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January 30, 2014

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RE Draft Report: Framework for Open Access and Common Communication Standards Review

As a global supplier servicing the energy sector, with 116 years' experience in the Australian market, General Electric (GE) welcomes the opportunity to provide its comments on the Australian Energy Market Commission's (AEMC) draft report on the Framework for Open Access and Common Communications Review ("Open Access Review").

GE notes and supports the objectives of the AEMC's Power of Choice review (being "to identify market and regulatory arrangements that would allow the community's demand for energy services to be met by the lowest cost combination of demand and supply side options") and those of the Open Access Review (being to establish "a framework for open access and common communication standards to support contestability in metering and services enabled by smart meters").

GE supplies technology to participants across the energy value chain, from generation through transmission and distribution to retail and end users (including metering). As a result, GE seeks to contribute to the AEMC's understanding of the commercial incentives facing metering service providers, as well as any factors affecting the overall efficiency of the value chain.

The draft report recommends technology and architecture mandates in several areas (including meter and market protocols, as well as the point of access). However, the draft report does not argue that a market failure is likely, and it does not make clear whether the AEMC believes that

these recommendations should be mandated. This response sets out why a market failure is unlikely, and there should be no mandate for the protocol and point-of-access recommendations in the draft report. We have also included an overview of the likely contractual relationships between parties affected by metering, in order to assess the likelihood of market failure and therefore the advisability of regulation.

GE would welcome the opportunity to provide AEMC reviewers further information or clarification. Please contact me by email at jim.kuiper@ge.com, or by phone on 0410 546 264.

Yours sincerely

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1 Executive Summary

A competitive market is the best mechanism for achieving the AEMC's goal of innovation and competition in DSP services. GE endorses the AEMC's philosophy that market forces should operate without regulation, except in case of monopoly or market failure[1]. There is no reason to believe that a market failure will occur. As a result, there should be no regulation or mandate in respect of a decision that can be reached efficiently by the market.

GE's response sets out in greater detail how market forces will operate in the metering market. Markets have an excellent track record in converging on open standards where this is efficient. The same thing is likely to happen in the metering market. This logic suggests the appropriate conclusions on the key questions identified by the AEMC, specifically:

- It is undesirable to mandate any common meter protocol. Market-driven adoption of common protocols is a source of efficiency; selection and enforcement of common protocols through legislation carries a high risk of distorting the market.
- A common market protocol is desirable, but coordination difficulties between participants may mean that it is not easy to agree on. Therefore, it is desirable to set up a framework by which participants can agree a non-binding common market protocol (the AEMO B2B procedures are ideal).
- Such a common market protocol will necessarily use a market point of entry; however, the common protocol might not be the most efficient choice for all applications, so there should be no compulsion to use the common market protocol or the market point of access in all situations. This applies also to new service offerings.
- There should be no regulation of prices for access, or levels of access, as markets can achieve this more efficiently without regulation.

The final conclusion is driven by the need for simplicity and minimal red tape. That is, there is no need for a separate SMP role. The existing MP and MDP roles are sufficient.

[1] Draft report, section 6.

2 Markets are good at setting access and interoperability levels

Section **Error! Reference source not found.** above argues that regulation of access and interoperability settings is unnecessary unless a market failure is likely. Such a market failure is indeed unlikely, as competitive markets are very good at achieving efficient technological and architectural outcomes.

On **interoperability**, markets can achieve more efficient outcomes than regulation. The area is complex, as it requires coordination between participants; however, markets have a strong track record of managing this coordination successfully. With complex systems (such as market interfaces) it will be helpful to implement a framework that allows participants to agree on a common market protocol; it is undesirable that regulation should actually determine the market protocol, or force participants to use it in all circumstances. There should not be a mandated common meter protocol.

Access is an architectural decision that markets can make efficiently without help. This is because access is a complex area; as time goes by, changes in technology and commercial relationships will mean that there are a large number of "efficient" points of access. The market is best placed to judge what these efficient points of access are; there is no need to regulate any point of access. The non-binding common market protocol will necessarily use a market point of access, but there is no need to mandate this.

2.1 Minimal regulation is the optimal setting for interoperability

The AEMC asks whether there is a "most efficient point of interoperability", and concludes that a common market protocol and common meter protocol are desirable (although the AEMC does not state whether it favours regulation to enforce these). The draft recommendations propose DLMS/COSEM as the meter protocol, and that participants use a market protocol based on DLMS/COSEM.

The AEMC correctly identifies that interoperability is often a source of efficiency in technology markets. The AEMC also understands that this does not mean that it is always a source of efficiency, or that it should be pursued in all situations. The key question for regulation is: can markets reach an efficient level of interoperability on their own, or do they need help from regulation? At the meter level, the answer is that the market can get there without help, and there should be no regulation. At the market level, coordination difficulties mean that a framework to agree a common protocol would be useful.

The main reason for allowing the market to choose a meter protocol is that this choice is a complex investment decision, whose parameters will shift over time. Interoperability can be assessed at different levels of a smart metering system (at the meter, the communications system, the head end system, and so on). What constitutes an efficient level of interoperability at each level of the system will vary (a) over time, (b) across different accredited party relationships, and (c) across different DSP or metering services. As technologies change, as DSP offerings get more sophisticated, and as accredited party relationships get more demanding, the relative efficiency of different levels of interoperability will change.

2.1.1 Markets can deliver efficient device-level interoperability without regulation

Device-level interoperability is a moderately complex optimisation problem. Fortunately, markets have shown that they are very good at solving this particular problem. This is because the cost-benefit ratio for individual firms is greatly reduced through adherence to a standard. That cost-benefit equation is clearest when the technology is simple; for example, twisted-pair copper wire has been a standard in the telecommunications industry for over 100 years. Since then, technology markets have converged on standards in a huge range of areas, from mobile phones to computers to televisions, all without help from regulation.

There is no reason to believe metering will be different; as the AEMC points out, there are already a range of standards in the metering space, and these are all driven by consortia of participants in the market (that is, they exist because market participants want standards to exist). Appendix A gives an example of standards convergence in a closely analogous industry, that of home automation.

2.1.1.1 It is undesirable to mandate a common meter protocol

The pressures that drive standards convergence in Appendix A are also at work in the metering space. As a result, it is unnecessary to mandate a common meter protocol. In fact, doing so will reduce the efficiency of the market, as it will close off options that rely on other meter protocols. For example, a US meter manufacturer (relying on ANSI standards) may produce a meter which is far cheaper than any DLMS/COSEM meter. Mandating DLMS/COSEM would then force Australian participants to use the more expensive DLMS meters, regardless of whether this is the most efficient choice.

Please note, this does **not** mean that GE believes that DLMS/COSEM is an **in**efficient choice. Our IEC meters use DLMS/COSEM. GE does believe that the choice of meter protocol should be left to the market; at this point in time, we have chosen DLMS/COSEM, but would want to retain the flexibility in future to choose other protocols.

GE notes that some parties have argued that a common meter protocol is necessary to reduce inefficient replacement of meters when a customer churns retailers. This is not the case; see Appendix B for a detailed discussion of how this is efficiently handled in a competitive market.

