Intellihub

Promoting innovation for NSW energy customers

Public Consultation Paper - Submission

Intellihub is comfortable that this submission is not treated as confidential

Executive Summary

Intellihub welcomes the NSW Department of Planning, Industry and Environment public consultation on promoting innovation for NSW energy customers, and the opportunity to make this submission.

Competition in the metering sector has delivered better and more efficient service, less cost and cheaper prices, and increased innovation and new technology.

Modern smart meters also deliver a wide range of data and services that benefit customers, retailers, networks, technology providers and the market operator.

Today, smart meters give insights in real-time; optimise the home for solar, batteries and electric vehicles; enable new services like demand response, virtual power plants and load shifting e.g. dynamic control of hot water.

When deployed at scale they both increase system reliability and reduce overall cost to serve, putting downward pressure on electricity prices. They also enable greater end consumer visibility and control of energy use. Many skilled jobs have been created, with promises of many more.

State Governments including New South Wales are beginning to put smart meters at the centre of new grid security and energy efficiency policy as part of the energy sector's transition. Smart metering technology is now a key enabler of this transition, the integration of Distributed Energy Resources (DER) and the AEMC's and Energy Security Board's (ESB) broader market reforms. While the Power of Choice reforms have succeeded in many areas, there are elements of the rules that have created unintended barriers to a more efficient and timely deployment of smart meters.

As a result, Australia is on track for one of the slowest smart meter deployments in the world, with full deployment currently unlikely until after 2035. In New South Wales, it is estimated that only 20%-25% of small customers have a smart meter.

In contrast, most overseas rollouts have been completed in around seven years. New Zealand reached 50% penetration in just 6 years under its competitive approach and now close to 90% of New Zealand customers have a smart meter.

In Australia, network meter testing rates have slowed and so too have replacements of old failed meters. Proactive meter replacements by electricity retailers are not occurring at the rates that were envisaged three to four years ago, mainly due to retailers absorbing almost all of the costs of smart meters despite the benefits being shared by a range of industry participants.

As a result, households, industry, grid operators and governments are missing out on the benefits of smart meters.

Reforms for metering can help improve customer access to and uptake of new energy technologies and innovation, and we support the New South Wales Government in their intent through this consultation.

The attached contains our response. We have responded only to Part 1: Digital Energy Technologies. We have not provided specific responses for Part 2 and Part 3, however we are broadly supportive of the NSW Government's efforts to provide a better pathway and remove barriers for widescale DER uptake, and to support ongoing digitalisation of the energy market.

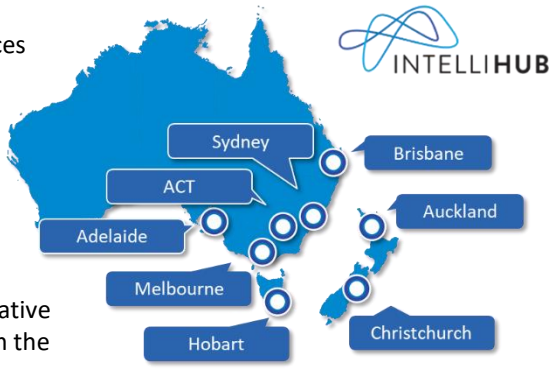
Introduction:

The Benefit of Smart Meters

0 | Introduction

0.1 | About us

Intellihub Group is an Australia and New Zealand based metering services company focused on electricity, gas and water metering services. Our expertise is in all aspects of advanced metering services (including residential, embedded, solar and C&I) to assist in faster and more accurate meter data reading, introduction of innovative products and a focus on driving an exceptional customer experience.



Our shareholders include one of Australia's leading investment managers, Pacific Equity Partners, and one of the world's largest alternative asset managers, Brookfield. The business also continues to benefit from the global metering technology expertise of Landis+Gyr.

Intellihub currently has over 1 million advanced meters under management and a committed pipeline to deploy at least 1 million more. The business is consistently installing up to 20,000 advanced meters per month and has contracts in place with all major retailers across Australia and New Zealand.

Intellihub is focused on creating business value for energy retailers through the best customer experience for installing advanced meters and afterwards maximising the digital and 'new energy' services that this technology can enable. To achieve this, we have built a proven business model of partnering closely with energy retailers. The Intellihub business has created a distinctive culture based on blending the industry 'must haves' on safe and reliable practises with the latest thinking in adopting new technology.

0.2 | The benefits of smart meters to consumers and the broader energy sector

0.2.1 | Current smart meter services

Smart meters are a key enabler of the transition of the energy sector. They enable a wide range of services to help customers reduce their energy costs. The data and services they can provide to retailers, network operators, AEMO and the States help improve reliability, system security, safety and affordability.

Without a smart meter, consumers cannot install solar PV, engage in demand response and be rewarded for reducing their consumption at peak times or using their batteries or electric vehicle to support the grid, access potential future services, or access information about their energy consumption and ways to reduce their usage and costs.

Smart meters can provide extremely valuable data and services for AEMO and network businesses to help them manage a grid with higher penetrations of renewables and integrate increased amounts of DER while maintaining security and reliability. For example, distribution network service providers (DNSPs) are currently facing increased issues with voltage limits in parts of their networks with high penetration of solar PV. This is challenging to manage efficiently due to a lack of data on their low voltage networks. Smart meter data can help networks manage these issues (when at sufficient penetration) and increase the amount of DER they allow customers to connect, which can reduce network and wholesale energy costs and benefit all customers.

Many services that can currently be provided by smart meters are under-utilised (limited to smaller-scale programs and trials) due to the low penetration of smart meters. They would be made more widely available if penetration rates increase. The following table outlines the benefits from Smart Meters that would be available once higher penetration levels are reached

