

Register content codes

2017 Operational Review Decisions and summary of submissions

20 March 2018



Executive summary

The Authority consulted on *Register content codes – 2017 operational review* between August and September 2017.

Participants use register content codes and periods of availability for validating the correct application of delivery prices, network reporting and billing, retailer pricing, consumer invoicing, the certification of metering installations, and creating submission information for the reconciliation manager. The codes support standardisation and interoperability, and reduce complexity for metering equipment providers (MEPs), distributors, and traders.

Analysis of registry data has highlighted inconsistencies and confusion within the industry regarding the application of some register content codes and period of availability values.

The current list of register content codes is brief and unstructured, leaving room for different interpretation and incorrect application. There is also a mixture of generic and customised codes which adds unnecessary complexity.

New technologies, mass deployment of advanced meters, and increased competition are encouraging distributors to offer more cost reflective delivery prices, and traders to offer innovative retail pricing plans that provide more choice for customers.

In response to the introduction of new technologies, distributors have been considering several types of delivery prices for mass market consumers, which are enabled by smart metering capability. These include time of use (TOU), demand, and capacity prices.

Over recent years several distributors have offered TOU delivery prices to residential customers as an option to standard prices. This has led to the introduction of customised register content codes for uncontrolled channels that identify both the type of information being recorded by the channel and the time blocks for which the channel is active.

While customised register content codes seemed appropriate at the time, it has led to a proliferation of register content codes, and there are concerns they may stifle innovation by encouraging participants to align pricing constructs with the customised codes rather than the needs of customers.

We decided it was time to undertake an operational review and take a fresh look at the current approach to ensure register content codes are fit for purpose for the foreseeable future.

For the register content codes, our consultation paper outlined six alternatives to the status quo and identified a preferred option (Option D). Option D provides for a set of generic codes to replace the existing customised codes (in some cases after a transition period where currently used), as well as some additional generic codes, grouped by number of channels associated with pricing options. These generic codes may be required until traders develop capability to use the half hour (HHR) data from smart meters to support the implementation of more cost-reflective delivery prices and TOU retail products.

The consultation paper also proposed a change to period of availability specification to Num 2.1, and proposed changing some business requirements to improve the accurate application of register content codes and period of availability.

This decision paper provides the detail and rationale for the decisions we have made, and explains our next steps in relation to some additional work.

We have decided to:

- (a) for the register content codes, proceed with the framework outlined as Option D, but with some refinements:
 - (i) add new generic register content codes for peak, off peak, and shoulder, requiring traders and MEPs to refer to the distributor's pricing information for the relevant time-blocks and minimum number of hours in any day that supply is available for inclusive channels
 - (ii) discontinue existing customised codes that are not used
 - (iii) grandfather the use of existing customised codes that are currently used
 - (iv) amend descriptions, repurpose some existing codes, add comments and group logical combinations of register content codes, to support more accurate and consistent application
- (b) not proceed with the proposal to change the field specification for period of availability to Num 2.1, instead allowing for rounding up or down the period of availability to a whole number as appropriate
- (c) not proceed with the Code change proposal at this time, which would have required the distributor's pricing information to include register content code and period of availability combinations for each ICP-based volume delivery price option and associated price component code
- (d) use market facilitation measures to encourage distributors to provide traders and MEPs with sufficient pricing information to support accurate application of register content codes and periods of availability, thus enabling traders to reliably use the distributor's pricing information and metering information in the registry to map to the correct delivery price option and associated price component code
- (e) add a period of availability section to the registry functional specification as outlined in Appendix C, to support more accurate and consistent application of period of availability.

Contents

Executive summary	ii
1 Background	5
We consulted on a range of options	6
2 Submissions and Authority's consideration	7
Submissions on options, principles and issues	7
Authority's response	10
Submissions on proposal regarding distributors' pricing information and register content codes	13
Authority's response	15
Submissions on the costs and benefits of the proposed amendments	16
Authority's response	16
Timing	17
Authority's response	17
3 Authority decisions	17
Appendix A Register content codes – tracked changes	21
Appendix B Register content codes – clean	32
Appendix C Period of availability	39
Appendix D Mapping of customised to generic register content codes	40

1 Background

- 1.2 We consulted on *Register content codes – 2017 operational review* between August and September 2017.
- 1.3 Register content codes are unique codes specified in the registry¹, used in the registry and participants' systems, that identify the configuration of each channel (previously referred to as meter register) in a metering component. The MEP at an ICP records the register content codes in the registry against each channel.
- 1.4 The register content codes (in conjunction with the period of availability values) describe the physical and programmed set-up of the meter channels(s).
- 1.5 Register content codes and periods of availability support standardisation and interoperability, and reduce complexity for MEPs, distributors, and traders. They are used for:
- (a) validating the correct application of delivery prices and price component codes for different metering configurations
 - (b) network reporting and billing of network charges
 - (c) quoting prices for potential new customers
 - (d) retailer pricing
 - (e) customer invoicing
 - (f) designing, configuring, and certifying metering installations
 - (g) creating submission information for the reconciliation manager.
- 1.6 Analysis of registry data has highlighted inconsistencies and confusion within the industry regarding how to apply register content codes and period of availability values. Traders spend a significant amount of time dealing with these anomalies, which cause errors in operational processes.
- 1.7 The current residential and small business (mass market) pricing structures and the framework for register content codes and associated period of availability values were originally developed under different market conditions. Despite that, the current framework is still workable.
- 1.8 The shift to mass market TOU delivery price options by several distributors has led to the addition of new, and the potential proliferation of, customised register content codes.
- 1.9 For the most part, existing register content codes support legacy mass market capacity and demand prices. However, going forward it is expected that HHR data from smart meters will increasingly be used to support implementing more cost-reflective delivery pricing options.
- 1.10 Historically, register content codes have not necessarily indicated the time blocks² for each channel, and participants have had to interpret the distributor's pricing information³ to determine the load control policy, time blocks, and eligibility for certain delivery prices.

¹ See file format SD-020 in the registry functional specification (www.electricityregistry.co.nz).

² 'Time blocks' means time periods greater than 1 trading period.

³ For the purposes of this decision paper "distributor's pricing information" means the delivery price schedule together with any associated information relevant to the application of delivery prices (e.g. pricing policy).

- 1.11 For mass market TOU delivery prices, the trend over recent years has been to establish customised register content codes and descriptions that identify both the type of information being recorded by the channel and the active periods for the time blocks.
- 1.12 With the market changing rapidly, and issues with different interpretation and incorrect application, we considered it appropriate to undertake an operational review of register content codes and the associated period of availability to ensure they are fit for purpose for the foreseeable future.

We consulted on a range of options

- 1.13 We consulted on seven options:
- (a) **Option A:** status quo, existing codes and format
 - (b) **Option B:** existing codes, but reformatted by number of channels (refer Appendix B)
 - (c) **Option C:** as for Option B, but adding generic codes for potential mass market TOU prices
 - (d) **Option D:** as for Option C, but deleting existing customised codes
 - (e) **Option E:** existing codes, but adding a library of potential future codes (numeric 4 characters)
 - (f) **Option F:** as for Option E, but replacing existing codes with numeric codes
 - (g) **Option G:** as for Option D, but excluding period of availability as an attribute, adding a suffix to register content codes where necessary to differentiate register content codes within a network where the same type of channel information applies but with a different period of availability.
- 1.14 Our preference was for Option D, the key features being:
- (a) a new set of generic register content codes that are appropriate for all known existing physical or programmed metering configurations. This option would require MEPs and traders to interpret the distributor's pricing information to determine both the time blocks and the minimum number of hours in any day that supply is available
 - (b) including some additional generic register content codes that we considered participants may require during the transition from configuring non half-hour (NHH) meter installations to support TOU pricing, to using HHR data⁴
 - (c) discontinuing existing customised register content codes, requiring all participants using the existing customised register content codes to convert (or map) to the new generic register content codes in their back-office systems
 - (d) including the new/amended codes that were subject to consultation in July 2017:
 - (i) INEM
 - (ii) DIN/NIN
- Note: the Authority has not approved the amendment proposed to include 'SR' and 'WR' for all Summer and Winter codes.

⁴ For example, inclusive equivalents of uncontrolled register content codes for peak, off peak and shoulder where a network does not have separate uncontrolled and controlled metering.

- (e) changing the format to assist accurate application, with register content codes grouped by number of channels showing which codes need to work together as a group
- (f) amending some descriptions for consistency and to improve clarity.

1.15 We also consulted on:

- (a) requiring distributor's pricing information to include a table showing, for each price component code associated with an ICP-based volume price, the time blocks, register content code, and period of availability value. The table would specify the applicable register content codes and period of availability values if a trader or MEP wished to configure the NHH metering installation to align with the distributor's delivery price time blocks and load control policy.
- (b) changing the format for period of availability to Num 2.1, to allow for active periods that are for an odd number of trading periods
- (c) clarifying the period of availability for multi-channel uncontrolled, controlled and inclusive configurations
- (d) requiring that, if a distributor's pricing information does not specify the minimum number of hours in any day that supply is available for a controlled or inclusive delivery price, the default for the period of availability should be '0' hours
- (e) if submitters considered the benefits of the proposed amendments outweighed the costs.

