

The 2022 Energy Crisis: horizontal and vertical impacts of policy interventions in Australia's National Electricity Market

EPRG Working Paper 2216

Cambridge Working Paper in Economics CWPE2257

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In 2022 the war in Ukraine and the associated turmoil in seaborne markets for coal and natural gas sent fuel prices to multiples (viz. 5-6x) of their historic averages, creating an *energy crisis*. The effects are being felt as far away as Australia – as a significant exporter of coal and gas, domestic fuel markets are linked to seaborne prices. And while the majority of thermal plant have long-dated contracts detached from the seaborne markets, marginal plant and output do not – they are exposed to varying degrees to export prices. Sharply rising levels of renewables meant the degree of term-contracted fuel supplies has also been declining. And when combined with unusually high coal plant outage rates, NEM exposure to export price dynamics was further amplified. Forward electricity prices for 2023 delivery in Australia's NEM surged from ~\$48 in 2021 to \$156/MWh in 2022 (the 52-week average), peaking at \$247/MWh in Oct-22. Consequently, gains from falling electricity tariffs over the period 2015-2022 will be quickly unwound, with rising levels of fuel poverty a predictable outcome.

With a backdrop of rising interest rates and sharply higher consumer price inflation, governments intervened. In late-2022, the Commonwealth Government set a price cap of \$125/t and \$12/GJ for domestic coal and gas, respectively. NEM State Governments will also respond in various ways by refining customer hardship policies and schemes. Australian households have thus far been broadly shielded from these (spot) electricity price dynamics because regulated tariff determinations assume a prudent retailer builds-up a hedge book over a 2- or 3-year period prior to real time. However as each year passes, low-cost hedges from prior periods (i.e. pre-2022 energy crisis conditions) are assumed to be replaced by hedges in

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current market conditions. As a result, by the 2023/24 financial year household electricity tariffs will have fully impounded the effects of very high wholesale market prices.

In the analysis which follows, residential electricity tariffs and consumer impacts are modelled over a three-year period (2021/22 to 2023/24) using electricity market data and Australian Bureau of Statistics (ABS) microdata, respectively. The modelling is grounded firmly in welfare economics with a primary purpose of assessing ‘underlying’ levels of fuel poverty, and the cumulative effectiveness of policy responses.

Modelling results show the 2022 energy market crisis was set to send retail tariffs up 11% in 2023 and 35.3% in 2024, with the underlying (pre-policy) levels of fuel poverty virtually doubling, from 6.3% in 2022 to 12.1% of households in 2024. Policy intervention by the Commonwealth Government in the domestic fuel markets, viz. setting price caps of \$125/t and \$12/GJ for coal and gas, is likely to constrain tariff increases to ~16.5% given a market heat rate of ~8.2GJ/MWh. This policy benefits all consumers and would reduce the rate of fuel poverty by 2.0ppt. However, existing state-level policies remain crucial and are forecast to reduce the incidence and severity of fuel poverty by 2.7ppt. An additional universal payment is capable of making a further contribution of 0.5ppt, and if re-purposed to a targeted payment, 1.0ppt.

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Publication	December 2022
Financial Support	N/A