



MARCHMENT
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Victorian AMI Program

Victorian Energy
27 August 2009

Victorian Government AMI Policy

That all residential and small business electricity consumers across Victoria have access to the benefits of smart meters and the full capabilities that AMI enable.

A.Consumer benefits: Increase options for consumers to better manage their energy use and understand greenhouse emissions.

B.Energy Market benefits: Encourage new and innovative products and prices, enable improvements to consumer service, competition and wholesale trading.

C.Distributor benefits: Deliver operational efficiencies, improve network management and utilisation, defer augmentations and optimise investment.

Source: AMI Stakeholder Forum, Richard Bolt, Secretary, DPI, 7 December 2007

Scope

Replace 2.6 million old style electricity meters with digital AMI Meters over 4 years across Victoria : 4,000 meter replacements per day.

Establishment of entirely new two way communications network between the Distribution Business back end systems and the AMI Meter at the customer premise.

Establish Core AMI Services:

1. Half hourly interval data;
2. Remote Data Collection;
3. Remote Energisation; and
4. Remote De-Energisation.

Distribution Businesses	Retailers	Market Operator	Government Departments and Consumer Groups
			

Victorian AMI Program Phases



Victorian AMI Program Phases

2006

Jul 2007

Establishment

Development

Deployment

Led by Government.

Defined the major milestones and objectives for the deployment and operation of AMI in Victoria.

Defined the Functional Specification for AMI Meters and the Service Level Specification for AMI Services.

Victorian AMI Program Phases

Jul 2007

June 2010

Establishment

Development

Deployment

To ensure that cross industry activities associated with making the minimum AMI functionality available and enabling the minimum AMI services

- are achieved within the timeframes
- establish regulatory and process frameworks that allow AMI Services to be efficiently accessed by Retailers
- establish the AMI Services as quickly as possible
- are delivered efficiently; and
- are managed such that adverse customer impacts, both during the Program and as a consequence of the outcomes of the Program, are minimised

Victorian AMI Program Phases

Jul 2007

June 2010

Establishment

Development

Deployment

Two stage Program Vision:

- AMI meter exchanges are occurring at high volume with minimum disruption to retailers, distribution businesses or, most importantly, customers.
- AMI Services (half hourly meter data, daily remote data collection and delivery, remote re-energisation and remote de-energisation) are operating reliably and safely.

Victorian AMI Program Phases

Jul 2007

June 2010

Establishment

Development

Deployment

Current State:

- NEM Changes approved
- Victorian AMI Process Model Approved and under change control
- MSATS 46.74 build on track for Nov 09
- Meter deployment to commence in Sep 09
- Industry Testing Schedule to be completed in Q2 2010

Victorian AMI Program Phases



3 ½ years transition period to digital AMI meters.