2 Submissions and Authority's consideration

Submissions on options, principles and issues

- 2.1 Ten of the 15 submitters support Option D. Option D would replace customised register content codes with generic register content codes, while retaining the associated period of availability.
- 2.2 The basis of support was that register content codes and period of availability must reflect the physical or programmed set-up of the metering installation, and not pricing constructs or virtual channels.
- 2.3 One of the submitters supported Option D as an improvement on the status quo, but also suggested an alternative long-term solution would be to use multiple registry fields to describe the channel as opposed to long and complicated register content codes.
- 2.4 One submitter agreed with the proposal to replace existing customised codes with generic register content codes, but also suggested that a set of virtual register content codes should be created for EIEP1 reporting where the trader is reporting volumes based on aggregated HHR interval data – UN7304, IN7304, CN7304.
- 2.5 Of the five submitters that did not support Option D:
 - (a) Two submitters preferred Option A (status quo):
 - (i) one submitter considered the only change to the status quo should be to replace customised TOU register content codes with generic register content codes

- (ii) the other submitter supported retaining customised register content codes as it considered it less likely that errors would occur if we retained the current 1:1 relationship, rather than having to source the information from the distributor's pricing information. It considered that:
 1. Option D would introduce unnecessary complexity into traders' systems and associated processes such as switching and alignment with the registry, reconciliation, billing configurations and pricing updates
 2. the mapping of invalid to valid codes is not removed for traders, but replaced with a new mapping requirement for different time periods
 - (b) One submitter preferred Option G, raising questions about the ongoing relevance of period of availability as a single value that has never been sufficient to describe the level of service, especially when it is used for different contexts. This submitter supported Option D if we retained period of availability.
 - (c) Another submitter considered that, for multi-channel configurations that include controllable load, the period of availability should reflect the time-block(s) for each channel. The controlled period should be represented in the registry as an additional field associated with CN/IN register content codes as an attribute associated with the load control device.
- 2.6 There is general support for tidying up the register content codes to make them fit for purpose.
- 2.7 Several submitters commented on the unnecessarily large number of rarely used register content code and period of availability combinations in the registry, and the prevalence of incorrect combinations. These frequently cause errors in operational processes.
- 2.8 While ENA⁵ submitted that its members support the tidy up of register content codes to make them fit for purpose, it expressed some concern that the output from the review is too complex and will likely make the unsatisfactory situation with the current register content codes in the registry even worse.
- 2.9 Some common themes in submissions include:
- (a) the fundamental purpose of register content codes is that they must only reflect the physical or programmed metering configuration, not pricing or virtual channels
 - (b) we should only add new register content codes where necessary to describe new physical or programmed set-ups of metering installations, not new pricing
 - (c) we should delete existing customised register content codes, and only replace them with generic codes where the existing codes do not work
 - (d) we should avoid adding new register content codes purely to create distinctions that reflect delivery prices, or drive pricing outcomes, when HHR interval data can be used
 - (e) we need to incentivise a shift to using HHR interval data by not adding register content codes that may never be used

⁵ Electricity Networks Association.

- (f) Option D is a step in the right direction in terms of minimising the unnecessary proliferation of increasingly specific register content codes that do not reflect metering
- (g) register content codes will become less relevant as participants develop systems to utilise the HHR interval data, so it makes sense to prioritise a solution that has minimal cost and resource impact on participants
- (h) we need to promote enabling settings rather than restrictive codes
- (i) register content codes need to be set in a way that supports rather than stifles pricing innovation (e.g. it is considered customised codes will incentivise pricing aligned with approved codes because obtaining approval for new codes is difficult and time consuming)
- (j) register content codes based on type of channel and time blocks (rather than physical metering configuration) do not add value in an environment where HHR interval data can be used to provide appropriately time-blocked data
- (k) at some point the industry needs to accept that the registry is a record of the actual physical attributes (not virtual registers) of a metering installation and will no longer be able to (nor should need to) reflect how a participant may decide to treat the output from the physical configurations in its customer interactions
- (l) we need to provide for a transition period from existing customised codes to replacement generic codes
- (m) there is a concern as to how the proposed changes will account for weekday definitions that exclude public holidays, given some public holidays vary across New Zealand.

2.10 As noted above, one submitter raised questions about the ongoing relevance of period of availability as a single value that has never been sufficient to describe the level of service, especially when it is used in different contexts. The submitter made the following comments:

- (a) for controlled supplies, a single number does not provide any indication as to whether the control is fixed time or dynamic, and provides no indication of the timing or the period it might be continuously off for
- (b) for multi-rate supplies, a single number does not provide any indication of the timing (for example, when the night period begins and ends) and is not at all compatible with things like “weekender” pricing (where the low night rate is extended to apply all weekend) in a two-register configuration
- (c) several network areas operate a combination of the above, where a multi-rate supply also includes a controlled load. A single “period of availability” fails to describe this option or how it differs from other options
- (d) as a related issue, period of availability is used as an indication of service levels for controlled loads, typically water heating. But specifying that a water heater is on for a minimum of (say) 17 hours per day is a meaningless metric, because it does not take 17 hours to heat any water cylinder – the very largest can fully heat in less than 6.5 hours
- (e) as period of availability is inadequate to completely describe the key attributes of the metering configuration, its continued use will further stifle innovation

- (f) supports a more flexible approach consistent with Option G – to eliminate the period of availability, and to utilise a simple register content code that links to a scheduled description of the information represented. The minimum requirements for the information in the schedule should be specified to include area of availability, any special conditions, switching times and minimum service levels.
- 2.11 An MEP submitter noted that period of availability does not support meters with both timed registers and a controlled element, and believes that replacing the timed period with controlled period will lead to more confusion and inaccuracies. It is concerned with the scalability of Option D given that register content codes continue to incorporate attributes outside the physical metering configuration, and hence outside the control of the MEP. It suggests a better solution would be:
- (a) replace the current register content code and period of availability with fields for the MEP to describe the physical configuration of the meter only
 - (b) for the distributor/trader should be responsible for representing network control periods on the registry.
- 2.12 One submitter considers the proposal for period of availability for multi-channel controlled or inclusive metering configurations is over-complicated, and should simply replicate what is stated for multi-channel uncontrolled configurations, noting that differentiation between the controlled, inclusive, and uncontrolled metering configurations exists through the respective register content codes.
- 2.13 Two submitters disagreed that the period of availability should default to '0' where the distributor does not specify the minimum hours of supply. One reason given was that it would imply no service.
- 2.14 Several submitters were opposed to the period of availability field being changed to Num 2.1, suggesting it would add material system development costs for no benefit. All of those submitters suggested rounding up or down to a whole number.
- 2.15 Some disagreement/confusion remains around the application of the DC, NC, and CN register content codes:
- (a) for night only (e.g. 8 hours) and night boost (e.g. 8 hours at night + 3 hours boost during the day) with fixed on/off times:
 - (i) one submitter considers it should be CN8 (night only) for night only
 - (ii) while not included in any submission, we note the ENA pricing guidelines specify it should be CN8 (night only) and CN11 (night boost)
 - (b) whether DC/NC is a valid combination for a 2-channel day/night meter where all load is subject to control at any time via a load control device, and consumption is separately recorded for the day and night periods.

