DISTRIBUTION PRICING ROADMAP

APRIL 2019





CUSTOMER LED NEW ENERGY FUTURE

New breed of customer – new technology unlocks:

- New behaviours
- Need for new options
- Demand for increased resilience, lower costs and a reduction in carbon





Vector is enabling this new future:

- Data analytics
- Battery storage
- Peer-to-peer trading
- Integration of consumer-owned distributed generation (DG)
- Managed smart electric vehicle (EV) charging
- Smart load control
- New pricing



REGULATORS, POLICY-MAKERS AND INDUSTRY ALIGNED ON NEED FOR PRICING REFORM – BUT CUSTOMER IMPACTS MUST BE CAREFULLY MANAGED

"Moving to prices that more accurately reflect costs comes with risks... A GPS could encourage industry to spread impacts of price rises over a longer time, and to co-ordinate reform with changes to LFC regulations and energy hardship measures." EPR Options Paper, Feb 2019

"Participants in the electricity sector have been highlighting their ongoing concerns on the [low user] regulations and the review is an opportunity to assess their role in the wider context of supporting New Zealanders to afford their energy bills." Megan Woods, Mar 2018



"There is broad industry agreement that distribution network prices need to change... The current situation is unsustainable" Electricity Authority, Oct 2018

"Pricing reform... will play an important role in delivering optimal outcomes to consumers in the context of ongoing technological development... analysis strongly indicates that careful transitioning is essential if reform to distribution pricing is to be successful."

ENA, Feb 2019



CUSTOMER NEEDS TO BE AT THE CENTRE

Pricing structures need to satisfy customers rather than textbook economic theory

With the customer:

- Explain simply
- Get input
- Design around what customers value
- Test / trial
- Manage impacts





WHAT OUR CUSTOMERS TELL US THEY VALUE





WHAT OUR CUSTOMERS TOLD US ON PRICING

Key findings:

- They want options
- They briefly engage with electricity bill / pricing
- Have interest in new pricing plans
- Want control
- Like rewards not penalties
- Are interested in new technologies

Innovative Pricing Options:



Preferred by 30% of customers

Preferred by 20% of customers

Preferred by 32% of customers MOST POPULAR OPTION



VECTOR'S WORK PROGRAMME ON PRICING REFORM IS UNDERWAY





WE ARE EXAMING FOUR PRICING STRUCTURES PLUS PEAK-TIME REBATE (PTR)

Static time- of-use (TOU)	 Fixed charge (c/day) plus static peak/off peak variable charge (c/kWh) Peak times defined as per existing TOU tariff 	Price mod
Dynamic Volumetric	 Fixed charge (c/day) plus dynamic peak/off-peak variable charge (c/kWh) Peak defined as 10 highest consumption periods in existing TOU time definitions (signalled ~24 hours in advance) 	char uncc Bill ir
Demand based	 Fixed charge (c/day) plus variable anytime maximum demand (AMD) charge (\$/kW by month) 	Bratt
Fixed Bill	Flat monthly charge, orVolume or capacity graduated monthly charge	deve prici

Price structures have been modelled on both a low user fixed charge (LFC) compliant and unconstrained basis

Bill impacts have been estimated both pre- and post- demand response

Brattle Group is providing analytical support on both development and assessment of pricing options



PRELIMINARY ANALYSIS SUGGESTS IMPORTANT TRADE-OFFS BETWEEN SIMPLICITY, COST-REFLECTIVITY AND BILL IMPACTS

Dynamic Volumetric	 Significant monthly variation in prices Strong cost-reflective signal but low predictability for customers Less intuitive/simple than status quo or static TOU
Static time-of- use	 Relatively small bill impacts vs status quo Less cost-reflective than dynamic pricing but high level of predictability Adding seasonal shape would increase cost-reflectivity but add complexity
Demand based	 Reduces winter bills on average as volume effect reduced Charging unit (kW) not intuitive and would require customer education AMD not necessarily connected to system peaks/investment costs Requires active management to manage costs
Fixed Bill	 Significant bill impacts on low volume / low load factor customers Reduces winter bills on average as volume effect removed Simple to understand and similar to many other products (broadband, Netflix etc) Not cost reflective on its own but could be combined with PTR or excess demand charge



PTR TRIAL IS SCHEDULED TO LAUNCH IN WINTER 2019



Current thinking is that PTR could be usefully combined with fixed bill structure as a tool to manage costs

However in theory PTR could be added to any of the price structures under consideration



KEY CHALLENGES

Low Fixed Charge, even with the EA's 2016 Guidelines creates restrictions on price structures

• No tiered or stepped prices, including for excess demand charges

Some price structures require broader industry development, data exchange protocols, billing systems

- Particularly interval data due to the volume of data, privacy etc
- Structures with unknown price timing, such as Critical Peak or Dynamic Volumetric
- Agreement on process for items such as deemed capacity
- Monthly demand charging requires calendar billing

Practical considerations such as the effect of switching

• Part period switching (switch move), what happens with monthly demand, new deemed capacity etc

None are insurmountable, but some do require industry agreement and development which will limit choices or require a lengthy transition period