Table 1 - Advanced smart meter services and their current availability

Service	Current availability
Data for apps to provide real time visibility to consumers of their energy usage	Currently available. Near real-time streaming data (i.e. streaming energy data updated every few seconds, not just 5 minute interval data) is available and currently provided to some retailers. Non-intrusive load monitoring technology is also available to provide insights into the consumption of individual appliances. Apps are currently provided to customers by some retailers.
Improved billing arrangements including pay-as-you-go	Currently available. Many retailers offer monthly billing to smart meter customers.
Monitoring of safety issues such as neutral integrity and cross-polarity	Currently available. All Intellihub smart meters provide the data necessary to detect neutral integrity issues that are observable at the metering point.
Providing visibility of the LV network, including power quality and network outage information	Currently available. Intellihub has arrangements in place with some DNSPs to provide data in near real-time to enable applications including: - Power quality monitoring - Unplanned outages, fault identification, workforce optimisation - Neutral integrity - Dynamic voltage control - Long term DER hosting capacity improvement - LV modelling - Bushfire risk management - Long term/day ahead load forecasting - New connections process improvement - Dynamic line rating - New tariff structures, e.g. time of use (TOU) solar sponge tariffs. Some of these services require higher penetration rates of smart meters, but many are effective with penetration rates of around 30% or more.
System security functions	Currently available. Examples include the SA relevant agent service for remote disconnection of solar PV systems to manage system security emergencies. Intellihub has also held discussions with AEMO on smart meter solutions for managing DER exports at times of minimum demand that can provide a more targeted alternative to disconnection of generation. Intellihub is currently releasing meters that will meet AEMO's frequency control ancillary service (FCAS) specifications to measure and validate FCAS provision from connected DER. More services can be provided if AEMO or governments specify the requirements.
Optimisation of controlled load for hot water	Currently available. Intellihub meters have load control devices capable of dynamic control and optimisation. These services are currently being provided to retailers and DNSPs with significant interest shown within South Australia.
Demand management	Currently available. Smart meters are a key enabler for demand management services. Some retailers are currently offering demand management services using data from Intellihub meters.
Optimisation of DER generation and storage	New products to optimise DER including generation, storage and appliances that are connected through the smart meter are in development.

Service	Current availability
Utilisation of electric vehicles (EVs) for energy storage	Intellihub smart meter data currently enables optimised EV charging and tariff options including using EVs for storage and vehicle-to-grid VPP services.
Improved integration of renewable energy	Currently available as noted above, plus Intellihub's meters enable dynamic export control and solar inverter monitoring services.
Virtual power plants (VPPs)	Currently available. Intellihub offers VPP services and currently has over 2,000 sites in VPPs.
Research and market planning	Currently available, subject to customer and retailer consent.

0.2.2 | **Smart meter benefits available now**

The key benefits that can be provided by these services and the potential savings to consumers are illustrated in the following figures.

Figure 1 - Potential savings to consumers from smart meters

Benefits

- ❑ Elimination of estimated bills from remote meter reads
- ❑ Increased awareness and control over energy costs
- ❑ Maximise the value of solar and battery systems
- ❑ Remote control energisation makes moving house easier
- ❑ Lower prices driven by increased retail competition
- ❑ Faster restoration and reduced blackouts due to smarter grid
- ❑ Greater access to new and innovative retail products including data services, demand response, VPPs and new tariff options

Savings

- ✓ 100% accurate bills, every time
- ✓ Estimated reductions of up to $50[1] per year
- ✓ Savings of over $175[2] per year when enabling a larger system
- ✓ Avoid manual, special meter reads saving up to $115[4]
- ✓ Access to smart retailers, saving up to 5%[5] on the reference price
- ✓ Victoria has evidenced[6] significant improvement since the rollout
- ✓ Save up to $60[3] per year with time of use and other products including significant savings from demand response and VPPs

Source: (1) https://fbe.unimelb.edu.au/exchange/edition1/smart-customers-save; (2) Solar Analytics Savings Calculator for a customer using a 6kW system instead of a 4kW system with dynamic export limiting; (3) finder.com.au/time-of-use-vs-single-rate – assuming energy mix is 80:20 off-peak to peak; (4) Combination of Essential Energy fees for connection and disconnection, 2020; (5) Comparing a tier 1 and tier 3 retailer for a household using 3900 kWh on a single rate tariff; (6) https://www.energy.vic.gov.au/electricity/smart-meters - Smart Meter Provision stakeholder engagement by KPMG

0.2.3 | **Current slow pace of deployment**

Currently only about 18% of small customers in the NEM outside of Victoria currently have a smart meter. Based on AER data, only around 430,000 smart meters were installed in the year to March 2020, which is about 4.5% of current meter fleet for small customers.

This deployment rate per year puts Australia on track for one of the slowest smart metering rollouts in the world, with full deployment to all customers unlikely to occur until after 2040.

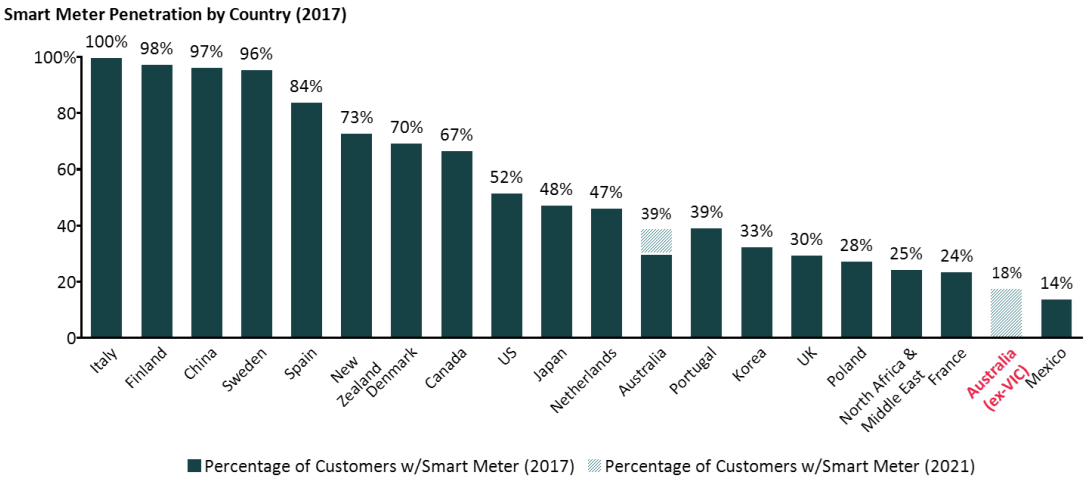


Figure 2 - Australian smart meter penetration compared with other OECD countries and global benchmarks

Source: Intellihub analysis of data from European Commission DG Energy, Bloomberg New Energy Finance, Natural Resources Canada, AER retail energy market performance update as at Q1 FY21

Intellihub's experience and its analysis of AER data indicates that:

- Almost all of the current smart meter installations are due to faults, family failures, new connections or customers installing solar PV.
- Meter installation rates for new connections and solar PV appear to be in line with expectations and there are no indications that these rates should be higher.
- The current rates of family failures are surprisingly low and have fallen well below the levels seen before implementation of the metering competition rule change in late 2017. A key cause appears to be record low volumes of meter tests by many DNSPs. For example, average annual testing rates for type 5 and 6 meters by NSW DNSPs are currently less than half the levels of tests that were undertaken prior to the contestability rules commencing. This may be due to DNSPs no longer being able to benefit from increasing their RAB with new meters once legacy meters fail tests.
- The current rates of proactive retailer new meter deployments are extremely low. The AEMC's rule change was partly based on an expectation that retailers would proactively offer customers smart meters under the opt-out arrangements, but that is not happening. In the year to March 2020, AER data shows that only 0.6% of customers received a smart meter under a retailer new meter deployment. This may be due to Retailers bearing almost all the costs of smart meters, but only some of the benefits.