Authority's response

- 2.16 We agree that:
- (a) register content codes and period of availability must reflect the physical or programmed configuration of the metering installation
 - (b) the registry is a record of the actual physical attributes (not virtual registers) of a metering installation and will not necessarily reflect how a participant may decide to treat the output from the physical configurations in their customer interactions

- (c) register content codes need to be set in a way that support, rather than stifle, pricing innovation
 - (d) customised codes may stifle pricing innovation by incentivising pricing aligned with approved codes because obtaining approval for new codes is difficult and time consuming
 - (e) register content codes will become less relevant as systems are developed to utilise the HHR interval data, so it makes sense to prioritise a solution that has minimal cost and resource impact on participants
 - (f) the timing is right to replace customised register content codes with generic register content codes
 - (g) new generic register content codes should only be provided for existing physical or programmed configurations and new register content codes should not be provided for potential physical or programmed configurations that may never be used
 - (h) there should be a transition period to move from existing customised codes that are used to generic codes, e.g. grandfather for existing ICPs for 14 months (a full market revision cycle)
 - (i) periods of availability for time-blocks that are for an odd number of trading periods should be rounded to a whole number, provided the sum of the periods of availability in any day does not exceed 24.
- 2.17 We do not agree that it would be helpful to create a set of virtual register content codes for EIEP1 reporting where the trader is reporting volumes based on framed HHR interval data (UN7304, IN7304, CN7304). This is unnecessary and will be obvious from the misalignment between register content code (reflecting the physical or programmed configuration) and price.
- 2.18 We agree that Option G has some merit. Option G provides one option to address the questions raised about the ongoing relevance of period of availability as a single value that has never been sufficient to describe the level of service, especially when it is used for different contexts. However, we do not propose to progress this option because:
- (a) we consider the current framework is still workable, and that making some refinements will deliver a fit for purpose solution for the foreseeable future that has minimal cost and resource impact on participants
 - (b) period of availability is embedded in so many systems and processes that the cost to make changes to the Code, registry functional specification and design, participant back office systems and processes, and field service provider systems, would be higher than Option D.
- 2.19 We acknowledge that while several submitters disagreed with the proposal to default the period of availability to '0' where the distributor does not specify a minimum period of supply > 0 in its load control policy, they did not suggest a solution. To avoid confusion with a valid period of supply, we consider the period of availability should default to 0 or 24, (depending on the scenario) where metering configurations include a load control device, but the distributor does not specify a load control policy or does not actively control the load, as follows:

- (a) period of availability should default to '0' where the distributor specifies "no maximum hours of control" or the equivalent, or does not specify any load control policy
 - (b) period of availability should default to '24' where the distributor specifies it does not actively control the load.
- 2.20 We disagree with one submitter and the ENA's pricing guidelines that CN8 and CN11 are appropriate for night only (in this example 8 hours at night) and night boost (in this example 8 hours at night with 3 hours afternoon boost) metering configurations with fixed on/off times. We remain of the view that (in this example) NC8 and NC11 are the correct register content code – period of availability combinations, on the basis that:
- (a) CN indicates all load on the channel is subject to control at any time via a load control device
 - (b) NC indicates all load on the channel is subject to control at fixed times during the night period by a load control device
 - (c) night only and night boost are normally subject to fixed on/off times.
- 2.21 We acknowledge the industry has used CN for night only fixed time channels (especially CN8) since 1999 and the difficulty the industry may have with changing these register content codes to NC. However, there is still misalignment and potential confusion between the use of CN for fixed time channels and the definition of CN. We therefore will:
- (a) add a new register content code of NO for new fully controlled at fixed times, night only channels
 - (b) grandfather, until the next metering installation recertification, installations using CN, NC or N⁶ for fully controlled at fixed times, night only channels (e.g. CN8, NC8, N8)
 - (c) add a new register content code of NB for new fully controlled at fixed times, night boost (night with afternoon boost) channels
 - (d) grandfather, until the next metering installation recertification, installations using CN, NC or N for fully controlled at fixed times, night with afternoon boost channels (e.g. CN11, NC11, N11)
 - (e) not allow CN, NC or N to be used for any new or recertified fully controlled at fixed times, night only or night boost channels
 - (f) delete/discontinue NC on its own for fully controlled at fixed times, night only or night boost channels once the need for grandfathering has run its course
 - (g) retain CN for fully controlled at variable times channels (for example peak load control)
 - (h) add a new register content code of SL for metered streetlights.
- 2.22 One submitter said that the DC/NC combination is used on its network for a 2-channel day/night meter where all load is subject to control at any time via a load control device,

⁶ We are aware that CN and NC have been used for fully controlled at fixed times, night only and night boost channels. We are also aware that N has been used on at least one network for the same configuration and been recently corrected to NC, however we are including N in the grandfathering provision for both night only and night boost in case there are other installations where N has been used for night only or night boost.

and consumption is separately recorded for the day and night periods. The Authority's proposal was to create new DCN/NCN register content codes for this configuration. Separate to the consultation, we asked MEPs to advise what they use DC and NC for. This has led us to conclude that we should:

- (a) discontinue DC on its own for a fully controlled at fixed times day only channel, as it is not currently used and is unlikely to be used
- (b) provide for DC/NC combination to be available for a 2-channel day/night meter where all load is subject to network control at any time via a load control device, and consumption is separately recorded for fixed day and night periods. Defining DC/NC for this purpose provides a compromise solution reflecting existing use, the combination of control at fixed times (day/night switching) and any time (network control), thus avoiding the need to create the DCN/NCN combination as proposed in the consultation paper.

Note: a separate consultation proposed the addition of DIN/NIN as a register content code to describe a 2-channel day/night meter where part of the load is subject to network control and the remainder of the load is uncontrolled. As noted in 1.14(d), we have decided to include DIN/NIN in the implementation of these register content codes.

- 2.23 For period of availability, we are retaining the existing definition. *Period of availability* is the minimum number of hours within a day that supply is available (or controlled part is available for an inclusive channel) and must be ≤ 24 .
- 2.24 The proposed 'rules' for period of availability for multi-channel configurations are not intended to add complexity, rather they are intended to add clarity.
- 2.25 The definition of period of availability and 'rules' for single and multi-channel configurations, intended to support accurate and consistent application, are set out in Appendix C.

Submissions on proposal regarding distributors' pricing information and register content codes

- 2.26 Thirteen of the 16 submitters supported the idea of a Code change proposal that would require each distributor's pricing information to include, for each price component code associated with an ICP-based volume price, the appropriate time blocks, register content code, and period of availability. This was on the basis the register content codes and period of availability in the distributor's pricing information would be applicable if a trader or MEP wished to configure the metering installation to align with the distributor's delivery price time blocks (even though they do not have to be aligned).
- 2.27 A new entrant trader expressed the view that the lack of an obligation on distributors to map each ICP-based volume delivery price to every register content code and period of availability combination on the distributor's network causes significant confusion and interpretation discrepancies between traders. This results in a range of issues from confusion for traders when quoting prices for potential new customers, to complaints from customers due to a change in price allocation following a switch, to difficulties reconciling network charges.
- 2.28 A distributor suggested that, given the importance of register content codes, a registry report by network area would be useful and would assist distributors with pricing

development (mapping table) as well as improving assurance for network reporting and billing.

2.29 One submitter supported a requirement for transparency and consistency of distributors' pricing information for ICP-based volume prices, but suggested this should be at a higher level. This is because there are practical barriers to a requirement that distributors produce 1:1 mapping of price component codes to register content code – period of availability combinations. The submitter provided the following comments:

- (a) retail and delivery pricing does not necessarily align, and should not be required to do so:
 - (i) for example, a distributor may offer two simple usage pricing options – an uncontrolled price, and a controlled price, while a trader may choose to offer customers the option of a day/night pricing plan. Assuming the metering installation had no controlled load, the trader could have the metering configured to day/night (e.g. D16/N8) and attribute the uncontrolled delivery price against both channels
 - (ii) because the submitter would not like to see distributors objecting to legitimate register content code changes for an ICP (e.g. UN24 to D16/N8) on the basis that the retailer's preferred register content code is not in the distributor's pricing information
- (b) if distributors have eligibility criteria regarding load control and/or time blocks, they should be required to provide this information as part of the pricing information, but at a level higher than register content code, which provides flexibility for traders. For example, specifying that a price is specifically for 'fully controlled load', or specifying that a 'day' price is only available for the period 7am to 11pm, would not prevent retailers from using other register content codes that fit the specified criteria (e.g. applying a peak/off peak set of register content codes)
- (c) distributors should be required to disclose more general information on load control and periods of availability, so that retailers understand what the distributor's ripple signals do. For example, if most ICPs in a region have CN17 but an ICP switches with CN19, the gaining retailer is unsure if this ICP is receiving a better service level than other ICPs or if it is an error.

2.30 Two submitters disagreed with the proposal for various reasons, including:

- (a) any Code amendment may simply add an additional compliance requirement onto the distributor, and may not keep pace with future developments in the nascent area of future pricing
- (b) it is in distributors' best interests to provide sufficient information to traders to ensure consistent and correct use of ICP-based volume prices, so there is no need to mandate it through the Code
- (c) distributors are incentivised to provide sufficient and correct pricing information to ensure that traders apply the correct price component code to each respective price, otherwise it is more likely that traders will misinterpret how the prices will be applied and there is risk either that the distributor does not recover the revenue expected from each relevant price or the trader is required to pay the difference
- (d) distributors do not populate register content code and period of availability information on the registry. This is performed by MEPs, so distributors may not be

aware of all register content code – period of availability combinations, on their own networks

- (e) this is regulatory creep into an area that is between the distributor and trader to resolve if there is a lack of understanding
 - (f) regulating in this area risks distributors tailoring price constructs to fit with register content codes rather than the needs of the customer.
- 2.31 One distributor noted that on its network there are multiple register content code – period of availability combinations that map to a single price component code. Therefore the proposal would be impractical unless the business requirement specified the most prevalent combination be used.
- 2.32 Several submitters were opposed to regulating where not required, referring to the very limited, if any, benefits these submitters observed from the Authority regulating EIEP12.