2.1.1.2 The alternative to a mandated meter protocol is not necessarily proprietary

The draft report appears to conclude that the only alternative to a mandated meter protocol is a thorny mess of proprietary and non-interoperable protocols. This is not the case. Market participants are still likely to gravitate toward standards even if no standard is mandated (the standards bodies, after all, are all driven by market participants). The actual choice is between forcing market participants to use a single standard for all applications, regardless of its suitability, and allowing market participants to choose the standards which will deliver the greatest competitive advantage. GE believes firmly that the latter will distort the market less, resulting in stronger competition and better outcomes for consumers.

2.1.2 A framework can assist market-level interoperability

A common market protocol increases efficiency, because market participants need to interact, and a common protocol reduces the cost of building multiple custom interfaces. Compared to device-level interoperability, interoperability at the market level requires an extra level of coordination between parties. Where complex systems need to be integrated, there is a case for regulation to set up a framework where participants can agree on a non-binding standard.

There are some important features that such a framework should have, namely:

- it should be a framework for participants to agree on a market protocol. It should not be a requirement to use, forever, a protocol that appeared efficient to a regulator at one point in time. The AEMO B2B framework meets this requirement;
- participants should judge, under the agreed framework, what is the right outcome for any architectural concern (including whether the market protocol is services-based or function-based[2]). The AEMO B2B framework has this flexibility;
- the answers to any of the above questions may change over time, so it is crucial that the framework for agreeing the protocol is flexible. Again, the AEMO B2B framework meets this criterion;

[2] GE believes that services-based is the most efficient option; however, regulation should not mandate a services-based protocol. Participants should make the decision under the AEMO framework, if for no other reason than that different levels of protocol may be more appropriate for different services.

- the framework should not be mandatory – it should allow parties to agree to use alternatives outside the common protocol. For example, DSP services in future may require speeds that the AEMO B2B framework struggles to provide. If both the metering provider and the accredited party agree on an alternative to the market protocol, this should be permitted; and
- new functions should be added to the protocol when the market deems it to be efficient, and not before. Requiring that new functions be added to the common protocol before they are used will stifle innovation and competition, as set out in section 4 below (response to section 5.4.2 of the draft report).

2.1.3 A mandate for DLMS at the market level is also a mandate at the meter level

It is also worth noting that mandating a meter protocol as the foundation for a market protocol will have the effect of forcing participants to use that protocol at the meter level as well. This is because all participants will need to interface with the market protocol. If the market protocol is based on a meter protocol, the cost of those interfaces will be substantially greater for those participants who implement an alternative meter protocol, as the level of protocol translation required will be greater. Any systems that rely on alternative meter protocols will thereby be unfairly (and inefficiently) penalised.

By contrast, a services-based protocol would not favour any particular meter protocol. As a result, participants could choose the meter protocol which is most efficient for a particular installation, without any penalty in integrating to the market protocol.

As a result, mandating a meter protocol (such as DLMS) as the foundation for the market protocol will drive inefficiency at both the meter and market levels.

2.2 Markets can deliver efficient points of access without regulation

The AEMC asks whether there is a "most efficient point of access", and concludes that a "market point of access" is preferable to points of access at the meter or elsewhere. It is not clear from the draft recommendations whether the AEMC proposes to mandate a market point of access.

As described in section 2.1.2 above, GE advocates a framework to determine a non-binding common market protocol. Any such common protocol will necessarily use a market point of access, but this does not need regulation in order to happen. All of the benefits of a market point of access can therefore be achieved without regulation of the point of access.

A mandated point of access is also undesirable because there is no single "most efficient point of access" common to smart metering or DSP services. For metering services, there will be multiple

efficient points of access: (a) over time, (b) across different accredited party relationships, and (c) across different DSP or metering services. That is, as technologies change, as DSP offerings get more sophisticated, and as accredited party relationships get more demanding, the relative efficiency of different points of access will change.

An efficient outcome for "access" therefore requires an assessment of cost-benefit trade-offs across all of these factors not only today, but across the life cycle of a 10-year asset in conditions where the business and technology future is uncertain. This assessment needs to take account of scarce resources and other constraints on parties in the system, which will also change over time. Market participants are in the best position to make this assessment.

It is very important to point out that GE does **not** believe that a "market point of access" (as mentioned in the report) is *inefficient*, or that any other point of access is *more efficient*. It is plausible, even likely, that at some point in the future it will be efficient to offer some (or all) parties access to some (or all) metering services by providing market access, or direct access to the smart meter, or some combination of the above. GE strongly believes that smart meter providers are best placed to assess when this is so, and for what services it applies. Regulation should not disturb this judgement unless there is clear evidence of market failure, and no such evidence exists.

2.3 Efficiency and failure to agree

It is also worth emphasising that an efficient market will not result in access to metering services being granted in every single case. If the cost of providing a service is greater than the benefit that participants will derive, the efficient outcome is that the service is **not** provided. The fact that a DSP participant cannot access a metering service does not automatically indicate that regulation is needed; this will only be the case if the cost-benefit analysis is favourable, but the market still does not offer the service. This is considered in more detail in section 5 of this response (analysis of commercial relationships).

3 Conclusion

The goal of the Open Access Review is to implement an efficient market for smart metering and DSP services. To achieve this goal, it is necessary to consider what an efficient outcome looks like, as well as to understand the role played by regulation. That efficient outcome requires a vast number of interdependent decisions to be made in a context of scarce resources. A free market is a very efficient vehicle for making those allocation decisions, both in the context of access and interoperability.

As a result, regulation should seek to provide a framework in which market forces can operate, without seeking to make judgements that should be left to the market. That means:

- Participants in the market, acting together, are best placed to agree a common market protocol. The best way to facilitate this agreement is to set up a framework by which participants can reach this agreement. Regulation should not define any particular protocol, as participants are best placed to make this judgement. No DSP or metering service should be forced to use the common market protocol if the parties believe that it is more efficient to transact in another way. New functions should be added to the market protocol only when the participants, using the framework, agree that it is efficient;
- Interoperability should not be mandated at any level, and no preference should be given to any particular protocol (including DLMS, whether at the meter or market level). This would only be required if there were clear evidence of market failure, which there is not;
- Regulation should not mandate a point of entry or access at any level, or force participants to use any access framework, because the access point is an architectural choice which is best left to the market. A common market protocol will, by definition, use a market point of access. Because the market protocol should not be mandatory, the market point of access should not be mandated either; and
- No regulation of access or pricing is needed. Market failure is not likely in any of the critical relationships (including with FRMPs, LNSPs or third parties; see section 5).

4 Detailed Response to the Draft Report

The following section sets out a point-by-point response to the commentary and questions in the draft report. References are to clauses in the draft report unless stated otherwise.

5 – Initial recommendations for smart meter communications infrastructures

This section seems to suggest that the goal of the Review is to "assess … the requirements for smart meter open access and communications standards that provide an efficient level of interoperability … and appropriate levels of access." However, the draft response does not establish that market failure is likely. As a result, in line with the AEMC's preference for markets not to be regulated, there should be no mandates for interoperability or access levels (other than a framework to agree a common market protocol, as set out in section 2.2 of this response).

