Overview.- Electricity Price Review.- Bob Thomson

The Electricity Price Review report was a distinct disappointment. It looked at the Electricity Industry as it has been in the past, and showed poor vision or knowledge of technological changes which are occurring overseas ,giving those countries a distinct advantage from a cost point of view. It did not look at it from a customer point of view which is a major deficiency..

Figure 14 showing the Wholesale contract price clearly shows the increased costs which have occurred since the Bradford reforms which occurred in the 1990's.It also shows a bias as the cost of new stations is significantly below that shown in the Figure.

The same comments can be made from an examination of Figure 20. It is amazing that that was not commented on.

The examination of distribution charges , taken from Trustpowers presentation , is simplistic in its approach.A key factor, ignored , as detailed at the top of page 21 is the affect of rebates by Trust owned companies . These rebates are not dividends as represented in the report . They are reductions in line charges and should have been analysed . If this is done a completely different picture emerges especially for domestic customers.

That would give a truer picture.

The Generation sector is not competitive and has been making excessive profits for some time. Two studies ,one in 2009 and one in 2018 , have come to that conclusion as does Fig 14.

Electricity prices will rise substantially . The key to this is CO2 taxes. Generation in N.Z. is 80% renewable but only 65% non CO2. When CO2 taxes increase ,as they must, substantially, the cost of electrical energy will also rise substantially . This is caused by the way the spot market operates. For this reason I do not believe there will be a major pick up in Electricity demand. Much of the heavy transport demand will probably go to fuel cell application which will also allow electricity customers at all levels to be independent.

It is worth remembering that the estimates made by Transpower and officials in 2006,demand was supposed to increase to 50,000 Gwhr by 2012 instead it flatlined, to justify the 400 Kv line to Auckland have proven to be wildly optimistic.

Whilst the industry cannot practically fully reorganise to overcome the disastrous “Bradford “ reforms of the 90’s certain improvements can be made. They are ;

- Make all generators transparently put there commercial output into a contract market, available to all retailers , and make all retailers be able to buy out of it. There would be no direct contracts from

Generators to tied retailers.Separate accounts should be kept for Generation and Retailing.

- Metering should be regulated with data fed into a common system available to all. Similiar to Australian thinking. Customers should have this data.
- The idea of a distribution operator separate to a distribution owner should be dropped. Our market is very small . We already have far too much overhead in it.
- Distribution Companies should be allowed to install solar and batteries on their networks as well as fuel cells when available. The Commerce Commission should oversee that cross subsidies do not occur.
- There should be greater customer education and representation. To accommodate this all Bills should be itemised so that the breakdown of costs can be clearly seen by customers.
- To cope with the technological changes fast approaching there should only be one regulator. More and more the Distribution/Transmission business' will morph into a competitive framework. Having two regulators will cause major problems in different attitudes and demarcation issues.
- My detailed comment are attached .

1. Assessment of Consumers Priorities

   Consumers priorities will vary but everybody should have a right to basic electricity. With the emergence of new technologies ,solar, batteries and fuel cells many customers will increasingly leave the networks. It will not only be well off customers. If customers leave the networks it is not certain that those left pay more.There is the alternative that the electricity companies,including the regulatedones, lose value. i.e. A normal commercial position taking place of impairment or accelerated depreciation.

2. Do consumers have an effective voice.

   Low income groups do not have an effective voice. Community owned network companies give local customers an effective voice. A fact ignored in the report.

   An example of this is Entrust applying to the Commerce Commission regarding the cartel behaviour of the generators in supplying the fourth potline at Tiwai, at a cost price of about 5.5 c/Kwhr, which effectively withdraws capacity from Generation forcing up prices for all other customers. This appears to be the cost price for

Generation. The question is why are other customers paying so much more.

3. Whether Consumers trust the electricity Industry.

   There is very little trust of the electricity industry amongst the public , It is seen as a rip off and a form off tax. The reforms of the 1990's are seen as a failure.

4. Assessment of make up of recent price changes.

   There are two fundamental flaws in this analysis which reveals the biases of the review team.