0.2.4 | **Linkages to other regulatory and market operation projects and priorities**

The services and data that can be provided by smart meters are a key prerequisite for successful implementation of several AEMC and ESB projects including the ESB's Post 2025 Market Design project and the ESB's Data Strategy.

Smart meters are also a key enabler for other AEMC and ESB projects and proposed reforms including the implementation of two-sided markets, demand response, DER integration, the future role of distribution networks and network tariff reforms. Smart meters can also support AEMO's and the States' energy bodies work on system security, in particular data and services to manage the challenges associated with minimum demand. Smart meter data will also be critical to the success of the proposed Consumer Data Right.

Response:

Digital Energy Technologies

1 | Meter Costs to Customers

Consultation Questions	1a. How are the costs and benefits of smart meter installations currently communicated to customers? 1b. Can electricity retailers provide government with the various cost inputs for smart meters? (this information will be treated as commercial in confidence)? 1c. Would it be useful for customers if the cost of a smart meter was included on the details of electricity plans on comparison sites? 1d. What share of customers in New South Wales are on cost reflective pricing tariff options? 1e. What are the benefits and challenges for customers moving onto cost reflective tariffs? 1f. Are there any other costs to customers that should be considered?

Intellihub's response:

1.1 | How are the costs and benefits of smart meter installations currently communicated to customers?

The benefits of smart meters are typically communicated to customers as part of the installation process.

Retailers must provide customers with notification of a smart meter upgrade per the relevant regulatory requirements for each type of installation. If the retailer is leading the roll out of the meter they will need to disclose all upfront costs to the customer before the new meter is installed, although typically customers do not pay for the upgrade unless the customer's meter board is non-compliant.

In many instances, as part of or in additional to this notification, the retailer will provide the customer with information about what to expect from the smart-meter installation and the key benefits that it will deliver for them – including easier-to-monitor usage, more timely updates and accurate bills without estimated reads. Customers who require a smart-meter to enable their solar or battery system will usually also have learnt of the further benefits for their situation as part of their decision to install that distributed energy resource.

Intellihub also works with retailers to provide clear information to customers as part of the meter installation journey – including what to expect throughout the installation process and a recap of the new benefits that the smart-meter unlocks post-installation.

Additionally, there is a range of relevant information easily available online on smart meters from government / regulatory agencies (e.g. AER, NSW EnergySaver), individual retailer websites (e.g. Origin, AGL, Simply Energy) and other reputable third party consumer websites (e.g. Choice, CanstarBlue).

1.2 | Can electricity retailers provide government with the various cost inputs for smart meters? (this information will be treated as commercial in confidence)?

The costs inputs associated with smart meters such as the upfront hardware and installation, as well as the ongoing data and service costs, are borne by smart meter providers. Under the Power of Choice framework, the provision of smart meter services to retailers is contestable and managed through commercial relationships between the metering provider and the retailer.

Metering providers typically charge retailers a monthly service fee as negotiated and contracted between the two parties. These charges are not itemised by cost inputs and as such retailers will not be able to provide cost inputs.

Both electricity retailers and metering coordinators are also typically limited by confidentiality clauses in their contracts.

We note that the competitive approach has resulted in significant reductions in costs and prices compared with a regulated approach or compared with the market prior to the 2015 Power of Choice rule change.

These reductions have been realised from both a metering provider and retailer perspective:

- **Metering costs to MCs:** About half of the total upfront cost to an MC of deploying a smart meter is the hardware cost and the other half is the installation cost. Installation costs have approximately halved since 2015, largely due to increased scale. Meter hardware costs have also reduced. Intellihub predicts that installation costs will fall further if the regulatory changes proposed in our AEMC submission are made to increase efficiency and scale by accelerating the rollout.

- **Metering prices to retailers:** Intellihub charges retailers an annual fee for its metering services rather than a one-off hardware or installation fee, with the annual price varying depending on the meter type. Intellihub's average annual price to retailers is up to 50% less than the annual regulated prices charged by Victorian DNSPs to retailers during the Victorian rollout.[1] This lower price has been achieved despite the Victorian DNSPs having the scale advantages that should have come with a mandated rollout to every premises.

1.3 | Would it be useful for customers if the cost of a smart meter was included on the details of electricity plans on comparison sites?

We do not believe this would be useful nor is it practical.

One of the key benefits of the competitive approach has been that we understand that almost no small customers are being charged directly for smart meters. Retailers are generally absorbing the costs of smart metering services and are not increasing prices or charging customers different prices based on whether they have a smart meter or manually-read meter. Regulated retail prices under the Default Market Offer were not increased to account for any smart metering costs. This compares with the Victorian regulated rollout where customers experienced a significant increase in retail prices due to increased metering costs.

It would also be impractical to show the cost of the smart meter accurately as there are several variables that impact the cost of the meter that are outside of the customer's control. These include non-uniform pricing structures for smart meters that can have different costs depending on the distributor network, type of installation region (e.g. metropolitan, regional, remote), type of meter variant (e.g. single-phase vs. three-phase, one-element vs. two-element), availability & signal strength of remote communication networks and other specific metering requirements for that customer site (e.g. presence of solar, home batteries, residential EV chargers, pool pumps/heaters, other controlled loads). Most of this information is not available in public market platforms such as MSATS and would be difficult for a customer to input accurately themselves. In many cases it is only assessed at the time of the smart meter installation. An allowance or estimate may be able to be made but if too generic would limit the usefulness of the comparison to other plans.

