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Current Comment

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Free Electricity: What Cost? – What Benefit?

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Geoffrey Bertram has recently proposed that the government legislate for blocks of free electricity to be supplied to residences (Susan Edmunds “Call for free power” New Zealand Herald (10 February 2013)). It is a very appealing thought; few if any people are charmed by winter power bills. But what are the costs and benefits of the proposal?

There seem to be three legs to the proposal: 1) that water is free, 2) that NZ's electricity price has risen quickly relative to the rest of the world since the changes of the electricity market starting in the 1980s, and 3) that much electricity plant was constructed and paid for in the past and hence these costs for this plant are no longer relevant. None of these are a basis for the proposal.

Water is not free. It has social benefits in alternative uses via storage for future use in electricity, for substitution for other resources e.g. gas generation and general use, and in alternative non-electricity uses such as irrigation and recreation.

The second leg relates to price rises, but it does not tell us about the cost of electricity to households. Prior to the changes of the 1980s households as tax payers paid for much electricity infrastructure and plant. At the time the electricity price to households and businesses did not incorporate the full cost of electricity production and investment. Now the electricity price covers electricity production and investment costs and the industry is not cross subsidised from taxation. Prices of electricity before the changed electricity market arrangements do not indicate the cost of electricity to households at that time.

The third proposition is that historical paid-for investments such as dams mean that electricity is costless. It is a common misconception. It ignores the fact that water has various uses and a value of its own separate from the costs of infrastructure required to convert it to electricity. It is not free and its price is determined in electricity by the price of electricity. The fact that the dams that exist in 2013 have been paid for, does mean that hydro electricity is profitable to produce at today's electricity price: much in the same way as established dairy farms near processing factories are profitable relative to developing and remote dairy farms. In both cases the value of the firm will reflect the productivity of the firm and the history of investment and whether the investment has been paid for: in the case of electricity it is dams. For farms it is the history of fertiliser, fencing and genetic investment. In both cases changes in the market price they face cause revaluations of the firm, not the other way round.

For the economy to perform well, the value of using a resource in one activity should be the same as in any other use, and the way to ensure this is for the price to be the same for each user. If the price of a common unit of electricity is different for different users it is socially under valued in some uses. Households too should be called upon to pay the opportunity cost of electricity and by extension, water.

The price of electricity creates household management incentives. If the price is high, households may invest in insulation or alternative energy sources, or manage heating requirements more actively. This is part of the rationale for the emissions trading scheme: it raises the price of carbon-emitting activity so that substitute activities by consumers and firms are encouraged. It is understandably galling to be told this if, say, you are struggling to pay the monthly power bills, but to ignore household energy-saving incentives, as the proposal does, is no solution. Any additional consumption induced by the provision of free power, and any electricity economies that fail to occur under free power will have additional resource costs, since they imply more generation, higher prices or both.

Finally, a certain amount of free electricity to residences is equivalent to the government paying a chunk of our electricity bills. This is because three of the five major generators are state-owned. The idea may be palatable to some, but it has further widespread effects on the desirable use of our resources. There is the question of how the government would make up the resulting shortfall in its books – taxation is always a possibility, but raising taxes has a cost itself.

Why free electricity in the face of other initiatives, like education or child poverty? The view that households intrinsically “deserve” an electricity subsidy does not arise from the electricity market, nor can it be general as not all households are poor and not all businesses are flush with cash. There are existing government processes for addressing specific household needs.

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