   The first is that Distribution charges have not been analysed correctly. There are two classes of Distribution Companies. Those privately owned, and those community owned by Trusts . The Trust owned companies pay substantial rebates to their customers ,basically they are not for profit . If the figures are adjusted for this a completely different picture will emerge. The majority of these rebates are to residential customers. This is different from a dividend. Note 39 shows a clear bias in this report against customer orientation.

   Furthermore when assets have been sold the customers have been disadvantaged . An example of this is given in the recent article by Geoff Bertram in the Dominion recently.

   If the distribution charge increase was broken down properly it would be found that much of the increases

come from Hutt Valley, Powerco, Wellington, and North shore. All of which have moved into full private ownership away from community ownership. The Trust ownership model REDUCES charges to the customers compared with the private ownership model.

The second flaw is that the there is no breakdown of the generation, retail and metering charges. This must be easy to do unless information is withheld. There is a clear case for full disclosure on all accounts of all elements of the bill. It cannot be that hard, Flick does it.

5. International price comparison.

   In looking at the comparison what strikes me is that we are very high compare with other countries with a predominately hydro generation base i.e. Our generators are overcharging compared with the norm in other similar countries, Sweden, Norway, Canada.

6. Outlook for electricity prices.

   Prices will definitely increase by a substantial margin. The generators are only about 65% non co2, not 80%. When co2 pricing is fully invoked there will be a considerable increase in the cost of generation as with the market model we have, all generators get the benefit of the co2 cost whenever co2 plant is running. Many geothermal plants emit co2.

The cost of solar and batteries are falling by the predicted about 10-15% per year and new I.T. is making it easier to control load thus reducing the need for Transmission and Distribution. The unknown fact is Fuel cell technology which is about 10 years behind solar. Firms such as BOSCH, Wychei ,Toyota, Hyundia and Honda are developing fuel cells . Some to provide a domestic electricity source. If that develops many will leave the networks for reliability and price as well as other factors. This would reduce prices.

It is almost certain that the model developed in the review will not be around in 20 or so years. There is a revolution coming. You only have to refer to Australia where many customers are going off grid. This has been caused by subsidies but reduction in the cost of new technology has the same affect over time.

On balance prices will increase, but customers, especially domestic will leave the networks.

7. Affordability

If you have a purely commercial model such as N.Z. you will always have an affordability problem . The argument in the 90's was whether Electricity was an essential service or commercial product. The model put in made it a commercial product. If you want to have no affordability issues you have to compensate via the social security system. These should be introduced in the form of support

for solar panels to give long term benefits not short term relief of cash handouts.

8. Generation Sector Performance.

   What a superficial analysis. There have been two studies ,one in 2009 and one in 2014 ,which have both defined significant super profits made by the Generators. Why is there no analysis of the profitability of the Generators? Is that because the Government owns 50% and it is protecting the investment. Figure 14 shows that the reforms in the industry, splitting up the generators and removing retailing from Distribution Cos has been a failure.

   In a competitive market the contract prices should be below the new entry price until new capacity is required. That is the teaching I received at INSEAD in ’92 That this is not the case shows there is not competition.

   On my analysis the generation market is not competitive and this is protected by the generators being able to supply there retail arms direct. All commercial output should have to be put through a contract pool with all retailers buying and selling from that pool transparently. This would be similiar to the spot market for physical quantities.

   Recently the four major Generators colluded by back to back contracts to supply the fourth potline at Tiwai, about 4% of NZ load, at a price in the order of 5.5C/Kwhr.

As this is a base load contract it has the affect of removing generation capacity and forcing up prices. It is anti competitive and shows the generation market is not competitive at all.

Furthermore the price of new generation has been falling considerably, Gas Turbine prices have halved, wind has also been reported as being cheaper, and household solar is on parity with grid power. This is not reflected in the contract prices.

