ABN 85 082 464 622

MANAGEMENT STRATEGY
NETWORK METERING

DOCUMENT NUMBER: NW-#30161864-V3

DATE: 13 MAY 2011

This page is intentionally blank.

TABLE OF CONTENTS

REV NO.	DATE	REVISION DESCRIPTION	APPROVALS	
0	13 May 2011	Original Issue. (NW-#30161864-V3).	Prepared by	DM
			Reviewed by	AD
			Endorsed by	STT
			Approved by	AB

This page is intentionally blank.

1. PURPOSE

The purpose of this document is to describe the long term optimised and sustainable direction for the management of Aurora Energy's metering assets to assist in the delivery of the organisational strategic plan.

2. AURORA ENERGY METERING STRATEGY OBJECTIVE

The objective of the Aurora Energy Metering Strategy Framework 2007 – 2012, shown in Figure 1, is to:

> *Ensure an integrated and consistent approach to the development and delivery of metering, metering services and metering related market services across Aurora Energy which optimises business outcomes for Aurora while ensuring the business needs and regulatory obligations of individual functions are met.*

The Framework also shows the links to the Energy Business Prepayment metering strategy by providing a metering solution to enable continued implementation of the Aurora Pay-As-You-Go (PAYG) prepayment product.

3. NETWORK MANAGEMENT STRATEGY OBJECTIVE

The objective of the Network Management Strategy is:

> *To minimise cost of supply to the customer whilst:*
>
> *a. Maintaining network performance;*
>
> *b. Managing business operating risks; and*
>
> *c. Complying with regulatory, contractual and legal responsibilities.*

4. NETWORK METERING STRATEGY OBJECTIVES

The Network Metering Strategy contained within the Aurora Energy Metering Strategy Framework, provides an overview of the three main streams of:

1. Metering Assets;
2. Metering Services; and
3. Market Services.

The Metering Assets Objective is to:

> *Ensure existing regulatory obligations and business needs are met while positioning the business towards developing technologies as they evolve.*

The Metering Services Objective is to:

> *Develop metering service solutions that deliver innovative and cost effective customer solutions to meet regulated obligations that also meet the planning and operational needs of the Distribution and Energy Business Functions.*

The Market Services Objective is to:

> *Provide high quality market services, including provision of excluded services and LNSP functions, to meet regulated obligations.*

5. OVERVIEW

Aurora Energy has sought to develop a high-level strategy framework in respect of metering and metering services that will support each of its energy, network and services businesses as a whole and enables each to meet its business objectives while optimising the outcomes for Aurora Energy.

The Aurora Energy Metering Strategy Framework 2007 – 2012 provided this framework for the current pricing period (2007/2008 to 2011/2012). By setting a high level framework and direction for metering and metering services, the strategy enables each business function to develop detailed business objectives, strategies and work plans as part of their individual business planning processes, that support Aurora Energy's overall business objectives.

Network metering is a specific Thread within the overarching Network Management Strategy. Due to its business wide importance, this dedicated Network Metering Strategy has been developed with a focus on the regulatory control period 2012/2013 – 2016/2017.

Network's previous metering strategy was developed as part of the response to the Pricing Determination for the current regulatory control period (2007/2008 to 2011/2012). In part, the strategy provided for:

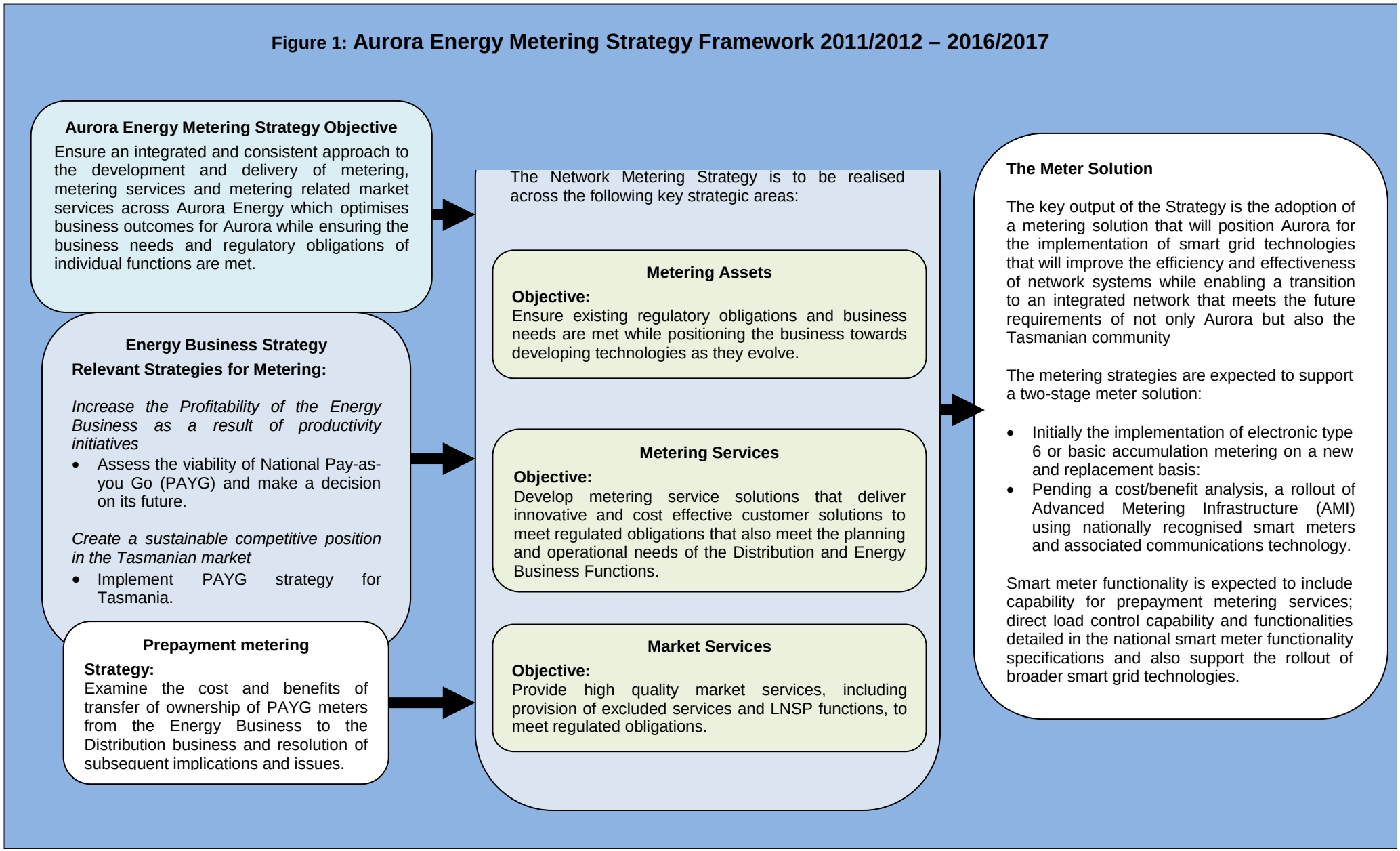
- Electronic interval meters to be used in place of accumulation type meters for new and replacement installations;
- These new electronic meters are treated as basic accumulation meters for meter reading;
- For existing meters to be replaced on an 'aged' basis over a '5-year + 5-year' program; and
- Following the completion of the replacement program, meters would be replaced on a 15-year cycle to coincide with the assumed useful life of electronic meters.

The electronic interval meters currently procured for the program have similar base functionality to that required in the current Victorian advanced metering program and that being considered under the National Smart Metering program. The move to electronic meters with remote communications interface capability was based on the premise that it would be a simple field based exercise to retrofit communications equipment as and when required in the future.

The metering strategy has now moved from an aged based replacement program to a condition based replacement program that also incorporates new metering technologies to provide solutions for business needs such as the challenge facing Aurora to supply increasing amounts of energy while meeting community and government expectations for more affordable, reliable and sustainable supply of energy.

Aurora plans to meet this challenge by changing the way it operates and modernise the network with smarter technologies – in essence integrating information and communications technologies into existing network infrastructure and business systems to create a smart electricity network (or smart grid). Part of this solution is to consider implementing advanced metering infrastructure as an enabling platform for a broader smart grid.

Figure 1: Aurora Energy Metering Strategy Framework 2011/2012 – 2016/2017



6. METERING ASSETS

To ensure regulatory obligations are met, meters are to be maintained and replaced in accordance with the Australian Energy Market Operator (AEMO) approved Meter Asset Management Plans.

