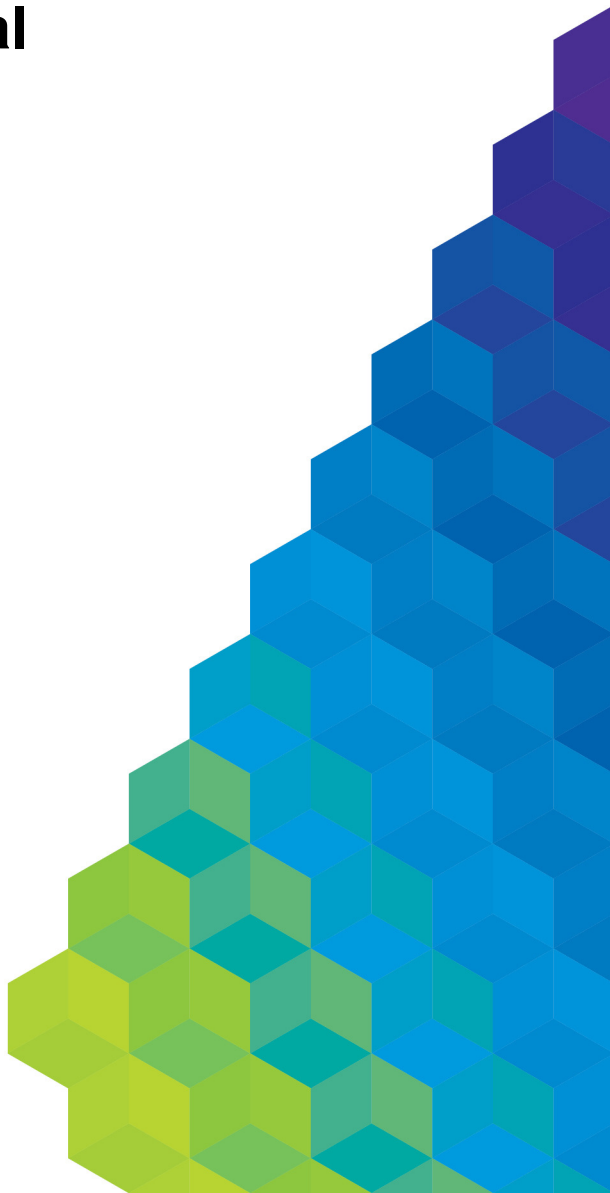
AusNet Electricity Services Pty Ltd

Electricity Distribution Price Review 2016-20

Revised Regulatory Proposal

Power of Choice program

Submitted: 6 January 2016



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Power of Choice Program

This document sets out AusNet Services' response to the Australian Energy Regulator's (AER's) Preliminary Decision with respect to costs related to the Power of Choice reforms. AusNet Services' initial positions were set out in Chapter 11: Cost Pass Through of the Regulatory Proposal.

1.1 Introduction

On 30 November 2012, the Australian Energy Market Commission (AEMC) released its final report and implementation plan with respect to its review of demand side participation in the NEM, titled *Power of Choice – giving consumers options in the way they use electricity*. In response to this report, the Council of Australian Governments (COAG) and the COAG Energy Council agreed to implement a suite of energy market reforms that relate to:

- Improving pricing and incentives by providing customers with clear signals about the cost of their energy consumption;
- Providing customers and demand side participants with information that allows them to choose efficient demand options; and
- Implementing a range of technologies, skills and supporting frameworks to support pricing information and demand management options

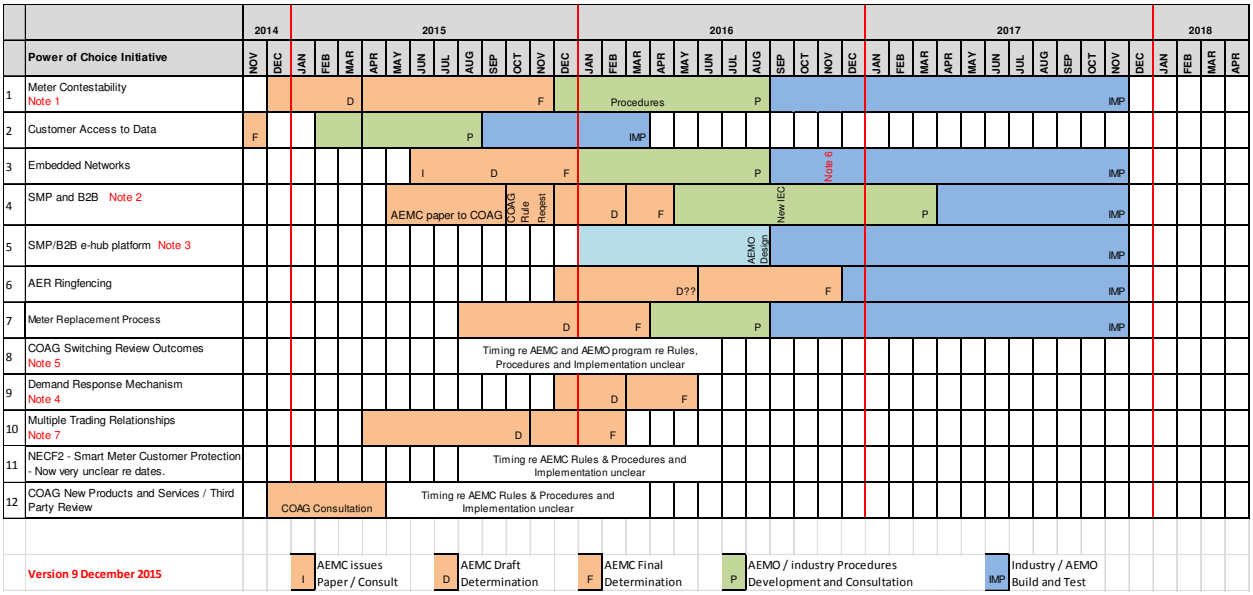
These reforms, which are largely aimed at increasing the choices and information available to customers with respect to their energy use, are having, and will continue to have, wide-reaching ramifications for the electricity distribution industry and its customers.

The implementation of the Power of Choice reforms will require a series of changes to the NER. Accordingly, multiple rule change requests have been submitted to the AEMC by the COAG Energy Council. In response to these requests, the AEMC is required, in consultation with the industry and its stakeholders, to make a final determination on whether to proceed with the proposed rule. Final determinations have been made for some reforms, while others are still underway.

Power of Choice program

The Power of Choice reforms and timelines associated with these determinations and supporting procedures are illustrated below.

Figure 1 – Power of Choice Program Summary (December 2015)



Note: Any changes to Power of Choice timelines that have occurred since 9 December 2015 are not reflected in this figure

As evidenced by the figure above, the structure and staggered phasing of the Power of Choice program is such that the rule change requests, periods of consultation, determinations and finally, effective dates, are taking place over a number of years, and in separate rule changes. Furthermore, the scope of change contemplated by the various rule changes, and hence costs of implementation, vary widely across the reforms. For instance, the costs of complying with the AEMC's new Demand Management and Embedded Generation Connection Incentive Scheme (not shown in the figure above) are relatively minor, whereas the costs of implementing a contestable framework for metering services are expected to be significant (>$20m).

The nature of this work program creates challenges with respect to the management and recovery of Power of Choice costs through either pass through arrangements, ex ante expenditure forecasts, or a combination of both.

AusNet Services' initial Proposal included a Power of Choice nominated cost pass through event, but did not include any Power of Choice costs in its ex ante expenditure forecasts. In light of the uncertainty that existed at that time with respect to the Power of Choice reforms, AusNet Services considered that the recovery of its prudent and efficient costs through the cost pass through arrangements, rather than ex ante expenditure forecasts, was in the long-term interests of customers.

In response to the AER's preliminary decision to reject AusNet Services' proposal for a nominated cost pass through event aimed at recovering efficient Power of Choice costs, and as more certainty on each reform has emerged, the Revised Proposal provides details on AusNet Services' strategy and subsequent requirements to achieve regulatory compliance.

This document sets out the prudent and efficient ICT system changes necessary to achieve compliance. While the Victorian Government's position on the application of a contestable metering framework is yet to be decided, based on the regulatory regime applying at the time of this Proposal – which adopts national metering contestability from 1 December 2017 – the costs presented in this document represent a reasonable estimate of the efficient costs AusNet Services will incur to comply with Power of Choice.

Accordingly, AusNet Services has elected to include costs for the reforms only where sufficient certainty exists to form a reasonable cost estimate. For some changes that will occur during the forthcoming period, but are subject to a high degree of uncertainty with respect to their scope – such as those resulting from the AER's Distribution Ring Fencing Guideline – AusNet Services has excluded these costs from its forecast, and will seek to manage these costs using cost through pass through arrangements (subject to the AER's approval).

This approach, which balances the long-term interests of AusNet Services' customers with the recovery of its efficient costs of implementing the changes occurring under Power of Choice, has resulted in the following costs being included in AusNet Services' revised ICT capex forecast:

Table 2 – Power of Choice Program CAPEX Costs ($m real 2015, direct)

Power of Choice Initiative	CAPEX Costs ($m real 2015, direct)
Distribution Network Pricing Arrangements	$5.86m
Introduction of national metering competition (including new roles & responsibilities)	$27.80m
Embedded Networks	$4.63m
Access to smart meter services and SMP/B2B integration	$6.57m
Demand Response Mechanism – option for demand side resources to participate in the market	$2.08m
Total	**$46.93m**

1.2 Business Reason

The Power of Choice reforms are designed to provide tools, information and capabilities for consumers to play a more active role in the electricity market by providing them with options to manage their electricity consumption and in turn their expenditure. This has a greater net community benefit to ensure demand for electricity service is met by the lowest combination of demand and supply side options.

AusNet Services, as a distribution network service provider and a consequence a deemed meter co-ordinator, is obligated to analyse these proposed changes and identify a program of prudent and efficient changes that will ensure compliance with the new and changed rules and obligations created by Power of Choice.

For example, to be compliant under a contestable market for metering services, AusNet Services must have developed the automation required to manage meter churn, receive and validate data from meters connected to its network but not owned by it and manage outages at these homes, in addition to continuing to be an 'owner' of meters by way of a Meter Coordinator role.

1.3 Program Costs ($m real 2015, direct)

AusNet Services has forecast the capex required to achieve compliance with Power of Choice, which will be incurred largely during the first two years of the current period.

Table 3 – Power of Choice Program Costs ($m real2015, direct)

Power of Choice	CY2016	CY2017	CY2018	CY2019	CY2020	Total
Power of Choice CAPEX Program	$13.37m	$31.48m	$2.08m			$**46.93m***

* The ICT Lifecycle Management – Metering and Customer Systems: Upgrade of Metering and Business systems program approved in the Preliminary Decision included expenditure to replace the current MDMS system. While the Power of Choice implementation program involves replacing the MDMS system, forecast expenditure for this work will form part of the existing ICT program as approved in the Preliminary Determination. Therefore, these costs are not included in this Revised Proposal.

This expenditure is required in order to comply with AusNet Services' regulatory obligations as a distribution network services provider and deemed metering coordinator. These costs specifically exclude any costs to establish and/or operate a contestable metering business. Any costs associated with this activity will be funded by that business.

The expenditure above is demonstrated using the programs' alignment to our business strategy with an achievable program which will support key benefits to electricity consumers. The solution proposed is predicated on a number of key assumptions where key options have been evaluated to ensure the most prudent and cost-effective response is delivered. The options assessed are discussed in section 1.10.

1.4 Power of Choice Reforms

A summary table of the Power of Choice reforms proposed in this submission is described below:

Table 4 – Power of Choice reforms

Initiative	Overview
Distribution Network Pricing Arrangements	• Changes to network charges to reflect actual network augmentation, maintenance and operation costs, including time-of-use, season and maximum demand elements
Introduction of national metering competition (including new roles & responsibilities)	• Impacts of new roles and responsibilities • Unbundling of metering charges from network charges • Process for replacement of meters that are faulty or end-of-life and meter churns
Embedded Networks	• Introduced a new Embedded Network Manager (ENM) accredited entity to manage embedded network customers market actions including NMI assignment
Access to smart meter services and SMP/B2B integration	• Access to smart meter services provided by Metering Coordinators • Provision of services to Financially Responsible Market Participants (FRMPs) and other market participants • Integration with the B2B Shared Market Protocol for smart meter services
Demand Response Mechanism – option for demand side resources to participate in the market	• New Demand Response Mechanism, potentially requiring the distributor to handle notifications of Demand Response (DR) actions as the basis of understanding of network loading changes

AusNet Services recognises that there are additional initiatives proposed as part of the Power of Choice reforms; namely Multiple Trading Relationships (MTR) and as a second grouping of COAG Switching Review – Customer Data Cleanse and MSATS (Market Settlement and Transfer Solution) Review, NECF (National Energy Customer Framework) Smart Meter Customer Protections and COAG new Products and Service Review.

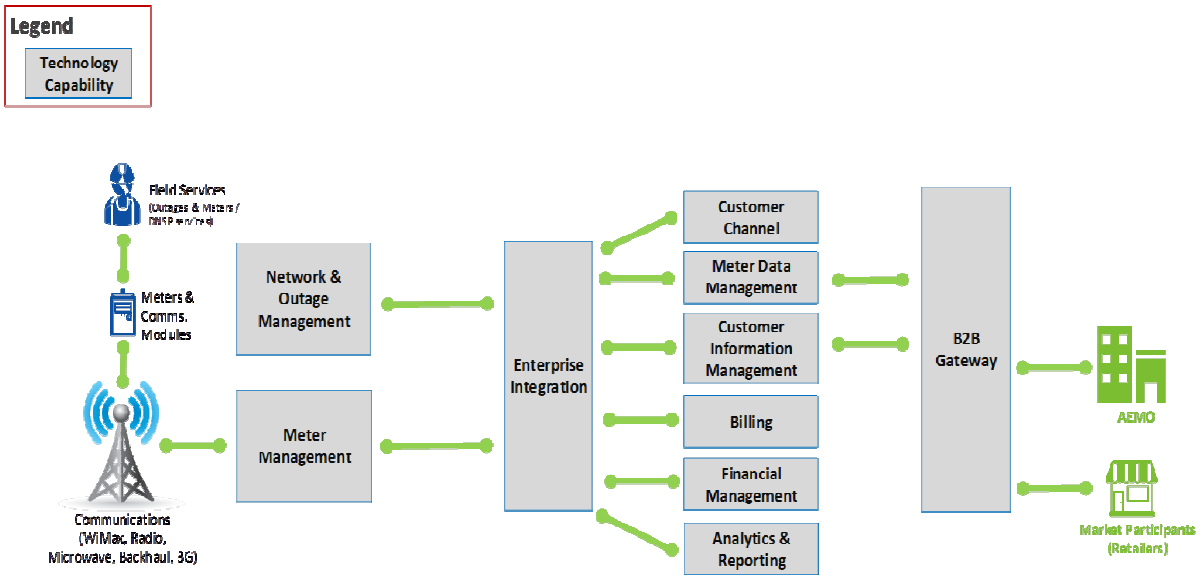
AusNet Services has recognised the recent AEMC decision that the implementation of the Multiple Trading Relationships ' rule change is unlikely to deliver material benefits for most customers but is likely to impose significant costs on retailers and distributor's which may result in increased electricity retail prices for all customers.[1] This decision has resulted in AusNet Services excluding this change from forecast expenditure.