The cost of the smart meter will also naturally vary depending on which metering coordinator the retailer opts to use for each specific customer site. Within the competitive PoC market, many retailers work with more than

[1] Based on a comparison between Intellihub's average metering charge and AusNet Services' regulated charges for smart metering services from 2012-2017, adjusted for inflation.

one metering coordinator. They allocate smart meter installation work amongst the providers depending on both operational and commercial requirements – which can also change and evolve over time. Each metering coordinator may have different cost structures and terms agreed with individual retailers. This likely makes it difficult for retailers to know precisely in advance the applicable smart meter cost for each individual customer and make that information available to customers on comparison websites.

1.4 | What share of customers in New South Wales are on cost reflective pricing tariff options?

No response.

1.5 | What are the benefits and challenges for customers moving onto cost reflective tariffs?

No response.

1.6 | Are there any other costs to customers that should be considered?

We note three problems that drive additional costs for smart meters. These are typically not directly borne by the customer but often can lead to delays for meter installation and poor customer experience.

- *Lack of access to DNSPs' keys for locked metering sites:* Some meters can only be accessed with keys that are held by the DNSP. In some jurisdictions, DNSPs have provided access to these keys to MCs and their personnel. But DNSPs in NSW and SA continue to refuse to do so. This is leading to MCs being unable to install smart meters, increased costs, delays and poor outcomes for consumers.
    - *Recommended reform:* Require DNSPs to provide MCs access to locked metering sites, subject to agreeing to appropriate security arrangements.
- *Lack of consistency in metering installation rules*: When metering was the responsibility of DNSPs prior to the introduction of metering competition, detailed service and installation rules applied and provided clarity around technical requirements for metering installations in each jurisdiction. These rules have not been updated for smart metering and are not suitable for a competitive smart metering rollout. Considerable inefficiency also arises from a lack of nationally consistent metering installation rules. The metering industry has developed proposed replacement rules, but they have no legal status.
    - *Recommended reform:* Implement a process for developing and authorising consistent metering installation rules.
- *Customer site compliance issues:* Asbestos boards, ceramic fuses and other compliance work required to be done by the customer before the smart meter can be installed results in smart meters not being installed for some customers. These compliance issues can alternatively result in considerable costs for customers or create safety issues as MCs cannot compel customers to remedy the issues. In the Victorian rollout, DNSPs fixed some of these issues (e.g. asbestos boards) and recovered the costs through their regulated metering charges, but that is not an option under the competitive model so some other source of funding is required to remedy these problems. A source of funding to address these issues would accelerate the rollout, reduce costs for customers and address safety risks.
    - *Recommended reform:* Recommend that governments develop and implement a mechanism to fund payments to customers, retailers or MCs up to a specified amount to address site compliance issues. It may be appropriate to target such a mechanism at certain vulnerable customers, e.g. concession or hardship customers.

2 | Meter life and redundancy changes

Consultation Questions	2a. What is the average life expectancy of basic meters and smart meters? 2b. What are the main operating factors that affect the life expectancy of smart meters? 2c. What is the average cost to a retailer of replacing a distributor's basic meter asset before it reaches its end of life? 2d. What are the factors to be considered before mandating end of life for basic meters? 2e. What are the main challenges to replacing basic meters or smart meters that reach their end of life? 2f. What measures should be included to protect vulnerable customers if their meter needs to be replaced? Would exemptions need to be included to account for implementation challenges at some premises?

Intellihub's response:

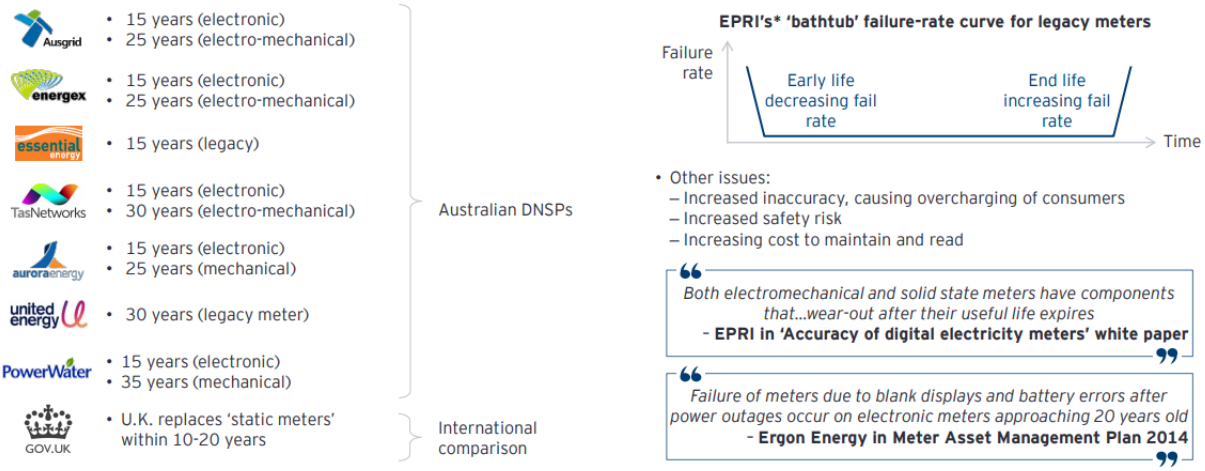
2.1 | What is the average life expectancy of basic meters and smart meters?

The technical life of basic meters typically ranges from 15 years up to 30 years.

Many of the older analogue variants of basic meters are operating beyond this timeframe, after which the components in the meter typically tend to "drift" within their designed tolerances - resulting in less accurate meter readings for customers.

In digital, face-read basic meters, these components are more likely to experience electronic failures and result in a more dramatic failure of the meter - typically following a 'bathtub' style curve.

DNSPs all have a mixture of basic meters that are both analogue and electronic.



Source: TasNetworks; Ergon Energy; PowerWater; Aurora Energy; Ausgrid; Energex; United Energy; Essential Energy; U.K. Gov; Electric Power Research Institute (EPRI)

The technical life of smart meters typically ranges from 12 years to 20 years – although smart meters do not have a set "expiry date". Ongoing monitoring of the asset fleet is required, and a proactive replacement strategy can be formed based on the actual field evidence.

Metering coordinators will typically warrant performance of the smart-meter for around 12-years as part of their contractual arrangements with retailers – during which any meters that fail would usually be replaced at the metering coordinators cost.

In practice, the majority of smart-meters are expected to last longer than that – consistent with what has been seen in other international markets. Manufacturer statements of design life typically range from 15 to 20 years. Field and simulated engineering testing, often referred to as accelerated life testing, also imply an effective useful life of 15 to 20 years with low failure rates for most smart-meter models/makes.

