Submission

Electricity Authority: More efficient distribution prices

19 February 2019

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1 Introduction

1.1 Aurora Energy welcomes the opportunity to respond to the Electricity Authority's (Authority) consultation paper *"More efficient distribution prices: what do they look like?"*, dated 11 December 2018 (Consultation Paper).

1.2 No part of our submission is confidential, and we are happy for it to be publicly released.

1.3 If the Authority has any queries regarding this submission, please do not hesitate to contact:

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2 Support for distribution pricing reform

2.1 Aurora Energy supports review and reform of distribution pricing.

2.2 As we stated in our Future Pricing Roadmap – Update, in 2018, we have a commercial interest in ensuring prices are as cost-reflective (efficient), as practicable. Cost-reflective network pricing, when reflected in retail prices, provides appropriate commercial incentives for consumers to manage their electricity use, or use on-site generation / storage, during times of high network demand. Conversely, it incentivises consumers to use electricity, or charge their storage facility, during times of low network demand. When electricity use changes in this way, our network investments to cater for electricity demand growth can be reduced, resulting in lower and more stable prices. This is to the benefit of electricity consumers.

2.3 The main body of our submission addresses general points that we would like to convey to the Authority, and our responses to the Authority's specific questions posed in the Consultation Paper are set out in Attachment A.

3 Co-ordination with our CPP application

3.1 We have signalled an intention to submit a customised price-quality path (CPP) proposal to the Commerce Commission, so that our regulated price (revenue) path reflects the long-term investment requirements of the network. We will be submitting our proposal in May 2020, in anticipation of commencement from 1 April 2021.

3.2 While we support distribution pricing reform, preparing a CPP proposal requires considerable time and resources and, for us, needs to take priority over distribution pricing reform at this time.

3.3 We are also mindful that if pricing structures change as a result of distribution pricing reform at the same time as our CPP takes effect, the impact on consumers' bills may be erroneously attributed to pricing development. Some consumers could perceive they are made worse off by the pricing methodology changes when they are not. This could harm consumer support for distribution pricing reform and undermine the durability of the changes. We will ensure pricing development changes are not applied in the same year as the commencement of the CPP.

3.4 The development of our CPP proposal will involve comprehensive consultation with stakeholders, including consumers, to provide them with the opportunity to contribute to our asset planning. As review of distribution pricing also requires stakeholder consultation, notably with retailers and consumers, there is a risk that the two separate initiatives, which both relate to pricing, are confused for each other, diminishing the value of each consultation process.

3.5 Once we have established a firm programme for the CPP project, particularly around stakeholder consultation, then scheduling of pricing development consultation will be reviewed to ensure it does not conflict with CPP consultation.

4 The 'technology' problem

4.1 While the Consultation Paper does not contain an explicit problem definition section, the Authority's distribution pricing 'technology' problem can reasonably be stripped down to the following propositions:

(a) Do not reward self-generation for reducing off-peak network usage.

> *"… consumers have an incentive to over-invest in solar panels, because these reduce the total kWh they draw from the network - but not at peak times."*[1]

(b) Do reward consumers for using battery storage to enable self-generated (or off-peak) electricity to be used during network peaks to help avoid bringing forward future investment costs.

> *"consumers have few incentives to avoid using power-hungry appliances or charging their electric vehicles when the network is congested, even if reducing demand is the cheapest option for addressing congestion. Distributors interpret the congestion as a need to invest in more network capacity."* [2]

> *" … smart (off-peak) EV charging can reduce the future demand for distribution network capacity, compared to passive charging – people plugging in their EV when they get home, without regard for congestion."*[3]

(c) Do reward electric vehicle (EV) owners for recharging their batteries off-peak to help avoid bringing forward future investment costs.