5.1.1 – Initial recommendations – Interoperability

The draft report recommends that "a common market protocol be used". GE agrees that a non-binding common market protocol is desirable, provided that it is agreed by participants under a flexible framework and is not locked in by regulation.

In response to the specific questions:

- **Should the NEM adopt a common meter protocol, based on DLMS/COSEM? That is, should all participants be forced to use a designated meter protocol for all installations, regardless of their preferences?** GE opposes mandating a common meter protocol. This includes DLMS/COSEM. It is significantly more efficient for the market to be allowed to select meter protocols. It may be that the international acceptance and other features of DLMS/COSEM lead to its adoption as a de facto standard in Australia for some or all applications (indeed, GE's IEC meters can use DLMS). That does not mean it should be mandated, unless the market is likely to get it wrong. This is not the case (see section 2 of this response, and also Appendix A for an example of markets getting it right).
- **Should Victorian distribution businesses be treated differently?** Victorian LNSPs should be able to select meter protocols freely, just like any other metering provider.
- **Should protocol translation be allowed? That is, should participants be allowed to choose the meter protocol which best suits the constraints of the installation?** Yes.

5.1.2 – "Open access" architecture

The party responsible for smart metering should be responsible for all management of access to smart meters in their network, as well as agreeing the level of access which is granted to

accredited parties. These functions can be performed equally well by a single party fulfilling both MDP and MP roles as by a new SMP role; as a result, there is no need for the cost, delay and ongoing red tape involved in setting up the SMP role.

5.2 – Common market protocol

Section 5.2 lists the benefits of a common market protocol (which GE agrees with), but does not set out whether this should be mandatory. A mandated common market protocol is not desirable. A framework for participants to agree a non-binding common market protocol is highly desirable.

Section 2.1.2 of this response sets out why it is desirable to set up a framework by which participants agree on a non-mandatory common market protocol. Regulation should not actually designate a common market protocol, or the architectural basis for it (such as DLMS). The framework should be flexible, to cope with future changes in technology and business arrangements, and participants should be free to use alternatives to the common protocol if they agree that it is efficient. The AEMO B2B framework is an appropriate foundation for this.

5.3.1 – Smart grid interoperability

This section suggests that in the future, smart meter infrastructure will need to interoperate with other grid infrastructure. This is likely to be the case, although the reality may be some years off.

The section goes on to conclude that basing a market protocol on DLMS/COSEM (or a similar protocol) would reduce the costs of interoperating with these other systems. The reason given is that "design standards and communications protocols [for metering] are taken from an integrated suite of smart meter and smart grid standards". This implies that DLMS is part of a family of tightly-integrated "smart grid" protocols which all share a common design philosophy, and which will interoperate without any significant integration expense.

GE's experience in this area is based on a strong track record selling solutions in generation, transmission and distribution, battery storage, distributed generation, electric vehicles, and all other areas of the smart grid. Over 60% of Australian distribution control rooms (which are likely to be operating the "smart grid" technologies highlighted in the draft report) run GE software. In GE's experience, the SCADA protocols used to control these other systems share little with DLMS/COSEM, or any other standard metering protocol. For the foreseeable future, it is overwhelmingly likely that smart grid interoperability will involve significant protocol translation, regardless of which metering protocol is chosen.

So, it is not the case today that grid operation protocols share many common elements with DLMS, or any other metering protocol. Industry participants are working towards this vision, but the timeline will be measured in decades rather than years. Participants who deploy meters in the foreseeable future will build their business cases on the assumption that any interoperation with SCADA protocols (such as DNP3, which most Australian control rooms use) will require significant integration effort. As a result, the conclusion in section 5.3.1 of the draft report provides no support for mandating a common meter protocol.

5.3.2 – DLMS/COSEM

This section describes DLMS/COSEM and lists several features of it. The section then appears to recommend adopting DLMS/COSEM as a common protocol in the NEM – that is, forcing all participants to use DLMS/COSEM in all circumstances.

To the extent that it is efficient to standardise on a common protocol, markets have proven that they are capable of doing exactly that, without regulatory help (see section **Error! Reference source not found.** of this response). Whether or not the benefits listed in this section are correct, the argument does **not** support mandating DLMS/COSEM (either as a common meter or market protocol).

To the extent that there is a common market protocol, GE strongly believes that this protocol should be chosen by market participants (through a framework facilitated by regulation) and not encoded in the regulation itself[3]. The AEMO B2B framework is far more appropriate as a foundation for this exercise than DLMS/COSEM, because:

- much of the work has already been done in the existing framework. Therefore the cost and complexity are likely to be lower;
- using a framework like AEMO B2B offers flexibility for market needs into the future. Those needs may evolve to include protocols other than DLMS; and
- the AEMO B2B framework already contains consultation mechanisms that ensure that it reflects the concerns of stakeholders, as well as the economic judgement of market participants.

As set out in section 2.1.3 above, mandating DLMS at the market protocol level will also have the effect of mandating DLMS at the meter level. This will have the effect of substituting regulations for the market's judgement at two levels, with all of the consequent inefficiency.

[3] See section 2.1.2 of this response for a more detailed discussion.

Finally, we note that the last two bullet points in section 5.3.2 are unusual justifications for mandating a meter protocol. These bullets argue, in effect, that:

- **It is beneficial to force all participants to use DLMS in all situations, at the market and meter level, because if this is done, there will be lots of DLMS consultants whom participants can pay to help them with the complexity of DLMS.** This can be true only if a DLMS-based market protocol, where participants require DLMS consultants to assist them, is the best way to achieve the NEO. GE does not believe this is the case; the AEMO B2B framework can be developed to suit the market's needs with substantially less cost to all participants. As a result, it is not clear how this justifies mandating DLMS, at the meter or market level. It would actually appear to reflect that DLMS has more cost and complexity than a services protocol, and particularly than the AEMO B2B framework.
- **If all Australian participants are forced to use DLMS in all situations, Australian DLMS consultants will gain lots of experience that can then be deployed outside of Australia.** Any savings realised overseas are of little interest to Australian electricity consumers.

5.3.4 – Areas for comment

In response to the specific questions:

- **Should regulation mandate that an international meter protocol be used as the foundation of the NEM market protocol?** It should not. The market protocol should be based on services, not on a metering protocol. The market protocol should also be chosen by market participants under a flexible framework, not by regulation. In addition, choosing a meter protocol as the basis for the market protocol will have the effect of forcing participants to use that protocol at the meter level as well (because a participant who chose to deploy, say, ANSI C12 would then be burdened with additional costs, whereas participants who worked with DLMS would not). Mandating DLMS (or any other meter protocol) as the foundation for the market protocol is therefore inefficient because it pre-empts the market's judgement at both the market and metering levels. See sections 2.1.1.1 and 2.1.3 of this response.
- **Is DLMS sufficiently well developed to be used as the foundation for a market protocol?** Whether or not this is the case is beside the point. Neither DLMS nor any other meter protocol should be mandated in the NEM, at the meter or market level, unless there is clear market failure (which there is not). As set out above, the synergies on smart grid interoperability are negligible, and certainly do not justify the inefficiency and cost associated with mandating a particular protocol.

