

**Advanced Metering Consultation
APPENDIX F: SUMMARY OF DISCUSSION POINTS**

Submission by: Energy Intellect Limited www.energyintellect.com

<p>Question 1</p>	<p>Do you agree with the metering strategy outlined in section 3? Please discuss reasons for agreeing or disagreeing</p> <p>Largely, The writer AGREES with the enabling factors that drive the requirement for smart metering.</p> <p>However, smart metering by itself will not enable more flexible energy pricing. Flexible pricing can only be enabled by retailers who choose to offer such flexible tariff options and services. This comment leads to the argument that if retailers currently offered flexible tariffs then smart metering service providers would naturally emerge in the market so customers can take advantage of flexible electricity pricing.</p> <p>The national interests would be better served by ensuring (willing) customers can respond to price volatility and therefore a set of mandatory tariff options should be imposed by the EC that enables a customer response.</p> <p>3.3 In addressing the pricing variation between AMR and AMI metering, the writer disagrees with this comment and given the volume of mass market AMI metering, and the feature sets found in today advanced meters, AMI metering is shaping up to be equally priced to that of only an AMR product.</p> <p>3.10 And appendix C 24. The writer DISAGREES with this position. It is likely that the management of half hour data across an entire meter base will be less cumbersome and costly than separate systems that manage profile settlement options. From half hour data, virtually any tariff rate can be derived and without the cost of having to additionally manage stored tariff rates within the meter and consumer profiles.</p> <p>3.13 While is it possible that the eventual logical and physical standards for in-home residential control and services may already exist, no party can claim to know for certain what they will be. It is best to allow for those standards to evolve in an unfettered environment.</p>
<p>Question 2</p>	<p>Do you agree that competing demands for discretionary load could create a demand management issue for the industry? Please discuss reasons for agreeing or disagreeing. <i>(section 3: advanced metering and load management)</i></p> <p>DISAGREE. The advent of advanced metering allows for the emergence of not only retail energy but distributor tariffs that reflect the value of load control as a valuable resource. A separate market for load that is independent of the distributor should be able to be realised. This load could then be purchased by the distributor from load aggregators, in order that customers get rewarded for curtailment.</p>
<p>Question 3</p>	<p>Do you agree that certain areas such as consumers on AUFLS feeders, and certain type of controlled load should remain under the centralised load</p>

	<p>management carried out by distributors? Please discuss reasons for agreeing or disagreeing. (<i>section 3: advanced metering and load management</i>)</p> <p>DISAGREE. AUFLS is an emergency load contingent that all customers should get the financial benefit of. Advanced metering means that all customers can, subject to be sufficient reward, react to and drop load to serious aberrations in frequency and get fully rewarded for doing so. If a mandatory load i.e. 32 % of all load was required then customers would at least have been informed, be aware of, and recompensed for their contribution.</p>
Question 4	<p>Do you consider that with the development of distributed load management within advanced meters distributors will have less incentive to maintain a centralised load management system? Please discuss reasons for agreeing or disagreeing. (<i>section 3: advanced metering and load management</i>)</p> <p>The notion of a draconian centralised load management system should disappear once advanced metering is implemented and be replaced by customers being provided incentives within their overall energy tariffs that make transparent the value of the load. Load aggregation parties can then bid and make load available to those in the industry who require it.</p> <p>A bold initiative of this nature is more likely to deliver gains that would benefit the national interests for demand limitation than the existing centralised model for load control. A move like this would require a reworking of network charges that would be more cost reflective of network investment, but given that demand information would be readily available from an advanced metering solution then this information should be used as a measure to fully attribute network charges to all customers.</p>
Question 5	<p>Is there additional advanced metering or load management capabilities that should have been included or noted? If yes, please discuss these. (<i>section 3: advanced metering and load management</i>)</p>
Question 6	<p>Do you agree that consumers will react to the price signals that advanced metering systems can deliver? Please discuss reasons for agreeing or disagreeing. (<i>section 3: advanced metering and load management</i>)</p> <p>All markets respond to commodity pricing and this is reflective with all goods and services. Customers are exposed to this in virtual every aspect of their daily life. There is no indication that electricity would be any different in this response than say what has happened in the telecommunications or the motor fuels industry. Customers understand off peak pricing and price volatility. The fundamental underlying premise for advanced metering to work and deliver the benefits relies on these basic market dynamics to work and for customers to react.</p>
Question 7	<p>Do you agree with the objectives outlined in section 4? Please expand with why or why not. (<i>section 4: objectives of advanced metering</i>)</p> <p>Most of the objectives are sound. What should be stated here are <u>outcomes</u>. Thus, 4.2b should simply state “<i>reduce network non-technical losses.</i>” and not go on to say HOW it will be done. In the opinion of the</p>

