

Pricing Electricity in the Australian Market

Kevin Cox
Consumer Representative
on the Evoenergy Consumer Representative Council
16th March 2023

Setting the price of electricity is difficult because the electricity grid is a natural monopoly and costs a lot to build. Recovering those costs is a large part of the cost of electricity. The AER, by regulation, guarantees the recovery by setting a Rate of Return (ROR) on a Regulated Asset Base (RAB). The AER uses an estimate of the international price of Capital and the cost of building the network minus depreciation.

It could use the domestic rate of return on allocated superannuation pensions and obtain the funds domestically. It could use the indexed value of the investment minus the amount taken out by the investors.

If it used these measures, the price of electricity would drop substantially and continue to drop.

The price of electricity should drop if the cost of production drops and increase if the cost of production increases. It should remain the same if the cost of local Capital and producing energy stays the same. Australia now exports more Capital than it imports and can be self-sufficient in Capital.

The price of electricity would remain stable or drop if Australians were permitted to invest in local energy infrastructure and receive a return on investment with cheaper electricity.

Read more about the approach at [A Self Regulating Efficient Monopoly](#). The AEMC could flag the change to local investment and start by dropping the ROR to 5%, and in the future, the RAB would be the investor's "at risk" funds rather than the depreciated initial Capital. This would phase in the change so Australia's financial reputation is maintained and would give international investors a chance to get out - while removing the ability of investors to acquire large amounts of unearned income through the current system.

I attach a submission to the ROR consultation of a year ago outlining how the AER could change.

Rate of Return Submission to AER 65402

Kevin Cox
Consumer Representative from the Gungahlin Community Council
on the Evoenergy Consumer Representative Council

Submission in response to [Rate of Return 2021](#) request.

This submission recommends the **inclusion of [Community Capital](#) in the regulations**. Community Capital allows all parties who contribute capital to receive the Rate of Return specified in the regulations. Note that **the inclusion does not require any other changes to existing regulations or laws**. It provides an option that **allows consumers to participate in the five-minute wholesale electricity market**. The suggestion will **create a more efficient energy market** than the current market. The market will be a distributed market that will include home and community solar and batteries as well as the large existing solar, wind and fossil fuel plants.

An advantage of **Community Capital** is that it **applies to investments in homes and businesses** and encourages consumers to invest. Most of the new investment needed to transition to the distributed grid is on the demand side of the electricity market. Providing a way for **all consumers to become investors** opens up a **new source of funds**. All solar panels, HVAC, hot water systems, home batteries, and car batteries will become part of the coordinated supply/demand electricity system. Consumers will **invest to reduce costs by reducing energy consumption** and buying electricity when it is cheap and using it when it is expensive. Including Community Capital in the regulations will coordinate the supply and demand sides of the electricity market.

On Feb the 30th the ACT government closed submissions for innovation grants to **increase investments in renewables in the ACT**. [This link is a summary](#) of a grant application to implement Community Capital in the ACT. Investing a small proportion of the Superannuation Contributions of Canberrans will rapidly fund the demand side required to **electrify Canberra as described in [Saul Griffith - The Big Switch: Australia's Electric Future](#)**. The price of electricity of those members of the public who decide to participate will drop by at least 30% and super fund returns will increase. If the **Australian Energy Regulator had regulations** that included Community Capital **the uptake would be rapid** and the approach would quickly spread to the rest of Australia.

Community Capital for Distribution and Transmission businesses.

Currently, shareholders of distribution and transmission businesses receive all the returns on the Regulated Asset Base (RAB) even after they have received their returns and their capital back. The RAB is NOT the same as the amount currently invested. It should be the amount **originally invested plus any new money invested by the original shareholders minus the amount depreciated**. Instead, it is the total amount invested by the original shareholders **plus extra contributed by consumers and others** minus the amount depreciated.

Allowing consumers to participate at the five-minute level, and requiring natural monopolies to include Community Capital will reduce the cost of electricity in Australia.

The mission of the Australian Energy Market Commission (AEMC) from its website is:

To work for Australia's future productivity and living standards by contributing to a decarbonising, affordable and reliable energy system for all consumers.