5% AMI meters by 30 Jun 2010

10% AMI meters by 31 Dec 2010

25% AMI meters by 30 Jun 2011

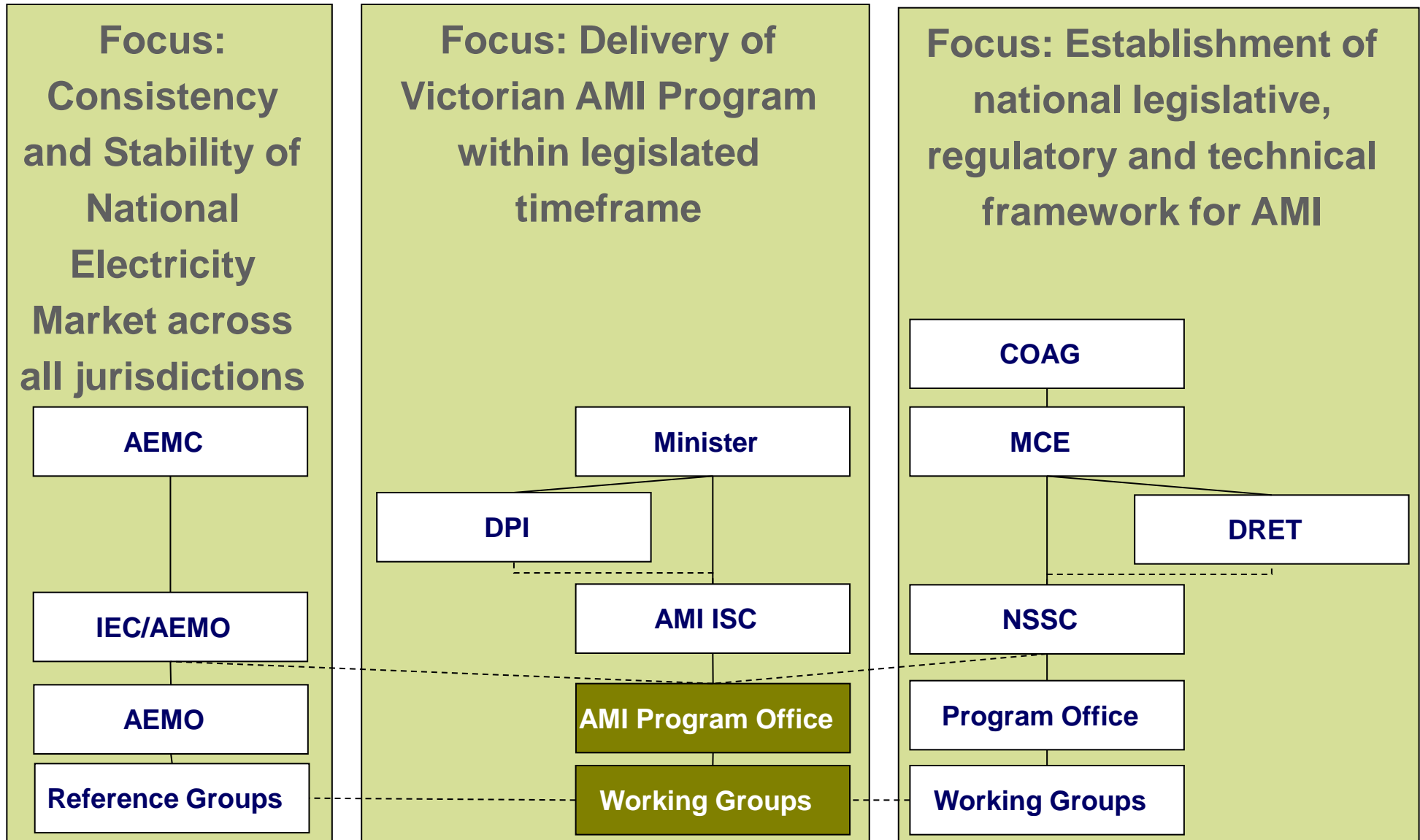
60% AMI meters by 30 Jun 2012

95% AMI meters by 30 Jun 2013



Program complete by 31 Dec 2013

AMI Service 1 from 1 Jan 2012

Complex Governance



AMI Market Impact – Meter Data Avalanche

<p>BASIC Meter</p>  <p>Analogue</p>	<p>AMI MRIM Meter</p>  <p>Digital</p>
<p>1 meter read with 1 data item per quarter.</p> <p>100,000 customers: 1,100 data items/day</p>	<p>1 meter read with 49 data items per day.</p> <p>100,000 customers: 4,900,000 data items / day</p>

AMI Market Impact – Individual Consumption Profiles

BASIC Meter

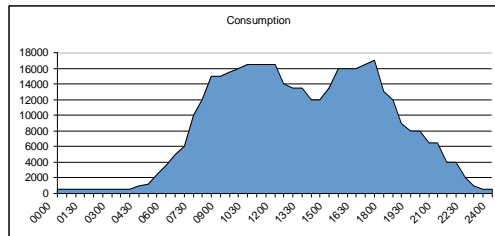


Analogue

Every customer for every retailer, regardless of appliance, lifestyle, business operation or location, has the same load profile.

100,000 customers: 1 profile

NSLP = Boundary Meter Profile -
 \sum Interval Meter Profiles within
Boundary



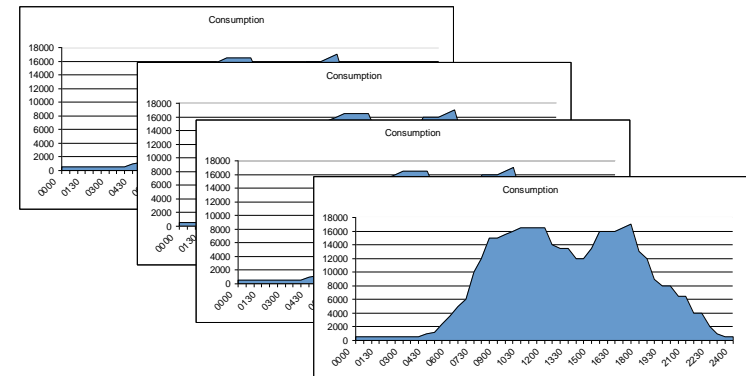
AMI MRIM Meter





Digital

Every Customer has an individual load profile.



100,000 customers: 100,000 profiles





AMI Market Impact – Customer Access to Meter Data

<p>BASIC Meter</p>  <p>Analogue</p>	<p>AMI MRIM Meter</p>  <p>Digital</p>
<p>The customer must go to the meter and write down the register numbers if they are interested in determining their consumption.</p> <p>No History.</p> <p>Displays are not easy to understand.</p> <p>Manual interaction with meter – Customer apathy.</p>	<p>Half hourly consumption information available to the customer via either a Home Area Network or a market based service.</p> <p>History available</p> <p>Data can be presented in an easy to understand format.</p> <p>Customer able to interrogate and manipulate data easily – Customer involvement.</p>