- **Would the costs of developing a services-based protocol deliver greater benefits than forcing participants to use a metering-based protocol?** Yes. This is true in any case, and particularly true of the AEMO B2B gateway. In addition to greater benefits, this approach would also deliver substantially lower costs.
- **Is the AEMO B2B gateway a viable option for a foundation?** Yes. AEMO B2B leverages expertise from across the spectrum of participants. In addition, the costs are comparatively low, because much of the current functionality will be sufficient. Finally, the AEMO B2B framework includes a consultation capability which can maintain and enhance the efficiency of the protocol. The AEMO B2B option meets all the criteria set out in section 2.1.2 of this response.

5.4.1 – Entity responsible for maintaining the common market protocol

In answer to the questions:

- **Is AEMO the most appropriate entity to maintain the market protocol?** Yes, because the actual protocol selection and maintenance is done *by participants* under a framework administered by AEMO.
- **Could the responsible entity adversely affect competitive provision of DSP and other services?** It is hard to see how this could be the case. AEMO's obligations appear to make it an ideal choice.
- **Would AEM be sufficiently neutral?** GE does not offer an opinion on competitive neutrality.

5.4.2 – Adding new functions to the common market protocol

In response to the questions:

- **Would requiring new functions to be documented before they are used stifle innovation and competition?** Requiring new functions to be documented before they are used would be a substantial burden on innovation, and this would in turn have a strong chilling effect on competition in DSP.
  This is the case because, in an efficient market, competition is the primary engine for innovation. Firms innovate because an innovation will, until it is copied by competitors, give them a unique offering. That uniqueness provides a competitive advantage, and the profit that comes from that competitive advantage is the justification for investing in the innovation.

Adding new functions to the common protocol, via the AEMO B2B mechanism, can be expected to take at least 12 months[4]. As a result, any participant seeking to implement a new service would need to give its competitors around one year's notice of an innovative technical deployment. That notice would need to include detailed technical specifications, so that the common protocol can be developed. Competitors could then infer the service to be offered, and would have time to copy the offering before it was launched in the market. As a result, there may be no period of uniqueness, no profit from the competitive advantage, and therefore no benefit to innovation.

As a result, it would be crippling to innovation in metering services to require all new services to be documented before they are used.

Would not requiring new functionality to be documented lead to reduced interoperability? Would this reduce DSP competition? The real question is whether any interoperability benefit justifies requiring that all new functionality be documented before it is used. GE's strong view is that the benefits of competition outweigh the costs of coordinating the protocol at a date after its first introduction in the market.

GE also notes the statement that "the difficulty of standardising on a common implementation of new functions would be significantly reduced if DLMS/COSEM were adopted as the foundation of the common market protocol". GE does not agree that the reduction in difficulty would be substantial, because the market needs a services-based protocol and not a metering protocol. Any reduction in difficulty is not enough to offset the costs of mandating DLMS (or any other meter protocol) as the common market protocol. The market protocol should be a services protocol, chosen by participants, under a framework like that set out in section 2.1.2 above.

5.5 – Common meter protocol

In response to the questions:

- **Should all participants be forced to use a common meter protocol for all installations?** There should not be a common meter protocol. The cost and delay associated with developing a companion specification would be substantial, and any benefit is unlikely to exceed these costs. Furthermore, mandating a common meter protocol closes off any competitive choices that rely on other meter protocols. Markets have a track record of converging on open standards where it is efficient to do so, and so any benefits of a

[4] This is likely to be a substantially shorter timeframe than can be achieved under any competing proposal, such as a DLMS-based common market protocol.

common meter protocol are likely be realised without incurring the costs of a companion specification. As a result, the cost-benefit calculation weighs heavily against mandating a common meter protocol. See section 2.1.1.1 of this response for a more detailed discussion of why it is inefficient to mandate a meter protocol unless there is clear market failure.

- **If it is desirable to force participants to use a particular metering protocol, should DLMS/COSEM be that protocol?** It is not desirable to force participants to use a metering protocol. Participants should be free to choose a meter protocol, as competition dictates.
- **If it is desirable to force some participants to use a common meter protocol, should the Victorian smart meter operators be forced to do so as well?** A common meter protocol is not required. Victorian LNSPs should have the same freedom of choice as other metering providers in the market.
- **Without a common meter protocol, will proprietary protocols be more likely to support DSP competition?** This question assumes that the market will choose proprietary protocols if no common protocol is mandated. No evidence is provided to support this assumption, which then biases the question towards restricting market choice.

  Markets, when allowed free choice, have an excellent track record of converging on standards where this is efficient. As a result, the issue is not whether proprietary protocols are better for competition, because allowing market choice does not preclude use of standard protocols. The real question is whether the market will better support competition in DSP services if all participants are forced to use a single protocol.

  GE's view is that it will not. The market will be more efficient if participants are able to choose their meter protocol, taking into account competitive pressures, resource constraints, and all of the other elements that produce efficiencies in free markets. Section 2.1.1.1 of this response discusses this in more detail. A common meter protocol should only be mandated in case of clear market failure, and there are no grounds for assuming this at present.

5.6.1 – Direct access to the meter; 5.6.2 – Market point of entry

These sections list a number of benefits and costs of particular architectural (access) and technical (interoperability) choices. These benefits and costs may be real, but they are not an argument for mandating architectural or technical choices.

Whether or not the stated benefits exceed the associated costs is a complex question, and the answer will be different at different points in time, for different accredited party relationships, and

for different DSP services, and at different levels of the metering system. As a result it should be left to participants to decide on the level of access (see section 2.2 of this response for a more detailed discussion on why markets can make efficient architectural choices without help).

5.6.3 – Market point of entry – single common meter protocol

The comment in relation to 5.6.2 above applies to this section as well.

The AEMC asks whether "protocols at the meter point of entry and the market point of entry support access to new functionality without the need to make any modifications to SMP software". This is actually a question about whether the benefits of a protocol choice outweigh the costs of updating systems. Any question relating to costs and benefits of systems is most efficiently decided by market participants, operating under the discipline of competition.

5.6.4 – Proposed smart meter communication architecture

This section describes an architecture which would permit access at various levels, together with associated costs and benefits. The job of assessing these costs and benefits, together with the choice of architecture for any particular service, should be left to market participants.

In response to the specific questions:

- **Should protocol translation at the point of entry be supported in the NEM?** Market participants should be free to contract for protocol translation at the point of entry if they are able to agree a contract to do so. It is not clear what "supported in the NEM" means; protocol translation at the point of entry should not be mandated, preferred, encouraged or prohibited in the Rules.
- **Should a common meter and market protocol be supported in the NEM?** Market participants should be free to implement architectures featuring common meter and market protocols if they can reach agreements to do so. Common meter and market protocols should not be mandated (although a framework for a non-binding common market protocol is desirable).
- **Should the architecture that allows communication via meter or market protocol be supported in the NEM?** Market participants should be free to implement the proposed

architecture in figure 5.3 if they are able to agree a commercial agreement to do so. No architecture should be mandated, preferred, encouraged or prohibited in the Rules[5].