Authority's response

- 2.33 We agree with several submitters that there may be practical barriers to requiring distributors to produce a 1:1 mapping of register content code and period of availability combinations to price component code. This was the reason for our decision to remove register content code and period of availability fields from EIEP12.⁷
- 2.34 However, in the context of the distributor's pricing information, we believe there is no need for a 1:1 mapping, and a 1:many or many:1 mapping will still be useful information for traders.
- 2.35 We remain concerned that the lack of mapping of valid register content code and period of availability combinations on a network to delivery price options is said to be causing significant confusion and interpretation discrepancies between traders, and is probably more of an issue for new entrant traders.
- 2.36 We are also concerned that the lack of mapping of valid register content codes and period of availability to the relevant delivery price option causes a range of issues from confusion for traders quoting prices for potential new customers, to complaints from customers due to a change in price allocation following a switch, and to difficulties reconciling network charges.
- 2.37 Accordingly, we consider it is important that distributors provide sufficient information in their pricing schedules (and associated pricing policies) to support:
- (a) MEPs and traders accurately and consistently applying register content codes and period of availability
 - (b) traders accurately and consistently mapping the range of register content code and period of availability combinations used on the network to delivery price options and associated price component codes.
- 2.38 We draw distributors' attention to the registry report PR-255 'Produce Metering Installation Information'. PR-255 contains all metering installation attributes within the requester's area of responsibility and selection criteria.
- 2.39 Although there is no requirement for a distributor's delivery pricing to align with the pricing or products the trader offers its customers, distributors can use either PR-030 or PR-255 to identify all register content code and period of availability combinations used

⁷ Refer to the Electricity Information Exchange Protocols (EIEPs) 2017 Operational review decision paper

on the network. This will allow distributors to map valid codes to each delivery price option and associated price component code which can then be disclosed in their pricing information. The trader and distributor need to agree on a distributor pricing option for each ICP, so any unspecified register content codes are likely to be rare, and can be agreed on a case by case basis.

- 2.40 Therefore, rather than regulating, we intend to use market facilitation measures to encourage distributors to include all valid register content code and period of availability combinations used on their networks in their pricing information. Each ICP-based volume delivery price option and associated price component code should contain a list of all the valid combinations that are eligible for that delivery price.
- 2.41 Traders can then use the distributor's pricing information and metering information in the registry to map to the correct delivery price option and associated price component code. It will also allow traders to identify potential invalid combinations which they can query and resolve with the relevant MEP and/or distributor.

Submissions on the costs and benefits of the proposed amendments

- 2.42 Ten of the fourteen submitters agreed the benefits of the proposed amendments would outweigh the costs. The consultation paper provided a qualitative assessment of the benefits of Option D, the Code change proposal to mandate distributor's pricing information, and the format change for period of availability.
- 2.43 The four remaining submitters made the following comments:
- (a) adding a decimal point to the period of availability is likely to result in material system costs for participants
 - (b) the proposed Code change proposal to mandate distributor's pricing information would result in limited benefits, citing similar benefits to the introduction of EIEP12
 - (c) MEP costs would be difficult to recover as increased lease fees for retailers could result in displacement of an MEP
 - (d) the Authority had underestimated the costs associated with system changes to integrate register content codes into billing and reconciliation systems
 - (e) the major cost is associated with updating metering installations with existing register content codes, for example CN to NC to comply with the registry functional specification
 - (f) avoidance of future change costs to the registry could not be claimed as it is difficult to foresee what registry changes will be required as the industry changes.

Authority's response

- 2.44 We have addressed the comments made about adding a decimal point to the period of availability and the proposed Code change to mandate distributor's pricing information in paragraphs 2.16 and 2.33 respectively. We will not be proceeding with these changes.
- 2.45 We agree a major cost would be in updating metering installations retrospectively with existing register content codes. As discussed in paragraphs 2.21 and 2.22, we will grandfather existing register content codes and create new ones that must be used at the time of the metering installation's certification expiration. Therefore retrospective updating, and the associated major costs for both MEPs and traders, will not be

required. Remaining costs are considered minor, and in the case of MEPs, will be similarly faced by all MEPs, therefore the displacement risk is minimised.

- 2.46 We acknowledge register content codes may not be as prevalent in the future with the increasing use of HHR information. However, register content codes will be used for the foreseeable future and this review is to ensure they are fit for purpose.
- 2.47 We consider the original assessment, that the benefits outweigh the costs, continues to be valid for the final decisions (including modifications) made.

Timing

- 2.48 The consultation paper proposed six months to convert from existing customised register content codes to replacement generic codes in Option D.
- 2.49 Of 14 submissions on this question, eight were comfortable with six months.
- 2.50 Other submitters made the following comments:
- (a) the transition period should be 12 months—estimated six months for development and three to six months for deployment
 - (b) these changes will need a two-stage approach to complete. The ‘changed’ codes will need to be included from the inception date and run in parallel with existing codes to allow for network wash-ups to occur. After the full wash-up cycle (up to 12 months depending on the network) the old codes will need to be removed/hidden to prevent accidental use
 - (c) 12 months to allow for network tariff design, system testing, and implementation of changes to MEP records
 - (d) nine to 12 months would be more reasonable
 - (e) 10 months would be required, because the proposal affects multiple systems
 - (f) the changes should come into force on 1 April 2019, to align with the next distributor pricing review
 - (g) need to accommodate the distributor’s obligation to provide EIEP12 files with pricing notification, noting that notifications commence the end of the calendar year for delivery pricing changes from the following 1 April. Distributors would need clarification as to whether they would be required to republish EIEP12 once the changes are effective.

Authority’s response

- 2.51 We agree that a staged approach is required where existing customised codes are in use that will be replaced. It would be sensible in these circumstances to grandfather the existing customised codes for 14 months to complete the full market revision cycle.
- 2.52 Apart from the need to grandfather those existing customised codes, once the new generic codes are effective the unused customised codes can be discontinued immediately.

3 Authority decisions

- 3.1 We have decided to retain the current structure for register content codes and period of availability. We consider the framework is workable and provides a fit for purpose solution with minimal cost and resource impact on participants as the industry shifts

towards greater use of HHR interval data from smart meters to support new pricing constructs.

- 3.2 Register content codes and period of availability must reflect the physical or programmed configuration of metering installations, and not pricing or virtual channels.
- 3.3 We will only add generic register content codes where it is necessary to describe new physical or programmed set-ups of metering installations. We will not add register content codes for new pricing constructs or virtual channels, thus encouraging an industry shift to using the HHR interval data from smart meters.
- 3.4 We have decided to proceed with the framework outlined as Option D, but with some refinements as outlined below (marked up in Appendix A):⁸
- (a) confirm the addition of new generic register content codes to be used for peak, off peak and shoulder time-blocks, requiring traders and MEPs to refer to the distributor's pricing information for the relevant time-blocks. The codes OP, PK and SH will provide for 2-channel and 3-channel combinations of off-peak, peak and shoulder (as appropriate)
 - (b) not add some generic register content codes included in the proposal because they are not currently required, e.g. the inclusive equivalents of OP/PK/SH, on the basis they may never be required if the industry shifts completely to using HHR data from smart meters for establishing time-blocked volumes
 - (c) add new register content codes which were subject to consultation in June/July 2017:
 - (i) DIN/NIN – inclusive equivalents of Day/Night uncontrolled
 - (ii) INEM – load on the channel is a combination of load controlled only in an emergency and uncontrolled load
 - (d) discontinue existing customised codes that are not currently used:
 - (i) OPKOOA/PKOOA/SPKOOA – 0 ICPs as at 15/03/18
 - (ii) OPKOOD/PKOOD/SPKOOD – 0 ICPs as at 15/03/18
 - (iii) OPKOOD/PKOOE/SPKOOE – 0 ICPs as at 15/03/18
 - (iv) DWD/NWD/WE – 0 ICPs as at 15/03/18
 - (e) grandfather customised code combinations for existing ICPs where currently used until the next metering installation recertification or when the codes are no longer used, and require the use of generic codes for all new or recertified metering installations with these configurations:
 - (i) DOP/DPK/N – 738 ICPs as at 15/03/18
 - (ii) OPKOOB/PKOOB/SPKOOB – 30 ICPs as at 15/03/18
 - (iii) OPKOOB/PKOOB – 3 ICPs as at 15/03/18
 - (iv) SEPK/SEOP/SENV – 1867 ICPs as at 15/03/18
 - (f) grandfather the following customised code combination for existing ICPs with this configuration until the code combination is no longer used:

⁸ Note: all changes to the register content codes will occur in the registry's static data table and the registry functional specification SD-020

- (i) SWDPK/WWDPK/WDOP/N – 124 ICPs as at 15/03/18
- (g) add new register content codes for night only and night boost, metered streetlights, and grandfather the existing use of CN, NC and N as stated below:
 - (i) add a new register content code of NO for new fully controlled at fixed times, night only channels
 - (ii) grandfather until the next recertification of metering installations using CN, NC or N for fully controlled at fixed times, night only channels (e.g. CN8, NC8 or N8)⁹
 - (iii) add a new register content code of NB for new fully controlled at fixed times, night boost (night with afternoon boost) channels
 - (iv) grandfather until the next recertification of metering installations using CN, NC or N for fully controlled at fixed times, night boost channels (e.g. CN11, NC11 or N11)
 - (v) not allow CN, NC or N to be used for any new or recertified fully controlled at fixed times, night only or night boost channels
 - (vi) discontinue NC on its own for fully controlled at fixed times, night only or night boost channels once the need for grandfathering has run its course
 - (vii) retain CN for fully controlled at variable times channels (for example peak load control)
 - (viii) add SL for metered streetlights
- (h) validate the DC/NC register content codes combination for a 2-channel day/night meter where all load is subject to control at any time via a load control device, and consumption is separately recorded for the day and night periods, reflecting existing use
- (i) discontinue DC on its own for fully controlled at fixed times, day only channels, as not currently used and unlikely to be used
- (j) amend the text for some register content code descriptions to improve consistency and add clarity
- (k) group register content codes that typically work together, with alphabetic order retained for the first register content code of each group instead of grouping by the number of channels associated with pricing options.