[1] Australian Energy Market Commission, Draft Rule Determination – National Electricity Amendment (Multiple Trading Relationships0 Rule 2015 – 19th November 2015

For the remaining reforms, AusNet Services does not currently possess sufficient information to prudently cost the changes required by these potential reforms. AusNet Services has therefore focussed on the initiatives where a reasonable estimate of the cost impact can be derived based on the available information, but also ensured the development of a strategic solution will provide flexibility to address future initiatives, if and when required.

The figure below demonstrates the current AusNet Services metering architecture before the implementation of change to enable the Power of Choice reforms.

Figure 5 – Current State: AusNet Services' Metering Architecture



1.5 Drivers for Change

This proposal is based on the assumption that the Victorian government will allow the current AMI derogation to expire[2] and adopt a contestable metering framework. As these changes are mandated, AusNet Services has demonstrated a prudent and efficient response to ensure adequate funding can be recovered to enable the required changes.

The introduction of Meter Contestability, effective from 1st December 2017 is a significant driver for change under the Power of Choice reforms. With contestable metering, the installation, servicing and reading of small business & residential customer meters is no longer the exclusive role of the distributor. AusNet Services will therefore need to make changes in order to facilitate the responsibilities of a new market role: the Metering Coordinator (MC). This reform in addition to the shared market protocol requirements imposes a significant amount of change on current capabilities, mainly:

- meter data management (MDM) – support transactions and management of contestable meter data,
- customer information system (CIS) – managing the new market roles and meter churn process and

[2] National Electricity Amendment (Victorian Jurisdictional Derogation - Advanced Metering Infrastructure)

- enterprise application integration (EAI) – enable integration to cater for new transactions and processes.

Whilst the end of the derogation is a key driver, Distribution Network Pricing has a compliance date in Q1 CY 2017 further emphasising the need for a commencement of the program.

Based on these assumptions, the following changes are required to the current architecture to achieve compliance with the updated National Electricity Rules.

Figure 6 – Magnitude of Change for current AusNet Services' metering systems capability

Capability	Components	Change	Magnitude of Change
Network and Outage Management	GIS (Geographic Information System) OMS (Outage Management System)	Enhance	Medium
Enterprise Integration	EAI (Enterprise Application Integration)	Enhance	High
Customer Channel	Portal	Enhance	Medium
Meter Data Management	MDMS (Meter Data Management System)	Enhance	High
Customer Information Management	CIS (Customer Information System)	Enhance	High
Billing	Billing	Enhance	High
Financial Management	ERP (Enterprise Resource Planning)	Enhance	Low
Reporting & Analytics	AMI Analytics Legacy enterprise reporting	Enhance	Medium
B2B Gateway	B2B Gateway	Enhance	Medium

The reforms have been analysed by subject matter experts internally and validated by industry experts to ensure a prudent and efficient program. As part of this analysis, impact assessments have been conducted on current system capabilities, identifying the following system capability changes.

Table 7 – Power of Choice Reforms – Capability with Highest Impacts and nature of change

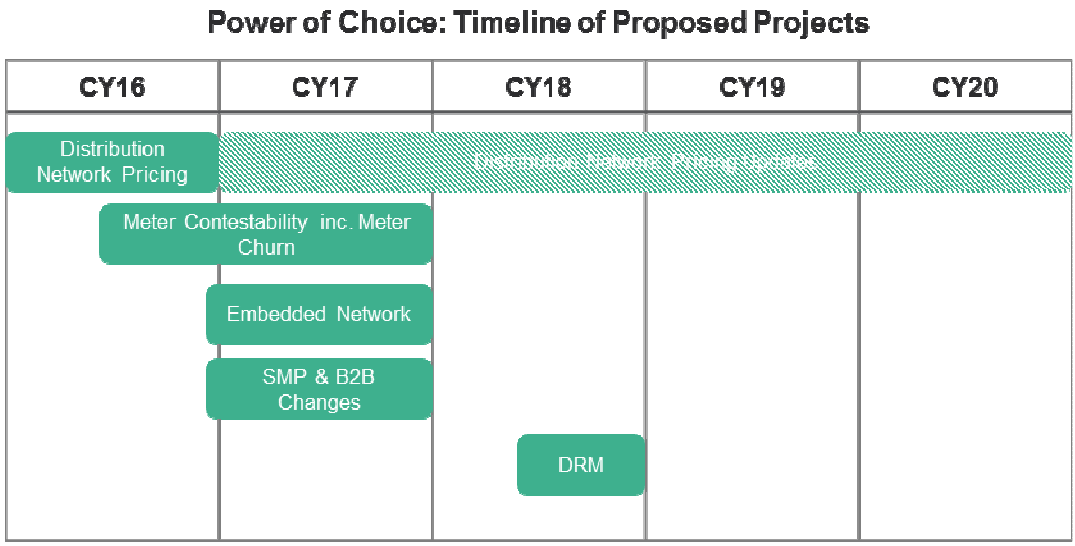
Initiative	Customer Information System	Meter Data Management	Billing	Enterprise Integration
Distribution Network Pricing Arrangements	New customer view to show monthly demand calculation. New functionality to profile NMIs (national meter identifier) from AEMO's website	Receive maximum demand to maintain view of customer's monthly demand	Perform calculation for the new aggregation logic and capacity limits	Support new B2B interface required to load data from AEMO

Introduction of national metering competition (including new roles & responsibilities)	Retrieve and update standing data, validate participant Standing data update, new market roles, changes to work orders and logistics to manage meter removals New rules for exit fee processing Meter replacement processes due to family test failure or DNSP meter fault	Receive meter energy data from external Meter Coordinators / Meter Data Providers Perform data quality and availability queries Provide Type 1-4 meter data in interval format for billing system Provide aggregated data for contestable meters for billing Provide data for transformer loading	To support the meter churn process, a new solution is needed for removing non-NUoS charges	Support new market transactions introduced through Meter Coordinators Additional business logic for orchestrating the services to various systems.
Access to smart meter services and SMP/B2B integration	Implement compliance requirements for new services New process to initiate a request and upload data, new configuration, different set of validation rules	Implement compliance requirements for new services Implement services in line with new market SLAs for certain market transactions	Implement integration and functionality for charging for new services	Implement integration for new transactions with new SLAs

1.6 Timeframes

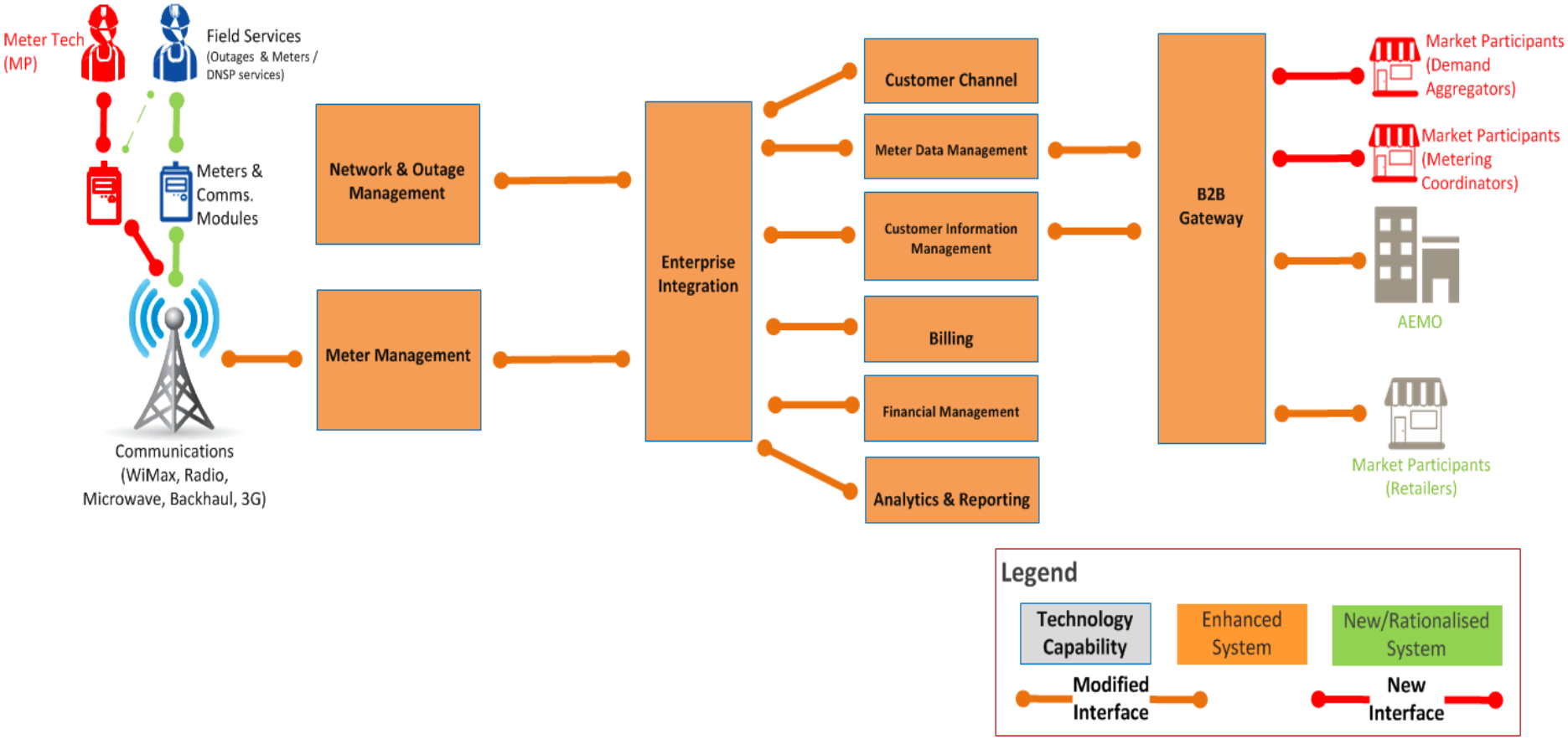
Indicative timeframes for the implementation of proposed projects are illustrated in the timeline below.

Figure 8 : Timeline of proposed Power of Choice projects



AusNet Services will undertake a program of work to effect the changes required to comply with these regulatory obligations, using a co-ordinated and integrated approach to achieve prudent and efficient synergy of systems change and delivery. The resultant change will result in the architecture changes shown in the following figure.

Figure 9 – Proposed Future State AusNet Services' Metering Architecture



1.7 Scope of Change

The following section describes each of the key reforms that AusNet Services' Power of Choice program will address, systems changes that will result and the expected outcome from the change.

Distribution Network Pricing Arrangements

This initiative requires Network Charges to be reflective of the efficient costs of providing distribution network services, to incentivise customers to reduce their demand in peak times, thus reducing or deferring the need for distribution network augmentation investments.

Tariffs will need to be cost-reflective on the basis of Long Run Marginal Costs (LRMC), which will require a new tariff structure based on Time-of-Use (ToU), season and maximum demand elements. The rule also prescribes new processes and timeframes for setting network prices for each regulatory period through Tariff Structure Statements and requires additional capture, store and analysis of energy elements.

The changes required to implement this initiative will impact the following systems

- Meter Data Management (high)
- Customer Information (high)
- Billing (medium)
- Integration interfaces and underlying enterprise resource planning systems (medium)

The completion of the change will mean more efficient and flexible network pricing for residential and small business consumers through the progressive introduction of cost reflective electricity distribution network pricing structures. This change will enable efficient and flexible future pricing structures.

On 21 December 2015, the Victorian Government advised AusNet Services that cost reflective pricing arrangements will be implemented in Victoria through an opt-in approach. Given the timing of this advice, the opex and capex forecasts set out in this Revised Proposal do not reflect Victorian Policy. The Revised Proposal forecast for cost reflective pricing is based on universal application or an opt-out approach, in line with the NER pricing principles that would apply in the absence of applicable obligations contained in another regulatory instrument.

AusNet Services will advise the AER of the impact on its expenditure forecasts, if any, of the Victorian Government's position in a submission to the price review.

Introduction of national metering competition (including new roles & responsibilities)

The Metering Contestability initiative will profoundly transform the current regulated metering business model, introducing competition for residential and small business customer metering. This initiative will allow new market participants such as retailers to compete in the metering business through the new market role of Metering Coordinator (MC).

Current meter installations (currently provided by Distributors) where demanded by customer or replacement meter decisions, will be replaced with the chosen metering coordinators' smart meter and all reading, maintenance and operations will be managed by the new provider.

Distributors will progressively transform from providers to consumers of meter service and data, as those services and data will be provided by meter coordinators external to the distribution business. To support the new model, AusNet Services will need to make substantial changes to its processes

and systems to continue to maintain compliance as a distribution network service provider and in effect a deemed meter coordinator.