5.7 – Allocation of the SMP role

There is no requirement to consolidate all of the functions in a single role, as a single party today can fulfil all of those functions while registered as an MP and MDP.

6 – Open access regulatory arrangements

Section 6 asks whether access to metering services should be free of regulation, or whether the provision and/or price of access should be set by regulation in certain circumstances. GE agrees strongly with the AEMC's statement that "market forces should be allowed to operate without any regulatory intervention … [unless] there [is] a monopoly service provider or … other inefficiencies in the market." An analysis of the commercial dynamics between metering providers and other accredited parties shows that it is not likely that there will be any inefficiency in the market which regulation needs to correct. There is no reason to believe that any metering provider will achieve a monopoly position in the market[6].

To answer the question posed in section 6 of the draft report, it is helpful to ask whether a market failure is likely (if it is likely, it may be a good idea to regulate charges or rights of access). To understand the probability of market failure, we should consider the likely commercial frameworks and the incentives that apply to the parties. Such an analysis is set out in section 5 of this response.

The conclusion from that analysis is that the incentives of the parties are likely to lead the parties to form efficient, arm's length contracts under pressure of competition. Metering providers do not have an incentive to abuse their position. As a result, there should be no regulation of rights of access or charges (unless, at a future date, an actual market failure is observed).

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[5] Except, of course, in case of market failure.

[6] Each SMP, under the framework supported by GE, may be (at a point in time) the only party who can permit access to a given meter. The SMP should not be considered a monopolist in respect of that meter, because competition will apply to drive prices down even for services outside the foundational contract with the FRMP (see section 5 of this response).

6.1 – Whether to regulate rights of access

In response to the questions:

- **Should the right of access be enforced?** No right of access should be enforced as market failure is not likely. See section 5.2 of this response for more details.
- **What contractual arrangements are expected to be in place?** A detailed analysis of the contractual relationships, together with the incentives of the parties and the efficiency of the likely outcome, is set out in section 5.2.
- **How would the market (and particular participants) be impacted if access is denied?** The answer to this question is set out in section 5.2. We note that a denial of access may be an efficient outcome, if the costs of providing access outweigh the benefits.
- **How would existing metering rights and obligations be affected?** Existing rights and obligations should not be affected.

6.2 – Nature of services provided

In response to the questions:

- **How should services be defined? Should they be subject to regulation?** The services, other than essential metrology data, do not need detailed definition. They should not be subject to regulation as the likelihood of market failure is small (see section 5.2 for more details.
- **Is there an alternative means of providing the service, other than through a smart meter?** This will depend on the nature of the service to be provided. In some cases (such as outage notification to an LNSP on a feeder with 100 homes on it) there will be a number of alternatives, including contracting with alternative metering providers and installation of sensors owned by the LNSP). In other cases (such as aggregation of consumer load for the purposes of trading in demand response) it is hard to see how an alternative would be provided. In either case, it is important to understand that "no access" can be an efficient outcome if the costs of providing the access outweigh the benefits. The analysis in section 5.2 considers both cases, together with the impacts on bargaining power and efficiency of the likely outcomes.

6.3 – Whether to regulate charges for access

In response to the questions:

- **Will efficient pricing emerge in a contestable market?** Yes. This is discussed in greater detail in section 5.2 of this response.
- **Are there risks to efficient outcomes? Can they be addressed?** There are risks, and they can all be addressed. See section 5.2 of this response for a detailed analysis.

6.4 – Consumer protection requirements

GE does not express a view as to which parties should be subject to consumer protection requirements. We note that metering providers may or may not provide services directly to end consumers (in many cases, the metering provider will provide services only to a FRMP or other accredited party). If the metering provider does not contract directly with the customer, it should not be subject to consumer protection requirements, as the FRMP or other accredited party is already under this obligation. If all metering providers are required to invest in the infrastructure to meet these requirements, it will result in unnecessary cost that will make the market less efficient.

6.5.1 – Accreditation of parties

Accreditation of metering providers should involve the minimal possible additional regulatory burden over and above the current arrangements for MPs and MDPs.

6.5.2 – Smart metering standing data

GE agrees that it makes sense to expand "NMI discovery" data to include information on whether the meter at a NMI is "smart".

5 Analysis of Commercial Relationships

GE's analysis of the likely commercial relationships, and the incentives acting on the parties, is set out in the table below. The analysis is based on three key categories of accredited party other than the metering provider, specifically:

- the FRMP for a particular NMI, which will sign the foundational contract with the metering provider for metering data services;
- the LNSP for that NMI; and
- any DSP provider (including third parties and retailers other than the FRMP), or other participant, who requires access to metering services for that NMI.

It is helpful to split the analysis according to each of these categories, because there are significant differences in the dynamics of each category of relationship (including the consequences for each party if access is withheld, and therefore relative bargaining power).

Please note that in this analysis, we have used the term "SMP"; this does not connote endorsement of establishing the SMP as role separate from the existing MP and MDP.

The categories analysed are:

- **Required access & consumer benefit** – what services does the accredited party require from the relationship? How does it advance the NEO if these services are provided?
- **Efficient outcome** – what will an efficient outcome look like?
- **Commercial incentives (SMP)** – what are the commercial forces that will shape the SMP's behaviour? This will help to understand whether the SMP is likely to abuse its position, or whether those commercial forces will tend to lead to an efficient outcome (as is usually the case in competitive markets).
- **Commercial incentives (AP)** – what are the commercial forces acting on the accredited party? This is the other half of the bargaining power dynamic.
- **Likely outcome** – considering the incentives acting on both parties, what kind of outcome should we expect to see? This is then compared to the efficient outcome. This section will also examine any potential inefficiencies to consider how likely they are to eventuate.
- **Consequences of lack of access** – if access is inefficiently withheld, regulation should be considered as a possibility. Whether regulation is actually imposed should depend in large part on the severity of this inefficiency.

5.1 Summary table of commercial structures

Accredited Party	Required access & consumer benefit	Efficient outcome	Commercial incentives - SMP	Commercial incentives - AP	Likely outcome	Consequences of lack of access
FRMP	**Foundational contract:** reduced cost for FRMP, passed on to consumers through competition	Contract agreed if benefits to FRMP are greater than SMP's price. Otherwise, no contract.	Strong incentive to agree a contract as SMP has no business without this relationship.	Sign contract only if benefits to FRMP are greater than SMP's price.	Efficient outcome.	SMP is out of business. FRMP continues with business as usual based on legacy metering service. If this happens it is likely to be the efficient outcome.
LNSP	Services & data which improve efficiency, reliability & safety of networks.	Contract agreed if LNSP can build regulatory case to meet SMP's price, and if this is the cheapest option. Otherwise, no contract.	Maximise number of new revenue opportunities Maximise price of new revenue opportunities	Sign contract only if LNSP can sustain a regulatory case for the expenditure, and if no cheaper alternative is available.	Efficient outcome.	LNSP either does without the service, or uses an alternative method to achieve the same outcome. If this happens it is likely to be the efficient outcome.
Third party	Metering services & data which support provision of DSP or other services to consumers.	Contract agreed if benefits outweigh costs. Otherwise, no contract.	Maximise number of new revenue opportunities Maximise price of new revenue opportunities Avoid jeopardising FRMP contract	Strong incentive to conclude a contract, as the accredited party's business initiative (or even entire business) is likely to depend on it	Efficient outcome.	DSP service is not offered to consumer. If this happens it is likely to be the efficient outcome.