> *"Demand response can be as simple as adding a time switch to a storage hot water cylinder – to avoid heating water over peak demand periods – or as sophisticated as adding a battery to a rooftop solar panel installation to draw on at peak time."*[4]

4.2 Given the way the Authority articulated the technology problem, we think the Electricity (Low Fixed Charge Tariff Option for Domestic Consumers) Regulations 2004 (Low Fixed Charge Regulations) are problematic, and time-of-use (TOU) pricing warrants a higher rating than the 2-star rating that the Authority has given it in the Consultation Paper. The nature of the problem also heightens the importance of the existing Distribution Pricing Principle (Pricing Principle) (a)(iii), which we think should be retained (this is further discussed at question 4 of Attachment A).

5 Access to data

5.1 Any move away from traditional fixed/flat-volumetric pricing to more sophisticated pricing methodologies will require additional advanced metering data which needs to be made available on reasonable commercial terms. Consideration will also need to be given to how consumers who are not on smart meters are priced.

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[1] Electricity Authority. (2018). More efficient distribution prices: What do they look like?, Consultation Paper, 11 December 2018, paragraph 2.15.
[2] Electricity Authority. (2018). More efficient distribution prices: What do they look like?, Consultation Paper, 11 December 2018, paragraph 2.9.
[3] Electricity Authority. (2018). More efficient distribution prices: What do they look like?, Consultation Paper, 11 December 2018, paragraph 2.17.
[4] Electricity Authority. (2018). More efficient distribution prices: What do they look like?, Consultation Paper, 11 December 2018, paragraph 2.9.

6 Areas where we would welcome clarification from the Authority

6.1 It is helpful for the Authority to be as clear and transparent as possible about its expectations and views. The Authority's thinking has clearly changed since its last distribution pricing consultation in 2015 (2015 Consultation Paper)[5]. This shifts the 'goal-posts' somewhat.

6.2 The Authority had expressed fairly orthodox views about time-of-use (TOU) pricing, and long-run marginal cost (LRMC), to signal future investment requirements. This was reflected in the 2015 Consultation Paper and the Authority's 2014 LRMC working paper[6].

6.3 The Authority's proposal is now that TOU be rated 2-stars, at best, and LRMC is justified because *"it is not yet practical to calculate locational marginal prices on distribution networks"*[7].

6.4 We are unsure about the efficacy of locational marginal pricing, at the distribution level. Locational marginal pricing is a potentially radical pricing option, which would need to be carefully considered and tested. The Consultation Paper is silent on why it should be preferred. While there is potential for future pricing innovations, we think the focus should be on what is practicable and will deliver benefits now.

6.5 While the Consultation Paper was fairly succinct, there are areas where we feel it would be useful for the Authority to clarify or elaborate on its views:

(a) the Electricity Price Review indicated tariff rebalancing should be adopted to lower costs to residential consumers. We would welcome clarification about the Authority's view on this given the Electricity Networks Association's (ENA) analysis indicates the types of distribution pricing reforms that are being discussed could raise residential prices. The Authority has previously indicated it considers residential prices to be below cost[8];

(b) we are unsure where the Authority's decision-making and economic framework for distribution pricing methodology (DMEF) fits in with the Authority's proposals (do pricing methodologies that score highly on the DMEF get a high star rating?);

(c) we are unsure why it is proposed to shift the Distribution Pricing Principles (Pricing Principles) focus from signalling the cost of future investment to losses. The Consultation Paper made clear the Authority's preference, if practicable, is for short-run marginal cost locational marginal pricing over LRMC pricing without explaining why;

(d) the Consultation Paper does not explain how LRMC pricing *"excessively discourage use of the network when there is spare capacity"* or *"insufficiently discourage use when the network is congested"*[9]; and

(e) the Consultation Paper is not as clear as it could have been as to why TOU pricing has dropped in the Authority's preferences, and kVA-based congestion charges are considered preferable[10]. We note TOU pricing would directly address the 'technology' problem the Authority has articulated in both this Consultation Paper and the 2015 Consultation Paper.

[5] Electricity Authority. (2015). Implications of evolving technologies for pricing of distribution services, Consultation Paper, 3 November 2015.