The key changes as assumed by AusNet Services to be introduced by the Metering Contestability initiative are:

- The rule changes establish the new role of Metering Coordinator which:
    - replaces the current role of Responsible Person, which is accountable for installing, maintaining and reading the meter;
    - can be performed by any entity (subject to accreditation); for small customers in Victoria this means that the metering is no longer restricted to the distributor; and
    - Is fully contestable, which shifts the metering service from a regulated to a contestable model.
- For small customers (residential and small business), the metering coordinator is appointed by the retailer. Large customers and (embedded generators that do not consume electricity) can appoint a meter coordinator directly.
- From the effective date, metering services for all new connections will be contestable, with the meter coordinator directly appointed by the customer's retailer.
- From the effective date, metering services for existing small customer connection points will continue to be provided by the distributor as the "deemed" metering coordinator, until an alternative metering coordinator is appointed by the retailer. This can occur in any of the following scenarios:
    - the retailer directly appoints an alternative metering coordinator (e.g. to provide new services to the customer);
    - the meter is replaced due to a connection addition or alteration;
    - the metering installation is reconfigured (e.g. due to a solar panel installation); or
    - the meter is replaced after failure or after being unsuccessfully tested for metrology accuracy.
- The new metering coordinator will be able to replace the distributor's existing meter with their own meter.
- All new and replacement meters installed by meter coordinator must be interval meters capable of remote read and operation, as per a new minimum services specification
- Where a new contestable meter is deployed by the metering coordinator, the distributor will be able to maintain an existing smart meter as a "network device" (used to provide communication and remote energisation and de-energisation, but not for metering purposes).
- The contestable metering regime is expected to include new market arrangements (Shared Market Protocol, SMP) and Business-to-Business (B2B) support for:
    - mass market Meter Churn process (replacement of metering coordinator, meter, and metering service provider associated with a retailer transfer); and
    - the provision of Smart Meter Services by the distributor and meter coordinator.
- Provision of metering data to retail customers (small customer) for contestable sites within the local distribution area. There is a requirement in the National Electricity Rules for the Distribution Network Service Provider (DNSP) to provide this data upon request to retail customers. Hence new Meter Data Management functionality is required by the network to receipt, store, verify, request and provide the requested metering data for sites with contestable metering.

The changes required to implement metering contestability will impact the following systems:

- Meter Data Management (high)
- Customer Information (high)
- Outage Management (medium)
- Geographic Information (medium)
- Integration & B2B interfaces and underlying enterprise resource planning systems(high)

The resultant outcomes on completion of the change will be the ability to manage market contestable customers inclusive of the following capabilities; network billing of contestable customers based on meter data received from external meter data providers, management of field works on contestable service provisions in coordination with external metering co-ordinators and management of customer information in compliance with new responsibilities.

Embedded Networks

This initiative seeks to reduce the existing barriers for customers in embedded networks (e.g. shopping centres) to participate in the electricity market, allowing them to choose products, services, and suppliers of retail electricity services. The rule changes (currently in draft) aim to achieve this by clarifying the framework for managing embedded networks and introducing the new accredited role of Embedded Network Manager (ENM). This role will act as the market interface for embedded network customers.

The Embedded Networks initiative will effectively reassign the responsibility of managing service provisions within embedded networks from the distributor to the new embedded network manager role. AusNet Services will need to modify its business processes and systems to cater for the new model and the supporting procedure changes. This will require changes to existing data models with capabilities to store and consume additional data.

The changes required to implement this initiative will impact the following systems

- Customer Information (medium)
- Outage Management (low)
- Billing (low)
- Geographic Information (low)
- And Integration layer (low)

The completion of the change will provide AusNet Services with the ability to manage the lifecycle of service provisions within embedded networks and interface with embedded network managers.

Access to smart meter services and SMP/B2B integration

The Power of Choice reforms will introduce new roles in the metering services market, such as Metering Coordinators (Metering Contestability initiative) and Demand Aggregators (Demand Response Mechanism initiative). The AEMC determined that the existing Business-to-Business (B2B) framework should be extended in order to support standard and efficient communication among these market participants to access smart meter services.

As a consequence, the Australian Energy Market Operator (AEMO) will implement a new Shared Market Protocol for “near-instant” access of smart meter services. This would improve customer service levels, e.g. by enabling meter reads and supply status verifications while the

customer is over the phone. The services accessible through the SMP will be as per the AEMC's minimum services specification.

The changes required to implement this initiative will impact the following systems

- Meter Data Management (high)
- Customer Information (medium)
- Billing (medium)
- Integration & B2B interfaces and underlying enterprise resource planning systems (high)

The completion of the change will support our ability to provide and consume smart meter services using the new shared market protocol in alignment with required service levels. This will include managing services as remote energisation, remote de-energisation, remote on-demand meter read service; remote scheduled meter read service, metering installation enquiry service and an advanced meter reconfiguration service.

Demand Response Mechanism – option for demand side resources to participate in the market through a Demand Response Aggregator (DRA) role

This initiative establishes a new demand response mechanism that would enable participating customers to offer a demand response for which they would be paid at National Electricity Market spot prices. The level of a customer's demand response would be determined with reference to a historical consumption "baseline".

The changes required to implement this initiative will impact

- Customer Information (medium) and
- Integration layer systems (medium)

The resultant outcomes on completion of the change will be for AusNet Services' to manage market transactions with the new Demand Response Aggregator market role and provide metering data to demand response aggregators. For the purposes of this estimation we have assumed minimum change as a Distribution Services Network provider (DSNP) with the majority of responsibility for changed roles and responsibilities to be assumed by the demand response aggregator.

1.8 Forecast Costs

Forecasted capital expenditure for the implementation of proposed projects is tabulated below.

Figure 10 – Power of Choice Program Forecast CAPEX Costs ($m, real 2015)

Project Name	Labour	Materials	Contracts	Total Capital Spend
Distribution Network Pricing Arrangements	$0.29m		$5.57m	**$5.86m**
Introduction of national metering competition (including new roles & responsibilities and meter churn)	$1.39m		$26.40m	**$27.80m**
Embedded Networks	$0.23m		$4.39m	**$4.63m**
Access to smart meter services and SMP/B2B integration	$0.33m		$6.23m	**$6.57m**
Demand Response Mechanism – option for demand side resources to participate in the market	$0.10m		$1.98m	**$2.08m**
Total	**$2.34m**		**$44.57m**	**$46.93m**

AusNet Services has also identified additional recurrent opex that will also be required during the current period to comply with the new regulatory obligations attributable to Power of Choice. These costs, which relate to new or changed business processes that will require an FTE uplift during the current period, are discussed in Chapter 4: Operating and Maintenance Expenditure.

1.9 Business Benefits

Benefits expected to be realised from the delivery of this program are illustrated by the following benefits mapping table. The table links the required reforms, describing the required change, describes the drivers behind the initiative and identifies key benefits.

Figure 11 – Power of Choice Program Business Benefits

Initiative	Change	Drivers	Benefits
Distribution Network Pricing Arrangements	Ability to apply network tariffs which are more closely aligned to the true cost of supplying electricity Influence consumer behavior to reduce peak demand	A highly developed customer service capability Industry Leadership and advocacy role in regulatory development	Improved regulatory compliance Reduced operational and regulatory risks
Introduction of National Metering Competition	Network Billing of contestable customers based on meter interval data received from external providers Management of field workers on contestable service provisions in coordination with external parties Management of customers and customer information in compliance with new roles and responsibilities Metering data provision for contestable metering sites customers based on meter interval data received from external providers.	A highly developed customer service capability Industry Leadership and advocacy role in regulatory development Efficient business supported by intelligent, automated processes and systems	Improve regulatory compliance Improved customer satisfaction Improved process Controlled capital expenditure

Power of Choice program

Initiative	Change	Drivers	Benefits
Embedded Networks	Ability to manage the lifecycle of service provisions within embedded networks Ability to interface with Embedded network managers	A highly developed customer service capability Industry Leadership and advocacy role in regulatory development Efficient business supported by intelligent, automated processes and systems	Improve regulatory compliance Improved customer satisfaction Improved process
Access to smart meter services and SMP/B2B integration	Provide and consume smart meter services such as remote energisation / de-energisation in compliance with new Shared Market Protocols Effective collaboration of all relevant stakeholders and their information and action requirements	A highly developed customer service capability Industry Leadership and advocacy role in regulatory development Efficient business supported by intelligent, automated processes and systems	Improve regulatory compliance Improved customer satisfaction Improved process
Demand Response Mechanism – option for demand side resources to participate in the market	Ability to manage the new demand response aggregator market role Ability to provide raw meter data to DRAs as per service level agreements. This largely pertains to providing new near real time row meter data to DRA providers.	A highly developed customer service capability Industry Leadership and advocacy role in regulatory development Efficient business supported by intelligent, automated processes and systems	Improve regulatory compliance Improved customer satisfaction Improved process

1.10 Options Analysis

AusNet Services has undertaken analysis using criteria to assess the best solution to maintain compliance as a distribution network service provider. The areas that were considered included reference to regulatory compliance and prudent outcomes, technology strategic alignment, and business impact, change and future sustainability.

In summary, this presented three options for consideration: Do Nothing, Commercial off the Shelf (COTS) solution or extending existing systems and solutions.

Option 1: Do Nothing

The first option would be to maintain current ICT systems, which will:

- Continue support for customer access to data but will not be able to meet scalability requirements
- Not support any new cost reflective network pricing
- Not support new market roles
- Not support market B2B/SMP transactions
- Not support demand response mechanisms
- Not support metering contestability

Doing nothing will, therefore, result in non-compliance. Given the Power of Choice reforms will bind all distributors, non-compliance would lead to breach of distribution license conditions and financial penalties under the NER and licence arrangements.

The high level risks resulting from following this option are detailed below.

Table 12 – Option 1: Do nothing Risks

Risk	Consequences
Risk 1: Inability for AusNet Services to achieve regulatory compliance with Power of Choice reforms	Financial penalties and/or loss of license
Risk 2: Service Level Agreements and information Requirements will not be achieved	Financial penalties and/or loss of license
Risk 3: Current metering solution only supports AusNet Services owned and managed meters and associated transactions	Failure to provide or consume data to/from external MCs

In light of these risks, AusNet Services has discounted Option 1 as a valid option for consideration.

Option 2: Replace Metering Solution

The second option would be to rationalise and reconfigure existing systems into a new customised solution. This option would enable AusNet Services to meet all of the compliance requirements defined as a distribution network provider.

This option implements capabilities in a new fit for purpose, scalable solution which would enable configuration rather than requiring future customisations.

The high level risks that would need to be considered if delivering this option are detailed below. Principally, this option involves substantially higher forecast capex to achieve compliance in comparison to Option 3 below, and is therefore not the preferred option.

Table 13 – Option 2: Replace Metering Solution Risks

Risk	Consequences
Risk 1: Requires earlier write-off of residual asset value relating to current metering solution	Increases the total costs of ownership to implement the required solution
Risk 2: Requires management of two metering data management solutions until the incumbent system is retired	Interim increased CAPEX and OPEX costs in establishing and maintaining two parallel solutions
Risk 3: New systems and supporting process requiring additional costs of implementation, change and business impacts	Increases the total costs of ownership to implement the required solution

Option 3: Extending existing systems (recommended)

The third option would be to incorporate enhancements into existing systems applying tactical synergies where relevant and implementing these changes into a logically grouped program to ensure prudent and efficient design, development and implementation.

This option would require customisations and extensions of existing solutions to enable the ability to sustain and manage ongoing new market transactions.

The high level risks that would need to be considered if delivering this option are detailed below

Table 14 – Option 3: Extending systems Risks

Risk	Consequences
Risk 1: Higher level OPEX costs to sustain customised solution	Continuation of some manual processes and workarounds will have to be maintained
Risk 2 Lower flexibility compared to bespoke option to cater for future metering and/or regulatory changes	The current solution using fit for purpose bespoke metering solutions so therefore in the event of future metering / regulatory changes this may not be flexible or scalable dependent on the outcomes
Risk 3: Interdependency with metering remediation to leverage existing solution	Interdependencies between the two programs will have to be carefully managed to ensure both outcomes are achieved.

For further information on the analysis undertaken to arrive at the recommended option please refer to the detailed Options Analysis defined in section 1.12: Power of Choice Project Justifications.

1.11 Conclusion

The Power of Choice reforms introduce a new landscape for customers who require enhanced information, more effective near real time communications between market participants and a more cost reflective price for the provision of electricity.

In summary, AusNet Services has considered these reforms and is proposing the most prudent and efficient option to implement ICT changes to systems, interfaces and processes in order to support and achieve compliance as a distribution network provider.

The preferred option **of extending existing systems,** which is reflected in the revised non network capex forecast set out in Chapter 3: Capital Expenditure, is one that promotes the long term interests of customers by providing the lowest total costs of ownership for consumers whilst simultaneously providing a fit for purpose solution to meet new Power of Choice obligations. The Power of Choice program set out in this document, and detailed in the following appendix, demonstrates the need and benefits of this forecast expenditure.

1.12 Appendix A – Power of Choice: Project Justifications

Program of Work: Power of Choice					
Project Name	**Distribution Network Pricing Arrangements**				
Cost Allocation	Electricity Distribution	100%	Electricity Transmission	0%	
	Gas Distribution	0%			
Project Type	**Recurrent**				☐
	Non-Recurrent – if non-recurrent, please select from 3 options below				☒
	☒ New Implementation	☐ Replacement / Lifecycle	☐ Strategic		
Project Timings	Project Duration:	1 Years			
	Project Start Year:	CY2016	Q1 ☐	Q2 ☒	Q3 ☐ Q4 ☐

Capital Expenditure Forecast

	CY2016	CY2017	CY2018	CY2019	CY2020	Total
Total Project Cost	$5.86M					$5.86M
Distribution Cost	$5.86M					$5.86M

Alignment to AER Expenditure Objectives

- ☐ Meet or manage expected demand over the period
- ☒ **Comply with regulatory obligations**
- ☐ Maintain reliability, safety and security of Supply
- ☐ Maintain reliability, safety and security of the Distribution System

Alignment to business strategy

New rules established in November 2014 require network charges to be reflective of the efficient costs of providing network services. This is expected to incentivise customers to reduce their demand in peak times, thus reducing or deferring the need for network augmentation investments. The saving is expected to flow into the market through lower network charges.

Tariffs will need to be cost-reflective on the basis of Long Run Marginal Costs (LRMC), which will require a new tariff structure based on Time-of-Use (ToU), season and maximum demand elements. The rule also prescribes new processes and timeframes for setting network prices for each regulatory period through Tariff Structure Statements (TSS).