To ensure compliance with regulatory obligations with respect to the ongoing provision of meter reading and associated data delivery Network will review and revise Network's Meter Asset Management Plans to ensure currency with the requirements of the relevant standards, National Electricity Rules (NER), Tasmanian Electricity Code (TEC) and National Metrology Procedures as appropriate.

To position the business for the future by developing new metering technologies as they evolve Network will participate in trials involving new and/or alternative technologies to identify how such technologies may be used to manage assets more efficiently (Refer: Network Smart Customer Proof of Concept Project).

7. METERING SERVICES

To develop metering service solutions that deliver innovative and cost effective customer services in terms of:

- Enabling customer participation;
- The PAYG application;
- Using alternative supply options including embedded generation; and
- Delivering other improved and/or innovative customer services

Network will:

1. Identify opportunities for improved customer service provision and develop and implement innovative, cost effective solutions (Refer: Network Customer Management Model and Energy Business PAYG Strategy).
2. Participate in trials involving new and/or alternative technologies to identify how such technologies may be used to enhance customer service and/or participation (Refer: Network Smart Customer Proof of Concept Project).

The rollout of Network's Cable PI device to customer installations has been highly successful. To leverage from this initiative Network will develop, in conjunction with other areas of Aurora, metering solutions to support Network safety programs in conjunction with Cable PI devices.

8. MARKET SERVICES

To provide high quality market services, including provision of excluded services and Local Network Service Provider (LNSP) functions, to meet regulatory obligations while minimising business risk Network will review and revise Network's Excluded Services Document to ensure currency with the requirements of the relevant standards, National Electricity Rules (NER), Tasmanian Electricity Code (TEC) and National Metrology Procedures as appropriate.

9. METER SOLUTION

Network will realign its approach to meter replacement from one of age-based replacement to one of condition-based replacement and business need. Network will continue the meter audit and testing program as required under the NER and TEC and replace meter families that are found to be non-compliant.

Existing business needs and risks will be addressed by replacing existing metering assets with electronic meters with remote two-way communications functionality where there is a positive business case to do so.

In order to manage the metering installations, collect data and receive and transmit basic control/status conditions where appropriate, Network will procure a Meter Network Management System (MNMS) and develop interface enhancements to some of the existing back office systems. The MNMS would provide meter management, communications network management and security management.

Given that the installations identified above are spread throughout the supply area, it is anticipated that a number of communications platforms will be required. While it is possible that the NBN network may form the backbone of communications in the more populous locations, other platforms such as WiMax, Mesh Radio and 3G will be required to infill and last mile connection in many areas.

Key issues and risks to be addressed under this approach include:

1. Replacement of ERT meters and technology;
2. Reading issues associated with PAYG meters, difficult to access meters and data processing;
3. Access issues associated with keys, dogs, remote locations (irrigation pumps), communications towers, etc
4. Optimising Cable PI.
5. Provide enabling platform for potential implementation of broader smart grid technologies pending the successful outcome of the Smart Customer Proof of Concept Project.

Existing ‘black meter’ technology will be replaced using electronic interval meters on a ‘new and replacement’ basis.

All new electronic meters should be available from multiple vendors and capable of (but not necessarily limited to):

1. Supporting two-way communications (eg IP, 3G/4G or mesh radio);
2. Enabling remote connection and disconnection and load control (safety ‘reconnect’ switch;
3. Remote updating of firmware and software;
4. Providing base meter capability for Aurora Retail’s PAYG solution;
5. Interfacing with a Home Area Network (HAN);
6. Providing power quality data;
7. Last gasp; and
8. Interfacing with cable PI (or equivalent) functionality.

10. REFERENCES

1. Aurora Energy Metering Strategy Framework 2007 – 2012 (NW#-10254983-V1A)
2. Network Management Strategy (NW#-30065608-V5A)
3. Energy Business Prepayment Metering Strategy
4. Network Customer Management Model
5. National Electricity Rules (Chapter 7)
6. Tasmanian Electricity Code (Chapter 9)
7. National Metrology Procedures
8. Network Excluded Services
9. Distribution Network IT Strategy (NW#-30110423-V1D)
10. Network Smart Customer Proof of Concept Project
11. Management Plan 2011 – Metering Assets (NW#-30161525-v1A)
12. Management Plan 2011 – Connection Assets (NW#-30158001-V2A)