[6] Electricity Authority. (2014). Transmission Pricing Methodology Review: LRMC charges, Working paper, 29 July 2014

[7] Electricity Authority. (2018). More efficient distribution prices: What do they look like?, Consultation Paper, 11 December 2018, paragraph 3.10.

[8] Electricity Authority. (2014). Analysis of historical electricity industry costs, Final report, 21 January 2014.

[9] Electricity Authority. (2018). More efficient distribution prices: What do they look like?, Consultation Paper, 11 December 2018, paragraph 3.10.

[10] This was ambiguous based on the Appendix B background to the star ratings.

7 Concluding remarks

7.1 Network pricing reform needs to be carefully managed for it to be successful.

7.2 For Aurora Energy, our planned CPP proposal adds additional challenges and complication. While the Authority has suggested utilising potential price reductions at the 2020 default price-quality path reset to help manage the transition and potential price shocks, the situation for Aurora could be the opposite if the CPP results in higher investment and price requirements.

7.3 The Consultation Paper helpfully lays out its current thinking about what good pricing options look like.

7.4 The Pricing Principles and star rating system will most likely be successful in facilitating and encouraging price reform, if the Authority garners stakeholder buy-in and broad support for its proposals (including the preferred pricing options). We want to avoid a situation where we have to balance competing regulator and customer preferences.

7.5 The proposed star rating system has a strong subjective element to it (in contrast to, say, the Energy Rating Labels it is presumably modelled on). Given this, we support the intention to overlay the star ratings with qualitative analysis. It could be helpful if this included what the Authority considered to be good (or best) practice which other electricity distribution businesses (EDBs) could follow, and what it considered to be examples of existing pricing that it does not consider good (or best) practice (for example, where there was an unnecessarily large number of tariff categories applying to small groups of consumers).

ATTACHMENT A – FORMAT FOR SUBMISSIONS

Question	Question	Response
Q1	**Do you agree that distributors need to reform their prices? What is the reason for your answer?**	Aurora Energy is supportive of initiatives for review and reform of distribution pricing.
Q2	**How important and urgent are the issues identified by the Authority?**	The reform of distribution pricing must be undertaken with care and not unduly rushed. In order to achieve long-term success of such reform, we recognise the need for consumers and electricity retailers to be at the forefront of any pricing reform and to provide consumers with opportunities to voice their views, for their preferences to be heard, and to influence distribution pricing decisions and proposals. This engagement needs to happen early (before proposals are developed) in the distribution pricing review in order for it to be meaningful. There will likely be significant impacts on groups of consumers as a result of distribution pricing reform. It is, therefore, imperative that consumers are engaged and informed throughout the reform process, and such engagement cannot be rushed. If electricity retailers offer pricing innovations, such as spot market contracts, and consumers do not like these pricing arrangements, they have the ability to choose another retailer. We saw this with Flick Electric's dramatic customer losses in November 2018. The same is not the case with distribution pricing, where consumers currently have no material options for the provision of the service. Therefore, careful consideration and thought needs to be given to the development and implementation of distribution pricing reform. Negative consumer reaction to fixed charges during pricing reforms in the 1990s, and the subsequent political response with the introduction of the Low Fixed Charge Regulations provides a lesson we all should be mindful of about the importance of understanding and respecting consumer interests and preferences. A good framework for thinking about these kinds of issues is provided by the principal purpose of Part 4 of the Commerce Act 1986, which is to promote outcomes consistent with workably competitive market outcomes. This is not far removed from the top ranking of prices that are "*market-based*" or "*market-like*" in the DMEF.

<table>
<tr><td>Q3</td><td>Do you agree with the proposed Distribution Pricing Principles?</td><td>Overall, we feel more of the existing Pricing Principles should be retained than is proposed, but that both versions have desirable elements.