Additionally, firmware upgrades can be sent over-the-air to enable new functionality and features for already-installed meters at customer sites – extending the benefits able to be delivered by smart-meters over time.

Communications networks used by remotely read smart meters will continue to evolve, however we believe this is not a material risk within the expected useful life of newly deployed meters. LTE service commitments by cellular network providers have been made out to 2042 in a recent example seen in the U.S., and this is expected to translate more broadly across geographies. Telstra is believed to be looking at a minimum 20 years of service coverage in Australia. In a situation where an upgrade is required, such as early smart meters with 2G/3G communications modules, the meter has not have become obsolescent but rather only require a that module to be upgraded. This can be done on a modular basis at the customer site without the need to remove the underlying installed meter.

2.2 | What are the main operating factors that affect the life expectancy of smart meters?

The actual life expectancy of an electricity meter is determined by:

1. the design
2. how well it is manufactured
3. the environment it is used in

Key operating factor considerations for smart meters include:

- Mechanical components can be subject to physical wear and aging
- Some electronic components can be subject to degradation with time, such as electrolytic capacitors and supercapacitors – with this being temperature dependent
- Humidity can cause corrosion over extended timescales

The lifetime of indoor meters is likely to be higher than those located in outdoor cabinets which will experience a wider diurnal and seasonal temperature range. Similarly, the lifetime of meters located in more humid or high-temperature locations will typically be lower than those with less intense conditions.

2.3 | What is the average cost to a retailer of replacing a distributor's basic meter asset before it reaches its end of life?

The cost differential between installing a new smart meter and paying to use the old type 5/6 meter until it fails has led to retailers undertaking extremely few proactive new meter deployments – limiting wide-scale realisation of benefits for customers.

When the new rules were introduced, the AER reformed DNSPs' charges for type 5/6 meters. Metering charges were split into an operating charge that ceases to be paid when the meter is replaced and a capital charge that continues to be paid by the retailer even when the old meter is replaced. This means that when a retailer replaces a type 5/6 meter with a smart meter, it has to pay for the remaining asset value of the old meter as well as paying for the new meter.

In some DNSP areas this is not a significant issue as capital costs can be as low as $1-2 a year. But in most DNSP areas these capital costs have become a major barrier to the deployment of smart meters and a key reason for the current cost gap between installing a new smart meter and continuing to use the old type 5/6 meter until it fails. For example, current capital charges for Ausgrid and Ergon are $15-17 a year and for Energex they are $25-28 a year. Due to the age profile of some of these DNSPs' metering fleets, these capital charges will continue to be high for at least the next 10 years.

Some DNSPs also charge an extremely high 'final read' fee when a type 5 meter is replaced with a smart meter, which can be over $70. This acts as an 'exit fee' that makes upgrading to a smart meter uneconomic.

We would recommend a review of the method for how DNSPs recover the capital costs of type 5/6 meters that are replaced with a smart meter and consider whether there are alternatives that do not create a barrier to the replacement of old type 5/6 meters. We also recommend a review DNSPs' final read fees and consideration of whether there are alternative approaches that avoid creating a barrier to the efficient installation of smart meters. In particular, it is key to ensure that there are no one-off costs incurred by retailers to upgrade a basic meter.

2.4 | What are the factors to be considered before mandating end of life for basic meters?

Smart meters provide significant benefits to consumers, the energy sector and the broader economy. An accelerated rollout would also deliver other public policy benefits, including economic stimulus and increased employment for thousands of electricians.

We are supportive of simple measures that put the control for smart meter rollout in the hands of the retailers who are incentivised to best manage both the customer outcomes and the efficiency (i.e. lowest cost) of rollout, in conjunction with their MC/MP/MDP providers such as Intellihub.

Mandating that all basic meters over a certain age (e.g. 25-30 years) be replaced with a smart meter within a certain timeframe (e.g. 5-years) would be a very effective way to accelerate the smart meter rollout. An alternative, similarly viable and simple approach, would be to require all type 5 or type 6 meters over a specified age (e.g. 25 years) to either be tested or replaced within the next 5 years.

This would dramatically increase deployment rates and lead to scale efficiencies that would reduce costs and increase the benefits of smart metering data and services to a range of parties. It would also help ensure that all customers eventually get access to a smart meter, with priority going to those with the oldest meters. This would mitigate the risk that rollouts target the lowest cost or highest value customers (e.g. urban customers and those who can afford DER) and that other customers would miss out or have to wait much longer.

The public availability of information on DNSP metering fleets should be improved to support delivery of the proposed mandate. This could be done by requiring DNSPs to publish their metering asset management strategies and test plans and provide data on to all MCs on meter ages, meter volumes, testing approaches and rates, forecast family failure dates and replacement plans. Current testing requirements for type 5/6 meters should also be strengthened and made more transparent – noting that based on AER RIN data, testing rates for type 5/6 meters have fallen dramatically since the new PoC rules were introduced in late 2017. For example, between 2009-2017, Ausgrid tested an average of 1,621 meters per year, but from 2018-2024 Ausgrid forecasts testing rates to fall to just 488 meters per year. The NSW DNSPs are only undertaking a total of about 2,000 tests per year out of about 5 million meters.

2.5 | What are the main challenges to replacing basic meters or smart meters that reach their end of life?

We have noted two specific challenges below on basic meters that reach the end of their life.

Additionally, please also refer to our earlier response to Issue 1f on: lack of access to DNSPs' keys for locked metering sites, lack of consistency in metering installation rules and customer site compliance issues.

- *Overly prescriptive opt-out notice requirement:* Retailers can install new smart meters for customers under a new meter deployment, but must provide opt-out notices that meet extremely prescriptive requirements in the rules on content and timing. Retailers have indicated that these requirements are a significant barrier to undertaking new meter deployments and a reason why the rates of those deployments are well below expected levels
    - *Recommended reform:* Almost no customers opt-out in practice, but the existence of this right is important for some customers and it should be retained. However, the content and timing requirements for opt-out notices should be reviewed to remove unnecessary prescription and reduce barriers to retailers undertaking new meter deployments.
- *Compliance barriers to installing smart meters as an alternative to legacy network load control services:* Retailers, DNSPs and MCs have experienced rules compliance barriers when installing smart meters as an alternative to network load control equipment that has reached the end of its life. In an Intellihub program where smart meters were installed as a lower cost alternative to replacing network load control equipment that had reached the end of its life, 'no action' letters were required from the AER to enable the installation of the smart meters.
    - *Recommended Reform:* If network load control equipment is faulty or at the end of its life and is replaced by a service that requires the installation of a new smart meter to provide load control services, the replacement of the meter should be treated like a family failure replacement for meter transfer and customer notification purposes. This could be achieved by amending the definition of a 'maintenance replacement' in the NERR to include these circumstances.