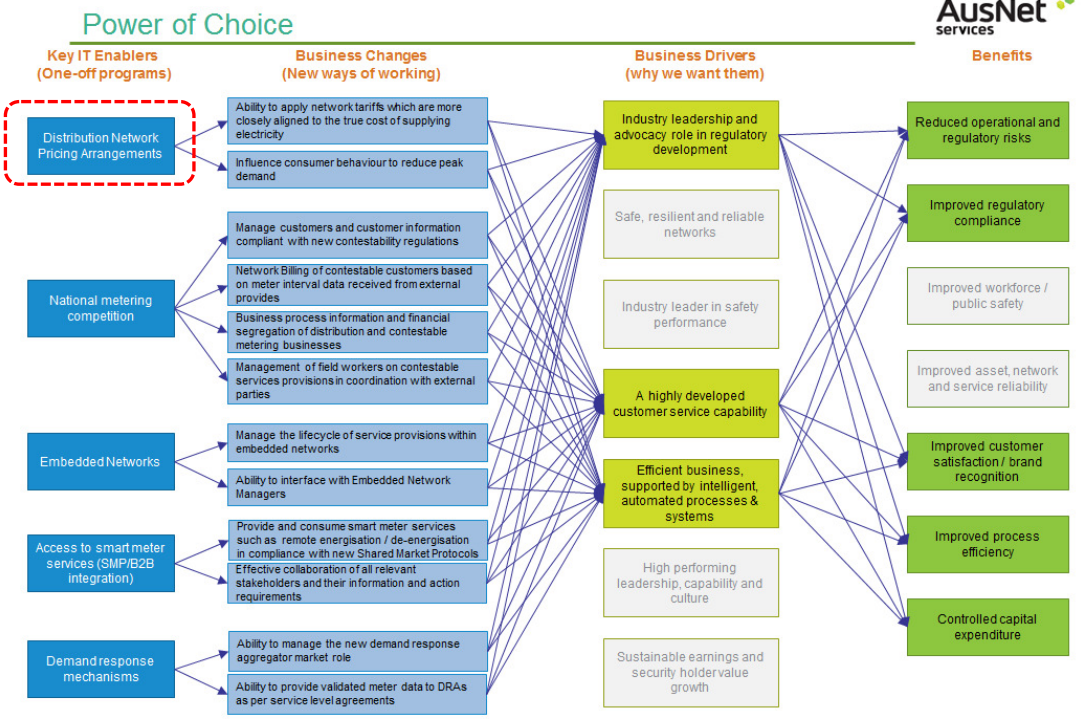
Corporate strategic objective	Contribution
Advocate for an enhanced regulatory framework	This initiative will contribute to compliance with regulatory obligations to establish cost-reflective tariffs which better represent the real costs of the provision of electricity to enable customers to make more informed decisions about their electricity use

Alignment to ICT Technology Plan and Roadmaps	☐ Leverage Core - Consolidate & Simplify ☒ **Leverage Core - Process Integration** ☒ **Leverage Core - Extend Core** ☐ Leverage Core - Technology Lifecycle Management ☒ **Information Enablement** ☐ Communications Enablement ☐ Security Enablement

Project Background & Scope	**Context:** In November 2012, the Australian Energy Market Commission's (AEMC's) Power of Choice (PoC) review set out recommendations to facilitate • the roll out of smart meters; • contestability in metering; and • efficient demand side participation (DSP) Provide consumers with information, price incentives and technology - enabling consumers to see and be rewarded for taking up demand side options The implementation depends on the availability of smart metering capabilities, and requires substantial changes to the National Electricity Market (NEM) and National Electricity Rules (NER), as well as to market procedures. These changes will impact consumers, distributors, retailers, and where relevant generators. In response to the changes in regulation through Power of Choice, AusNet Services (ANS) needs to ensure that its Information and Communication Technology (ICT) systems are functionally capable to comply with regulatory requirements. **Objective:** This initiative is to enable AusNet Services to apply cost-reflective network pricing to customers ensuring compliance with regulatory obligations. **Existing Problem or Known Error – Current State:** The new cost-reflective network tariffs will require additional billing determinants (such as maximum demand) to be applied for all mass market customers (residential and small business). AusNet Services' network billing capability must be enhanced in order to implement the required business rules in a way that is scalable for all customers. **Future State:** With the completion of this initiative, the business will achieve the following outcomes: 1. Ability to apply network tariffs which are more closely aligned to the true cost of supplying electricity; 2. Ability to influence consumer behaviour to minimise peak demand
Project Deliverables	**In scope:** Development of: • new business rules to maintain a view of customers' monthly demand • new billing rules to comply with the new tariff structure • demand reset process from customer/retailer churn • analytical system capabilities to support the calculation of cost-reflective tariff rates • market integration logic to profile NMIs and load data from AEMO Enhancement of: • system capability to enable automated large-scale maximum demand calculation • revenue forecasting process and systems to reflect new tariffs • billing dispute and exception management processes to cater for the new tariffs **Out of scope:** • Ratcheted demand tariffs (tariffs with a more complex structure than maximum demand, and consisting of multiple demand steps with increasing charge rates) are not expected to be a regulatory requirement for small business and residential customers • Any changes to financial accounting and accrual capabilities outside what is necessary to incorporate

	the new tariff structures
	• Any market consultation on the structure of the new tariffs will be BAU
	• Any billing not related to electricity distribution (e.g. transmission, gas etc.)
	• Network billing of current contestable meters (Types 1-4)
	
	Assumptions:
	• AusNet Services may phase-in cost-reflective tariffs as follows:
	  • Setting maximum demand rates to $0/kW in 2017,
	  • Then progressively increasing demand rates up to their true cost-reflective value over the years, starting from 2018
	• The new tariff structure for residential customers will include monthly demand on seasonal peak times, maximum demand will be re-set monthly upon customer (or retailer churn):
	  • Where a customer changes retailer during a month:
	  ▪ The incumbent retailer is charged the maximum demand that occurred from the start of the month to the change date prorated,
	  ▪ Whilst the incoming retailer is charged the maximum demand from the change date to the end of the month prorated
	  • Where a customer changes (move-in/move-out) during a month, the retailer is charged:
	  ▪ The maximum demand that occurred from the start of the month to the change date prorated, and
	  ▪ The maximum demand from the change date to the end of the month prorated
	• The level of detail in current accounting processes will be sufficient to determine rates for the new cost-reflective tariffs
	• Accruals are required at retailer level, there is no requirement to drill-down to individual customer level for accrual calculations
	• Impacts of receiving meter data from contestable meters are covered in a separate initiative
	• Current systems are already capable of setting up and applying new tariff structures to customers, however they are not able to do this for the large numbers of customers that will be subject to Long Run Marginal Cost (LRMC) tariffs
	• Customers may switch between cost-reflective and current tariffs through their retailer

Project Benefits	Benefits expected to be realised from the delivery of this program are illustrated below:

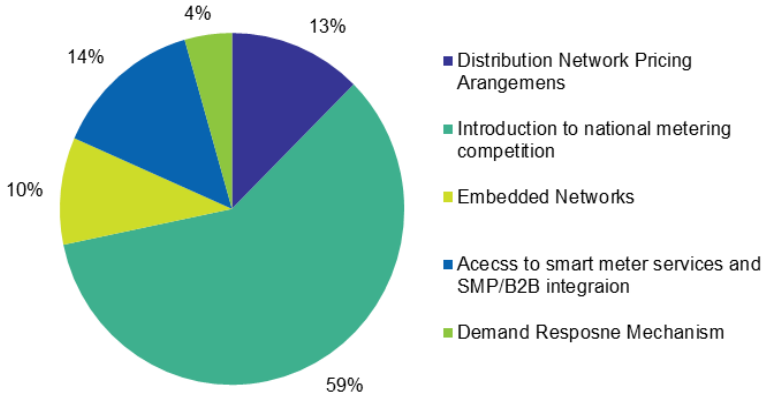


Benefits:

- Reduction of peak coincident demand, resulting from customers shifting their consumption patterns in response to the new cost-reflective tariffs
- Ensure regulatory compliance with Cost-Reflective Network Pricing requirements
- Customer satisfaction resulting from the ability to make clearly informed decisions about their energy use

Project Dependencies & Deliverability

The below graph shows the total breakup of the Power of Choice initaitives as a percentage.



High-Level Requirements

The following requirements resulted from AusNet Services' interpretation of the minimum set of changes that are required to:

- Directly achieve compliance with new and changed regulatory requirements; and
- Maintain the ability to perform regulated business functions in the context of the new and changed regulatory requirements.

#	Requirement
1	Ability to comply with the new processes and timeframes for setting network prices through Tariff Structure Statements (TSS)
2	Ability to capture, store, and analyse new energy elements for residential customers (e.g. season, maximum demand)
3	Configuration of new tariff structures to reflect the Long Run Marginal Costs (LRMC)
4	Ability to utilise the new energy elements to create network bills (and accruals) according to the new tariff structures
5	Ability to have a view on customer and record customer billing inputs (e.g. maximum demand and demand reset process, including on customer churn)
6	Ability to apply daily profile from AEMO website to aggregated consumption from basic meters
7	Ability to manage customers switching between cost-reflective and current tariffs during any billing period, and bill accordingly

Capabilities Impacted

The capabilities impacted by the recommended Option are:

Capability	Impact
Network Billing	Major enhancements to • Perform large-scale maximum demand calculation • Maintain view of customer monthly maximum demand • perform calculation for the new tariff determinants
Customer information management	Major enhancements to: • Establish new customer view to support maximum demand • Implement demand reset process on customer/retailer churn • Apply daily profile from AEMO to basic meters
Enterprise Application Integration	Moderate enhancements to support the interface changes
Reporting and analytics	Moderate enhancements to existing reporting and new reports
B2B Gateway	Minor enhancements to support acquisition of NMI load profiles from AEMO's website

This project has the following dependencies / constraints:

Regulatory dependencies

- AusNet Services' Tariff Structure Statement submission must be approved by the AER for the design phase of this Initiative to start, as this will define the new billing determinants. The AER's final decision (Victorian substitute determination) is expected for 30 April 2016.

Internal dependencies

- All AusNet Services' interval meters must be remotely read[3] to be able to calculate the new bill determinants.

Constraints

- Capability must be in place by the beginning of 2017 in order to enable the gradual phase-in of the new tariff structure from no later than 2017, as prescribed by the rules.

All the deliverability criteria below have been considered for this project. The project has been deemed feasible based on the following relevant criteria:

☒ Project Governance
☒ Project Interdependencies
☒ Business Change Adoption
☒ Resource Availability
☒ Infrastructure Availability
☒ Cost Comparison relative to Program
☒ Project Delivery Efficiencies

[3] AusNet Services are currently implementing the AMI (Advanced Metering Infrastructure) Remediation Program to achieve this objective

Project Risks		Details of Risk	Details of Consequence	Consequence rating (1 – lowest 5 – highest)	Likelihood rating (A – lowest E – highest)
	Current State Risk Assessment	Not proceeding with this initiative	Inability to meet regulatory requirements, resulting in compliance breaches	5	A
	Post Project Risk Assessment	Solution inappropriately optimised and/or scaled may result in inadequate interval data operation performance	Inability to comply with monthly billing timeframes, creating additional manual overheads and delaying revenue collection	4	A
		Insufficient design quality assurance may result in billing errors	High level of billing disputes resulting in additional overheads, cost of managing disputes, delaying revenue collection and potentially losing revenue if not rectified	3	A
		Inadequate revenue analysis and forecasting capability may result in sub-optimal rates	Failure to effectively influence consumer behaviour changes, missing out on potential network investment savings	3	A
		Inadequate consultation with customers may result in insufficient of new tariff structure	Failure to effectively influence consumer behaviour changes, missing out on potential network investment savings	3	B

Options Considered	**Option 1 – Do Nothing** In this option, the new tariff structure will not be implemented. In order to achieve compliance with the regulatory requirements, all new billing determinants would require manual calculation, which is not feasible in consideration of mass-market volumes and being non-compliant. Therefore this option is not recommended. **Option 2 – Enhance (recommended)** This option consists in enhancing the current: • Network billing capability, to perform the calculation of maximum demand and other interval data operations required to apply cost-reflective network tariffs; and • Customer information management capability, to maintain a view of the customer incorporating the new tariffs and bill determinants. This is the recommended options as it has the following advantages: • It ensures full compliance with regulatory obligations; • It enables the reflection of the costs of supplying electricity into the network tariffs, creating market incentives for deferring network augmentation in the long term; • It leverages the existing systems. **Option 3 – Replace** This option consists in replacing the current network billing capability with a Commercial Off-The-Shelf solution providing native capability for large-scale calculation of maximum demand and other billing determinants required to support cost-reflective network pricing. The current network billing capability has been designed to fit AusNet Services' network infrastructure and built to interface with the existing Meter and customer management systems. Replacing this capability with an alternative solution would incur a high cost and not result in the benefits of using the same solution, therefore is not recommended.
Note	*The specific technology solutions identified above are subject to revisions based on further analysis performed as part of the project feasibility study and full business case development.*

Program of Work: Power of Choice						
Project Name	**Introduction to national metering competition (including new roles and responsibilities)**					
Cost Allocation	Electricity Distribution	100%	Electricity Transmission	0%		
	Gas Distribution	0%				
Project Type	**Recurrent**					☐
	Non-Recurrent – if non-recurrent, please select from 3 options below					☒
	☒ New Implementation	☐ Replacement / Lifecycle		☐ Strategic		
Project Timings	Project Duration:	2 Years				
	Project Start Year:	CY2016	Q1 ☐	Q2 ☒	Q3 ☐	Q4 ☐

Capital Expenditure Forecast

	CY2016	CY2017	CY2018	CY2019	CY2020	Total
Total Project Cost	$6.58M	$21.21M				$27.80M
Distribution Cost	$6.58M	$21.21M				$27.80M

Alignment to AER Expenditure Objectives

- ☐ Meet or manage expected demand over the period
- ☒ **Comply with regulatory obligations**
- ☐ Maintain reliability, safety and security of Supply
- ☐ Maintain reliability, safety and security of the Distribution System

Alignment to business strategy

The objective of this initiative is to deliver the minimum changes necessary for AusNet Services to comply with Metering Contestability rule changes. By the new rules, metering services for residential and small business customers will no longer be AusNet Services' exclusive role but will be open to market participants. This will require AusNet Services to manage large volumes of contestable customers whose meter services and data are provided by external parties.

This initiative includes all changes necessary for AusNet Services to:

- ensure the regulated distribution and metering business complies with the rule changes (e.g. support new market roles and transactions); and
- sustain regulated business operations against the impacts of metering contestability (e.g. enable mass-market billing from third party meter data, outage management with third party meters etc.).

This initiative does not include support for Shared Market Protocol, which is covered by a separate initiative.