Please refer to our further comments at Q4 below.</td></tr>
<tr><td>Q4</td><td>What if any changes would you recommend are made to the proposed Distribution Pricing Principles, and why?</td><td>We have the following specific comments on the Authority’s proposed revisions to the Pricing Principles:
<table>
<tr><th>PRICING PRINCIPLE</th><th>AURORA’S RECOMMENDATION</th></tr>
<tr><td>(a) Existing Pricing Principle (a)(ii): Existing Pricing Principle (a)(ii) is a well understood and orthodox network pricing principle.

We would like to better understand the rationale for changing the Pricing Principle from future investment to losses and short-term capacity constraints. The focus of the Consultation Paper is on longer-term investment impacts.</td><td>Retain existing Pricing Principle (a)(ii).</td></tr>
<tr><td>(b) Proposed Pricing Principle (a)(iii): We support proposed Pricing Principle (a)(iii)’s reference to “time”, given TOU pricing would largely address the problems the Authority has identified. We question though the reference to “location-specific”. The Authority has not explained its preference for locational marginal pricing, and has acknowledged this pricing option is not practicable.</td><td>Adopt proposed Pricing Principle (a)(iii)’s reference to pricing being time-variant.</td></tr>
<tr><td>(c) Proposed Pricing Principle (a)(iv): The consultation paper’s “Reasons for proposed amendments to the pricing principles” only stated “Amended principle (a)(iv) states that where costs can be attributed to a specific user or set of users, those costs should be recovered from those users only”[11] and did not include any reason for its inclusion. The proposed Pricing Principle (a)(iv) appears to simply be an example of how to comply with existing Pricing Principle (a)(i). We are not sure it warrants being treated as a principle in its own right.</td><td>Amalgamate proposed Pricing Principle (a)(iv) as an example in existing Pricing Principle (a)(i), or alternatively delete (a)(iv).</td></tr>
<tr><td>(d) Existing Pricing Principle (b)/Proposed Pricing Principle (b)(i): We agree with the Authority that the</td><td>Create an amalgam of existing Pricing Principle (b) and proposed Pricing</td></tr>
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[11] Electricity Authority. (2018). More efficient distribution prices: What do they look like?, Consultation Paper, 11 December 2018, paragraph A.4.

			existing Pricing Principle's reference to demand responsiveness (implying Ramsey Pricing) is too narrow. The intention should be that cost recovery does not distort network use or minimises distortions (as reflected in the proposed revisions).	Principle (b)(i) which clarifies that Ramsey Pricing is just one example of how pricing distortions from cost recovery can be minimised.
		(e)	**Existing Pricing Principle (c)(i):** We do not agree that "*principle (c)(i) … is unnecessary*" or with the rationale that "*Prices that are subsidy-free and have regard to users' benefits or demand responsiveness do not encourage 'uneconomic bypass', so that phrase does not add anything*"[12]. Any price above incremental cost (which is necessary to recover the full costs of supplying distribution services), and therefore subsidy-free, can encourage 'uneconomic bypass'. We also note the Authority proposes to remove the reference to "*demand responsiveness*" so it cannot use the existing reference as a justification for removing Pricing Principle (c)(i). We are particularly conscious of the importance of Pricing Principle (c)(i), given our experience with PowerNet's decision to create inefficient network duplication at Frankton (Queenstown).	Retain existing Pricing Principle (c)(i).
		(f)	**Existing Pricing Principle (d):** From a consumer perspective, it may be more important that the prices themselves (as well as the development of those prices) are transparent, promote price stability and certainty and that the impact of changes to prices during their development is regarded (particularly where price shocks may occur due to pricing reform).	Retain the existing Pricing Principle (d) and: (1) replace the reference to "*stakeholders*" with "*consumers*"; and (2) remove the reference to "*Development of*" *as* this is covered in the proposed new Pricing Principle (c).
		(g)	**Existing Pricing Principle (e)/Proposed Pricing Principle (d):** We support the proposed changes. The changes make the requirements clearer and more	Adopt the changes in proposed Pricing Principle (d).