	<p>writer, little work is currently carried out on reducing network losses because of a dearth of commercial drivers, rather than a lack of technology.</p> <p>In the writer's view, the CUSTOMER needs to be the primary beneficiary for any advanced metering implementation and there should be established a model for the customer to invest in the technology for their overall benefit and their ability to respond in the national interest.</p>
Question 8	<p>Are there additional objectives of advanced metering that should be added? If yes, please discuss these. (<i>section 4: objectives of advanced metering</i>)</p> <p>"4.2 i. To assist in the effective commoditisation of energy and demand as separate and distinct items." We believe that this falls into line with the Government's endeavours to commoditise access to local loop copper and broadband services as separate and distinct items also.</p>
Question 9	<p>Do you consider that there is an issue to be addressed on ownership of discretionary load on a consumer's premise? Please discuss why you agree or disagree. (<i>section 7.2: load control</i>)</p> <p>AGREE. Ownership of discretionary load should reside with the consumer. The consumer has the right to contract with others parties who may wish to have exclusive or shared access to that demand.</p>
Question 10	<p>Do you consider that the beneficiaries of information from advanced meters should pay for access to the information outlined in section 7.3? Please discuss why you agree or disagree.</p> <p>AGREE. Access to information should be set at market accepted rates, determined by the quality, timeliness and resolution of that information.</p>
Question 11	<p>Do you consider that remote disconnections for credit issues should not be carried out? Please discuss why you agree or disagree. (<i>section 7.4: credit control and vacant premises control</i>)</p> <p>The option to remote disconnect should be available provided that affected customers have the ability to react prior to total disconnection e.g. load limit or similar warning</p>
Question 12	<p>Do you consider that remote connections may require the consumer accepting responsibility for the restoration? Please discuss why you agree or disagree. (<i>section 7.4: credit control and vacant premises control</i>)</p> <p>If remote reconnection is available, it should have an "arming" option, allowing the retailer to choose whether the connection is automatically engaged, or not until the customer flicks a switch on the switchboard (or local control system).</p>
Question 13	<p>Do you agree with the discussion on costs outlined in section 7.5? Please discuss why you agree or disagree.</p> <p>As stated in 7.5.2d, no single communications medium will be able to meet the requirements of such a diverse topology as New Zealand. This implies that it may be better to allow the meter and it chosen</p>

	<p>communications medium to be tightly integrated (to ensure the most effective implementation). Recent system architecture advances allow for may diverse ranges of meters/systems to be controlled by a single management system, or accessed through a single hub. Implementation layers that lie between the meter and the higher level data processing systems can perform protocol conversions, allowing for a level of consistency. This also allows for continued evolution of technology without the risk of creating stranded assets in the field.</p>
Question 14	<p>Do you consider that costs should be allocated to the beneficiaries of advanced meter functionality? Please discuss why you agree or disagree. (<i>section 7.5: costs</i>)</p>
Question 15	<p>Do you agree with the discussion on safety issues? Are there any other safety issues that should be considered? Please note and discuss these in your submission. (<i>section 7.6: safety</i>)</p>
Question 16	<p>Do you agree with the discussion on switching? Please discuss any issues in your submission. (<i>section 7.7: switching issues</i>)</p>
Question 17	<p>Are there any other switching issues that should be discussed? Please discuss these in your submission. (<i>section 7.7: switching issues</i>)</p>
Question 18	<p>Do you agree that there is a potential for advanced meters to create barriers to trade? Please discuss why you agree or disagree. (<i>section 7.8: barriers to competition</i>)</p> <p>It is pointless to introduce smart metering if the party that control the meters is not appropriately incentivised to expose/deliver as much of the services that can be offered through the meters. Any market structure where it suits the responsible party to hold back access to services, is destined to be dogged by barriers.</p>
Question 19	<p>Do you agree with the solutions to barriers to competition outlined in section 7.8.2? Please discuss why you agree or disagree.</p> <p>Too much emphasis is being placed on the meter being a barrier to trade. Maintaining standardisation OUTSIDE of the meter, through market-agreed data translations offers much more flexibility for the future, without incurring significant compliance costs now. An effective arrangement of meter ownership and appropriate incentives to offer/expose services should be the principal solution.</p>
Appendix B, Question 1	<p>Do you agree with changing the metering installation definition in part A of the Rules? Please discuss why you agree or disagree. (<i>paragraphs 3, 4, 5, and 6</i>)</p>
Appendix B, Question 2	<p>Do you agree with not having any changes to rules 3 and 6 of part D of the Rules? Please discuss why you agree or disagree. (<i>paragraph 7</i>)</p>
Appendix B, Question 3	<p>Do you agree to changing rule 3.8 of code of practice D3 of part D of the Rules? Please discuss why you agree or disagree. (<i>paragraphs 8 and 9</i>)</p>