Corporate strategic objective	Contribution
Advocate for an enhanced regulatory framework	This initiative will contribute to compliance with Metering Contestability regulatory obligations by enabling AusNet Services to manage the new market roles and responsibilities as a distribution network service provider and as an effect a deemed market coordinator.

Alignment to ICT Technology Plan and Roadmaps	☐ Leverage Core - Consolidate & Simplify ☒ **Leverage Core - Process Integration** ☒ **Leverage Core - Extend Core** ☐ Leverage Core - Technology Lifecycle Management ☒ **Information Enablement** ☐ Communications Enablement ☒ **Security Enablement**
Project Background & Scope	**Context:** In November 2012, the Australian Energy Market Commission's (AEMC's) Power of Choice (PoC) review set out recommendations to facilitate • the roll out of smart meters; • contestability in metering; and • efficient demand side participation (DSP) The implementation depends on the availability of smart metering capabilities, and requires substantial changes to the National Electricity Market (NEM) and National Electricity Rules (NER), as well as to market procedures. These changes will impact consumers, distributors, retailers, and where relevant generators. In response to the changes in regulation through Power of Choice, AusNet Services needs to ensure that its Information and Communication Technology (ICT) systems are functionally capable to comply with regulatory requirements. Under the current market rules, retailers may elect to change their meter on a contestable service provision in order to provide new services to the customer, or to replace an existing faulty or aging meter. On 1 December 2017 metering contestability will extend to all existing small customers (residential and small businesses), where the meter is currently owned and operated by the distributor. This will create the potential for large-scale meter replacements, requiring distributors (and other market participant) to implement a process able to manage the relevant volumes. Special arrangements for Victoria include exit fees payable by the retailer to the distributors for replacing an existing smart meters, to recognise their recent investment in smart metering. **Current State:** AusNet Services current business process and supporting application landscape have been designed to fit the current metering operating model, which is centred on the metering derogation for small customers (approx. 710,000 residential and small businesses as of 2015). This means that the majority of the service provisions on AusNet Services' network area are subject to regulated metering, whereby AusNet Services are responsible of installing, maintaining and reading the meter, as well as being the distributor. AusNet Services' business processes and applications have been designed and implemented to support the current meter churn volumes. Presently, AusNet Services have approximately 35,000 contestable customers. Once metering contestability comes into effect on 1 December 2017, approx. 750,000 customers will be able to undergo meter churn, and transaction volumes are expected to progressively increase accordingly. AusNet Services' current capability to support meter churn is not scalable to the expected volumes, therefore it will need to be developed in order to support these expected large-scale transactions. Meter churn uptake volumes will depend on the retailer's ability to generate new value-add services for consumers. In Victoria, this will be countered by the presence of exit fees. An analysis[4] providing an indication of the expected volumes suggests a 30% uptake of new contestable metering services in the NEM within 5 years of contestable metering having come into effect, as shown in Figure 1. Notwithstanding the current unknowns, the analysis indicates that any viable meter churn solution must support a substantial portion of the total customer base, therefore requiring a high degree of automation. The initial analysis conducted for in this initiative assumes meter churn transaction volumes will not to exceed 187,500 per year, and 1,000 per day (refer to Assumptions).

[4] Jacobs SKM - Benefits and Costs of Multiple Trading Arrangements and Embedded Networks – May 2014

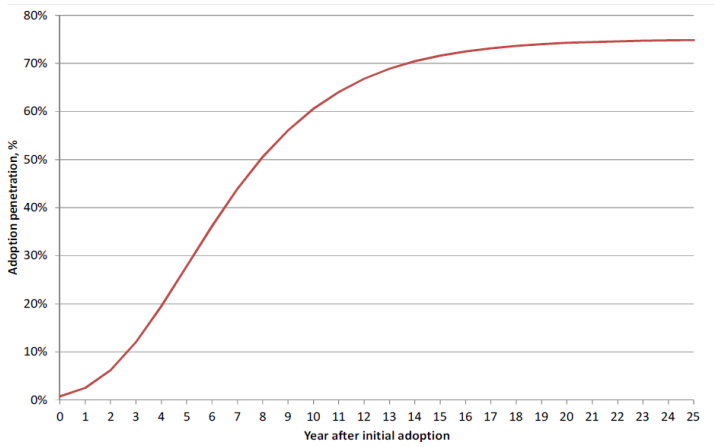


Figure 1 – Forecast contestable metering services uptake in the NEM

Limitations:

At present AusNet Services have a contestable metering capability, which is fit for commercial and industrial customers only (approx. 35,000 connection points). This capability is not scalable to support the entire small customer volumes.

Conversely, AusNet Services' current Advanced Metering Infrastructure (AMI) is set up to manage the entire small customer market, however it is fit for the current regulated model, and is not immediately applicable to contestable metering. Specifically, the current metering solution is not designed to receive and process external meter data from external parties for network billing purposes.

Consequently, AusNet Services must uplift its current metering platform by developing capability to support large-scale contestable metering.

Future State:

The Metering Contestability initiative, effective on 1st December 2017, will profoundly transform the current regulated metering business model, introducing competition for residential and small business customer metering. The expectation is that competition will result in lower prices and innovation in new metering products and value-add services. This will be achieved by allowing retailers and other market participants to compete in the metering business through the new market role of Metering Coordinator (MC). In particular, through the MC, market participants will be allowed to replace the distributor's existing meters with their own smart meter, and will ensure that smart meters are rolled out to all new connections.

Distributors, from a metering perspective, will progressively transform from providers of meter services and data to consumers. Metering services and data will be increasingly provided by contestable MCs. To support the new model, distributors will need to make substantial changes to their processes and systems.

The key changes introduced by this initiative are:

- The rule changes establish the new role of Metering Coordinator (MC), which:
  - replaces the current role of Responsible Person, which is accountable for installing, maintaining and reading the meter;
  - can be performed by any entity (subject to accreditation); for small customers in Victoria this means that the metering is no longer restricted to the distributor; and
  - is fully contestable, which shifts the metering service from a regulated to a contestable model.
- For small customers (residential and small business), the MC is appointed by the retailer. Large customers (and embedded generators) can appoint an MC directly.
- From 1/12/2017, metering services for all new connections will be contestable, with the MC directly appointed by the customer's retailer.
- From 1/12/2017, metering services for existing small customer connection points will continue to be provided by the distributor as the "deemed" MC, until an alternative MC is appointed by the retailer.

	This can occur in any of the following scenarios: o the retailer directly appoints an alternative MC (e.g. to provide new services to the customer); o the meter is replaced due to a connection addition or alteration; o the metering installation is reconfigured (e.g. due to a solar panel installation); o the meter is replaced after failure; or o the meter is replaced after failing metrology accuracy tests. • The new MC will be able to replace the distributor's existing meter with their own meter. • All new and replacement meters installed by MCs must be interval meters capable of remote read and operation, as per a new minimum services specification • Where a new contestable meter is deployed by the MC, the distributor will be able to maintain an existing smart meter as a "network device" (used to provide communication and remote energisation and de-energisation, but not for metering purposes). • The contestable metering regime is expected to include new market arrangements (Shared Market Protocol, SMP) and Business-to-Business (B2B) support for: o mass market Meter Churn process (replacement of MC, meter, and metering service provider associated with a retailer transfer); and o the provision of Smart Meter Services by the distributor and MC. • Provision of metering data to small customers for contestable sites within the local distribution area. There is a requirement in the National Electricity Rules for the DNSP to provide this data upon request to retail customers (small customers). Hence new Meter Data Management functionality is required by the network to receipt, store, verify, request and provide the requested metering data for sites with contestable metering. • Following the completion of this initiative, the business will be able to manage the mass-market meter churns end-to-end. **Notes:** • Smart Meter Services via the SMP/B2B are covered by a separate initiative.
Project Deliverables	Following the completion of this initiative, the business will be able to manage market contestable customers. In particular the following capabilities will be established to enable regulatory compliance: • Network Billing of contestable customers and metering data provision to small customers based on meter interval data received from external Meter Data Providers; • Management of field works on contestable service provisions in coordination with external Metering Coordinators; • Management of customers and customer information in compliance with the new roles and responsibilities where metering is contestable • Business process, information, and financial separation of the regulated distribution and metering business, and the contestable metering businesses, in compliance with the AER's ring-fencing guidelines. **In scope:** Development and enhancements of business processes and rules to support Metering Contestability: • Billing of contestable service provisions • Works management • Customer and customer information management • New market transactions • Network management (including outages and incidents) • Sensitive load management • Life support notifications • Manage mass-market meter churn market transactions • Manage return meter logistics • Process exit fees **Out of scope:** • Changes to current contestable metering (type 1-4)

- Changes supporting smart meter services via the Shared Market Protocol (SMP), which are covered by a separate initiative
- Management of the impact of meter churns on mesh network communication, which will be fixed on failure based on existing processes

Assumptions:

Contestable mass-market

- New secondary and value-add services in the contestable market will be performed by the MC
- New transactions will be required to support new market controls on sensitive loads, due to additional parties acting on AusNet Services' network
- MCs will always disconnect at contactor, and will not perform fuse pulls
- Centralised appointment and dispatch will be required to coordinate multiple parties against same piece of work (impact on service provider)
- Outage management performance is monitored and reported via the network control systems, and does not rely on meter data, therefore no impacts are expected because of meter churn
- Procedures are yet to be defined, therefore our assumption is that, if AusNet Services attend a customer premise fault and determine the cause is an external MC's meter failure, AusNet Services will notify the MC to determine the appropriate action

Current interval meters

- Currently AusNet Services are fully responsible of service provision in their patch, and are not responsible of coordinating with external parties; this is expected to change with metering contestability
- It is expected that exit fees will be chargeable to retailers via the existing network billing protocol
- The retailer will not be forced to nominate the MC when informed of fault, hence a new CATS transaction will be required to notify that the meter is subject to replacement; B2B will be used to notify the Market Settlement and Transaction System (MSATS)

Current basic meters

- Volumes of legacy basic meters will be negligible by the Metering Contestability effective date

Network devices

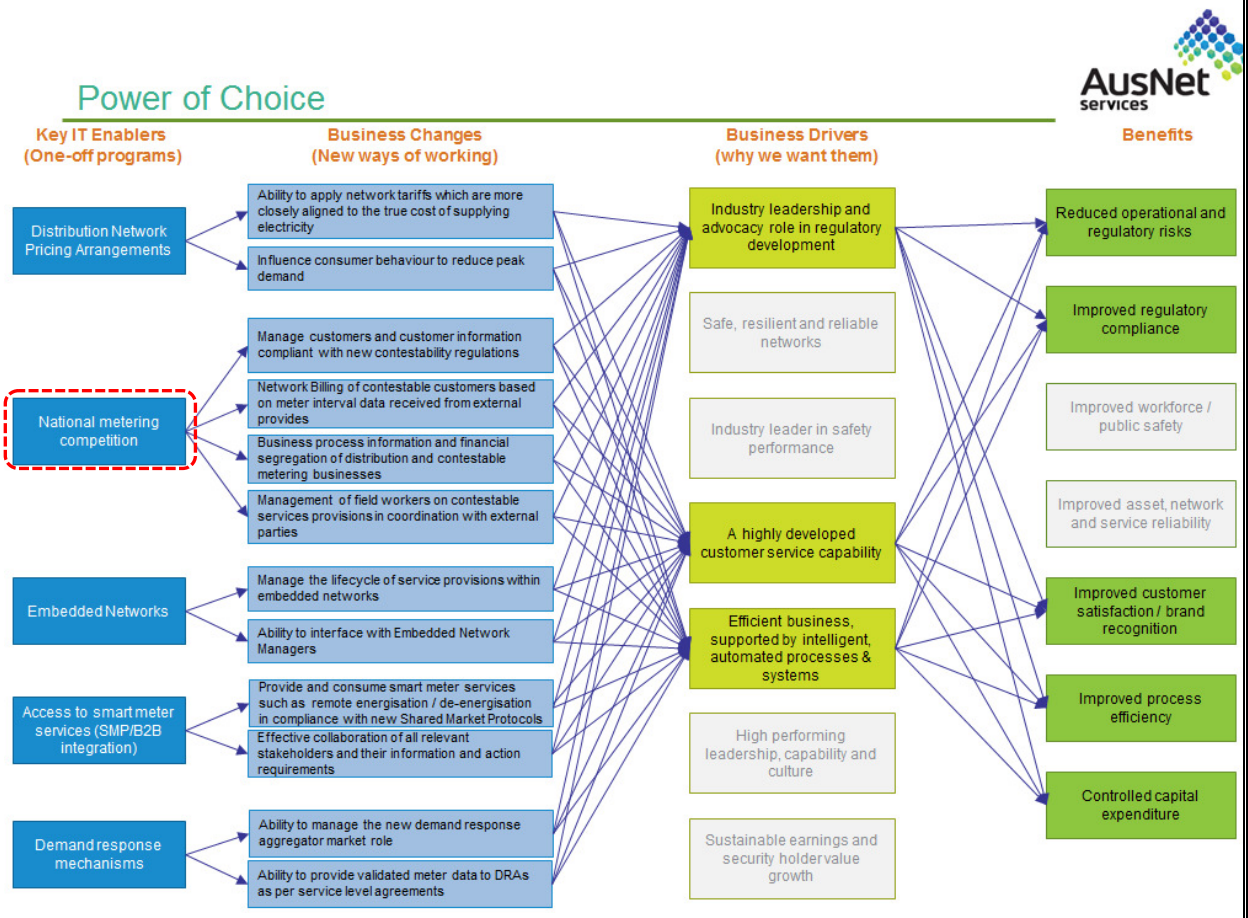
Although the rules allow distributors to utilise smart meters as "network devices" to obtain data (e.g. power quality), this option would not be a realistic large-scale solution for the whole of AusNet Services' network due to the following:

- Meter board space may not always be sufficient for the existing smart meter and a new meter
- The MC would be required to perform additional work to drop the meter board and do additional wiring to put meter in series (to be useful the network device should be upstream of the meter)
- AusNet Services' would incur a non-recoverable cost as the MC is not required to maintain the network device
- AusNet Services would need to disable remote services no longer to be performed on meters operating as network devices (e.g. energise/de-energise)
- AusNet Services' internal systems would need to be updated to recognise network devices as distinct from meters (e.g. no validation, family testing)
- Therefore the only feasible way to obtain data is to seek agreement with the MC

