THE CONVERSATION

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# Power prices, energy supply and the sustainability era

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When it comes to expectations for power price rises in the year ahead, the short answer is on average we can expect them to be less severe in 2014 than in recent years. The long answer, driven by electricity industry costs, is more complex.

Heatwaves provide a good reminder we need to think more carefully about how we use energy. Wiz78/Flickr

The recent Australian heatwave that saw some electricity consumers lose supply, was a sobering reminder we need to provide and use energy more sustainably.

The electricity supply industry has itself suggested there is a need to change electricity tariff structures due to air-conditioners increasing peak demand and thus the need for network investment, while annual electricity sales are falling, partly due to households installing solar PV and solar water heating.

Improving the present inefficient electricity tariffs would affect how electricity costs were distributed, creating winners and losers. Moreover, efficient electricity tariffs would be complex and location-specific. They would require consumers to forward commit to their expected future electricity consumption plans and bear the financial risks associated with changing them at short notice.

## A more holistic view

In thinking about what this means, we need to understand that our homes and electrical appliances form part of the electricity industry and that how we choose housing and use appliances influences both direct costs and external impacts.

For example, we should be prudent in our choice of housing and in focussing on only essential air-conditioning requirements during heat-wave conditions.

While there is evidence households are reducing their electricity consumption and that government energy efficiency policies have facilitated this, governments at all levels should continue to develop coordinated advice and support to households in making those important decisions, particularly as heatwaves are becoming more frequent with climate change.

In our work places, we need to understand that all buildings and electrical equipment form part of the electricity industry and that similar principles apply with respect to building design, equipment choice and equipment use. Again, there is evidence of reducing electricity consumption and effective government policies but governments should do more to support prudent energy use decision-making by organisations of all kinds.

As consumers and businesses consider their energy use, dramatic changes are underway in the supply side of the electricity industry. For example, there are now more than 2 million small-scale renewable energy systems in Australia, most of which have been purchased by households in the last decade and which now make a combined contribution to the electricity industry similar to the annual electricity consumption of 1 million households.

The Bureau of Resource and Energy Economics has updated its Australian Energy Technology Assessment, revising downwards its estimated future costs for solar and wind generation.

## Potential future scenarios

Looking ahead, CSIRO convened the Future Grid Forum to explore “potential scenarios for Australia’s electricity future and support the decision making process around what comes next”. Key findings of the forum investigations were to expect yet more change:

Scenario modelling shows that consumer choice around the use of on-site generation and managing peak demand can greatly influence the future direction of Australia’s electricity system.

Disconnecting from the grid as a residential customer is projected to be economically viable from around 2030 – 2040.

Technologies like smart air conditioners and in-home storage systems will facilitate more sophisticated ways of managing household demand during peak times.

Electricity will not get cheaper in the coming decades but bills can be reduced via the adoption of energy efficiency, peak demand management and on-site generation.

The steps listed in point number four, in combination with general wages growth, means the share of income spent on electricity in 2050 (2.3 – 2.9%) is projected to be similar to 2013 (2.5%).

What are governments doing to manage the process of industry change that is now underway?

In 2012, The Australian Energy Market Commission (AEMC) reported on its Power Of Choice Review, which was intended "to increase the responsiveness of the demand side to evolving market, technological developments and changing consumer interests over the next 15 to 20 years".

In 2013, the Productivity Commission published the report from its Inquiry into Electricity Network Regulatory Frameworks, which found a need for "a fundamental nationally and consumer-focused package of reforms", including modified reliability requirements, critical peak pricing and a smart-meter rollout and privatisation of state-owned network businesses.

In 2014, the Australian government is undertaking an Energy White Paper process, which is concerned with the export of energy resources (mainly fossil fuels) as well as the internal energy sector, where its stated goal is "reliability, competitively and transparently priced energy for a growing population and productive economy".

So, can we expect lower electricity industry direct and external impacts in 2014 and beyond? Only if the various government processes at federal and state levels produce wise outcomes and we all work together to continue the essential transition towards a more sustainable electricity industry.