<p>Appendix B, Question 4</p>	<p>Do you agree that appropriate controls be placed within advanced metering installations and that it is reasonable to extend the inspection period beyond one year? Please discuss why you agree or disagree. <i>(paragraphs 11, 12, and 13)</i></p> <p>Agreed. Yes, provided that the data validations systems within the back office have the capability to detect for abnormal usage trends in conjunction with the tamper detection functionality of the meter.</p>
<p>Appendix B, Question 5</p>	<p>Do you agree with not changing rule 3 of code of practice D4 of part D of the Rules? Please discuss why you agree or disagree. <i>(paragraphs 14 and 15)</i></p> <p>Increasingly, smart metering, logging and communications devices will offer the ability to be remotely upgraded. In order to avoid or reduce the risk of stranded assets, allowance should be made for remote/local upgrades of functionality of device in the field. However, such procedures should not be authorised to be carried out unless the PROCESS, as well as the RESULT, are verified by an authorised party. Even base metering functionality can be compromised by the change or addition of “application programs”. Care should be taken before allowing open slather changes of such functionality.</p>
<p>Appendix B, Question 6</p>	<p>Do you agree with the definitions in paragraph 18 being incorporated in the advanced metering guidelines? If not, what other suggestions do you have for improvement?</p> <p>DISAGREE. Aggregation into absolute or accumulating registers should not be restricted to solely within the metering installation. This can be achieved within the back office with no loss of authenticity. Additionally, if the customer has an interval meter, they should choose whether the data provided from their site be processed as HH or NHH information. This decision would largely be dependent on the economic advantages it delivers the customer. It would also serve to rapidly expose the weak association of deemed profiles to actual customer load.</p>
<p>Appendix B, Question 7</p>	<p>Do you agree with the proposed changes to rule 5.1.7 of code of practice G1 of schedule G8 of the Rules? Please discuss why you agree or disagree. <i>(paragraphs 18, 19, and 20)</i></p> <p>AGREE. The writer agrees that a review is necessary. The determination of tolerance bands should be reflective of the likely impact of time slippage.</p>
<p>Appendix B, Question 8</p>	<p>Are there any other rules that you consider constrains the introduction of advanced metering infrastructure or technology that require changes? Please discuss any other rule changes you see as necessary.</p> <p>Computing power and telecommunications are two fields that continue to evolve much faster than power engineering (or the electricity industry in general). Rather than looking to lock down the fast moving innovation with limits, decisions made about standardisation should not be made without leaving plenty of scope for growth, embracing the lack of homogeneity among solutions rather than lamenting it.</p>

<p>Appendix E, Question 1</p>	<p>Do you agree with the minimum attributes listed in the advanced metering attributes table? Please discuss why you agree or disagree.</p> <p><u>53 Common Protocol:</u> A common protocol among smart metering infrastructure is only worthwhile if the devices operate using the same medium, or when the media used is regarded as an open standard. Outside of metering, many other technology spheres develop common protocols because it makes commercial sense to do so for all the manufacturers. This destination can be arrived at without the intervention of regulators. The reason why a (successful) common protocol has not yet evolved for metering is a lack of consensus of the ideal media, immaturity of the technology, cost sensitivities around the handling/transport costs of bloated protocols and the burden of support for legacy equipment.</p> <p><u>52 Non remote programmable multipliers:</u> Multipliers are only one factor that can influence the nature and magnitude of information read from remote meters. Simply limiting this does not address risks. If appropriate measures are put in place (security, audit trails etc), no programmable feature should be changed (remotely or locally) without appropriate authentication and notification.</p>
<p>Appendix E, Question 2</p>	<p>Are there any other attributes that you consider should be included within any of the columns of the advanced metering attributes table? Please give reasons and discuss why you consider they should be included.</p> <p><u>Security:</u> There is a significant distinction between equipment that is used for remote monitoring and measurement of customer load and that of technology used for controlling load. The security implementation that currently exists around most smart meter implementations in New Zealand is lightweight at best. If a system used to monitor or measure customer usage is compromised by an external party, the impact is limited to: misappropriation of information; interference with normal acquisition processes and possibly spoofing of metering information. However, when (remotely controlled/configured) load control functionality is also introduced into the infrastructure, the potential impact is much, much greater. As a result, the Commission should seriously consider the role of security and authentication when analysing technical implementations that may allow some or all of a customer's supply to be controlled. Existing security measures laid down in the Rules are inadequate. A mass roll out of like technology can become an attractive target for committed and clever parties who may seek to undermine a control network for no reason other than to expose how easily it can be done.</p>