Meter Churn

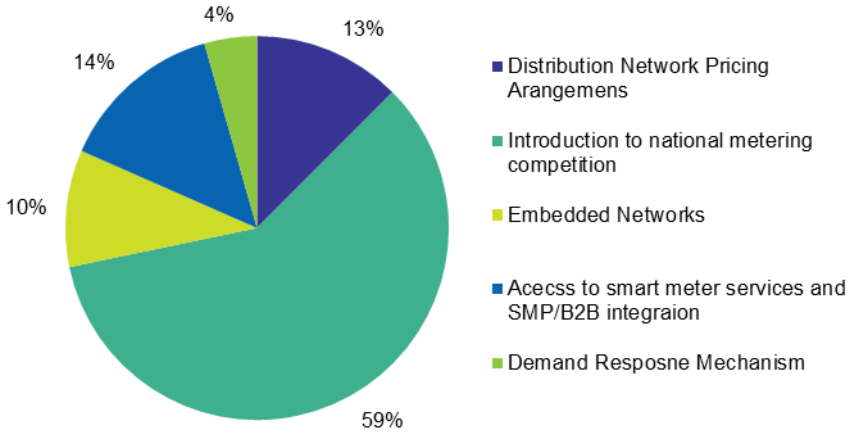
- Exit fees will be chargeable to retailers via the existing network billing protocol
- The meter churn process is expected to model the current process for contestable Commercial and Industrial customers, however will require a more robust/scalable solution

	• Meter churn volumes are expected to not exceed 187,500 per year, and 1,000 per day; these figures are based on:
	  ○ a total of 750,000 customers on AusNet Services' network
	  ○ 25% annual churn rate (in line with historical trends in Victoria)
	  ○ 250 business days per year
	  ○ volumes on a peak day being 25% higher than on an average day
	• Retailers will not be forced to nominate the MC when informed of a fault, hence a new B2B transaction may be required to notify that the meter is subject to replacement
	• Meter mesh network communications impacts from meter churn will be fixed on failure, based on existing process
	The mechanics of the return meter logistics and decommissioning process are unclear at present, therefore the scope of work will need to be realigned once these are defined

Project Benefits	Benefits expected to be realised from the delivery of this program are illustrated below:  **Benefits:** • Consumer benefits from increased metering competition, which is expected to drive a greater choice of innovative and cost-effective products and services • Enable regulatory compliance with Metering Contestability requirements • Increased consumer protection through more secure access to smart meter services • Enable regulatory compliance with AEMO's Metering Churn procedures

Project Dependencies & Deliverability

The below graph shows the total breakup of the Power of Choice initaitives as a percentage.



High-Level Requirements

The following requirements resulted from AusNet Services' interpretation of the minimum set of changes that are required to:

- Directly achieve compliance with new and changed regulatory requirements; and
- Maintain the ability to perform regulated business functions in the context of the new and changed regulatory requirements.

#	Requirement
1	Ability to provide and consume the new services required by new roles and responsibilities (excluding the impact of the SMP / market gateway implementation)
2	Ability to manage sensitive and network-critical load (e.g. life support) and notify the retailer when de-energisation is not possible
3	Ability to coordinate with third-party Metering Coordinators for field work (excluding new connections)
4	Ability to consume re-energisation and de-energisation status notification from third-party MCs
5	Ability to calculate bill determinants/new tariffs from ext. data
6	Maintaining outage management capabilities with external meters (e.g. remote meter probing)
7	Maintaining incident management capabilities (incl. single premise issues), including notifying external MCs of individual meter outages
8	Ability to obtain Power Quality (PQ) data from external parties for contestable sites without resorting to network devices, to maintain network management capabilities (e.g. smart networks / network modernisation)
9	Ability to manage the meter churn process (market transactions and back-end processes and system updates)
10	Ability to determine whether an exit fee is applicable, calculate the amount (e.g. based on depreciation) and charge the fee
11	Ability to manage the logistics of returned meters

Capabilities Impacted

The capabilities impacted by the recommended option are as follows:

Capability	Impact
Metering	Minor enhancements to: • Business rules for life-support de-energisation checks • Capacity and prioritisation of meter communication investigations to cater for increased volumes and meters removed by external MCs
Billing	Major changes to: • Receive market-validated data from external MCs/MDPs, for mass-market customers • Manage receipt and validation of externally-generated Power Quality data • Validate data quality and availability for network billing purposes • Store and make data available to business, including for transformer load balancing • Business logic to map external meter configurations to AusNet Services' tariffs in order to bill based on external data Moderate developments to: • Automatically change the sourcing of meter data to external and stop billing MP/MDP charges from churn date • Identify when exit fees are due, calculate the correct amounts and charge them to retailers
Customer information management	Major changes to: • Support new services required by the new market roles and responsibilities (excluding impact of Shared Market Protocol / market gateway implementation), including retrieval and update of standing data and market participant validation • Manage re-energisation and de-energisation status updates from and to external MCs • Support changes to customer-facing process for life support, including the recording of related documentation Moderate enhancements to: • Support the meter churn process and subsequent data updates (e.g. to receive churn notice, update standing data, and drive business processes
Works management	Major changes to coordinate with external parties for field work management, including: • Work order lifecycle • Work planning and scheduling • Appointment management • Recognising contestable meters and providing enhanced information to field crews • Safety impacts (e.g. MC need visibility of conditions which are not provided by existing transactions) • Service order charges Moderate changes to: • Coordinate with external parties for the physical meter replacement, including the return of the existing meter
Network management	Moderate changes to maintain capability with external meters: • Outage management (e.g. remote probing of external meters, with consequent service requests and charges) • Incident management (e.g. recognising external meters, including for single premise issues) • MC notification of individual meter outages
Enterprise Application Integration	Major system interface developments to: • Support new transactions • Create new orchestration of internal and external meter status requests • Support the changed meter data flows • Enhance standing data transaction to exchange and validate data Minor changes to: • Orchestrate the new automated process, including triggering the billing of exit fees
Reporting and analytics	Major changes to existing reporting and developments of new reports
B2B Gateway	Moderate developments to support new and changed market transactions

This project has the following dependencies / constraints:

Regulatory dependencies

- Draft market procedures must be available before the design phase can commence
- Final market procedures (expected in September 2016) must be available before the design phase can be completed, and implementation can commence
- Draft updates to market procedures for meter churn must be available before the design phase can commence
- Final market procedures (expected in September 2016) must be available before the design phase can be completed, and implementation can commence
- The Meter Churn Process described in this Initiative Brief is an integral part of the Metering Contestability initiative; consequently, the two initiatives are effectively interdependent and would need to be managed consistently

Internal dependencies

- This initiative will have interdependencies with the AMI Remediation Program, which will need to be managed throughout design and implementation
- This initiative will have interdependencies with the AMI Remediation Program, which will need to be managed throughout design and implementation
- This initiative has interdependencies with the SMP & B2B enhancement initiative.

Constraints

- Capability must be in place by the November 2017 to meet the effective date of 1 December 2017, as prescribed by the rules.

All the deliverability criteria below have been considered for this project. The project has been deemed feasible based on the following relevant criteria:

☒ Project Governance
☒ Project Interdependencies
☒ Business Change Adoption
☒ Resource Availability
☒ Infrastructure Availability
☒ Cost Comparison relative to Program
☒ Project Delivery Efficiencies

Project Risks		Details of Risk	Details of Consequence	Consequence rating (1 – lowest 5 – highest)	Likelihood rating (A – lowest E – highest)
	Current State Risk Assessment	Not proceeding with this initiative	Inability to meet regulatory requirements, resulting in compliance breaches	5	A
	Post Project Risk Assessment	Solution inappropriately optimised and/or scaled may result in inability to manage meter data from external parties	Inability to comply with monthly billing timeframes, creating additional manual overheads and delaying revenue collection	4	A
		Contestable metering uptake may be more rapid than accounted for in the planning of process automation	Use of additional temporary staff and increased operational costs	3	B
		Ineffective coordination with external parties for metering field work	Inefficient works management, resulting in additional overhead and delays	3	C
		Mesh network performance impact from replaced meters may be higher than expected	Reduced remote communication with AusNet Services' meters	3	B
		Delays to AEMO market procedures	Inability to achieve compliance with Metering Contestability obligations by the regulation effective date	5	A

Options Considered	**Option 1 – Do Nothing** In this option, AusNet Services will not be able to manage the new roles and responsibilities introduced by the Metering Contestability rule changes. As this would result in a major regulatory non-compliance, this option is effectively unviable and not recommended. **Option 2 – Enhance (recommended)** This option consists in enhancing the current: • Network billing capability, to manage external meter data for billing purposes and process exit fees; • Customer information management capability to manage, the new market roles and third-party meters, as well as data updates on meter churn; • Works management capability, to enable AusNet Services to coordinate with external parties for field work on contestable service provisions and meter replacements; • Network management capability, to recognise external meters involved in outages and incidents; and • Customer information management, to maintain a view of the customer incorporating the new tariffs and bill determinants. This is the recommended options as it has the following advantages: • It ensures full compliance with regulatory obligations; • It leverages the existing systems and support capability. • It builds on and further automates the existing functionality supporting meter churn for contestable customers rather than rebuilding it; and • It leverages the current investment in ICT. **Option 3 – Replace** This option consists in replacing the AusNet Services' core systems, which would otherwise require extensive changes to the below to support metering contestability and meter churn: • Meter data management system • B2B gateway • Customer information management system • Billing management These systems would be replaced with Commercial Off-The-Shelf solutions providing greater native support for the contestable market processes and transactions, including access to separation to comply with ring-fencing requirements. This option also requires extensive re-configuration of application integration, and regression testing of existing processes. As the replacement would cover all the core systems, a very large-scale project would be required, incurring a high cost. Furthermore, the replacement would hinder the benefits of recent investments, therefore is not recommended.
Note	*The specific technology solutions identified above are subject to revisions based on further analysis performed as part of the project feasibility study and full business case development*

<table>
<tr><td colspan="6">Program of Work:
Power of Choice</td></tr>
<tr><td>Project Name</td><td colspan="5">Embedded networks</td></tr>
<tr><td rowspan="2">Cost Allocation</td><td>Electricity Distribution</td><td>100%</td><td colspan="2">Electricity Transmission</td><td>0%</td></tr>
<tr><td>Gas Distribution</td><td>0%</td><td colspan="3"></td></tr>
<tr><td rowspan="3">Project Type</td><td colspan="4">Recurrent</td><td>☐</td></tr>
<tr><td colspan="4">Non-Recurrent – if non-recurrent, please select from 3 options below</td><td>☒</td></tr>
<tr><td colspan="2">☒ New Implementation</td><td colspan="2">☐ Replacement / Lifecycle</td><td colspan="2">☐ Strategic</td></tr>
<tr><td rowspan="2">Project Timings</td><td>Project Duration:</td><td colspan="5">1 Years</td></tr>
<tr><td>Project Start Year:</td><td>CY2016</td><td>Q1 ☐</td><td>Q2 ☐</td><td>Q3 ☐</td><td>Q4 ☒</td></tr>
<tr><td>Capital Expenditure Forecast</td><td colspan="5">
<table>
<tr><th></th><th>CY2016</th><th>CY2017</th><th>CY2018</th><th>CY2019</th><th>CY2020</th><th>Total</th></tr>
<tr><td>Total Project Cost</td><td>$0.38M</td><td>$4.24M</td><td></td><td></td><td></td><td>$4.63M</td></tr>
<tr><td>Distribution Cost</td><td>$0.38M</td><td>$4.24M</td><td></td><td></td><td></td><td>$4.63M</td></tr>
</table>
</td></tr>
<tr><td>Alignment to AER Expenditure Objectives</td><td colspan="5">☐ Meet or manage expected demand over the period
☒ Comply with regulatory obligations
☐ Maintain reliability, safety and security of Supply
☐ Maintain reliability, safety and security of the Distribution System</td></tr>
</table>

<table>
<tr><td>Alignment to business strategy</td><td>
Embedded networks are private electricity networks serving multiple premises, such as apartment blocks, shopping centres and retirement villages. The operator of the embedded network currently sells electricity to the embedded network customers. This initiative will enable these customers to choose who they buy their electricity from (including retailers), and the electricity products and services that best suit them to effectively manage their bills.

There are a number of likely benefits from allowing embedded network customers access to the competitive retail market which are related to price, quality of services, variety of products, and easier access to government schemes and consumer protection. This allows customers to access the electricity market and not prevent embedded network operators from selling electricity to embedded network customers. Instead, it would provide them with greater incentives to compete with retailers.

The draft rules introduce the new accredited role of Embedded Network Manager (ENM). This role will act as the market interface for embedded network consumers. The rules are expected to set clear responsibilities for electricity distributors, retailers, ENM, and Metering Coordinators for the management of embedded networks, and associated market procedures.

As a consequence, distributors will need to modify their business processes and systems to recognise the metering and other arrangements regarding embedded networks, including market procedure changes.

This Initiative will contribute to AusNet Services corporate strategic objective as follows:
<table>
<tr><th>Corporate strategic objective</th><th>Contribution</th></tr>
<tr><td>Advocate for an enhanced regulatory framework</td><td>This initiative will contribute to compliance with regulatory obligations on Embedded Networks by enabling AusNet Services to cater for the new Embedded Network Manager role and associated market transactions.</td></tr>
</table>
</td></tr>
<tr><td>Alignment to ICT Technology Plan and Roadmaps</td><td>
☐ Leverage Core - Consolidate & Simplify
☒ Leverage Core - Process Integration
☒ Leverage Core - Extend Core
☐ Leverage Core - Technology Lifecycle Management
☒ Information Enablement
☐ Communications Enablement
☐ Security Enablement
</td></tr>
<tr><td>Project Background & Scope</td><td>
Context:

In November 2012, the Australian Energy Market Commission’s (AEMC’s) Power of Choice (PoC) review set out recommendations to facilitate
• the roll out of smart meters;
• contestability in metering; and
• efficient demand side participation (DSP)

The implementation depends on the availability of smart metering capabilities, and requires substantial changes to the National Electricity Market (NEM) and National Electricity Rules (NER), as well as to market procedures. These changes will impact consumers, distributors, retailers, and where relevant generators.

In response to the changes in regulation through Power of Choice, AusNet Services (ANS) needs to ensure that its Information and Communication Technology (ICT) systems are functionally capable to comply with regulatory requirements.