[12] Electricity Authority. (2018). More efficient distribution prices: What do they look like?, Consultation Paper, 11 December 2018, paragraph A.10.

		robust, particularly noting that *"Prices should not place unreasonable costs and requirements …."*. (h) **Proposed Pricing Principle (e):** We agree consumers should be able to know or predict the prices they will face when making decisions to connect to or use the network. Realistically consumers will prefer to know the prices they will face rather than have to predict the prices.	Adopt the changes in proposed Pricing Principle (e).
Q5	**What if any changes would you propose to the star-ratings to better reflect the relative efficiency of distribution prices?**	While there are obvious parallels with the Energy Rating Labels that apply in New Zealand and Australia, the Energy Rating Label system is based on objective (and quantified) measures of energy efficiency. We are not sure if it is intentional, but the proposed star rating system appears to 'hard-wire' a preference for particular pricing methodologies, without taking into account that 'one size does not fit all'. What might be optimal in one set of circumstances (for example a high growth area, with large expected investment needs) may differ substantially to other circumstances (for example a stagnant growth area, with surplus capacity). Each EDB's network is unique and there needs to be room for it to be able to adopt the pricing methodology which best suits its particular network. Each EDB should consider their own individual circumstances and the views and preferences of electricity network users, including both electricity retailers and its consumers. The reasons why a particular EDB has selected a particular pricing methodology may be just as important as, or perhaps more important than, the star rating. By way of analogy, an individual consumer will not necessarily purchase white ware with the highest energy efficiency rating. There are trade-offs between price and quality, or capital and operating expenditure to take into account. The right choice will vary from consumer to consumer, depending on things like their financial wherewithal (what they can afford), and likely level of use of the appliance (is the washing machine intended for a holiday home, where it will be used infrequently?). The same can be said for the proposed distribution pricing star rating system. The option with the highest star rating might not be the best option for a particular EDB's circumstances. An alternative approach to the proposed star rating system, which could help avoid 'hard-wiring' particular pricing options, could be to provide a rating more directly against the level of compliance with each of the individual Pricing Principles.	
Q6	**How long do you think distributors would reasonably need to introduce the different**	Distribution pricing reform is already underway within the industry, with the ENA having established multiple working groups in recent times to consider the development and implementation of reform. As mentioned above, at question 2, the reform of distribution pricing must be undertaken with care and not unduly rushed.	

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<td>price structures discussed above?</td>
<td>As discussed in the main body of our submission, we need to consider the implication of our CPP on the prices that our consumers will face in the coming years. We need to manage the timing of any distribution pricing reform carefully to ensure that any price impacts are well understood by our consumers and that the impacts of our CPP and the impacts of distribution pricing reform are not confused with each other.

