

Sarah Gillies
Chief Executive Officer
Electricity Authority
Level 7, AON Centre
1 Willis Street
Wellington 6011

29 June 2023

By Email

Dear Sarah

Fast-Tracking our Decarbonisation Projects with minor Code changes

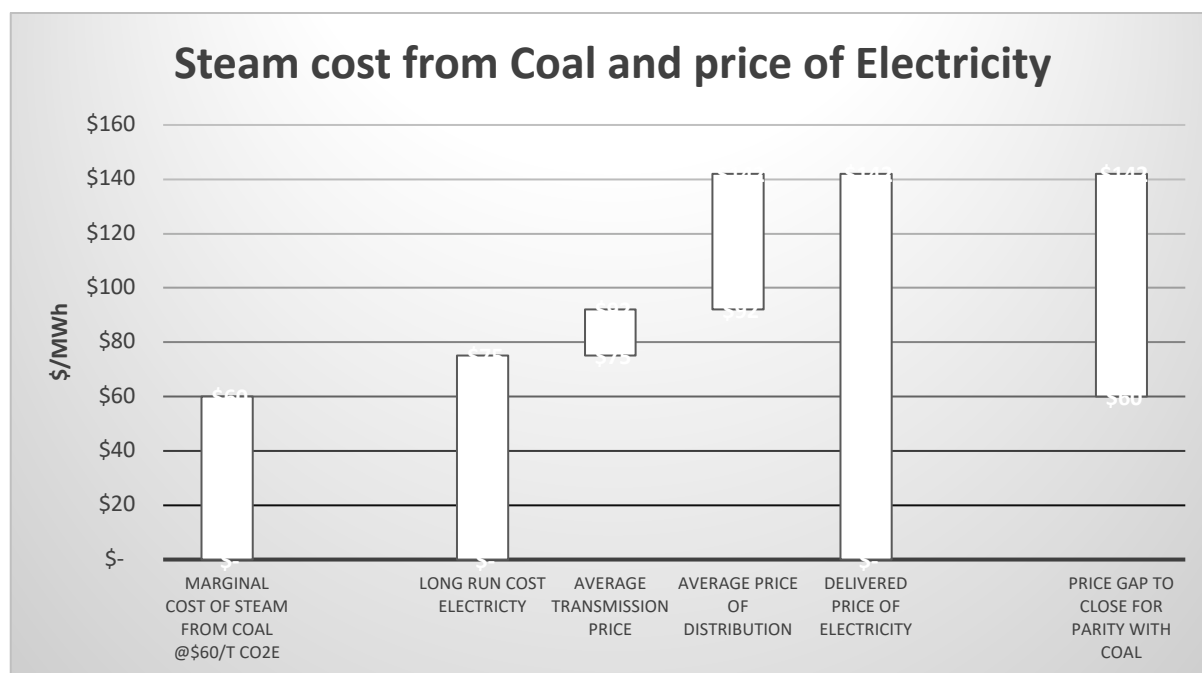
This letter seeks to call your attention to the opportunity to use the “Benchmark agreement and SRAM related Code Changes” consultation and workstream (the SRAM consultation) to provide \$12/MWh of price support to fossil fuel electrification and decarbonisation projects.

Networks are not providing pricing to end consumers that reflects price signals in the TPM as envisaged by the Authority in its practice note on distribution pricing issued in November 2022. Minor changes to the Code could give (larger) load customers the right to notionally direct-connect to Transpower for transmission services to access these important price signals, helping to accelerate the decarbonisation projects.

These changes could be rapidly implemented by incorporating this work as part of the current SRAM consultation which is making minor changes to the Code.

The Challenge of Electrifying Process Heat from Coal

The cost of steam from coal is ~ \$60/MWh including an allowance of \$60 per Ton CO₂e. This compares with delivered electricity prices ~ \$140/MWh or a price gap of ~\$80/MWh before electricity achieves price parity with coal as illustrated in the following figure.



The marginal cost of delivered electricity can be competitive with coal

Delivered electricity costs at the margin can be competitive with coal for process heat if the end customer has the ability to switch between electricity and other fuels and use existing spare capacity in the network.

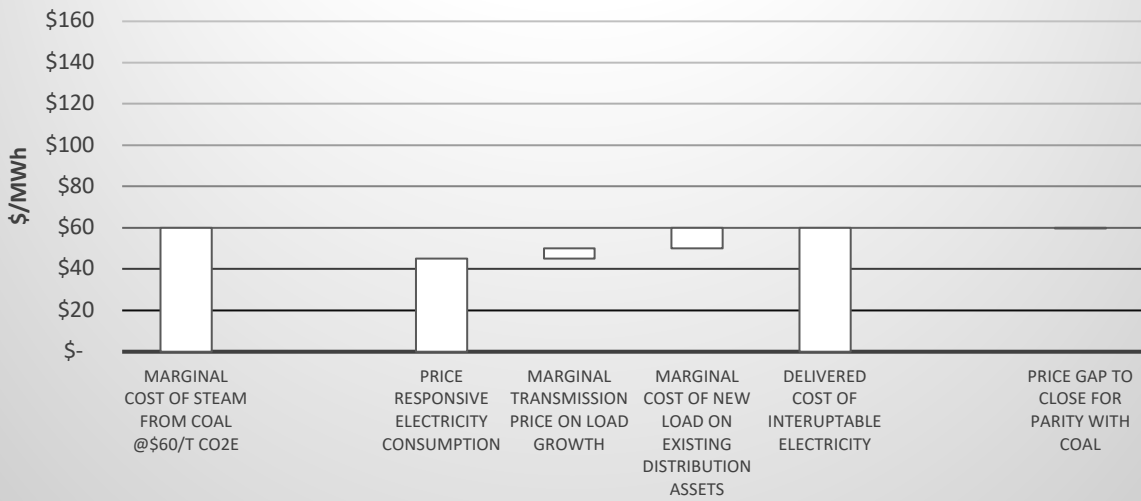
- Energy costs can be reduced by ~ \$30/MWh
 - o Price responsive electricity consumption i.e. use more electricity when it is cheap and less when it is expensive, lowers electricity cost and uses renewable generation because low prices and high renewables are correlated.