Objectives:

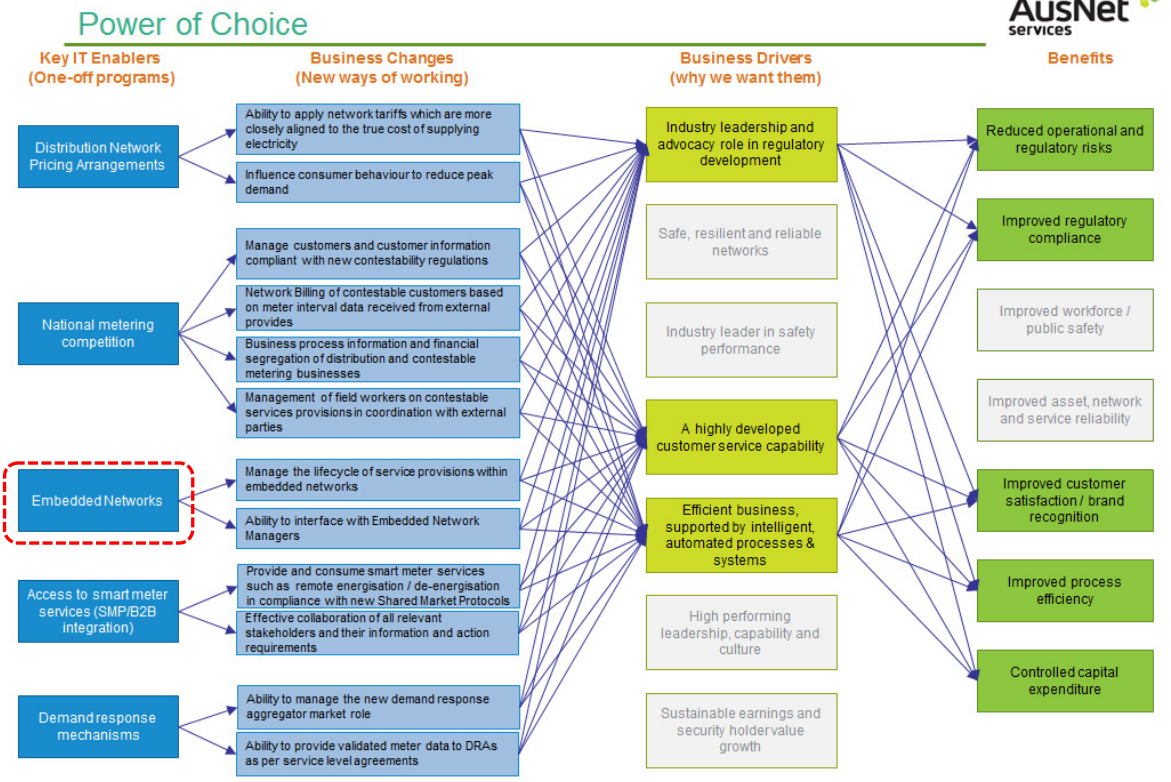
The objective of this initiative is to enable AusNet Services to cater for the new Embedded Network Manager role and associated market procedures.
</td></tr>
</table>

	Existing Problem or Known Error – Current State: The rule changes are expected to result in service provisions moving in and out of embedded networks[5] over time. AusNet Services' systems are fit for the current model, and will require changes to support these transitions. The changes will also establish new market transactions to support the new ENM role. AusNet Services' systems will need to implement new business processes and rules to support these transactions. **Future State:** With the completion of this initiative, the business will achieve the following outcomes: • Ability to manage the lifecycle of service provisions within embedded networks; • Ability to interface with Embedded Network Managers.

Project Deliverables	**In scope:**
	• Enhancement of current business rules to:
	  ○ manage the new Embedded Network Manager role
	  ○ support the changes to the lifecycle of service provisions within embedded networks
	• Development of new business processes to support the new market transactions related to embedded networks.
	
	Out of scope:
	• Requests of energy data by ENMs, which are covered in separate initiatives
	
	Assumptions:
	
	• No abolishment will be allowed for NMIs moving from embedded networks to AusNet Services' (based on AEMO NMI Procedure)
	• There is a possibility that every NMI in embedded network will become contestable on 1/12/17
	• AusNet Services' position is to not manage any NMI in an embedded network which does not have an AusNet Services' meter installed
	• For child NMIs which are in an embedded network which but still have an AusNet Services legacy meter, the ENMs will continue to request data directly to AusNet Services, outside B2B; the ability to provide data has been covered in a separate initiative

Project Benefits	Benefits expected to be realised from the delivery of this program are illustrated below:

[5] An "embedded network" is defined in the NER as "a distribution system, connected to either a distribution system or transmission system, that forms part of the national grid and which is owned, controlled or operated by a person who is not a Network Service Provider."

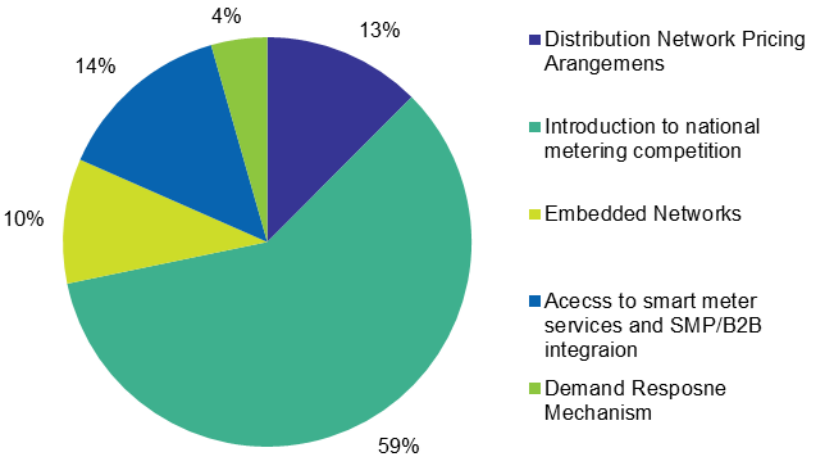


Benefits:

- Ensure regulatory compliance with Embedded Network requirements
- Customer satisfaction resulting from greater ability to choose products, services, and suppliers of retail electricity services

Project Dependencies & Deliverability

The below graph shows the total breakup of the Power of Choice initaitives as a percentage.



High-Level Requirements

The following requirements result from the business' interpretation of the minimum set of changes required to comply with regulatory requirements.

#	Requirement
1	Ability to manage the new ENM role: • Receive market transactions • Manage and access the ENM's details in AusNet Services' systems
2	Ability to provide data to the ENM upon request for existing ANS meters
3	Ability to recognise National Metering Identifiers (NMIs) which will be created within embedded n child NMIs and have AusNet Services' meters
4	Ability to manage metering service requests (e.g. re-energisation / de-energisation) for "child" AusNet Services' meters

Capabilities Impacted

The capabilities impacted by the recommended option are as follows:

Capability	Impact
Network Billing	Minor enhancements to cater for metering service requests for "child" service with AusNet Services' meters within embedded networks
Customer information management	Moderate changes to: • Cater for service provisions within embedded networks • Receive and service new market transactions • Manage and access details of Embedded Network Managers
Network management	Moderate changes to network models to recognise "child" service provisions cr embedded networks
Enterprise Application Integration	Minor developments to support interface changes and new market transactions
B2B Gateway	Minor developments to support the new market transactions

This project has the following dependencies / constraints:

Regulatory dependencies

- The AEMC final determination (expected on 17 December 2015) must be available before the project initiation phase can commence
- Draft market procedures must be available before the design phase can commence
- Final market procedures (expected in August 2016) must be available before the design phase can be completed, and implementation can commence

Internal dependencies

- None identified

Constraints

- Capability must be in place in Q4 of 2017 in order to comply with the effective date of 1 December 2017, as currently expected based on the draft the rules.

All the deliverability criteria below have been considered for this project. The project has been deemed feasible based on the following relevant criteria:

- ☒ Project Governance
- ☒ Project Interdependencies
- ☒ Business Change Adoption
- ☒ Resource Availability
- ☒ Infrastructure Availability
- ☒ Cost Comparison relative to Program
- ☒ Project Delivery Efficiencies

Project Risks

	Details of Risk	Details of Consequence	Consequence rating (1 – lowest 5 – highest)	Likelihood rating (A – lowest E – highest)
Current State Risk Assessment	Not proceeding with this initiative	Inability to meet regulatory requirements, resulting in compliance breaches	5	A
Post Project Risk Assessment	Solution inappropriately optimised and/or scaled may result in inability to manage meter data from external parties	Inability to comply with monthly billing timeframes, creating additional manual overheads and delaying revenue collection	4	A
	Contestable metering uptake may be more rapid than accounted for in the planning of process automation	Use of additional temporary staff and increased operational costs	3	B
	Ineffective coordination with external parties for metering field work	Inefficient works management, resulting in additional overhead and delays	3	C
	Delays to AEMO market procedures	Inability to achieve compliance with Metering Contestability obligations by the regulation effective date	5	A

Options Considered

Option 1 – Do Nothing

In this option, the new market transactions and system capabilities required to manage the new ENM role will not be implemented. In order to achieve compliance with the regulatory requirements, service provisions within embedded networks will need to be managed manually outside systems, which would expose the business to risk of non-compliance and material errors. Therefore this option is not recommended.

	Option 2 – Enhance (recommended) This option consists in enhancing the: • Customer information management capability, to support the new Embedded Networks Manager role; • Network management capability, to support service provisions within embedded networks; • Market interfacing capability, to support the new transactions. This is the recommended options as it has the following advantages: • It ensures full compliance with regulatory obligations; • It removes current system constraints for embedded networks by targeting specific enhancements, rather than extensively rebuilding existing capabilities; • It leverages the existing system capabilities wherever fit for purposes. **Option 3 – Replace** This option consists (at a minimum) in replacing the current customer information management system with Commercial Off-The-Shelf solutions providing native support for embedded networks. The replacement would require extensive reconfiguration of existing functionality besides what is required to deliver the new embedded networks regulatory requirements. Consequently this option would incur a significantly higher cost than enhancing the current solutions, and is not recommended.
Note	*The specific technology solutions identified above are subject to revisions based on further analysis performed as part of the project feasibility study and full business case development*

Program of Work: Power of Choice						
Project Name	**Shared Market Protocol and B2B Integration**					
Cost Allocation	Electricity Distribution	100%	Electricity Transmission	0%		
	Gas Distribution	0%				
Project Type	**Recurrent**					☐
	Non-Recurrent – if non-recurrent, please select from 3 options below					☒
	☒ New Implementation	☐ Replacement / Lifecycle		☐ Strategic		
Project Timings	Project Duration:	1 Year				
	Project Start Year:	CY2017	Q1 ☐	Q2 ☐	Q3 ☒	Q4 ☐

Capital Expenditure Forecast

	CY 2018	CY 2019	CY 2020	CY 2021	CY 2022	Total
Total Project Cost	$0.55m	$6.02m				$6.57m
Distribution Cost	$0.55m	$6.02m				$6.57m

Alignment to AER Expenditure Objectives

☐ Meet or manage expected demand over the period
☒ **Comply with regulatory obligations**
☐ Maintain reliability, safety and security of Supply
☐ Maintain reliability, safety and security of the Distribution System

Alignment to business strategy

The Power of Choice review rule changes will introduce new roles in the metering services market, such as Metering Coordinators and Demand Aggregators. The Australian Energy Market Commission (AEMC) determined that the existing Business-to-Business (B2B) framework should be extended in order to support standard and efficient communication among these market participants to access smart meter services.

As a consequence, the Australian Energy Market Operator (AEMO) will implement a Shared Market Protocol for "near-instant" access of smart meter services. This would improve customer service levels, e.g. by enabling meter reads and supply status verifications while the customer is over the phone. The services accessible through the SMP will be as per the AEMC's minimum services specification:

Table 1 – Minimum services specification

Remote energisation	Remote scheduled meter read service
Remote de-energisation	Metering installation inquiry service
Remote on-demand meter read service	Advanced meter reconfiguration service

In Victoria, where smart meters and some related services are already implemented, distributors will need to support the new and changed smart meter services as per the minimum specification (both as provider and consumer), and to develop the technological integration with the SMP.

Corporate Strategic Objective	Contribution
Advocate for an enhanced regulatory framework	This initiative will contribute to compliance with B2B procedures by enabling AusNet Services to integrate with the new Shared Market Protocol solution.

Alignment to ICT Technology Plan and Roadmaps	☐ Leverage Core - Consolidate & Simplify ☒ **Leverage Core - Process Integration** ☒ **Leverage Core - Extend Core** ☐ Leverage Core - Technology Lifecycle Management ☒ **Information Enablement** ☐ Communications Enablement ☐ Security Enablement
Project Background & Scope	**Context:** In November 2012, the Australian Energy Market Commission's (AEMC's) Power of Choice (PoC) review set out recommendations to facilitate • the roll out of smart meters; • contestability in metering; and • efficient demand side participation (DSP) The implementation depends on the availability of smart metering capabilities, and requires substantial changes to the National Electricity Market (NEM) and National Electricity Rules (NER), as well as to market procedures. These changes will impact consumers, distributors, retailers, and where relevant generators. In response to the changes in regulation through Power of Choice, AusNet Services needs to ensure that its Information and Communication Technology (ICT) systems are functionally capable to comply with regulatory requirements. **Objective:** The objective of this initiative is to deliver the minimum changes necessary for AusNet Services to support the minimum service specification and integrate with the new Shared Market Protocol in a manner that is scalable to the expected[6] transaction volumes. **Existing Problem or Known Error – Current State:** The new minimum services specification (refer to *Table 1*) includes • New smart meter services in addition to what AusNet Services currently support, such as remote on-demand meter read. • AusNet Services are already capable of providing, such as remote energisation and remote de-energisation, which however will need additional logic to cater for the new roles and responsibilities introduced by Metering Contestability. Metering Contestability will result in Metering Coordinators (MCs) being responsible for meters on AusNet Service's network. Consequently, AusNet Services will need to consume smart meter services provided by external MCs in order to continue their regulated business operations. Examples include power quality data and remote meter status checks, which are necessary for monitoring network performance. The minimum specification services will be implemented via the Shared Market Protocol, which will be supported by a new transaction system implemented by AEMO. Consequently, AusNet Services will be required to develop the capability to integrate with this system in such a way to support the required "near-instant" level of performance for the expected transaction volumes. As per the Metering Contestability rule changes, AusNet Services will be the "default" Metering Coordinator for all existing small customer connections, until the meter is replaced. Accordingly, AusNet Services will also be required to provide smart meter services as required for the MC role which are not in the SMP **Future State:** Following the completion of this initiative, the business will be able to provide and consume smart meter services as per the minimum services specifications, in compliance with the requirements of the new Shared

[6] Transaction volumes are expected not to exceed the no greater than the service levels prescribed by the Minimum AMI Functional Specification (Victoria), see Appendix

	Market Protocol.