If you look at revaluations of Meridian, Genesis, and Mercury you will find they are large . No new capacity has been needed in N.Z. for some years, capacity has been removed. These revaluations are a result of excessive charging of domestic customers. Mainly Meridian sets the price of the spot market in the South Island and Mercury and Genesis set the price in the North Island. The purpose of these revaluations is to reduce their apparent excess profit levels.

Why was that not analysed?. It can be done from Annual reports.

The generation sector has been rapacious in its pursuit of profit at the expense of the domestic consumer. If it can sell to Tiwai at 5.5c/kwhr why cannot domestics have it at the same price.

9. Barriers to competition in generation.

There are significant barriers to entry as detailed above. To correct the situation all generation should be sold into a commercial pool and all retailers should have to buy from that pool transparently i.e. Generator /Retailers should not be allowed to sell internally to each other. As an alternative another option would be have arms length relationships between all generators and retailers.

Separate transparent accounts should be available for generation and separately for retailing.

As a last resort a limit could be put on the dominant Generators building new generation but this may impinge on reliability.

10. Sufficient Generation.

With the advances in solar, batteries and longer term fuel cells there will be no shortage of alternative generation. The problem will be that it is all at the downstream end and it is destructive to the value of the existing industry.

You have to ensure that all parties, are able to introduce it.

This means that supply cos must be allowed to put solar and batteries into their networks .

If you want downstream generation you should ensure they pay the same charges for Transmission as input generation i.e. they do not pay transmission charges.

The key to getting enough generation is to empower domestic consumers to be self sufficient and install solar etc. This can be done for all classes of customers.

11. Retail Sector performance

The performance looks good but is not. Some generator /retailers have put in barriers to competition such as Trustpower who have NOT installed smartmeters. Furthermore the smartmeters in NZ have not been used to maximise consumer benefits only industry benefits.

All retailers should have to pass on distribution/transmission charges transparently.

All bills should itemise the categories of charge just like Flick does.

The costs to serve in Fig 17 are exorbitant. Most of these charges have been loaded onto the domestic customers.

12. Barriers to retailing competition.

The lack of an adequate contracts market is a barrier. There are too many retailers for the number of customers in this country.

13. Vertical integration and the contract market.

The present arrangements give a substantial advantage to the Hydro based Gen/retailers hence there market dominance. This especially applies in a tight supply situation such as a dry year. You have to bring full

transparency with all commercial product being sold into and bought out of a common pool with full disclosure. The present arrangements are a rort.

14. Financial performance of Generators and retailers.

Why have the generation profitability not been determined. This should have been done. It makes analyses of this sector meaningless and frankly looks like protection. Figure 20 clearly shows the failure of the reforms made to the industry in the 90's.Just look at the cash flows and the forward contract prices. It also shows the extra profits are in the generation sector not the retail sector.

The generation sector has to be fixed if you want fair prices to consumers .

15. TPM process's

The critical question is the asset base. Transpower has made a number of bad investments the major one being the 400KV line to AK from Whakamaru which will never be used at 400KV. Customers should not have to pay for this line. An impairment should be applied to Transpower . They made the bad decision. As a long term observer of this industry there is a habit of overestimation . It occurred in the 2006 – 2017 period , it occurred in the 1970's with Generation as well as at other times. The same is occurring

with the estimates made lately by Transpower and referred to in this report.

If you adjust TPM as the Electricity Authority wishes you will encourage customers to leave the networks. Benefiting the generators and Tiwai is going the wrong way.

Furthermore with the advent of batteries and solar ,over time , many customers will be net exporters. With the theories of TPM they should not be paying for Transmission.

The factor not considered in the present thinking is that network business' over time will have to take impairments or accelerated depreciation as they will not be able to increase charges as customers will have alternatives.

Many will disagree but this is happening in Australia and elsewhere.

16. Distributors Profits.

Trust and Community owned Distributors are not profit maximisers. Their profits get returned to the customers . Many of the lines in the rural areas are uneconomic and as such overtime will be replaced by new technology. The parties with the incentive to do this are the distributors not the Energy companies .

If you wish to drive down the costs of the distribution sector let them put in new technology and give them incentives to do it.