- Distribution costs can be reduced by ~ \$40/MWh
 - o Special protection schemes: Networks can use interruptible electric boilers as part of their network protection arrangements so that boilers can safely access redundant network capacity without putting the overall network at risk, and
 - o Capacity Constrained Load dispatch: End customer manages electrical load dispatch to only use existing spare capacity in the distribution network.

- Incremental transmission cost pass through
 - o For new electrical load, the marginal price of transmission under the new TPM is ~ \$5/MWh vs. an average transmission costs of \$15/MWh to \$20/MWh
 - o This is because the TPM pricing methodology has an 8 year phase in of residual charges on new load.
 - o Incremental pricing is mostly not available through Networks e.g. Vector, are not offering this marginal pricing to new load customers which adversely impacts electrification project economics.

If end consumers can access the marginal cost of delivered electricity on a non-firm basis they can close the fuel price gap between coal and electricity supporting the economics of electrification projects.

Flexible electricity costs less and can compete with coal

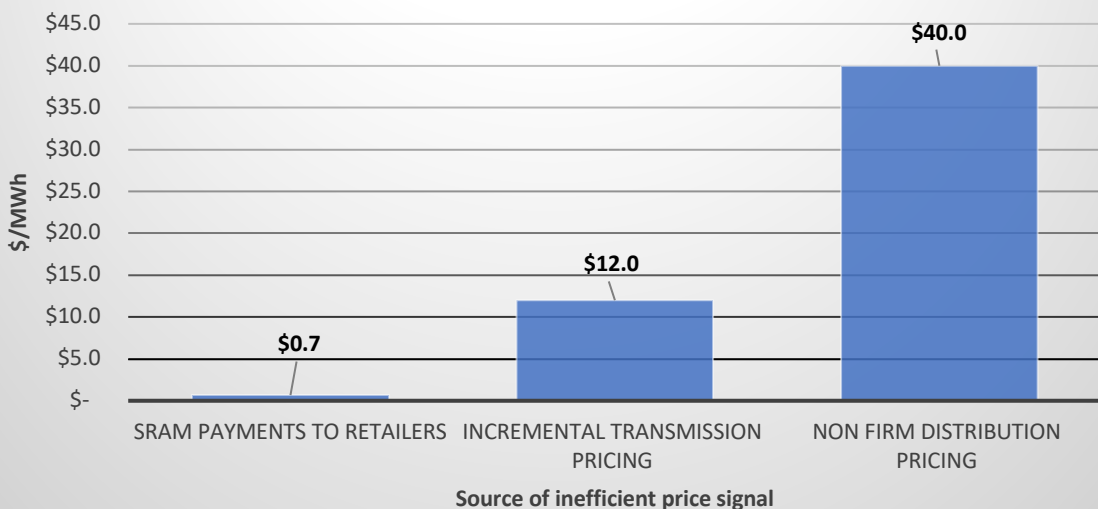


Transmission and Distribution are high impact opportunities that are simple to implement. The SRAM consultation addresses a concern that SRAM payments of less than \$1/MWh could result in inefficient investment decisions.

The bigger prize is network pricing. We have quantified network price inefficiencies by comparing the prices end consumers are seeing vs. the incremental price of transmission and marginal distribution network cost for utilising otherwise unused distribution capacity.

The relative size of these is set out in the following figure.

Comparison of SRAM with network price signals not getting through to electrification projects



Give End Consumers the right to establish Notional Transmission Connections

Most transmission pricing included in distributors' pricing on new load is between \$10 and \$15/MWh greater than the underlying incremental price in the TPM. This inefficient price signal is ~18 times larger than the SRAM payment amounts and arises where distribution charges don't send the same price signal as transmission charges (as per Distribution Pricing: Practise Note October 2022 112 b).

The price inefficiency can easily and quickly be addressed as the Code already provides for the most important aspects of notionally transmission connections including

- The TPM deals with pricing when existing load to become a new customer on a shared GXP
- Transpower already has customers that notionally connect including generators at Halfway Bush, Aniwhenua, Atiamuri and Mokai.

The balance of Code changes would need to deal with giving (large) end consumers the right to notionally connect to Transpower and require networks to offer distribution pricing that is reduced by the transmission charges that would otherwise have been recovered from the end customer.

Implementation concurrent with the SRAM payments would also benefit distributors who are currently reviewing their pricing, business processes and billing systems to support the modified SRAM requirements.

Default Non-Firm Distribution Pricing

Access to non-firm distribution at close to marginal cost is also critical to close the price gap with process heat from coal and support economic decarbonisation of New Zealand businesses. We estimate the magnitude of inefficient distribution pricing is over 40 times greater than SRAM payments.

I envisage this could be addressed as part of the upcoming distribution pricing workstream.

Next steps

I would appreciate the opportunity to meet with you to discuss any questions you have and understand how I can help with these material regulatory opportunities.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Stephen Peterson', written over the typed name.

Stephen Peterson

StephenPetersonNZ@gmail.com

0210 488 164

Cc:

Hon Dr. Megan Woods, Minister for Energy and Resources, m.woods@ministers.govt.nz

Alexandra Seton, Climate Change Commission, alexandra.seton@climatecommission.govt.nz