Project Deliverables	**In scope:**
	Development and enhancements of business processes and rules to:
	• Provision of minimum specification smart meter services (refer to *Table 1*) as the distributor via SMP
	• Consumption of minimum specification smart meter services (refer to *Table 1*) as the distributor via SMP
	• Provision of services not in SMP as the Metering Coordinator
	• Service transaction charges
	• Near-instant service integration via SMP
	
	Out of scope:
	• AusNet Services are not required to provide the following:
	  ○ Metering installation inquiry service
	  ○ Advanced meter reconfiguration service
	• AusNet Services are already capable of providing the following:
	  ○ Remote scheduled meter read service
	
	Assumptions:
	• Service levels required by the SMP will be no greater than those implemented by AusNet Services current infrastructure, and in particular no greater than the service levels prescribed by the Minimum AMI Functional Specification (Victoria) v1.2 September 2013.
	• AusNet Services will only be requested to provide data which is already being collected; where the requested data is not already available, AusNet Services will be required to attempt to remotely read the meter, but not to perform onsite reads in case the remote read fails
	• Responses to requests for data will be via the existing B2B procedure
	• Charges for services will be on a per-request basis
	• Current meter communications module is capable of supporting the new minimum services
	• The existing interval data aggregation process for monthly billing will be able to cater for data provided by external parties, therefore there will be no impacts to the monthly billing process
	• AusNet Services will not be required to provide the following services (out of the minimum service specification defined in *Table 1*) as retailers are not likely to need them:
	  ○ Metering installation inquiry service
	  ○ Advanced meter reconfiguration service
	• AusNet Services are already capable of providing the following service (out of the minimum service specification defined in *Table 1*):
	  ○ Remote scheduled meter read service

Program of Work: Power of Choice				
Project Name	**Demand Response Management**			
Cost Allocation	Electricity Distribution	100%	Electricity Transmission	0%
	Gas Distribution	0%		
Project Type	**Recurrent**			☐
	Non-Recurrent – if non-recurrent, please select from 3 options below			☒
	☒ New Implementation	☐ Replacement / Lifecycle	☐ Strategic	
Project Timings	Project Duration:	1 Year		
	Project Start Year:	CY2018	Q1 ☒ Q2 ☐ Q3 ☐ Q4 ☐	

Capital Expenditure Forecast

	CY2016	CY2017	CY2018	CY2019	CY2020	Total
Total Project Cost			$2.08M			$2.08M
Distribution Cost			$2.08M			$2.08M

Alignment to AER Expenditure Objectives

☐ Meet or manage expected demand over the period
☒ **Comply with regulatory obligations**
☐ Maintain reliability, safety and security of Supply
☐ Maintain reliability, safety and security of the Distribution System

Alignment to business strategy

The AEMC recommended the development of a Demand Response Mechanism (DRM) to allow customers to more actively participate in the wholesale market in response to the current price of electricity.

Customer demand response seeks to reduce consumption or employ on-site generation behind the meter (e.g. co-generation, batteries), and would be achieved through a new Demand Response Aggregator (DRA) market role. The DRA would coordinate customers to reduce their load compared to a projected or "baseline" consumption, and be paid by the Australian Energy Market Operator (AEMO) for the reduction. The DRA may then be able to reward customers based on an agreed scheme.

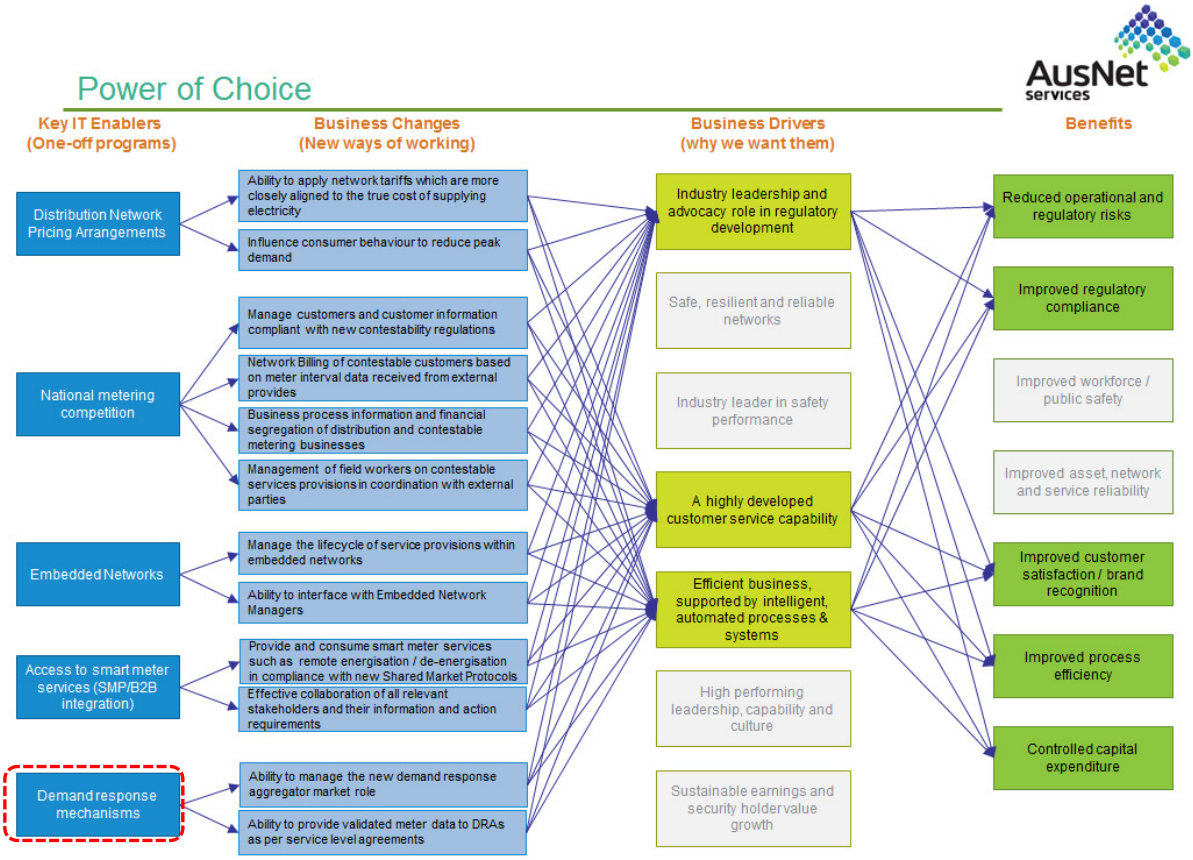
This initiative is in the consultation stage, therefore its impact on distributors is still to be determined. The current expectation is that distributors will be required to provide meter interval data to DRAs.

Depending on the market uptake of DRM services, distributors may need to monitor and respond to proposed large-scale demand response events in order to prevent unbalancing the network. This impact is not discussed here as it is expected to be covered by future initiatives.

Corporate strategic objective	Contribution
Advocate for an enhanced regulatory framework	This initiative will contribute to compliance with the Demand Response Mechanism requirements by enabling AusNet Services to support the new DRA market role.

Alignment to ICT Technology Plan and Roadmaps	☐ Leverage Core - Consolidate & Simplify ☒ **Leverage Core - Process Integration** ☒ **Leverage Core - Extend Core** ☐ Leverage Core - Technology Lifecycle Management ☒ **Information Enablement** ☐ Communications Enablement ☐ Security Enablement
Project Background & Scope	**Context:** In November 2012, the Australian Energy Market Commission's (AEMC's) Power of Choice (PoC) review set out recommendations to facilitate • the roll out of smart meters; • contestability in metering; and • efficient demand side participation (DSP) The implementation depends on the availability of smart metering capabilities, and requires substantial changes to the National Electricity Market (NEM) and National Electricity Rules (NER), as well as to market procedures. These changes will impact consumers, distributors, retailers, and where relevant generators. In response to the changes in regulation through Power of Choice, AusNet Services needs to ensure that its Information and Communication Technology (ICT) systems are functionally capable to comply with regulatory requirements. **Objective:** This initiative is to deliver the minimum changes necessary for AusNet Services to support the Demand Response Mechanism. **Existing Problem or Known Error - Current State:** The Demand Response Aggregator would be an entirely new market role. If the Demand Response Mechanism is implemented, AusNet Services will require additional capabilities to support this role. **Future State:** Following the completion of this initiative, the business will be able to support the DRM.
Project Deliverables	**In scope:** Development of new capabilities to: • Manage the new DRA market role • Provide raw meter interval data to the DRA **Out of scope:** The following broader impacts of DRM are out of scope, as they would require a network security protocol, which is expected to be covered in future regulatory changes: • Demand response notifications from DRAs • Network impacts of demand response events • Coordination of planned and unplanned outages with Demand Response events **Assumptions:** • AusNet Services will not seek to operate as a DRA • Demand response will be a contestable service, therefore DRAs will not request demand response actions through the distributor • Currently load shedding is done at feeder level, not meter level; therefore AusNet Services will not need to utilise DRM service offered by DRAs until the market is mature

	• Until the market is mature and the penetration of demand response services is substantial, no significant impact on distribution business is anticipated; and therefore AusNet Services do not need to be informed of DRM operations • SLAs for providing meter interval data to DRAs are yet to be defined; it is assumed that distributors will be required to provide raw data (not validated) to DRAs in near-real-time, either upon request or through data stream
Project Benefits	Benefits expected to be realised from the delivery of this program are illustrated below:

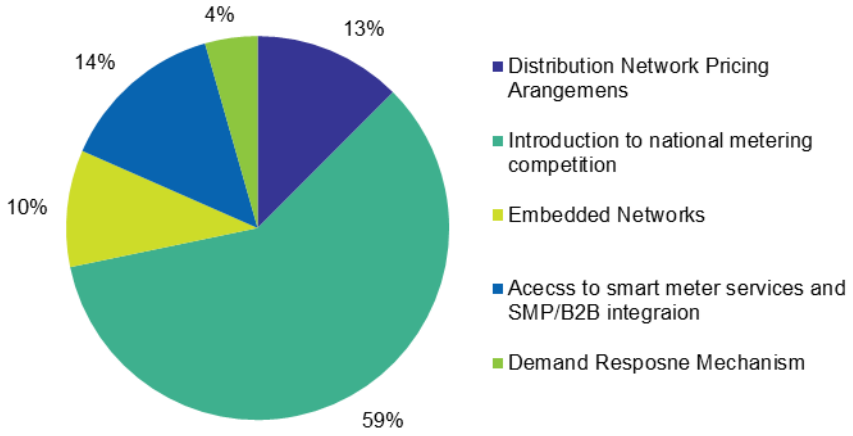


Benefits:

- Controlled capital expenditure due to deferred network augmentation
- Enable regulatory compliance with DRM requirements
- Reduced peak network load
- Defer network augmentation due to reduced peak network load
- Consumer benefits of increased ability to respond to electricity prices

Project Dependencies & Deliverability

The below graph shows the total breakup of the Power of Choice initaitives as a percentage.



High-Level Business Requirements:

The following requirements resulted from AusNet Services' interpretation of the minimum set of changes that are required to:

- Directly achieve compliance with new and changed regulatory requirements; and
- Maintain the ability to perform regulated business functions in the context of the new and changed regulatory requirements.

#	Requirement
1	Ability to receive and respond to customer requests for data by driving the request lifecycle
2	Ability to validate the customers and authorised representatives, including privacy aspects and follow-up support as necessary

Capabilities Impacted

The capabilities impacted by the recommended option are as follows

Capability	Impact
Meter management	Moderate developments to establish the capability to provide DRAs with raw meter interval data on a near-real-time basis as per LSAs to be defined
Customer information management	Moderate developments to: • Recognise and track new DRA role in the standing data • Trigger the dissemination of DRA information to all relevant systems
Enterprise Application Integration	Moderate changes to support the provision of raw meter data in near-real-time

This project has the following dependencies or constraints:

Regulatory dependencies

- Draft market procedures for DRM must be available before the design phase can commence
- Final procedures must be available before the design phase can be completed, and implementation can commence

Internal dependencies

- This initiative has interdependencies with the SMP and B2B as well as Metering contestability initiatives.

Constraints

- It is expected that DRM will be effective in December 2018; the capability will need to be in place by then.

All the deliverability criteria below have been considered for this project. The project has been deemed feasible based on the following relevant criteria:

☒ Project Governance
☒ Project Interdependencies
☒ Business Change Adoption
☒ Resource Availability
☒ Infrastructure Availability
☒ Cost Comparison relative to Program
☒ Project Delivery Efficiencies

Project Risks

	Details of Risk	Details of Consequence	Consequence rating (1 – lowest 5 – highest)	Likelihood rating (A – lowest E – highest)
Current State Risk Assessment	Not proceeding with this initiative	Non-compliance with SLAs for providing meter data to DRAs	5	A
	Changes to final DRM framework resulting in distributor impacts greater than currently expected	Increased cost of achieving compliance	4	B
Post Project Risk Assessment	Solution inappropriately optimised and/or scaled may result in inability to manage service requests	Inability to comply with real-time service performance levels, with possible consequent fines	4	A
	DRM uptake by mass-market earlier than anticipated	Network impacts due to large-scale demand response events requiring earlier efforts to establish a network security protocol	4	B

Options Considered

Option 1 – Do Nothing

In this option, AusNet Services will not implement system capability to support the new DRA role, and would not be able to meet the SLAs for providing raw meter interval data to DRAs. This would lead to non-compliance, therefore this option is not recommended.

Option 2 – Enhance (recommended)

	This option consists in enhancing the current: • Meter data management capability, to publish increased volumes; and • Customer information management capability, to manage the new DRA role. This is the recommended option as it has the following advantages: • It ensures full support for the Demand Response Mechanism, in-line with regulatory obligations; • It leverages the current investment in ICT systems. **Option 3 – Replace** This option consists in replacing the meter data management and customer information management systems with alternatives offering greater support for DRM. Replacing the existing systems would be incomparably more complex than enhancing them, and not justified by the degree of changes required, therefore this option is not recommended.
Note	*The specific technology solutions identified above are subject to revisions based on further analysis performed as part of the project feasibility study and full business case development*