Gencost\_25

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# Gencost tries to serve too many ends

The CSIRO does not have the responsibility, authority, modelling tools, expertise or complete input data to calculate the price of electricity in a decarbonised NEM. And yet that, more or less is what it claims to do.

There is a need for a respected independent estimator for the electricity price (LCOE)required to justify investment in new generation assets but by trying to be more than that CSIRO has diminished the relevance of the numbers it does publish.

Outside of being a political football Gencost’s main use is to serve as input into AEMO’s ISP. Unless I greatly misunderstand the ISP modelling process AEMO uses only the individual asset costs in its own modelling process and not the half baked renewable fraction total cost.

The CSIRO has created political controversy for itself by wading into an area in which it did not need to go.

In the process much of the detail that the people that work with LCOE want to know gets lost.

## LCOE is at best only a guide

I apologies for this dull piece of pedagogy but it’s to clear the ground. As a reminder LCOE is the solution to a very standard algebra problem. Given a set of inputs (variable = assumptions) calculate the value of the missing variable.

In this case LCOE is derived from Net Present Value(NPV) analysis the cornerstone building block of economics and finance. In economics the principal foundation is the tradeoff between future and current consumption and this is equated by the rate of interest. In finance it’s the same principal , ha ha, $1 received in one year’s time is worth less than $1 received today. The rate of interest or more broadly when risk is considered, the weighted average cost of capital, is the return required to make people accept the wait, the investment return.

In NPV analysis we know the initial capital outlay and operating costs, we know the expected revenue and we have an estimate of the cost of capital. You put all those numbers into a formula and calculate whether the NPV is positive. If it is, bingo.

The next variation is to find what discount rate produces a zero NPV, that’s called the Internal Rate of Return(IRR) and can be used to rank a series of projects

In this third variation, used only in the electricity industry, all the inputs are known except the price and a price is found that produces a zero NPV which by definition has an IRR = WACC.

## LCOE is at best approximate and has many assumptions

There are so many explicit and implicit assumptions in LCOE