Generator retailers will inhibit the new technologies as it deprives them of profit.

17. Greater efficiency for Distributors.

Pricing structures should reflect costs , especially peaks. But the arguments are being overtaken by technology as with battery prices falling the solar will be able to adjust to obtain maximum benefits.

There should be greater collaboration between Distributors but forced amalgamations will not work. Almost all of the small Distributors are barely economic and only sustainable because of local input and goodwill. Over time new technology will provide alternatives for the uneconomic areas.

Metering data should be transparent and available to all including customers. It should be collated in a central repository and be regulated as is proposed in Australia.

There is nothing wrong with the Governance of Trust owned line companies. The distributors are run by commercial boards. The Trusts are elected every three years. That is a better control than political interference. I believe the case in point was a vineyard in Marlborough

which has turned out to be a very good investment with extensive expertise on the relevant Board.

Asset management planning beyond ten years is guesswork. It is hard enough doing ten year plans.

18. Allocation of distribution costs.

Any changes to allocation has to be done slowly and in small increments. There probably should be some reallocation and this should be under regulatory guidance.

The legislation should be modified to encourage greater efficiency as requested by Powerco.

19. Challenges for Distribution

This is about customer choice. Customers will decide to put in solar,batteries and inverters and they will respond to price signals to allow control and integration into networks . What is forgotten is that these customers will have the option to leave in the future.

This country has a very small market. The distributors must be the operators of the distribution networks.

When you look at the extra cost structures introduced into the industry after the 90's, 5 major generators,2 regulators, a complaints authority,40 retailers etc it is no wonder the prices have risen substantially. These are all overheads and that is part of the reason why the reforms are a failure for customers.

Do not add in extra costs by allowing non network owners to be operators.

My son has 5Kw of solar which has been operational for 3 years and is economic. He is installing, at the present time, another 10 Kw of solar, a 10Kw battery with a 3 phase inverter. It is able to run islanded, will have a pay back of 5 years, without trading. These are package units which do not require knowledge beyond that of an ordinary electrician. I do not see a skills shortage. The question for him will be whether he stays on the networks.

These types of arrangements are increasing, many new connections to lifestyle blocks are not being made. The customers go stand alone.

20. Impact of Technology.

The technology will have a huge affect on the industry. Recent investor presentations by Genesis and Mercury have admitted that distributed generation will be cheaper than bulk generation by 2020.

If you have solar and a battery reliability, from the networks, is less important. Once a fuel cell home power unit , being developed overseas by BOSCH at least, appears the question will become whether it is worth paying the transmission and distribution charges . Transmission is especially vulnerable.

All companies in the industry will be liable to take significant impairment charges. You cannot just keep putting up the charges. The Commerce Commission in N.Z. only promises revenue security on assets for 10 years.

The prime point to remember is that the CUSTOMERS will have choice and they will have the ability to store the product which will remove a lot of value from the industry participants.

Predicting the timing and the detailed direction is difficult but similarities to other sunset industries can be observed.

21. Impact of technology on pricing.

With the reducing costs of new technology ,the advent of batteries , and sophisticated I.T. control specific charging mechanism's will be optimised by customers.

22. Emerging technologies and resilience.

The need for short term resilience recedes for those with batteries. If higher resilience costs money it will encourage customers to leave . Those that need the resilience should pay for it . That is mainly industry especially places like Tiwai.

23. Regulatory System

The objectives of both regulators assume that all consumers remain connected to the networks. That does not give the best outcomes for the country . It should be

rephrased to give the best outcomes for all consumers whether connected or not. At the moment both of the objectives can be read to be protecting the present industry.

Fairness should not be in the objectives it introduces to many judgement calls.

24. New technologies and regulation

The Regulators have discouraged new technology in this country. The affect of this is that in the future many of the leaders in this field will leave the networks and the key is fuel cells.

The advent of new technology will mean that it is preferable to only have one regulator. This would also reduce costs,a factor sorely needed.

Bob Thomson