3.5 We have also decided:

- (a) not to proceed with the proposal to change the field specification for period of availability to Num 2.1, instead allowing for rounding up or down to a whole number as appropriate, provided the sum of the periods of availability in any day does not exceed 24

⁹ We are aware that CN and NC have been used for fully controlled at fixed times, night only channels. We are also aware that N8 has been used on at least one network for the same configuration and been recently corrected to NC, however we are including N in the grandfathering provision for both night only and night boost in case there are other installations where N has been used for night only or night boost.

- (b) where metering configurations include a load control device, but the distributor does not specify a minimum period of supply in its load control policy, the period of availability should default to:
 - (i) '0' (zero) where the distributor specifies "no maximum hours of control" or the equivalent, or does not specify any load control policy
 - (ii) '24' where the distributor specifies it does not actively control the load
- (c) not to proceed with making changes to the Code, at this time, requiring distributors to include in their pricing information a table of register content code and period of availability mapped to each ICP-based volume delivery price option and the associated price component code
- (d) to use market facilitation measures to encourage distributors to include in their pricing information, mappings of all valid register content code and period of availability combinations on their networks to each ICP-based volume delivery price option and price component code. This will allow traders to reliably use the distributor's pricing information and metering information in the registry to map to the correct delivery price option and associated price component code. This will also allow traders to identify potential invalid combinations, which can be queried and resolved with the relevant MEP and/or distributor.
- (e) to add a period of availability section to the registry functional specification as outlined in Appendix C, to support more accurate and consistent application of period of availability
- (f) that, in terms of a timetable:
 - (i) new register content codes will come into force on 1 April 2018
 - (ii) unused customised register content codes will be discontinued immediately
 - (iii) inclusion of DC on its own will be discontinued immediately
 - (iv) SWDPK/WWDPK/WDOP/N combination will be grandfathered until the ICPs currently using these codes are moved to an alternative price category, then this combination will be discontinued. All other existing customised codes in use will be grandfathered until the next metering installation recertification date, and then they will be discontinued
 - (v) the use of CN, NC or N for fully controlled at fixed times, night only and night boost, will be grandfathered until the next metering installation recertification date, and then the inclusion of NC on its own will be discontinued
 - (vi) immediately following addition of the new NO and NB codes, CN, NC or N will not be permitted for any new or recertified metering installations that use these codes for fully controlled at fixed times, night only or night boost channels
 - (vii) MEPs will be given until the next metering installation recertification date to change the register content codes in the registry from CN, NC or N to NO or NB (as appropriate) for metering installations which use CN, NC or N for night only or night boost where there are fixed on/off times.

Appendix A Register content codes – tracked changes

A.1 The table below shows changes from the current table of register content codes contained in the registry static data table SD-020.

A.2 The register content codes use the standard convention, in the following order:

- (a) season – e.g. ‘S’ or ‘SR’ (summer), ‘W’ or ‘WR’ (winter)
- (b) day of week – e.g. WD (weekday), WE (weekend)
- (c) time of day – e.g. PK (peak), OP (off-peak), SH (shoulder)
- (d) type of load – e.g. CN (controlled), IN (inclusive, combination of controlled and uncontrolled load), UN (uncontrolled).

A.3 In the below table, where a “Status” cell covers multiple register content code rows, the register content codes must be used together at the same metering installation.

Register content code	Description	Status	Comments
AD	kVA demand - K kVA MDI	<u>Approved for use</u>	
AH	kVAh - cumulative K kVA register channel	<u>Approved for use</u>	
CN	Controlled - all load on the register channel is subject to control by the distributor at any time via a load control device. LineCo	<u>Grandfathered</u>	<u>Use of CN is grandfathered for fully controlled at fixed times, night only and night boost metering installations (for example CN8 and CN11) until the next metering installation recertification. -All new and recertified night only and night boost metering installations to use NO or NB (as appropriate).</u>
D	Day == may only be used with N. Daytime only of an uncontrolled 2-channel day/night meter, switched between channels at fixed times via an internal time clock or external signal.	<u>Approved for use</u>	<u>Day/Night uncontrolled</u> <u>Use of N on its own is grandfathered for fully controlled at fixed times, night only and night</u>

Register content code	Description	Status	Comments
<u>N</u>	<u>Night – may only be used with D. Night-time of an uncontrolled 2-channel day/night meter, switched between channels at fixed times via an internal time clock or external signal.</u>	<u>Approved for use with D. Grandfathered where used on its own.</u>	<u>boost metering installations (for example N8 and N11) until the next recertification. All new and recertified night only and night boost metering installations to use NO or NB (as appropriate).</u>
DC	<u>Day Controlled – may only be used with NC. Daytime of a 2-channel day/night meter switched between channels at fixed times via an internal time clock or external signal. All metered load is subject to control at any time via a load control device, and consumption is separately recorded for the day and night periods.</u> DC may only be used with NC. DC represents daytime only of a 2-channel day/night meter where all load is subject to control at any time via a load control device, and consumption is separately recorded for the day and night periods Day register for a fully controlled meter	<u>Approved for use</u>	<u>Day/Night controlled</u>
<u>NC</u>	<u>Night Controlled – may only be used with DC. Night-time of a 2-channel day/night meter switched between channels at fixed times via an internal time clock or external signal. All metered load is subject to control at any time via a load control device, and consumption is separately recorded for the day and night periods.</u> When used with DC, NC represents night time only of a 2-channel day/night meter where all load is subject to control at any time via a load control device, and consumption is separately recorded for the day and night periods <u>NC is also used on its own for a single channel night only or night boost meter where the load is switched on/off at fixed times (refer to NC below).</u>		

Register content code	Description	Status	Comments
<u>DIN</u>	<u>Day Inclusive – may only be used with NIN. Day time of a 2-channel day/night meter, switched between channels at fixed times by via an internal time clock or external signal. All metered load on the channel is a combination of controlled and uncontrolled loads.</u>	<u>Approved for use</u>	<u>Day/Night inclusive</u>
<u>NIN</u>	<u>Night Inclusive – may only be used with DIN. Night-time of a 2-channel day/night meter, switched between channels at fixed times via an internal time clock or external signal. All metered load on the channel is a combination of controlled and uncontrolled loads.</u>		
DOP	Triple Saver Off-Peak (11:00-17:00, 21:00-23:00)	<u>Grandfathered</u>	<u>Use of this combination of codes is grandfathered for existing metering installations until the next metering installation recertification. Use generic codes for all new or recertified metering installations.</u>
DPK	Triple Saver Peak (07:00-11:00, 17:00-21:00)		
<u>N</u>	<u>Night 23:00-07:00</u>		
DWD	Day of Week Days (7:00am-9:00pm)	<u>Discontinued</u>	
<u>NWD</u>	<u>Night of week days (9:00pm-7:00am)</u>		
WE	Weekend – records all consumption during weekends		
EG	Embedded Generation	<u>Approved for use</u>	
IN	Inclusive - load on the register channel is a combination of controlled and uncontrolled loads	<u>Approved for use</u>	
<u>INEM</u>	<u>Emergency - load on the channel is a combination of load controlled only in an emergency and uncontrolled load</u>	<u>Approved for use</u>	
KD	kW demand - kW MDI	<u>Approved for use</u>	
N	Night – night time only		