5.2 Detailed analysis of commercial structures

5.2.1 Relationship between SMP and FRMP

This is the foundational contract for the competitive smart metering market; the committed long-term revenue from this contract will provide the justification for investing in smart meter infrastructure. No other relationship can add enough value to fill this role. It is the critical relationship that sustains the SMP's business.

5.2.1.1 Required access and consumer benefit

The FRMP is likely to require access to basic metrology data as well as certain services that are enabled by smart metering (such as remote disconnect/reconnect, on-demand reads, and so on).

The basis for this contract is that the FRMP will save money. In other words, the benefits to the FRMP (avoided charge for type 5/6 metering, plus benefits such as credit and collections) should exceed the cost (that is, the fee for metering services charged by the SMP).

If retail competition is effective (an assumption that GE does not dispute), then this cost saving will be passed on to consumers, or benefits enabled by smart metering will be delivered to consumers at lower cost. This will promote the NEO.

5.2.1.2 Efficient outcome

If the benefits outweigh the costs, the FRMP and SMP agree on a contract for metering services. If not, there will be no contract, and this will be an efficient outcome.

5.2.1.3 Commercial incentives – SMP

This contract is the foundation of the SMP's business model; unless it can secure a contract with one or more retailers, the SMP has no business. As a result, SMPs can be expected to do anything that is reasonably consistent with profitability and legal/ethical constraints to secure this contract.

5.2.1.4 Commercial incentives – AP

The FRMP will not sign a contract at all until it is convinced that it will save money by doing so.

5.2.1.5 Likely outcome (including potential inefficiency)

Assuming that the metering charge which is broken out of DUoS is appropriate, and that exit fees are reasonable, and there are no regulatory impediments to successful business, SMPs and FRMPs are likely to reach agreement (as long as it is efficient to do so).

5.2.1.6 Consequences of lack of access

If the FRMP and SMP fail to agree on a contract, this is likely the most efficient outcome (as explained above). In this case, the FRMP will continue to use existing type 5 and 6 metering services, provided by the LNSP.

5.2.2 Relationship between SMP and LNSP

This relationship is important to both parties. Each has leverage to ensure that an efficient contract is reached.

5.2.2.1 Required access and consumer benefit

LNSPs will seek to use metering services which enable them to operate networks more reliably, safely and efficiently. These services will include:

- services which require data from a given NMI (such as power quality readings at a particular address, in response to a consumer complaint); and
- services which can be satisfied from a range of NMIs (such as outage, where only one outage notification is required for an LV circuit which may service hundreds of homes).

Generally, the bargaining power of the SMP will be greater in the former case (in the latter, the LNSP can often source the data from multiple SMPs). As a result, this analysis will focus on the former scenario, as the competitive pressure in the latter is clear.

Services will include a wide range of services, including voltage, power quality and outage.

5.2.2.2 Efficient outcome

An LNSP is unlikely to agree to any contract for which it cannot recover its costs under the Rules. Assuming that the rules achieve their intended effect, this will ensure that any contract entered into by an LNSP should be considered to be efficient, and to promote the NEO.

There are three possible outcomes:

- **LNSP and SMP agree on a contract –** this will be an efficient outcome, as the LNSP will not be able to satisfy its regulatory requirements for an inefficient contract.
- **LNSP and SMP do not agree on a contract, and SMP's prices are reasonable –** in this case, the efficient outcome is that there is no contract (because the benefits do not outweigh the costs).
- **LNSP and SMP do not agree on a contract, and SMP's prices are unreasonable –** in this case, there is no contract, even though the efficient outcome may have been for a contract to be struck. This will lead to an inefficiency at the market level only if the SMP does not correct its pricing as a result of the failure to agree a contract. Such a correction is highly likely, as set out in Appendix C.

5.2.2.3 Commercial incentives – SMP

The SMP has a strong incentive to maximise its profitability. This will put two pressures on the SMP:

- to maximise the number of profitable contracts it strikes for services beyond the foundational SMP-FRMP contract, described in section 5.2.1 of this response; and
- to maximise the price it achieves in each of those contracts.

To the extent that the SMP is able to satisfy both of these outcomes, it will do so. If it cannot, the SMP will prefer to sign a profitable contract at a lower price than miss out on a contract at a higher price.

5.2.2.4 Commercial incentives – AP

As discussed above, the LNSP's incentive is to sign a contract where it will recover its costs for doing so (that is, where it can convince the AER that purchasing a service at a particular price is efficient). If the SMP's price is greater than the efficient benefit level, the LNSP will not sign a contract (meaning the SMP will get no revenue from the LNSP). If the SMP's price is below the benefits realised by the LNSP, the LNSP will:

- contract with the SMP, if there are no other ways to achieve the same benefit that are cheaper; or
- if there are cheaper ways to achieve the same benefit (such as, by contracting with another SMP for outage data on the same feeder, or by the LNSP installing a meter at the LV transformer), then the LNSP will take the cheaper option and will not contract with the SMP (meaning the SMP will get zero revenue from the LNSP).

If the SMP's price is close to the LNSP's benefit level, it will not be easy for the LNSP to establish a regulatory case for the expenditure; the LNSP may well prefer other projects (in which case the SMP will derive no revenue).

5.2.2.5 Likely outcome (including potential inefficiency)

The likely outcome over time is that SMPs will price their services at an efficient level, because if they fail to do so, they risk missing out on revenue that they otherwise could have won, and they will be less able to compete for foundational FRMP contracts (see Appendix C). In this case, the possible outcomes are:

- if an LNSP is able to establish a regulatory case for buying the service, and if the LNSP has no cheaper options, then the SMP and LNSP will agree a contract. This will be an efficient outcome.
- if an LNSP is not able to establish a regulatory case for buying the service, or if the LNSP has a cheaper option to realise the same benefit, there will be no contract. This is also an efficient outcome.

In discussions with GE, some LNSPs have raised the concern that an SMP may seek to abuse its position as the sole supplier for its base of NMIs, by charging a price that is excessive in relation to the value of the services provided. In this case, the LNSP and SMP will not reach an agreement. The concern was raised that this failure to agree may be inefficient. That is true, if the failure to agree persists over time; however, such persistence is very unlikely, as an SMP that persists in this policy will go out of business. See Appendix C for a detailed explanation.

5.2.2.6 Consequences of lack of access

If an LNSP does not gain access to metering services, it will seek to realise the same benefit through alternative means (such as getting network load data or outage information by installing its own sensors), assuming that those alternative means are also efficient.

This no-access outcome is only inefficient if the SMP is overcharging (see section 5.2.2.5 above). Commercial pressures on the SMP mean that any such inefficiency is unlikely to persist (see Appendix C). Regulation of access should not be considered unless inefficiencies like this are observed in practice.

