

# How energy efficiency could become the villain of the energy transition

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Thank you Luke [Menzel] for the invitation to be part of this opening panel session. I'm honoured to be sharing the stage with Josephine (Maguire) and Anna [Skarbek].

I remember all those years ago when the Energy Efficiency Council was being established. I confess. Back then I saw no reason for why such a body was needed. Why on earth did we need to talk about – let alone advocate for – something as self-evident as the efficient use of energy.

Surely, I believed, households, businesses and industry, would act rationally. Self-interest would motivate them to do what needed to be done to reduce their exposure to the prospect of rising energy prices – particularly once a carbon pricing mechanism was in place. I was well-versed in the ubiquitous McKinsey abatement curve showing energy efficiency paid for itself (and more). There was money to be saved and money to be made, in which case, market forces should be left to take care of energy efficiency without any help from policy makers or advocates. Or so I believed – having started my public service career as a dutiful Treasury official.

Then I stepped out of the bubble.

During the ten years I chaired the Essential Services Commission (here in Victoria), I discovered most consumers had not studied the theories of Alfred Marshall or read Paul Samuelson's seminal economic textbook. But actually, that wasn't my biggest realisation.

The biggest surprise came when I realised how many of my colleagues in the regulatory community, and the reformers who had created the National Electricity Market, how many of them had read **nothing but** Marshall and Samuelson (I'm speaking metaphorically, of course). The entire edifice of the NEM, with its thousands of pages of laws, rules, guidelines and standards, rested on the narrowest of theoretical foundations – foundations laid down by Alfred Marshall in the late 19<sup>th</sup> century.

Let me read you something...

*Prices, and choosing to respond to price, are at the very heart of our economic system. Prices create incentives for participants to act efficiently by reflecting the consumer's marginal benefit and/or supplier's marginal cost.*

These words don't come from Alfred Marshall in 1890 – though they easily could have. Any guesses where they come from?

They come from a publication released by the Australian Energy Market Commission (AEMC) just two months ago.<sup>1</sup>

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<sup>1</sup> AEMC (September 2023) *How the national energy objectives shape our decisions* – section 3.1.4

Don't get me wrong. Marshall's contribution to neo-classical economics is monumental. But his ideas were only ever meant to be simplifications that allowed all of reality's complexities to be collapsed into two lines on a graph – supply and demand; and where the two lines cross, we get a nice, stable equilibrium.

I have written a number of papers this year highlighting how, by the 1990s and 2000s, it was possible for the economic reformers of that era to look at the stability of the electricity system and conclude that they could reproduce that stability by creating market rules to generate supply and demand curves. Stability meant monolithic, vertically integrated, state-owned monopolies could be replaced by market rules that generated just two curves.

Maybe they were right – or right enough. But then the world changed. Around a decade ago, the steady-state conditions which the reformers believed to be immutable, started falling apart. Stability and linearity were being replaced by uncertainty and complexity.

Despite this historical shift, the regulatory community continued – *and continues* – to believe this uncertainty can be tamed using the same regulatory principles, assumptions, methods and processes that had been developed for markets in steady-state. That's what the above quote from the AEMC is telling us.

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So why is any of this relevant to today; to this event; to the role you play in the energy transition?

For most of the 25 years since the NEM was established, the regulators wilfully ignored energy efficiency. They were happy for you to 'faff around' under various state schemes, as long as you didn't interfere with the market; *their* market.

But then, while they were looking askance, activity burgeoned on the so-called 'demand side'. Consumption started flatlining. And worse still, the demand side had the audacity to invade the supply-side – consumer-generated solar exports started taking over the daytime markets (first in South Australian and now elsewhere). It took years for AEMO to recognise these phenomena.

Having ignored the demand-side for so long, the regulators are now desperately trying to corral it using a range of market-oriented mechanisms. Dare I mention the Reliability and Emergency Reserve Trader (RERT) scheme or the Wholesale Demand Response Mechanism (WDRM); or more recently, Network Export Tariffs and Flexible Export Limits, and the Export Services Incentive Scheme.

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These mechanisms (and various others) finally recognise and attach value to activity on the demand side – and, your role in marshalling that activity. My concern, however, is that this recognition comes with unrecognised risks for consumers (and possibly service providers).

Before continuing, I need to quickly distinguish between non-market and market-oriented residential energy performance. I don't have a precise definition of what I mean but, in general, market-oriented measures are anything that allows consumers to actively participate in the electricity market – typically selling their demand, their supply or their storage in response to price signals. In other words, these are customers who are not just passively drawing energy from the grid.

These are the consumers I am most concerned about when we talk about residential energy performance.

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Let me explain.

These days we hear a lot of talk (and read a lot of papers) focussed on generating cost reflective price signals to coordinate individuals' behaviour within the overall constraints of the system. We also hear a lot about supporting consumers to respond to these price signals, for example, through information, education, digitalisation and automation. All good stuff.

But here's the question: Where do markets and consumers intersect? It's at the point of contract.

They intersect when a consumer contracts with a service provider – be they a retailer, aggregator, energy management supplier, VPP, or anything else. So what do these contracts look like?

Well, it's going to require consumers to consider a large number of decision variables, such as:

- the price of electricity supplied from the grid as well as the price of electricity supplied *to* the grid
- volumetric limits on how much electricity can be exported and maybe even limits on how much electricity can be drawn from the grid
- delegated control over onsite electricity production and storage appliances, as well as controls over load
- price, access, ownership and control of electricity stored offsite (say, in community batteries), and
- maybe even payments for ancillary system services

We can expect contracts to be further complicated by:

- many of these variables being dynamic, that is, changing in real time so they can't even be specified in a contract
- financing arrangements that are indistinguishable from payments for energy services
- a framework of penalties for breaching any of the above terms
- customers relying on multiple suppliers providing interacting services.

Can you see what all of this is doing?

It is taking consumers (including residential consumers) – people who just buy and use electricity – and it is converting them into market “participants” (that the term used in the AEMC quote above). Consumers are being converted into market *traders* – into traders in one of the most complicated, dynamic and sophisticated markets in the Australian economy.

Who are we kidding if we believe that most people have the interest, let alone the wherewithal, to identify, evaluate and manage the risks involved in trading in such a market.

We know for a fact that over the past 20 years, consumers have not been very good at shopping around for energy contracts – and that's at a time when all they needed to do was shop around for contracts with just one decision variable: the price of electricity. Why on earth does anyone believe they will now effectively navigate a market requiring them to negotiate contracts with multiple decision variables?

The opportunity for customers to enter contracts that don't align with their interests is about to explode.

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I've run out of time. But my final message is this.

If we remain blind to all the risks these developments are pushing on to customers, and if we choose to overlook the harm that this will cause some-or-many of them, and if we ignore the community dissatisfaction this will create, and if we pretend there will be no political blowback from a dissatisfied community – then we are not only risking everything you are working for, we are also putting the entire energy transition at risk.

I'm sure no-one in this room would consider that is a risk worth taking. I know it might sound counterintuitive, but please don't let energy efficiency become the villain of the energy transition.