The mission statement mentions **all consumers**, yet consumers only have an indirect influence via the regulations that their views will be heard and actioned. Under the current regulations, it is inevitable that energy prices will increase because the **shareholders who own the transmission**

and distribution assets must strive to increase the returns to shareholders. The main protection against price increases is the AEMC regulations. When the shareholders were governments, governments were constrained on price increases by electors. **Private investors** have no such constraints and **are required by law to get the greatest returns** they can from their investments.

The evidence that private investors have been successful in getting high returns is the number of international **energy businesses in Australia that pay little or no tax** and the **increase in energy prices above inflation over the past 17 years** even though the regulated Rate of Return has dropped and technology has reduced the cost of providing services. The money from the price increases has gone to the shareholders. Further evidence is the price paid to buy regulated businesses. For example, the **bid price for AusNet** on the 13th January 2022 is almost **double the current market price**. The **existing shareholders get all the benefits** because the board of directors has to put the **needs of shareholders before the needs of consumers**. This is against the aim of the Australian Energy Commission as consumers will ultimately pay the windfall to shareholders in less affordable electricity.

Consumer voices are scattered and diffuse and consumers depend on the regulator to protect their interests. **Consumers** overwhelmingly **want the burning of fossil fuels to stop** and for local systems to become **more reliable and resilient**. Local communities want those affected by technology changes to get jobs in new industries. Today these views only **come to the investment decision-makers via government regulations and political action**, such as protests.

This submission argues that we need **consumers to have more influence** when businesses **make pricing and investment decisions**. In **Free Markets, consumers directly influence investment and pricing** through the **choice of supplier**. In a Regulated market, **consumers indirectly influence** investment and pricing via the regulator. Because consumers have no direct influence, **changes** in the Energy Market **tend to result in inefficient economic outcomes**. Economically inefficient means **buyers pay more** for the same output while **investors receive less or the same** returns.

An example is a recent increase in **electricity prices in the ACT**. The ACT government secured **renewable energy long-term contracts at fixed prices**. Some of these prices are now higher than the market prices because of the increase in solar capacity. The distributor, who receives a Fixed Rate of Return, covered the price variation by passing on the extra cost with higher prices to consumers. An **alternative would be to invest in storage and load shifting** to take advantage of the lower prices. However, the storage and load shifting comes from consumer investments, not distributor investments. **Consumers**, if they had had a voice on the decision-making board, might have **stopped the price increase, by working with the distributor** on assisting consumers to make appropriate investments in load shifting.

Another example is the calculation of **ownership of the Regulated Asset Base**. The parties **who provide the money** to build or purchase the asset base **should receive a return**. However, only the parties that own the asset base receive a return. In practice, much of **the money to maintain and build the asset base come from higher prices from consumers**, but consumers do not get a return on their contribution. This submission puts the case for **consumers to purchase part of the asset base with Community Capital**. This will make the **Regulated Energy Market operate more like a free market** where consumers share the profits through lower prices.

A Voice to Consumers

Consumers would have a voice on the distributor and transmission companies' board of directors **if the consumers could accumulate Community Capital**. It argues that rather than seeking investment from the international financial markets the **industry regulations should give consumers investment priority** and the regulator should set the **Rate of Return with reference to the investment options open to domestic consumers**. For example, superannuation funds could allow members to specify Community Capital as an investment choice.

Rate of Return based on the RAB

The regulator sets the Rate of Return and then applies it to the Regulated Asset Base. The **Regulated Asset Base is the cost of the assets minus the depreciation**. At present, no matter where the money comes from, the shareholders of the distributor or transmission businesses receive the return. This submission questions this entitlement and argues that the **Return on Investment should go to the parties that supply the capital and have it at risk**.

To illustrate the problem assume an asset of value \$100,000, a Rate of Return of 6%, and a dividend payout of 6%. Assume the assets have a 40-year life, so the assets' value decreases by 1/40th or 2.5% each year. The 2.5% is a cost and decreases the asset value by 2.5%. However, the sales are still the same, so the return is still the same as the consumers have supplied extra money to cover the 2.5% loss in capital. In a regulated market, the return on 2.5% of the capital should now accrue to the consumers. Over ten years of operation, the following table indicates the results.