5.2.3 Relationships between SMP and third parties

This category includes a large range of SMP relationships, including those with DSP providers, ESCOs, and retailers other than the FRMP. It is appropriate to analyse these relationships

together as they share several important characteristics. Specifically, they all involve an accredited party other than the FRMP, and that accredited party is likely to depend on access to support its business model. As a result, bargaining power may favour the SMP, and some people have expressed concern that inefficiency or market failure could occur in this relationship[7].

5.2.3.1 Required access and consumer benefit

The accredited party will require access to a metering or DSP service in order to execute a particular business model. That might include selling a DSP service to consumers; offering consumers more information about their energy usage; aggregating consumers for load control or other purposes; collecting energy efficiency data; selling services relating to electric vehicles or renewable energy; or any other service which requires access to metering functionality.

The benefit arises because the consumer has access to an energy service; that service is enabled by because the accredited party has access to the metering service.

5.2.3.2 Efficient outcome

An efficient outcome will be either:

- the parties agree on a service contract, on the basis that the SMP's price is less than the benefits derived by the accredited party; or
- it is not efficient to agree a contract because the SMP cannot offer the service at a price or on other terms which are attractive to the accredited party. In this case the metering service, and any DSP product or service which depends on it, is not offered. This is also an efficient outcome.

5.2.3.3 Commercial incentives – SMP

The SMP has a strong incentive to maximise its profitability. In the context of this relationship, this will translate into several commercial pressures, including:

- the SMP will seek to maximise the number of contracts it signs with accredited parties;
- the SMP will seek to maximise the price it charges on each of those contracts; and
- the SMP will avoid anything which jeopardises its foundational contract with the FRMP, because this contract is more commercially important than the contract with the accredited party.

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[7] GE does not believe that there is any risk of inefficiency.

Some parties have expressed concern that the second of these pressures will lead the SMP to charge ruinously high prices, thereby locking DSP providers out of the market, or appropriating all of the value in the relationship with the DSP provider. This concern is unfounded. See Appendix C for an analysis of the commercial pressures on an SMP which fails to agree third party contracts.

5.2.3.4 Commercial incentives – AP

The accredited party will generally have a very strong incentive to close a contract with the SMP, because the service which the accredited party offers to the consumer is likely to depend on access to the metering service. In some cases, the accredited party's business may not survive a failure to contract with the SMP.

5.2.3.5 Likely outcome (including potential inefficiency)

The likely outcome is that the SMP and the accredited party will agree a contract if it is efficient to do so, and will not agree a contract if it the contract would be inefficient. See section 5.2.3.3 of this response for a detailed explanation. Where the SMP is a subsidiary of the FRMP, the ring-fencing rules should operate to ensure that it behaves in the same way as an independent SMP.

Accordingly, regulation should proceed on the basis that market failure is not likely. If market failure is observed in practice, regulation should then be considered.

5.2.3.6 Consequences of lack of access

Lack of access to metering services will generally result in a service (either DSP or other energy service) not being offered to the consumer. Assuming that the SMP is profit maximising, however, this failure to offer the product will be an efficient outcome (as set out in section 5.2.3.3 above).

Appendix A – Example of Standards Convergence in Home Automation

Markets have an admirable track record of converging on open standards in a huge range of technology industries. This is well illustrated by an overview of modern television systems; not all the technologies correspond directly with metering, but the way in which vendors converge on standards – without help from regulation – is the same.

Consider the home IT infrastructure used by a modern television viewer who records programmes on a personal video recorder (PVR). Every connection between devices relies on standards:

- the PVR receives the TV signal through a standard coaxial antenna cable;
- the PVR receives electronic programme guide (EPG) information via a Wi-Fi connection to the viewer's modem. This uses a range of standards, including:
    - Wi-Fi for the in-home wireless network that connects the PVR to the viewer's DSL router;
    - a Universal Serial Bus (USB) cable to connect the Wi-Fi radio to the PVR[8]; and
    - the published EPG format;
- the standard Wi-Fi radio in the PVR communicates with a compatible Wi-Fi radio in the viewer's modem. That modem then communicates over standard ADSL protocols and standard copper phone lines to an exchange which relies on a comprehensive suite of open telecommunications standards; and
- the PVR connects to the television using a standard high definition media interface (HDMI) cable. The same HDMI standard is capable of connecting speakers, DVD players, and so on.

All of these standards have been adopted by a huge range of manufacturers in different industries. They interoperate seamlessly to the viewer, who simply switches the TV on and watches the cricket. *Not one of these standards was mandated by regulation*, yet they have all been enthusiastically adopted by vendors in a range of markets from televisions to telecommunications to cables.

[8] USB is extremely common in all IT applications – nearly all modern computers include USB ports, frequently up to four. Anyone with a smart phone almost certainly charges it with a USB cable.

Appendix B – Switching Agreements and Meter Displacement

Some people have argued (particularly in the UK) that forcing all participants to use the same meter protocol will reduce the risk that meters will be replaced before it is efficient to do so. This theory proposes that if all participants use the same protocol, then any participant can operate any meter, regardless of which participant installed the meter. If participants are not all forced to use the same protocol, the theory goes, some will choose proprietary protocols which nobody else can operate. Then, when the customer switches retailers, and the new retailer has a different metering provider, the new metering provider cannot read the existing meter. This leads to the (flawed) conclusion that the new metering provider will replace the meter with a new meter that it can read directly. So, the argument goes, the inefficiency of forcing everyone to use the protocol is outweighed by the inefficiency of replacing meters before their time.

This logic does not accurately describe a competitive market. Competitive markets are quite capable of agreeing frameworks that allow meters to stay on the wall even when the meter provider changes to a new meter provider, who cannot *directly* read the original meter. This is because commercial frameworks arise naturally whereby the meter services are provided *indirectly*. Therefore, there is no inefficiency in a competitive market of meters being replaced too early. As a result, meter displacement is not a justification for forcing everyone to use a common protocol.

