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To: Retail Electricity Inquiry
Subject: TRIM: Affordable Electricity Prices

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Any review of electricity price trends must start with an understanding firstly of the escalation in wholesale prices, and secondly the impact of the creation and sale of large scale renewable energy certificates on retail prices.

According to AEMO, wholesale prices in Victoria averaged around \$30/MWhr (that's 3.0 cents/Kwhr) from 2005-2012 but then jumped to over \$50 in 2013/14 with the introduction of the carbon tax. Prices dropped back to \$30 in 2015 but rose to \$46/MWhr in 2016.

However with the closure of Hazelwood coal-fired station in March 2017, wholesale prices in Victoria increased to \$79/MWhr in 1Q 2017 and jumped again to \$105/MWhr in 2Q 2017.

Those increases can be attributed to the impact of the government's renewable energy target that mandated 14% of supply must come from "renewables" in 2017, rising to 23.5% of supply in 2020. This is forcing cutbacks in supply from coal-fired stations and an increase in electricity supplies from intermittent wind and solar generators. When the sun doesn't shine and the wind doesn't blow, electricity must be supplied by increased gas generation at higher cost.

Dr Finkel's report included estimates on page 201 of the levelised costs of electricity in 2020.

Wind \$92/Mwhr (no backup)

Large solar photovoltaic with 3 hours storage \$138/MWhr

Large solar thermal with 12 hours storage \$172/MWhr

Combined cycle gas turbine \$82/MWhr

Open cycle gas turbine \$123/MWhr

Supercritical coal \$76/MWhr

Add some backup to wind and you end up with a wind cost of order \$150/MWhr.

Therefore, while the RET continues to mandate increases in the amount of electricity to be produced from "renewables", wholesale electricity prices and therefore retail prices will continue to escalate, devastating households and businesses.

The second factor impacting retail prices is the creation and sale of large scale renewable energy certificates. Renewable generators, as well as receiving income from the wholesale price, currently \$105/MWhr in Victoria, also sell large-scale generation certificates usually to liable entities (electricity retailers), who are required to surrender a set number of certificates to the Clean Energy Regulator each year. Those certificates are currently priced at around \$80/MWhr, adding a further \$11/MWhr to retail prices, increasing to \$19 by 2020 (at 23.5% of supply).

A third factor impacting retail prices is network costs, estimated to be of order \$100/MWhr, but there seems to be very limited public data available. It is probable

that moving to a more distributed grid with intermittent supplies from wind/solar is also increasing network costs. Hopefully your report can shed some light on trends and causes in this area.

The key issue to be addressed by your inquiry is the impact of government policies, both State and Federal, on escalating electricity prices. **The desired outcome is affordable electricity for households and businesses, and that requires lower prices, not simply a curtailment of future increases.** Without a change from current trends, Australia faces damaging impacts on the whole economy.

Yours sincerely,

John Roberts