	Investor	Consumer	Return on	Return on
Year	Capital at Risk	Capital at Risk	Capital at Risk	on Initial Capital
1	\$100,000	\$2,500.00	\$6,000	6.00%
2	\$97,500	\$5,000.00	\$5,850	6.15%
3	\$95,000	\$7,500.00	\$5,700	6.32%
4	\$92,500	\$10,000.00	\$5,550	6.49%
5	\$90,000	\$12,500.00	\$5,400	6.67%
6	\$87,500	\$15,000.00	\$5,250	6.86%
7	\$85,000	\$17,500.00	\$5,100	7.06%
8	\$82,500	\$20,000.00	\$4,950	7.27%
9	\$80,000	\$22,500.00	\$4,800	7.50%
10	\$77,500	\$25,000.00	\$4,650	7.74%

The return on investment going to the consumer's Capital at Risk would have appeared as **lower prices to consumers instead of higher returns to the shareholders**. Prices have not decreased. Consumer prices have stayed the same, and the Rate of Return on the Capital at Risk should have stayed the same. Instead, consumer prices have risen, and the Rate of Return on the original Capital has increased. The outcome has made electricity more expensive.

What has happened?

When we monetise an asset, we treat the money that purchased or built the asset as though it were the asset - but **we do not depreciate the money**. The companies do not depreciate the Capital and do not treat the asset as they would in a free market. In a free market, to keep prices competitive, the shareholders would invest the 2.5% depreciation back into the business and only take out 3.5%. The idea behind the Regulated Market is to make it as close to a free market as possible. The regulator has assumed the **replacement capital came** from the operator because they own the business whereas the replacement capital has come **from the consumer**.

The same issue will **occur in other situations**. For example, the operator might replace the capital with a loan and burden the business with repayment. The operator might keep the profits down by investing in technologies - like IT systems - that are either expensed immediately or have a high depreciation rate. The greater the depreciation rate, the faster the operator can extract capital from the system. Clever accountants and lawyers can take advantage of the system and, acting within the law and regulations, keep prices higher than they need to be and work against the **objectives of the Australian Energy Market Commission to keep energy prices affordable**.

Changing who receives a return will make the Regulated Market operate more like a Free Market. As **the risk moves to the future consumer**, the Return on Investment accrues to consumers in the form of future lower prices. One way to achieve this is to base the Regulated Asset Base at risk to the shareholders on the **cost of the assets minus the amount of capital taken out of the business** by the shareholders. The capital taken out still exists in the business and is **allocated to the consumers who purchased energy**.

Addressing the Issue

Attempting to fix the problem just with **regulation is complicated**. Private Equity firms who control businesses can use the businesses' money to find holes in any regulation. A **highly paid, well-resourced industry of financial and tax experts** support shareholders to find ways to increase prices to the detriment of consumers. **Consumers even pay the cost of legal opinions** that work against their interests. More regulation is not always the answer, but **changing existing regulations can** provide consumers with a voice in the decision making.

This submission recommends changing the Rate of Return calculated on the RAB to the return **on the Shareholder Capital at Risk (SCAR)**. Rather than the owners having all the Regulated Asset Base, the return is on the SCAR or Shareholder Capital at Risk. **The Capital no longer at risk is transferred to consumers via retailers or other organisations**, and consumers get a return with future lower prices. The RAB and Rate of Return remain the same. The regulated change means those who supply the money get the return.

To provide consumers with the promise of lower prices on Capital they own, the regulator could specify capital that offers lower prices when used. One form is the **well-known discount on prepayment for goods and services or Community Capital**. Many businesses now use discounts on upfront payments, a standard accounting and marketing technique. The Capital released with the reduction in ICAR can go to consumers as **future discounts in proportion to their previous payments**.

Implementing [Community Capital](#) allows **consumers a way to invest in regulated enterprises**. If consumers are direct investors, lower prices are also in their interests. Lower prices for the same output **fits well with the Australian Energy Market Commission's objective** of an economically efficient energy market.

As investors of capital in regulated enterprises, the regulations could ensure **consumers have direct representation on the company boards**.

Direct representation will have positive economic outcomes. For example, consumer representatives in the ACT would support an investment solution rather than the recent price increase. Consumer representatives are likely to argue for a **single price per kWh for all consumers** rather than the current system of higher prices for low consumption consumers. Consumer representatives will almost always argue for **investments to increase reliability and resilience**. Consumers would argue for **better metering** and access to the five-minute wholesale energy market to reduce prices. Prosumers who generate electricity could participate directly in the five-minute market through their local retailer or other organisation and remove the need for feed-in tariffs and lead to more energy retailer competition and lower prices.