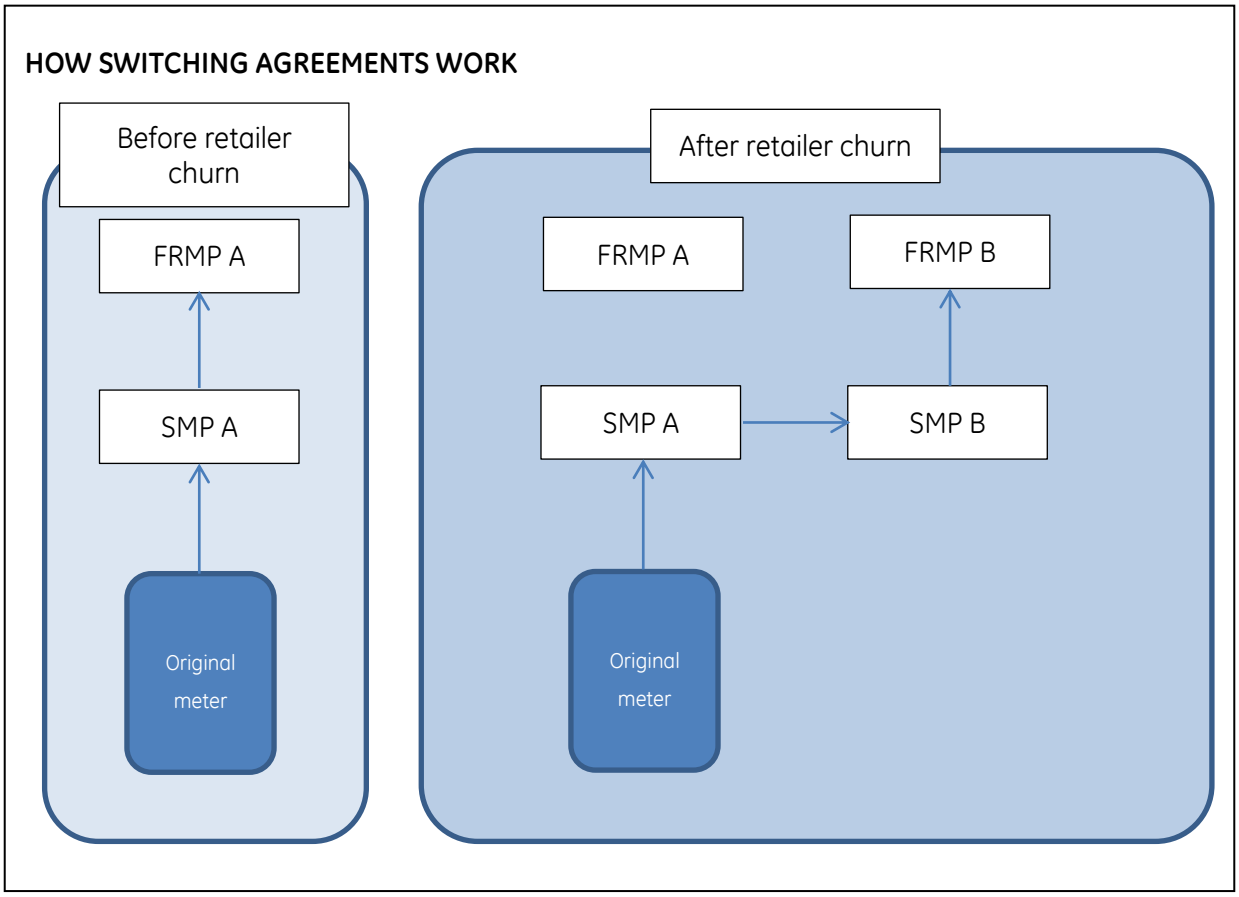
The commercial framework which achieves this (in both the UK and New Zealand) is the *switching agreement*. It works like this[9]:

- Before the customer changes retailer, SMP A sells meter services to FRMP A. Nobody but SMP A can read the customer's meter, which SMP A has installed. The contract between SMP A and FRMP A provides a revenue stream which allows SMP A to pay its finance provider for the customer's meter.
- The customer then switches its energy retail contract to FRMP B. FRMP B has no contract with SMP A; it has a contract with SMP B. SMP B cannot directly read the customer's existing meter, which was installed by SMP A.
- SMP A now faces a commercial problem. It must still pay its finance provider for the customer's meter, because the finance provider will not accept the risk of customer

[9] Please note that use of the term "SMP" is for convenience only; GE does not agree that a separate SMP role is required.

churn. However, SMP A's original contract with FRMP A is now worthless – it will provide no revenue that can pay for the meter. FRMP B will not sign a contract with SMP A; it doesn't care if SMP A can pay the bills, and wishes to contract only with SMP B. So SMP A has no option but to somehow convince SMP B to leave the original meter on the wall, even though SMP B cannot read that meter directly.

- The solution is for SMP A to offer a new contract to SMP B, whereby SMP A will offer the same metering service it provided to FRMP A, but will provide it instead to SMP B. SMP B can then meet its contract with FRMP B by on-supplying the metering service it receives from SMP A. **Should SMP A's pricing or terms be unacceptable, SMP B will replace the meter, and meet its contract with FRMP B by reading the new meter using SMP B's own software**. This commercial discipline will ensure efficient outcomes, without the significant inefficiency of mandating a common protocol. This structure operates in New Zealand today, where it prevents inefficient displacement of meters.



Disappearance of SMPs, escrow, and last resort

Another argument that has been made in favour of mandating a common meter protocol is that SMPs may go bankrupt or otherwise cease to operate; in this case (so the argument goes), nobody may be able to operate the SMP's meters unless a common protocol is mandated.

This argument misunderstands the dynamics of a competitive market. There is indeed a requirement that someone must provide metering services for the late SMP's customers; and it may be that the most efficient outcome is for that person to continue to use the SMP's meters, rather than to replace them. In a competitive market, this is indeed the most likely outcome.

Should an SMP fail, other SMPs will realise that the meter base of the failed SMP is a source of revenue for them. They will also realise that there are costs to set up systems that can use the (possibly proprietary) protocols that the late SMP used. These SMPs will consider all of these factors in deciding how much to pay a receiver for the ex-SMP's meters; if the costs of integration are high, then the price paid for the meters will be reduced to reflect this.

This area is complex, and should not be regulated without an open consultation process. GE notes that many of our customers manage risk in this area by considering the reliability of their potential partners, and by contracting for escrow agreements (whereby proprietary source code is placed in escrow with a third party agent, to be drawn down by the customer if the software provider goes bankrupt or cannot maintain the software).

Appendix C – Competitive Pressure on SMPs for Ancillary Services

It has been argued that, if an SMP is the only person who can read a given meter, that SMP may abuse this position to charge LNSPs and third parties unreasonable prices. This is not true, because any SMP who does this is likely to go out of business in the medium term. Knowing this will put pressure on the SMP to act sensibly in the short term.

To understand why this is so, consider the impact on an SMP (whom we shall call SMP A) which charges an excessive price to an LNSP for network-related services (say $20 per meter per year), thereby failing to secure an LNSP contract in relation to SMP A's meters. SMP A receives $100 per meter per year on its foundational contract with the FRMP. SMP A says, "I can pay the bills out of my $100, so the LNSP can take it or leave it at $20." SMP A is assuming that failing to agree the LNSP contract does not threaten its $100 contract with the FRMP. SMP A is wrong.

SMP A's competitor, SMP B, charges only $10 to the LNSP, and secures an LNSP contract in relation to SMP B's meters, in addition to its $100 FRMP contract[10]. SMP B also secures a $10 contract with an ESCO for metering services, and a $10 contract with an aggregator. SMP B can now drop its price for the FRMP contract to $75, but despite this, it makes a total of $105 in revenue (as against SMP A's $100). SMP B promptly knocks on the door of SMP A's FRMP, which switches its $100 contract with SMP A to a $75 contract with SMP B.

SMP A's failure to agree the LNSP contract has put it out of business.

[10] These numbers are not in any way indicative of what actual prices on these contracts are likely to be. It would be gravely unsound to use these numbers for any purpose other than to illustrate the point being made in sections 5.2.2 and 5.2.3. Actual prices will be higher or lower, depending on supply and demand, as would be expected in a competitive market.