

Electricity Authority

## **Comments on implications of involving technologies for pricing of distribution services**

### **Q1. What are your views on the scope of the Authority's review of distribution pricing in the face of evolving technologies?**

*I think the scope is deficient. Before the electricity reforms ripple control of hot water cylinders and other similar loads brought huge benefits to the consumer. Regulations imposed as part of the electricity reforms effectively destroyed the incentive that lines companies previously had to use ripple control for the benefit of their consumers.*

*This review should have commented on this and should have had proposals on how we could return to the previous situation. Nothing that is suggested in this document can come anywhere near to achieving the benefits for the consumer that were achieved by ripple control. (Note that I am aware that Orion and other Upper South Island distributors are still using it to the benefit of their customers.) Finding out why other distributors have abandoned it and remedying the situation should be top priority for the Electricity Authority.*

*The review also failed to discuss other new technologies such as smart thermostats on water heaters that could deliver even more benefits than ripple control. These include frequency management, managing transmission and distribution constraints, avoiding blackouts due to loss of generating capacity transmission lines, retailers reducing their consumers demand in times of high prices and so on.*

### **Q2. What other technologies do consumers invest in or use that are likely to have a material effect on investment or operation of distribution networks? Please give reasons for your answer and an estimate of when you expect the technologies will have a material effect.**

*Changing to LED lamps. The technology is here now and is already economic. Perhaps more publicity should be given to their advantages to encourage people to make invest-*

*ments that, right now, are in their own economic interests. No financial as incentives or market distortions should be necessary.*

**Q3. What is your view of the Authority's concerns that existing distribution pricing structures do not reflect the costs of the different distribution services provided and may not be durable?**

*I agree. Charging for distribution costs on the basis of kWh consumption is seriously wrong and has produced distortions such as seriously uneconomic investment in solar panels.*

**Q4. What is your view of the potential for a significant amount of inefficient investment in solar panels if distribution pricing structures continue to be based primarily on a consumption-based approach?**

*In a real world, not much because solar power is seriously uneconomic whichever way you look at it. But in the world that we inhabit where a solar cell producing electricity worth seven or eight cents can generate an income of \$.25, it is significant.*

**Q5. What is your view of the potential for inefficient investment in distribution networks if there is a high uptake of electric vehicles and distribution pricing structures continue to be based primarily on a consumption-based approach?**

*Electric vehicles exist because, in most countries, they are heavily subsidised. In a world with an abundant supply of fossil fuels (just look at the price) for the foreseeable future (from fracking and advancing deep water technologies) there is little scope or need for expensive electric vehicles to take over from conventional cars. In most countries they are the toys of the rich who are quite happy for the subsidies to be paid for by poorer taxpayers.*

*They will become significant in New Zealand only if we get a government crazy enough to subsidise them.*

**Q6. What is your view of the potential for battery technology to defer or avoid investment to augment distribution networks?**

*None. And for a very long time. The review pointed out that they are expensive but, regrettably, did not take it to its logical conclusion and calculate the cost of battery storage per kilowatt hour recovered. The review should have done so.*

*I have calculated this cost and it is in the region of \$0.77/kWh This is probably on the low side because it ignored installation and connections. As the cost of installation and connections cannot go down by any significant amount, it is probable that the economics would be dubious even if you got the batteries for nothing.*

### **Q7. What is your view of the potential for alternative distribution pricing structures to promote more efficient investment by consumers in heat pumps and / or LEDs?**

*The economic incentives exist right now. Charging for distribution as a service would probably improve the economics somewhat.*

### **General comments**

*The review fails to set the scene by discussing the range of likely costs and other factors regarding the technologies it discusses. It should also have listed the electricity consumption of various appliances – which would have shown that, by far, electric water heating is the biggest demand. If this had been done, people would have been able to establish the relative credibility of the various technologies. It could also have mentioned that the most economic use of solar PV is to connect the solar cell directly to the heating element of an electric water heater. This eliminates costs of the inverter and connection to the system and also provides storage for nothing.*

*The review also failed to mention that, once upon a time, New Zealand had the best demand side management system in the world and that it was the electricity reforms that have effectively destroyed it. It should have discussed this and discussed ways of undoing the damage done by the electricity reforms. It could also have discussed truly smart technologies such as intelligent water heater thermostats.*



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