% in real terms over the next fifteen years. This is despite the ASX futures market for New Zealand wholesale electricity suggesting average annual prices will remain around \$75/MWh over the next three years.

The view that New Zealand's resources are limited and thus the country will be forced to move to ever more expensive forms of generation may prove to be right. But a more optimistic view – based on confidence in human ingenuity and the ability of our scientists and engineers to discover new, innovative ways to meet our energy requirements - may prove a better bet. The experience of the last twenty years suggests a degree of caution is warranted if making major investment decisions based on projections of ever increasing real prices for electricity. There are powerful economic forces – on both the demand and supply sides – that tend to counteract such trends over time.

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