Register content code	Description	Status	Comments
<u>NB</u>	<u>Night Boost - for a single channel meter, where the load is switched on/off at fixed times during the night period and a boost period during day via a load control device</u>	<u>Approved for use</u>	
<u>NCNO</u>	<u>Night register Only - for a fully controlled single channel meter, where the load is switched on/off at fixed times for the night period via a load control device.</u> <u>Used also for Night Boost for a single channel meter, where the load is switched on/off at fixed times during the night period and a boost period during day via a load control device</u>	<u>Approved for use</u>	
<u>NWD</u>	<u>Night of week days (9:00pm - 7:00am)</u>		
<u>OP</u>	<u>Off-peak</u>	<u>Approved for use</u>	<u>Use PK/OP for 2-channel peak/off-peak and PK/OP/SH for 3-channel peak/off-peak/shoulder metering configurations.</u>
<u>PK</u>	<u>Peak</u>		
<u>SH</u>	<u>Shoulder</u>		
<u>RH</u>	<u>kVArh - reactive meter register</u>	<u>Approved for use</u>	
<u>SL</u>	<u>Metered streetlights. Only applies to NHH meter channels used for streetlights.</u>	<u>Approved for use</u>	
<u>S</u>	<u>Summer - records consumption during summer</u>	<u>Approved for use</u>	<u>Summer/winter</u>
<u>W</u>	<u>Winter - records consumption during winter</u>		
<u>SENW</u>	<u>Weekday night (9:00pm - 7:00am Monday - Friday 21:00 - 07:00); and all weekend (Friday 21:00pm - Monday 07:00am)</u>	<u>Grandfathered</u>	<u>Use of these codes is grandfathered for existing metering installations until the next recertification.</u> <u>Use generic codes for all new or recertified metering installations.</u>
<u>SEOP</u>	<u>Off-peak (Monday - Friday 11:00am - 17:00pm; and 19:30pm - 21:00pm)</u>		
<u>SEPK</u>	<u>Peak (Monday - Friday 07:00am - 11:00am; and 17:00pm - 19:30pm)</u>		

Register content code	Description	Status	Comments
SRD	Summer Day – Records day consumption during summer. Period of availability to match register changeover times	<u>Approved for use</u>	<u>Summer/winter day/night</u>
SRN	Summer Night – Records night consumption during summer. Period of availability to match register changeover times		
<u>WRD</u>	<u>Winter dDay – Records day consumption during winter. Period of availability to match register changeover times</u>		
<u>WRN</u>	<u>Winter dDayNight – Records nightday consumption during winter. Period of availability to match register changeover times</u>		
SWD	Summer w Weekday - records consumption during summer weekdays	<u>Approved for use</u>	<u>Summer/winter weekday/weekends</u>
<u>SWE</u>	<u>Summer wWeekend - records consumption during summer weekends</u>		
<u>WWD</u>	<u>Winter wWeekday - records consumption during winter weekdays</u>		
<u>WWE</u>	<u>Winter wWeekend - records consumption during winter weekends</u>		
SWDD	Summer w Weekday d Day - records day consumption during summer weekdays	<u>Approved for use</u>	<u>Summer/winter weekday/weekend day/night</u>
SWDN	Summer w Weekday n Night - records night consumption during summer weekdays		
<u>SWED</u>	<u>Summer wWeekend dDay - records day consumption during summer weekends</u>		
<u>SWEN</u>	<u>Summer wWeekend nNight - records night consumption during summer weekends</u>		
<u>WWDD</u>	<u>Winter wWeekday Day - records day consumption during winter weekdays</u>		

Register content code	Description	Status	Comments
<u>WWDN</u>	<u>Winter wWeekday nNight - records night consumption during winter weekdays</u>		
<u>WWED</u>	<u>Winter wWeekend dDay - records day consumption during winter weekends</u>		
<u>WWEN</u>	<u>Winter wWeekend nNight - records night consumption during winter weekends</u>		
SWDPK	Standard 3 Rate Summer Weekday Peak Summer (07:00-11:00, 17:00-21:00) 3-step rate	<u>Grandfathered</u>	<u>Use of this combination is grandfathered for existing metering installations until the ICPs are moved from the closed price category to a different price category or the combination is no longer required.</u>
<u>WDOP</u>	<u>Standard 3 Rate WWeekday OOff-Ppeak (11:00-17:00, -21:00-23:00) & WWeekend OOff-Ppeak (07:00-23:00)</u>		
<u>WWDPK</u>	<u>Standard 3 Rate Winter WWeekday PPeak-Winter (07:00-11:00, 17:00-21:00) 3-step rate</u>		
<u>N</u>	<u>Night 23:00-07:00</u>		
SWE	Summer weekend - records consumption during summer weekends		
SWED	Summer weekend day - records day consumption during summer weekends		
SWEN	Summer weekend night - records night consumption during summer weekends		
UN	Uncontrolled - no load on the register channel is subject to control via the a load control device	<u>Approved for use</u>	
W	Winter - records consumption during winter		
WD	Weekday - records consumption during weekdays	<u>Approved for use</u>	<u>Weekday/weekend</u>
<u>WE</u>	<u>Weekend - records consumption during weekends</u>		

Register content code	Description	<u>Status</u>	Comments
WDD	<p><u>Weekday eDay (Mon-Fri). Must be used with WED and may be used with other register content codes for the night period.</u></p> <p>Records day consumption during weekdays. Non-seasonal equivalents of SWDD and WWDD (Summer and Winter weekday daytime).</p> <p><u>Must be used with WED and may be used with other registers content codes for the night period.</u></p> <p><u>Period of availability to match register changeover times but WDD and all night registers must add up to 24.</u></p>	<u>Approved for use</u>	<p><u>Weekday/weekend day</u></p> <p><u>May be used with other codes for night periods.</u></p>
<u>WED</u>	<p><u>Weekend eDay. Must be used with WDD and may be used with other register content codes for the night period.</u></p> <p><u>Records day consumption during weekends. Non-seasonal equivalents of SWED and WWED (Summer and Winter weekend daytime).</u></p> <p><u>Must be used with WDD and may be used with other register content codes for the night period.</u></p> <p><u>Period of availability to match register changeover times but WED and all night registers must add up to 24.</u></p>		
WDOP	<p>Standard 3 Rate Weekday Off Peak (1100-1700-2100-2300) & Weekend Off Peak (0700-2300)</p>		
WE	<p>Weekend—records consumption during weekends</p>		

Register content code	Description	Status	Comments
WED	Weekend day—Records day consumption during weekends. Non seasonal equivalents of SWED and WWED (Summer and Winter weekend daytime). <ul style="list-style-type: none"> • Must be used with WDD and may be used with other registers for the night period. • Period of availability to match register changeover times but WED and all night registers must add up to 24. 		
WRD	Winter Day—Records day consumption during winter. Period of availability to match register changeover times		
WRN	Winter Day—Records day consumption during winter. Period of availability to match register changeover times		
WWD	Winter weekday—records consumption during winter weekdays		
WWDD	Winter weekday day—records day consumption during winter weekdays		
WWDN	Winter weekday night—records night consumption during winter weekdays		
WWDPK	Standard 3 Rate Weekday Peak Winter (0700-1100, 1700-2100) 3 step rate		
WWE	Winter weekend—records consumption during winter weekends		
WWED	Winter weekend day—records day consumption during winter weekends		
WWEN	Winter weekend night—records night consumption during winter weekends		
7302	30 minute recorded channel kVAh		
7304	30 minute recorded channel kWh		

Register content code	Description	Status	Comments
7050	30 minute recorded channel kVAh		
7052	5 minute recorded channel kVAh		
7054	5 minute recorded channel kWh		
7056	5 minute recorded channel kVAh		
Groupings			
OPKOOA	Any Day 22:00 – 06:00, part of a three register tariff. Must be used with PKOOA and SPKOOA. Period of availability must be 8 hours	<u>Discontinued</u>	
PKOOA	Weekdays 07:30 – 09:30 & 17:30 – 19:30, part of a three register tariff. Must be used with OPKOOA and SPKOOA. Period of availability must be 4 hours		
SPKOOA	Weekdays 06:00 – 07:30, 09:30 – 17:30, 19:30 – 22:00 & Weekend 06:00 – 22:00, part of a three register tariff. Must be used with OPKOOA and PKOOA. Period of availability must be 12 hours		
OPKOOB	Weekdays 11:00 - 17:00, 21:00 - 7:00 & Weekend 24 Hours, part of a two register tariff. Must be used with PKOOB. Period of availability must be 16 hours	<u>Grandfathered</u>	<u>Use of these codes is grandfathered for existing metering installations until the next recertification.</u> <u>Use generic codes for all new or recertified metering installations.</u>
PKOOB	Weekdays 07:00 - 11:00 & 17:00 - 21:00, part of a two register tariff. Must be used with OPKOOB. Period of availability must be 8 hours		
OPKOOA	Any Day 22:00 - 07:00, part of a three register tariff. Must be used with PKOOA and SPKOOA. Period of availability must be 9 hours	<u>Grandfathered</u>	<u>Use of these codes is grandfathered for existing metering installations until the next recertification.</u> <u>Use generic codes for all new or recertified metering installations.</u>
PKOOA	Weekdays 07:00 - 09:30 & 17:30 - 20:00, part of a three register tariff. Must be used with OPKOOA and SPKOOA. Period of availability must be 5 hours		