It is also important that the industry is afforded the opportunity and time to work collaboratively on distribution pricing reform to ensure that a consistent approach is developed, where possible.</td>
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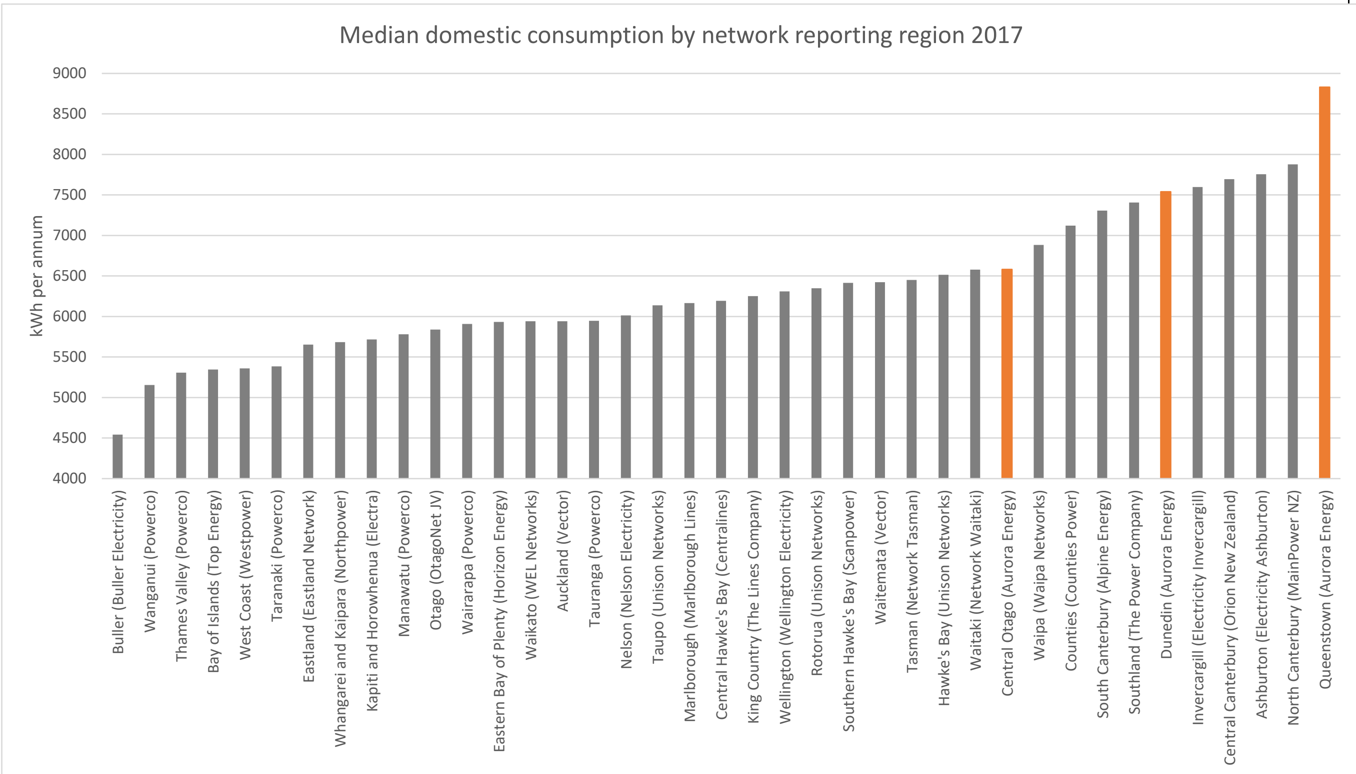
<td>Q7</td>
<td>Can you illustrate how and to what extent the LFC regulation hinders price reform?</td>
<td>Given the Authority considers one of the main problems with current distribution pricing to be over-reliance on flat-volumetric charges, we think the issues with the Low Fixed Charge Regulations, which require low fixed charges/high volumetric charges, warrant greater attention.

The 8,000 and 9,000kWh thresholds for an “average consumer” in the Low Fixed Charge Regulations are too high and mean a substantial majority of domestic consumers in New Zealand qualify for the low fixed charge tariff option.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As depicted in the graph above, it is notable that while the Aurora Energy network area is a relatively cold part of New Zealand, with correspondingly high levels of domestic electricity consumption, Queenstown is the only place in New Zealand where the majority of households consume more than the Low Fixed Charge Regulations threshold of 8,000kWh (but not the threshold that applies to Aurora of 9,000kWh)[13].