2.6 | What measures should be included to protect vulnerable customers if their meter needs to be replaced? Would exemptions need to be included to account for implementation challenges at some premises?

In most instances, a smart meter upgrade will not drive any additional cost for the customer.

We do agree that, in some instances, asbestos boards, ceramic fuses and other compliance work required to be done by the customer before the smart meter can be installed results in smart meters not being installed for some customers. These compliance issues can alternatively result in considerable costs for customers or create safety issues as MCs cannot compel customers to remedy the issues.

In the Victorian rollout, DNSPs fixed some of these issues (e.g. asbestos boards) and recovered the costs through their regulated metering charges, but that is not an option under the competitive model so some other source of funding is required to remedy these problems. A source of funding to address these issues would accelerate the rollout, reduce costs for customers and address safety risks.

Protecting vulnerable customers is important and we would recommend that the NSW government develop and implement a mechanism to fund payments to customers, retailers or MCs up to a specified amount to address site compliance issues. It may be appropriate to target such a mechanism at certain vulnerable customers, e.g. concession or hardship customers.

3 | Solar connection delays

Consultation Questions	3a. Are the current installation timeframes, and the measures to monitor compliance with those timeframes, that are required under the national rules appropriate? 3b. Are you aware of any regulatory or non-regulatory barriers that may be contributing to delays in the installation of smart meters? 3c. What additional measures would need to be implemented to unlock these customer benefits? 3d. Are there any benefits for customers to allowing third parties to be able to manage the installation of a smart meter on their behalf?

Intellihub's response:

3.1 | Are the current installation timeframes, and the measures to monitor compliance with those timeframes, that are required under the national rules appropriate?

Yes, we believe these are appropriate.

Under the current rules, customers have the certainty of binding maximum installation timeframes, with meaningful financial penalties if those timeframes are not met. This contrasts with the non-binding or best endeavours obligations that applied when distributors were responsible for metering.

Intellihub considers that installation timeframes are now significantly shorter than the timeframes experienced when distributors were responsible for metering prior to the new rules commencing in 2017, noting that there was almost no visibility of DNSPs' installation timeframes.

During 2020, Intellihub's average installation timeframes were 4 business days for new connections and 11 business days for additions & alterations. In 2021, our average installation timeframe for new connections has fallen further to 3 business days and we continue to improve our timeframes for additions & alterations.

This compares with the regulated timeframes under the rules of 6 and 15 business days respectively, with exceptions to those timeframes applicable in a range of circumstances. During 2021, Intellihub installed over 99%+ of meters within these timeframes. More detailed information on timeframes and reasons for exceptions to standard timeframes can be provided on request if useful for this consultation.

3.2 | Are you aware of any regulatory or non-regulatory barriers that may be contributing to delays in the installation of smart meters?

Please refer to our responses to 1f and 2e.

3.3 | What additional measures would need to be implemented to unlock these customer benefits?

Customers currently do not have any right to have a smart meter installed on request. Some retailers will install a smart meter on request, but others will only fulfil a request where a new or replacement meter is required e.g. for solar PV. Customers should be able to request a smart meter from their retailer if they want one (e.g. to access a new tariff or service) and should not need to change retailers just to access a smart meter.

3.4 | Are there any benefits for customers to allowing third parties to be able to manage the installation of a smart meter on their behalf?

Intellihub does not support changing the rules so that small customers can appoint their own Metering Coordinator or third-party to manage a smart-meter installation on their behalf.

This would not be an effective way to accelerate the rollout or unlock the benefits of smart meters and appears to have very little stakeholder support. It would add unnecessary confusion for customers and further complicate an already complex contractual model.

Customers should be able to focus on the services they want, rather than the technology used to deliver those services or metering coordinator appointed to manage the installation.

Retailers are also best placed to manage the metering installation given their established role as the FRMP for each customer site and primary point of contact for customers for their electricity service.

4 | Meter board upgrades

Consultation Questions	4a. Should there be a requirement to replace meter boards that are older than a specified age (e.g. 30 years) as a prerequisite to installing a smart meter? 4b. What challenges would prevent electricity retailers and metering providers from offering a meter board survey service to customers before a smart meter is installed? 4c. If a meter board survey service can be provided, how much should customers pay for the service? Can the service be offered for free? 4d. Should electricity retailers and/or metering providers receive a report on the state of a customer's meter board? If not, why? 4e. What are the challenges to using an existing platform to enable metering providers to register and share the state of a customer's meter board with other energy market participants? 4f. Are these options suitable for customers in regional and rural areas, or are there other options that should be considered to meet the needs of these customers? 4g. What is the best way to provide customers, solar panel installers and electricity retailers with information about meter board upgrades?

Intellihub's response:

We agree with the consultation paper that ~10% of customers have required their meter board to be upgraded or replaced by an ASP before a smart-meter could be installed – this aligns with our operational statistics on delays to jobs due to meter board issues over the last 6 months in NSW. As is noted, these issues are more common in older houses and apartment buildings.

The process of upgrading the meter board does cause delays to smart-meter deployment and can result in additional unplanned costs, particularly for those customers who are requiring a smart meter to enable their new solar installation, or other additions and alterations at their premises.

Intellihub believes there needs to be incentives to engage and grow the currently limited pool of qualified Level 2 ASPs in NSW to support improvements to these processes and further expedite the meter roll-out.

If a meter board survey is required, it will also need to have the appropriate incentive to have a qualified electrician to identify and confirm the scope of work required to make site compliant. This is an additional service that requires additional visit (and time) to complete the survey work and cannot be offered for free.

Additionally, we support metering providers receiving the most recent and accurate information on the state of meter boards.

We recommend using MSATs to transact this information, to confirm the compliance certificate and the most recent picture of the meter board – subject to updates to the AEMO B2M schema. We strongly maintain that the DNSPs should have the ability and responsibility to keep this information updated for all sites, as per current responsibilities to maintain standing data.

Table 2 – Intellihub response on proposed options for meter board upgrades.