Register content code	Description	Status	Comments
SPKOOO	Weekdays 09:30 - 17:30, 20:00 - 22:00 & W weekend 07:00 - 22:00, part of a three register tariff. Must be used with OPKOOO and PKOOO. Period of availability must be 10 hours		
OPKOOO	Any Day 23:00 – 07:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with either: <ul style="list-style-type: none"> – PKOOO and SPKOOO; or – PKOOE and SPKOOE • period of availability must be 8 hours. 	<u>Discontinued</u>	
PKOOO	Any day 07:00 – 09:30 & 17:30 – 20:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with OPKOOO and SPKOOO • period of availability must be 5 hours. 		
SPKOOO	Any day 09:30 – 17:30, 20:00 – 23:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with OPKOOO and PKOOO • period of availability must be 11 hours. 		
OPKOOO	Any Day 23:00 – 07:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with PKOOE and SPKOOE • period of availability must be 8 hours. 	<u>Discontinued</u>	
PKOOE	Any day 07:00 – 10:00 & 16:00 – 21:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with OPKOOO and SPKOOE • period of availability must be 8 hours. 		
SPKOOE	Any day 10:00 – 16:00, 21:00 – 23:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with OPKOOO and PKOOE • period of availability must be 8 hours. 		
<u>7302</u>	<u>30 minute recorded channel kVAh</u>	<u>Approved for use</u>	

Register content code	Description	Status	Comments
<u>7304</u>	<u>30 minute recorded channel kWh</u>	<u>Approved for use</u>	
<u>7306</u>	<u>30 minute recorded channel kVArh</u>	<u>Approved for use</u>	
<u>7052</u>	<u>5 minute recorded channel kVAh</u>	<u>Approved for use</u>	
<u>7054</u>	<u>5 minute recorded channel kWh</u>	<u>Approved for use</u>	
<u>7056</u>	<u>5 minute recorded channel kVArh</u>	<u>Approved for use</u>	

Appendix B Register content codes – clean

B.1 The table below shows the updated register content codes (to replace the current codes in the registry static data table SD-020) following the 2017 operational review of register content codes and decisions from the review.

B.2 The register content codes use the standard convention, in the following order:

- (a) season – e.g. ‘S’ or ‘SR’ (summer), ‘W’ or ‘WR’ (winter)
- (b) day of week – e.g. WD (weekday), WE (weekend)
- (c) time of day – e.g. PK (peak), OP (off-peak), SH (shoulder)
- (d) type of load – e.g. CN (controlled), IN (inclusive, combination of controlled and uncontrolled load), UN (uncontrolled).

B.3 A.3 In the below table, where a “Status” cell covers multiple register content code rows, the register content codes must be used together at the same metering installation.

Register content code	Description	Status	Comments
AD	kVA demand - kVA MDI	Approved for use	
AH	kVAh - cumulative kVA channel	Approved for use	
CN	Controlled - all load on the channel is subject to control by the distributor at any time via a load control device.	Grandfathered	Use of CN is grandfathered for fully controlled at fixed times, night only and night boost metering installations (for example CN8 and CN11) until the next recertification. All new and recertified night only and night boost metering installations to use NO or NB (as appropriate)
D	Day – may only be used with N. Daytime of an uncontrolled 2-channel day/night meter, switched between channels at fixed times via an internal time clock or external signal.	Approved for use. Grandfathered where N is used on its own.	Day/Night uncontrolled Use of N on its own is grandfathered for fully controlled at fixed times, night only and night boost metering installations (for example N8 and N11) until the next recertification. All new and recertified night only and night boost metering installations to use NO or NB (as appropriate).
N	Night – may only be used with D. Night-time of an uncontrolled 2-channel day/night meter, switched between channels at fixed times via an internal time clock or external signal.		

Register content code	Description	Status	Comments
DC	Day Controlled – may only be used with NC. Daytime of a 2-channel day/night meter switched between channels at fixed times via an internal time clock or external signal. All metered load is subject to control at any time via a load control device, and consumption is separately recorded for the day and night periods.	Approved for use	Day/Night controlled
NC	Night Controlled – may only be used with DC. Night-time of a 2-channel day/night meter switched between channels at fixed times via an internal time clock or external signal. All metered load is subject to control at any time via a load control device, and consumption is separately recorded for the day and night periods.		
DIN	Day Inclusive – may only be used with NIN. Day time of a 2-channel day/night meter, switched between channels at fixed times via an internal time clock or external signal. All metered load on the channel is a combination of controlled and uncontrolled loads.	Approved for use	Day/Night inclusive
NIN	Night Inclusive – may only be used with DIN. Night-time of a 2-channel day/night meter, switched between channels at fixed times via an internal time clock or external signal. All metered load on the channel is a combination of controlled and uncontrolled loads.		
DOP	Triple Saver Off-Peak (11:00-17:00, 21:00-23:00)	Grandfathered	Use of this combination is grandfathered for existing metering installations until the next recertification Use generic codes for all new or recertified metering installations
DPK	Triple Saver Peak (07:00-11:00, 17:00-21:00)		
N	Night 23:00-07:00		
EG	Embedded Generation	Approved for use	

Register content code	Description	Status	Comments
IN	Inclusive - load on the channel is a combination of controlled and uncontrolled loads	Approved for use	
INEM	Emergency - load on the channel is a combination of load controlled only in an emergency and uncontrolled load	Approved for use	
KD	kW demand - kW MDI	Approved for use	
NB	Night Boost - for a single channel meter, where the load is switched on/off at fixed times during the night period and a boost period during day via a load control device	Approved for use	
NO	Night Only - for a single channel meter, where the load is switched on/off at fixed times for the night period via a load control device	Approved for use	
OP	Off-peak	Approved for use	Use PK/OP for 2-channel peak/off-peak and PK/OP/SH for 3-channel peak/off-peak/shoulder metering configurations
PK	Peak		
SH	Shoulder		
RH	kVArh - reactive meter register	Approved for use	
SL	Metered streetlights. Only applies to NHH meter channels used for streetlights.	Approved for use	
S	Summer - records consumption during summer	Approved for use	Summer/winter
W	Winter - records consumption during winter		
SENP	Weekday night (Monday – Friday 21:00 - 07:00); and all weekend (Friday 21:00 - Monday 07:00)	Grandfathered	Use of these codes is grandfathered for existing metering installations until the next recertification. Use generic codes for all new or recertified metering installations
SEOP	Off-peak (Monday - Friday 11:00 - 17:00; and 19:30 - 21:00)		
SEPK	Peak (Monday - Friday 07:00 - 11:00; and 17:00 - 19:30)		
SRD	Summer Day – Records day consumption during summer	Approved for use	Summer/winter day/night

Register content code	Description	Status	Comments
SRN	Summer Night – Records night consumption during summer		
WRD	Winter Day – Records day consumption during winter		
WRN	Winter Night – Records night consumption during winter		
SWD	Summer Weekday - records consumption during summer weekdays	Approved for use	Summer/winter weekday/weekends
SWE	Summer Weekend - records consumption during summer weekends		
WWD	Winter Weekday - records consumption during winter weekdays		
WWE	Winter Weekend - records consumption during winter weekends		
SWDD	Summer Weekday Day - records day consumption during summer weekdays	Approved for use	Summer/winter weekday/weekend day/night
SWDN	Summer Weekday Night - records night consumption during summer weekdays		
SWED	Summer Weekend Day - records day consumption during summer weekends		
SWEN	Summer Weekend Night - records night consumption during summer weekends		
WWDD	Winter Weekday Day - records day consumption during winter weekdays		
WWDN	Winter Weekday Night - records night consumption during winter weekdays		
WWED	Winter Weekend Day - records day consumption during winter weekends		

Register content code	Description	Status	Comments
WWEN	Winter Weekend Night - records night consumption during winter weekends		
SWDPK	Standard 3 Rate Summer Weekday Peak (07:00-11:00, 17:00-21:00)	Grandfathered	Use of this combination of codes is grandfathered for existing metering installations until the ICPs are moved from the closed price category to a different price category or the combination is no longer required.
WDOP	Standard 3 Rate Weekday Off-peak (11:00-17:00, 21:00-23:00) & Weekend Off-peak (07:00-23:00)		
WWDPK	Standard 3 Rate Winter Weekday Peak (07:00-11:00, 17:00-21:00)		
N	Night 23:00-07:00		
UN	Uncontrolled - no load on the channel is subject to control via a load control device	Approved for use	
WD	Weekday - records consumption during weekdays	Approved for use	Weekday/weekend
WE	Weekend - records consumption during weekends		
WDD	Weekday Day (Mon-Fri). Must be used with WED and may be used with other register content codes for the night period. Records day consumption during weekdays. Non-seasonal equivalents of SWDD and WWDD (Summer and Winter weekday daytime).	Approved for use	Weekday/weekend day May be used with other codes for night periods.
WED	Weekend Day. Must be used with WDD and may be used with other register content codes for the night period. Records day consumption during weekends. Non-seasonal equivalents of SWED and WWED (Summer and Winter weekend daytime).		