	Queenstown					Central Otago					Dunedin				
	5th percentile (kWh)	25th percentile (kWh)	50th percentile (kWh)	75th percentile (kWh)	95th percentile (kWh)	5th percentile (kWh)	25th percentile (kWh)	50th percentile (kWh)	75th percentile (kWh)	95th percentile (kWh)	5th percentile (kWh)	25th percentile (kWh)	50th percentile (kWh)	75th percentile (kWh)	95th percentile (kWh)
January	115	315	508	759	1276	116	273	431	637	1093	139	309	463	655	1023
February	102	283	459	684	1150	100	241	382	562	953	143	286	418	580	909
March	89	296	492	742	1230	92	250	418	621	1068	155	328	489	691	1079
April	126	369	607	913	1527	104	282	464	681	1149	193	391	573	807	1275
May	163	492	822	1258	2149	112	352	590	889	1533	238	495	735	1052	1672
June	185	588	987	1516	2595	114	386	678	1038	1872	261	550	826	1196	1955
July	215	689	1165	1787	3097	126	452	781	1212	2164	276	612	927	1339	2151
August	189	603	1015	1567	2704	117	399	689	1062	1926	238	526	800	1154	1881
September	157	491	824	1239	2168	104	341	568	858	1547	214	459	688	987	1601
October	126	372	622	947	1644	99	283	475	716	1253	190	390	578	828	1331
November	108	307	517	783	1340	88	249	413	618	1065	167	337	494	700	1116
December	90	266	449	681	1171	85	240	398	607	1056	124	270	403	572	908
Annual	1665	5071	8467	12876	22051	1257	3748	6287	9501	16679	2338	4953	7394	10561	16901

The table above demonstrates that, based on month-by-month analysis of domestic consumer electricity consumption in our three network reporting regions, even domestic consumers in the top 75th percentile of electricity consumption are only 'standard' consumers during the winter months, and would be considered low-use consumers during summer.[14]

13 https://www.emi.ea.govt.nz/Retail/Reports/0YUCE0?DateFrom=20100101&DateTo=20171231&RegionType=NWK_REPORTING_REGION&Timescale=Y&Show=P50&seriesFilter=ALL&_rsdr=ALL&_si=tg|consumption,_dr_DateFrom|20170101,_dr_DateTo|20171231,_dr_RegionType|NWK_REPORTING_REGION,_dr_Timescale|Y,v|4

14 https://www.emi.ea.govt.nz/Retail/Reports/0YUCE0?DateFrom=20100101&DateTo=20171231&_rsdr=ALL&_si=tg|demand,_dr_DateFrom|20170101,_dr_DateTo|20171231,_dr_RegionType|NWK_REPORTING_REGION,_dr_Timescale|M,_dr__rsdr|Y1,v|4

		The approximate percentage of domestic consumers who qualify for the Low Fixed Charge tariffs in Aurora Energy's network reporting regions are:[15] <table><tr><th></th><th>Queenstown</th><th>Central Otago</th><th>Dunedin</th></tr><tr><td>**February**</td><td>75.9%</td><td>82.3%</td><td>82.6%</td></tr><tr><td>**Annual**</td><td>53.0%</td><td>71.1%</td><td>62.7%</td></tr></table> The majority of households in New Zealand qualify for the low fixed charge tariffs, and will be subject to what the Authority considers to be an inefficiently strong incentive to invest in solar (with all the ensuing detriments the Authority has identified). The concerns the Authority has raised in both this Consultation Paper and the 2015 Consultation Paper about new or evolving technology cannot be fully resolved without reform[16] or removal of the Low Fixed Charge Regulations.
Q8	**How accurately has the Authority categorised distributor revenues and costs? How could this be done more accurately?**	
Q9	**What if any would be better indicators of the efficiency of distribution prices, or the ambition of and progress being made by distributors on their price reforms?**	
Q10	**What assistance could the Authority (or other stakeholders) offer distributors in order to speed up the reform process, or help to remove**	It would be helpful for the Authority to promote the removal of the Low Fixed Charge Regulations. A unified approach by the industry may help expedite legislative reform in this area.

[15] Estimates assume a linear relationship between percentile and demand (see table above).

[16] Even adjusting the Low Fixed Charge Regulations so the *"average consumer"* reflects a genuine average or median (or better still the bottom quartile), and adjusting the low fixed charge for inflation, would significantly dampen the distortions caused by the regulations. Note: average domestic consumption is higher than the median so even using a genuine average consumption value as the threshold for the *"average consumer"* would result in the majority of domestic consumers being better off on a low fixed charge tariff.

	or reduce barriers to distribution price reform?	