Proposed Options	Intellihub's response
1. Consult with National Energy Ministers to amend laws and rules to ensure:	-
a. if it is safe to do so, customers or their agent may submit a photo of their electricity meter board to their electricity retailer to enable the metering provider to make a preliminary assessment of whether a meter board upgrade is required before attending the site	We do not believe this change would necessarily improve the outcome for customers, nor reduce the instances of wasted installation visits by metering providers – particular for work that was not initiated by the customer (i.e. meter installations for reasons other than solar installation or addition/alteration). It would be difficult to define appropriate mechanisms and ensure adequate incentives for: (i) the customer or their agent to provide suitable photo within required format and timeframes (ii) the retailer to request, receive and process the photo from customer to metering provider (iii) the metering provider to assess / identify a required meter board upgrade or other rectification works required
b. metering providers that attend a meter board, particularly in multi-occupancy dwellings (such as apartments and townhouses), can record and report the state of the meter board via an approved process (such as inclusion in the database supporting Market Settlement and Transfer Solutions (MSAT) or other)	We are supportive of this proposed option, although we note that the current AEMO B2M schema does not support this information currently. We additionally strongly maintain that DNSPs should have the ability and responsibility to keep this information updated accurately for all sites, as per current responsibilities to maintain standing data.
2. Distributors to provide ASPs with blanket approval to re-mount old meters on new meter boards in apartment buildings, rather than owners' corporations having to seek permission from their distribution network service provider (DNSP).	We are supportive of this proposed option, as this would indeed remove an unnecessary barrier for ASPs to complete their work.
3. The Department is working with the Department of Customer Service as part of the review of the Strata Schemes Management Act 2015 to require owners' corporations to consider meter board upgrades as part of their 10-year Capital Works Fund Plan..	No response.

4.1 | Should there be a requirement to replace meter boards that are older than a specified age (e.g. 30 years) as a prerequisite to installing a smart meter?

No. If meter boards are compliant, they should not need to be upgraded – regardless of their age. This will avoid additional and unnecessary upgrades of meter boards for customers.

However, we are supportive of meter boards that are non-compliant being upgraded and do agree that typically these will be for those that are older than 30 years of age.

4.2 | What challenges would prevent electricity retailers and metering providers from offering a meter board survey service to customers before a smart meter is installed?

There is no existing mechanism or incentive for metering providers to complete this scope of work and additionally there is a limited supply of qualified Level 2 ASPs to do so.

Metering providers do not have visibility of the condition of the meter boards and there is currently a lack of any of the required market processes to fulfil this work at scale.

There also needs to be incentives to engage and grow the currently limited pool of qualified Level 2 ASPs in NSW to both support this work and then further expedite the meter roll-out.

4.3 | If a meter board survey service can be provided, how much should customers pay for the service? Can the service be offered for free?

If the meter board survey is required it will need to have the appropriate incentive to have a qualified electrician to identify and confirm the scope of work required to make site compliant.

This is an additional service that requires additional visit (and time) to complete the survey work and cannot be offered for free.

Regardless of who is engaged to complete the work, we recommend that only Level 2 ASPs be used to complete the survey work and that appropriate incentives be put into place to ensure availability of these qualified resources.

4.4 | Should electricity retailers and/or metering providers receive a report on the state of a customer's meter board? If not, why?

Yes, we support metering providers receiving the most recent and accurate information on the state of meter boards.

We also recommend using MSATs to transact this information, to confirm the compliance certificate and the most recent picture of the meter board. We note that the current AEMO B2M schema does not support this information currently.

4.5 | What are the challenges to using an existing platform to enable metering providers to register and share the state of a customer's meter board with other energy market participants?

The current Market Change Requests do not support this functionality to be managed by the metering provider or any other participant.

Metering providers should not be the only responsible party to keep this information updated, because this would limit the information to contestable metering sites (where we are nominated).

We strongly maintain that the DNSPs should have the ability and responsibility to keep this information updated accurately for all sites, as per current responsibilities to maintain standing data.

4.6 | Are these options suitable for customers in regional and rural areas, or are there other options that should be considered to meet the needs of these customers?

As above, we strongly maintain that the DNSPs should have the ability and responsibility to keep this information updated for all sites, as per current responsibilities to maintain standing data.

4.7 | What is the best way to provide customers, solar panel installers and electricity retailers with information about meter board upgrades?

We propose using the market standing data mechanism, which the retailers have access to currently. The Retailers have commercial relationship with the customer, and the customer has relationship with the REC/Solar/PV installer to be able to provide the information required.

Another option is for the Department to provide a portal where this information could be made available to all relevant parties.

5 | Sample Meters

Consultation Questions	5a. Are there broader benefits (beyond the financial settlements process) to retaining controlled load profiles in New South Wales? 5b. Are the costs to enable smart meters to determine the controlled load profiles less than the benefits from the information? 5c. What alternative options should be considered?

Intellihub's response:

Intellihub is supportive of the first proposed option: Amend AEMO's metrology procedures to remove the controlled load profiles requirement completely – removing the need for sample meters.

5.1 | Are there broader benefits (beyond the financial settlements process) to retaining controlled load profiles in New South Wales?

No response.

5.2 | Are the costs to enable smart meters to determine the controlled load profiles less than the benefits from the information?

No response.

5.3 | What alternative options should be considered?

No response.

6 | Consumer protections for remote vs manual re-energisation and deenergisation

Consultation Questions	6a. Should the same obligations be applied to both manual and remote re-energisation and de-energisation services? 6b. Do you foresee any unintended consequences of aligning these obligations? 6c. Do you consider there to be any barriers that may prevent a customer being afforded the same protections if they have been remotely re-energised and/or de-energised?

Intellihub's response:

6.1 | Should the same obligations be applied to both manual and remote re-energisation and de-energisation services?

Intellihub is generally supportive of the same obligations being applied for both manual and remote re-energisation, although we note that certain specifics may not strictly require any regulatory change given other established rules or procedures outside the NERR.

Table 3 – Intellihub response on obligations for remote re-/de-energisations.