The addition of **Community Capital into the energy market will provide competition for capital** and will **increase the opportunities for innovation and resilience**. It will increase investment in energy efficiency and in finding ways to increase the consumption of cheaper renewable energy.

Development of Regulated Markets

The following expands on the ideas outlined above. How regulated markets will change with Community Capital having a voice when investment decisions are made is likely to evolve as follows. Over the years, the **consumer investors** will own more of the assets. They don't want a monetary return; they **want lower prices and a reliable electricity supply**. The existing ownership share structures remain and participate as **share capital can coexist with Community Capital** if the Regulator Allows it.

Workers are also consumers. Workers supply their knowledge and know-how to the business. It is likely a form of worker capital will arise and **workers will be given a voice** on investments.

Using this approach would **turn a regulated market** closer to the idealised **free market** of many buyers and many sellers, with the buyers looking for lower prices and investors looking for higher prices. Instead of the market setting the price, representatives of buyers, workers and investors negotiate to set the price. The way for **buyers to get lower prices, sellers to get higher returns, and workers to keep their jobs is to make more efficient use of capital**.

Investors purchasing **Community Capital** instead of shares to finance new assets **removes the cost of operating a share trading system and the need to remove capital** to pay dividends. **Discounts on sales do not remove capital**. From the point of view of the business, dividends are a cost and come from sales. Replacing dividends with discounts eliminates the cost to the business of finding replacement capital.

The change would have **minimum impact** on the operation of the Australian Energy Market. It would give buyers lower prices and investors higher returns by removing the need for extra capital

and lowering operating costs. **It leaves all operational and technical regulations unchanged.** It **leaves the wholesale energy market the same**, by giving consumers a voice in the setting of prices in a distributed market.

More importantly, **all consumers receive equal treatment. All consumers become investors, and social equity and cohesion are enhanced. No one is left behind.**

The **cost of treating every consumer** as a part-owner of an energy business would be **high**. Instead of every consumer having a small voice, **consumers should form local non-distributing cooperatives or companies**, and representatives from those organisations could speak for many consumers. Having many cooperatives and ensuring consumers move easily between cooperatives would give **consumers a choice**. The **cooperatives will generate profits**, and the discussion on whether to increase prices or decrease returns will occur at the cooperative as well as the enterprise level. The ability to exercise choice is a critical part of market operation. Choosing which community organisation to join will encourage innovation and competition.

In the Electricity Network, other **businesses need regulation**. These include **metering, battery storage, electric vehicles, heating and cooling, and pumped hydro**. The **regulator could experiment with Community Capital** first with new metering and community batteries using Non-distributing cooperatives.

Summary

The mission of the Australian Energy Market Commission is to **decarbonised, affordable and reliable energy for all consumers**.

Today's regulations in the energy marketplace require shareholders to seek higher prices. **Adding Community Capital** to capital regulations will bring the balance back towards consumers who seek lower prices. It will make the **energy market** closer to the idea of **a free market** at the heart of economic theory and practice. The system will be more reliable and resilient by lowering financing costs and distributing control and production while keeping the **necessary existing constraints provided by centralised regulations**.

It is suggested that the AEMC change the regulations to define the **RAB for shareholders to be the capital at risk** and for all transmission and distribution businesses to **implement Community Capital** and to give Community Capital a voice when investment decisions are made.

It is suggested the approach be used first with **community-funded metering systems** that allow retailers and other organisations to deal directly with producers so **individual households and businesses can participate in the five-minute wholesale market**. It will provide an alternative to government incentives such as feed-in tariffs and interest-free loans that add costs rather than reduce prices.

Lowering financing costs will mean **more retail funds are available to decarbonise** the economy. As a decarbonised electricity system costs less to operate than a fossil-fuel-based energy system the **electricity market will rapidly become carbon neutral and then carbon negative** as cheaper energy makes more carbon fixing investments economically viable.

The Australian Energy Market Regulator has an opportunity to **introduce Community Capital** to compete with Traditional Capital to supply the funds for the electrification of most of the Energy Market.