Register content code	Description	Status	Comments
OPKOOB	Weekdays 11:00 - 17:00, 21:00 - 7:00 & Weekend 24 Hours. Must be used with PKOOB.	Grandfathered	Use of these codes is grandfathered for existing metering installations until the next recertification. Use generic codes for all new or recertified metering installations.
PKOOB	Weekdays 07:00 - 11:00 & 17:00 - 21:00. Must be used with OPKOOB.		
OPKOOOC	Any day 22:00 - 07:00. Must be used with PKOOOC and SPKOOOC.	Grandfathered	Use of these codes is grandfathered for existing metering installations until the next recertification. Use generic codes for all new or recertified metering installations.
PKOOOC	Weekdays 07:00 - 09:30 & 17:30 - 20:00. Must be used with OPKOOOC and SPKOOOC.		
SPKOOOC	Weekdays 09:30 - 17:30, 20:00 - 22:00 & weekend 07:00 - 22:00. Must be used with OPKOOOC and PKOOOC.		
7302	30 minute recorded channel kVAh	Approved for use	
7304	30 minute recorded channel kWh	Approved for use	
7306	30 minute recorded channel kVArh	Approved for use	
7052	5 minute recorded channel kVAh	Approved for use	
7054	5 minute recorded channel kWh	Approved for use	
7056	5 minute recorded channel kVArh	Approved for use	
Discontinued register content codes			
DWD	Day of week days (7:00am-9:00pm)	Discontinued	
NWD	Night of week days (9:00pm-7:00am)	Discontinued	
OPKOOA	Any Day 22:00 - 06:00, part of a three register tariff. Must be used with PKOOA and SPKOOA. Period of availability must be 8 hours	Discontinued	
PKOOA	Weekdays 07:30 - 09:30 & 17:30 - 19:30, part of a three register tariff. Must be used with OPKOOA and SPKOOA. Period of availability must be 4 hours	Discontinued	

Register content code	Description	Status	Comments
SPKOOA	Weekdays 06:00 - 07:30, 09:30 - 17:30, 19:30 - 22:00 & Weekend 06:00 - 22:00, part of a three register tariff. Must be used with OPKOOA and PKOOA. Period of availability must be 12 hours	Discontinued	
OPKOOD	Any Day 23:00 - 07:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with either: <ul style="list-style-type: none"> – PKOOD and SPKOOD; or – PKOOE and SPKOOE period of availability must be 8 hours.	Discontinued	
PKOOD	Any day 07:00 - 09:30 & 17:30 - 20:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with OPKOOD and SPKOOD period of availability must be 5 hours.	Discontinued	
SPKOOD	Any day 09:30 - 17:30, 20:00 - 23:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with OPKOOD and PKOOD period of availability must be 11 hours.	Discontinued	
OPKOOE	Any Day 23:00 - 07:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with PKOOE and SPKOOE period of availability must be 8 hours.	Discontinued	
PKOOE	Any day 07:00 - 10:00 & 16:00 - 21:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with OPKOOD and SPKOOE period of availability must be 8 hours.	Discontinued	
SPKOOE	Any day 10:00 - 16:00, 21:00 - 23:00, part of a three register tariff: <ul style="list-style-type: none"> • must be used with OPKOOD and PKOOE period of availability must be 8 hours.	Discontinued	

Appendix C Period of availability

- C.1 Period of availability is the minimum number of hours within a day that supply is available (or the controlled part of the supply is available for an inclusive channel) and must be ≤ 24 .
- C.2 The following is provided for guidance and clarity:
- (a) For single channel uncontrolled configurations, the period of availability must be 24.
 - (b) For single channel controlled or inclusive configurations, the period of availability must be the minimum number of hours in any day that supply is available (or the controlled part of the supply is available for an inclusive channel).
 - (c) For multi-channel uncontrolled configurations, the period of availability is the actual period for which each channel is active, and must add to 24 in any day for register content codes that need to work together.
 - (d) For multi-channel controlled or inclusive configurations, the period of availability must be the minimum number of hours in any day that supply is available (or the controlled part is available for an inclusive channel):
 - (i) where the distributor's load control policy does not differentiate between time-blocks, the period of availability for each channel must be identical and reflect the minimum number of hours that supply is available to the controlled load; or
 - (ii) where the distributor's load control policy differentiates between time-blocks, the period of availability for each channel must reflect the minimum number of hours for the channel that supply is available to the controlled load.
- C.3 Period of availability must reflect the physical or programmed configuration of metering installations, and not pricing or virtual channels.
- C.4 Where the active period for a multi-channel configuration is for an odd number of trading periods, the period of availability is to be rounded up or down to a whole number for each channel such that the sum of all periods of availability in any day does not exceed 24.
- C.5 Distributors are encouraged to always specify minimum service levels for each controlled or inclusive delivery price in their pricing information. However, if the distributor does not specify a minimum service level, the period of availability should default to 0 or 24 (depending on the scenario), as follows:
- (a) period of availability should default to '0' where the distributor specifies "no maximum hours of control" or the equivalent, or does not specify any load control policy
 - (b) period of availability should default to '24' where the distributor specifies it does not actively control the load.
- C.6 Where time-blocks are different between weekdays/workdays and weekend/non-workdays, the period of availability must reflect the weekdays/workdays time-blocks.

Appendix D Mapping of customised to generic register content codes

- D.1 The table below shows the extent to which existing customised register content codes are used, and mapping to new generic register content codes.
- D.2 The SRWDPK and WRWDPH customised register content codes are specific to a closed price category which is to be grandfathered for existing ICPs.

Generic codes >>	POA	ICPs	PK – Peak	OP – Off-peak	SH – Shoulder	SRWDPK – Summer weekday peak	WRWDPK – Winter weekday peak
Use of existing customised codes as at 22/11/17							
DWD – Day of weekdays 0700-2100	14	0	x				
NWD – Night of weekdays 2100-0700	10	0			x		
WE - Weekend	24	0		x			
Electra Triple Saver (now TOU)							
DOP – Triple Saver off peak 1100-1700, 2100-2300 (Shoulder)	8	740			x		
DPK – Triple Saver peak 0700-1100, 1700-2100	8	740	x				
N - Night 2300-0700 (Off peak)	8	740		x			
Orion							
SEPK – Weekdays 0700-1100, 1700-1930 (Peak)	6 ¹⁰ or 7	1887	x				
SEOP – Weekdays 1100-1700, 1930-2100 (Shoulder)	7 or 8	1887			x		
SENW – Nights 2100-0700 + Weekend Fri 2100-Mon 0700 (Off peak)	10	1887		x			
Vector (when it initially offered 3 rate TOU)							
OPKOOA - Any day 2200-0600 (Off peak)	8	0		x			
PKOOA - Weekdays 0730-0930, 1730-1930 (Peak)	4	0	x				
SPKOOA - Weekdays 0600-0730, 0930-1730, 1930-2200 + Weekend 0600-2200 (Shoulder)	12	0			x		

¹⁰ Where the time block for a channel is an odd number of trading periods and rounded up or down, the sum of all periods of availability for any day must not exceed 24

Vector, Unison, Counties Power							
OPKOOB - Off peak - Weekdays 1100-1700, 2100-0700 + All Weekend 0000-2400	16	0		x			
PKOOB - Peak - Weekdays 0700-1100, 1700-2100	8	0	x				
WEL Networks							
PKOOC – Workdays peak 0700-0930, 1730-2000	5	30	x				
SPKOOB – Workdays shoulder 0930-1730, 2000-2200 + Weekends/public holidays 0700-2200 (Shoulder)	10	30			x		
OPKOOB – Off peak 2200-0700 (Off peak)	9	30		x			
Top Energy							
OPKOOD - Off peak 2300-0700	8	0		x			
PKOOD - Peak 0700-0930, 1730-2000	5	0	x				
SPKOOD - Shoulder 0930-1730, 2000-2300	11	0			x		
Waipa Networks							
OPKOOD - Off peak 2300-0700	8	0		x			
PKOOE - Peak 0700-1000, 1600-2100	8	0	x				
SPKOOE - Shoulder 1000-1600, 2100-2300	8	0			x		
Counties Power GEN 3 RATE (closed)							
SWDPK – Summer weekday peak 0700-1100, 1700-2100	8	123				x	
WWDPK – Winter weekday peak 0700-1100, 1700-2100	8	123					x
WDOP – Weekday shoulder 1100-1700, 2100-2300 + Weekend 0700-2300 (Shoulder)	8	123			x		
N- Night 2300-0700 (Off peak)	8	123		x			