Existing DNSP Obligations	Regulatory Gap	Intellihub's response
National Energy Retail Rule (NERR) 80(1)(c) prescribes that DNSPs must publish de-energisation and re-energisation timeframes on their website.	Retailers are not required to publish their metering providers' timeframes for remote re-energisation. In addition, neither distributors nor retailers are required to publish timeframes for manual or remote de-energisation.	Jurisdictional regulations stipulate the timeframes to re-energise and de-energise remotely. In NSW, these are captured under the Electricity Supply (General) Amendment (Remote De-energisation and Re-energisation) Regulation (No 3) 2020. A requirement for publication of these timeframes by retailers and/or distributors could serve to further publicise these to customers - although we note that some retailers already publish information online on their procedure for remote reconnections and disconnections in NSW (e.g. Red Energy).
NERR 103(1) & (2) prescribes that if DNSPs refuse a retailer's de-energisation request, they must notify the retailer promptly.	Metering providers are not required to notify retailers of a refusal to de-energise a customer's premises at the retailer's request (e.g. due to life support, Energy and Water Ombudsman NSW (EWON) complaint, outside protected period).	Unlike DNSPs, metering providers do not have means to validate or refuse the retailer request as we do not have a direct relationship with the customer nor do we have an obligation to maintain a related records (e.g. register for life-support customers).

Existing DNSP Obligations	Regulatory Gap	Intellihub's response
NERR 103(1) & (2) prescribes that if DNSPs refuse a retailer's de-energisation request, they must notify the retailer promptly.	Metering providers are not required to notify retailers of a refusal to de-energise a customer's premises at the retailer's request (e.g. due to life support, Energy and Water Ombudsman NSW (EWON) complaint, outside protected period).	The relevant obligations sit with retailers under the NERR (e.g. 123, 124, 126). In practice, this means that metering providers do not refuse retailer's requests to de-energise a customer's premises. They act upon the retailer's request on the understanding that they have fulfilled their relevant obligations; and as per processes established in compliance with the Guidelines for Development of Safety Management Plans for Remote De-energisation and Re-energisation of Small Customers Premises by Electricity Retailers and Metering Providers defined within NSW under the Gas and Electricity (Consumer Safety) Regulation 2018.
NERR 105(1)(b) prescribes that DNSPs who fail to de-energise a customer's premises within the prescribed timeframes must pay charges for energy consumed at the premises after the timeframes expire	Retailers are not required to provide compensation to their customers if a customer-initiated remote de-energisation is delayed and the customer receives usage charges as a result.	No response.
NERR 119(1)(a) prescribes that DNSPs may de-energise a customer's premises if the customer's retailer informs the distributor that it has a right to arrange for de-energisation under its contract.	The NERR are silent on when a metering provider can and cannot de-energise or re-energise a customer's premises.	While it is not covered under the NERR, we note that under NER 7.3.2(i) a Metering Coordinator must not arrange a disconnection or reconnection except at the request of the retailer, LNSP or EENSP in accordance with jurisdictional electricity legislation and, if applicable, emergency priority procedures. These rules under the NER already regulates when a metering provider can and cannot de-energise or re-energise a customer's premise. As a result, a change to the NERR may be unnecessary.

6.2 | Do you foresee any unintended consequences of aligning these obligations?

As above, we note that it is important to ensure consistency of any change to the NERR with other established rules or procedures outside the NERR.

6.3 | Do you consider there to be any barriers that may prevent a customer being afforded the same protections if they have been remotely re-energised and/or de-energised?

As above, we note that metering providers do not have a direct relationship with the customer.

We act only:

- upon the request of a retailer, LNSP or EENSP – as per the NER
- in accordance with jurisdictional regulations, which in NSW include:
    - timeframes - under the Electricity Supply Act
    - safety management plans - under the Electricity (Consumer Safety) Regulation

Intellihub is supportive of customers being afforded the same protections if they have been remotely re-energised and/or de-energised and happy to further engage with retailers, regulators and other stakeholders as needed on any proposed reforms.

7 | Enhancing protections for hot water embedded network customers

Consultation Questions	7a. Is it appropriate to require the sale of hot water to be treated as the sale of energy, to allow hot water embedded network customers to be given similar consumer protections as those in traditional common hot water systems? 7b. Do you foresee any unintended consequences of requiring hot water embedded network operators to bill customers for hot water in the underlying energy source (in cents per megajoule or kilowatt hour), rather than as a separate 'hot water' product (in cents per litre)? 7c. Do you consider there to be any barriers that may prevent a hot water embedded network operator from billing customers in the underlying energy source? 7d. Do you consider the AEMO Retail Market Procedures (NSW and ACT) formula for the calculation of energy usage to be appropriate and reasonable for use within hot water embedded networks?

Intellihub's response:

Intellihub is of the understanding that the owners-corporation, strata, or other relevant party representing the customers at the embedded network site has the ability to contract with their preferred embedded network operator for provision of services relating to bulk hot-water.

As a metering provider, Intellihub is not involved in the billing process for customers other than as it relates to provision of underlying data to the embedded network operator.

We have laid out below general commentary on the metering for hot-water embedded network customers.

As noted in the consultation paper, common hot-water plant equipment, including boilers and storage tanks, are typically 'centralised' for a given embedded network site. This equipment is used to provide hot-water for all the customers at that site – i.e. customers do not typically have their own dedicated heating plant.

The metering requirements are therefore twofold:

1. measurement of the usage of the underlying energy source to heat the water – at a site level – with an electricity or gas meter depending the type of hot-water plant equipment installed – i.e. in kWh or MJ
2. measurement of the consumption of individual users of the hot-water – at a customer level – with a hot-water meter – i.e. in L.

Hot-water metering for embedded network customers is typically procured by the embedded network operator (either directly from the manufacturer or from a specialised metering provider) and installed by at the site by a plumber or other suitably qualified tradesperson.

These meters are either manually read or remotely read with the addition of an appropriate communications solution. Data is typically then provided by the metering service provider back to the embedded network operator, who use it to generate bills accordingly for the customer.

Ongoing remote metering data services and asset maintenance requirements both contribute to the 'all-in' cost of supplying hot-water to customers - in addition to the underlying cost of the energy source and initial cost of deployment for the both metering / non-metering assets at the embedded network site.

7.1 | Is it appropriate to require the sale of hot water to be treated as the sale of energy, to allow hot water embedded network customers to be given similar consumer protections as those in traditional common hot water systems?

No response – please refer above general commentary.

7.2 | Do you foresee any unintended consequences of requiring hot water embedded network operators to bill customers for hot water in the underlying energy source (in cents per megajoule or kilowatt hour), rather than as a separate 'hot water' product (in cents per litre)?

No response – please refer above general commentary.

7.3 | Do you consider there to be any barriers that may prevent a hot water embedded network operator from billing customers in the underlying energy source?

No response – please refer above general commentary.

7.4 | Do you consider the AEMO Retail Market Procedures (NSW and ACT) formula for the calculation of energy usage to be appropriate and reasonable for use within hot water embedded networks?

No response – please refer above general commentary.


INTELLIHUB