AMI Market Impact – NEM Settlements

<p>BASIC Meter</p>  <p>Analogue</p>	<p>AMI MRIM Meter</p>  <p>Digital</p>
<p>Meter read allocated across each day in the meter read period and then within each day based on a profile.</p> <p>NSLP applied to all meter reads regardless of retailer.</p> <p>Settlements contains estimates until all BASIC meters are read, and even then includes inaccuracies of allocations.</p>	<p>Interval meter data is published to the market more frequently.</p> <p>Vic AMI target - 6:00am the following day.</p> <p>Individual profiles used for all meters.</p> <p>As the population of smart meters grows, the difference between the revision and final wholesale settlement will diminish.</p>

AMI Market Impact – Remote Re-en/De-en

<p>BASIC Meter</p>  <p>Analogue</p>	<p>AMI MRIM Meter</p>  <p>Digital</p>
<p>De-Energisation and Re-Energisation must be performed physically at the site regardless of the Service Order Sub-Type.</p> <p>Requires a site visit</p> <p>Best endeavours service standard – can be achieved within a few hours or a couple of days.</p>	<p>Smart meters include a supply contactor that can be remotely activated to de-energise and/or re-energise.</p> <p>Can be done remotely, when safe.</p> <p>On demand service.</p>

AMI Market Impact – Network Billing Changes

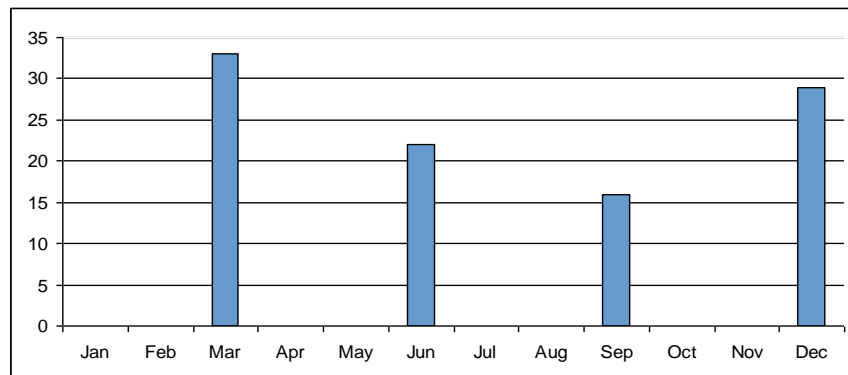
BASIC Meter



Analogue

Network charges are typically calculated and invoiced once a quarter and include the total energy consumption in the last quarter.

100,000 customers: 25,000 network charges invoiced each month.



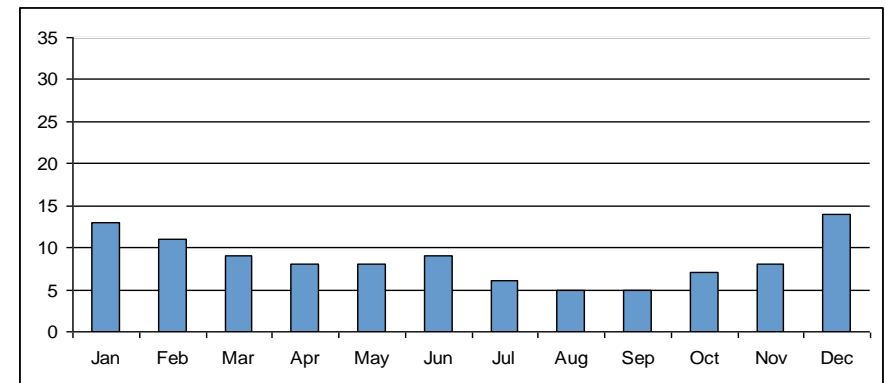
AMI MRIM Meter



Digital

Network charges for each NMI will be calculated daily. The network charges for the NMI will include the total energy consumption each day, issued monthly.

100,000 customers: Up to 3,100,000 network charge line items may be invoiced.



DNBP Accountability and Challenges

Transition from an analogue to a digital network with direct communication to 2.6 million nodes

- Establish a reliable Field Area Network with 3rd party access
- Transition to daily remote meter reading and publication
- Changes to more frequent network billing for each NMI with many more line items per invoice
- Re-engineering of traditional work force processes

Deployment of 4,000 AMI meters per day requires

- Capital investment in new more efficient meter exchange processes
- Significant capital investment in a large population of AMI meters
- Accelerated retirement of some old style meters

Distribution
Businesses



Retailer Challenges and Opportunities

- *Enormous increase in volume of meter data* creates opportunity for *superior understanding of customer demand*, but requires *significant capital investment*.
- Access to meter data will *increase customer engagement* and create opportunity for *deeper customer relationships*.
- Wholesale energy settlement will be more *specific to customers' load profiles*, but will require *significant increase in processing capacity* to model.
- Smoother, more customer specific network charges will *impact cash flows*.
- New or changed cross industry processes allow customer service improvements i.e. *immediate churn* and *on demand re-energisation* and *de-energisation*, but requires costly process re-engineering.

Retailers



Energy in action®

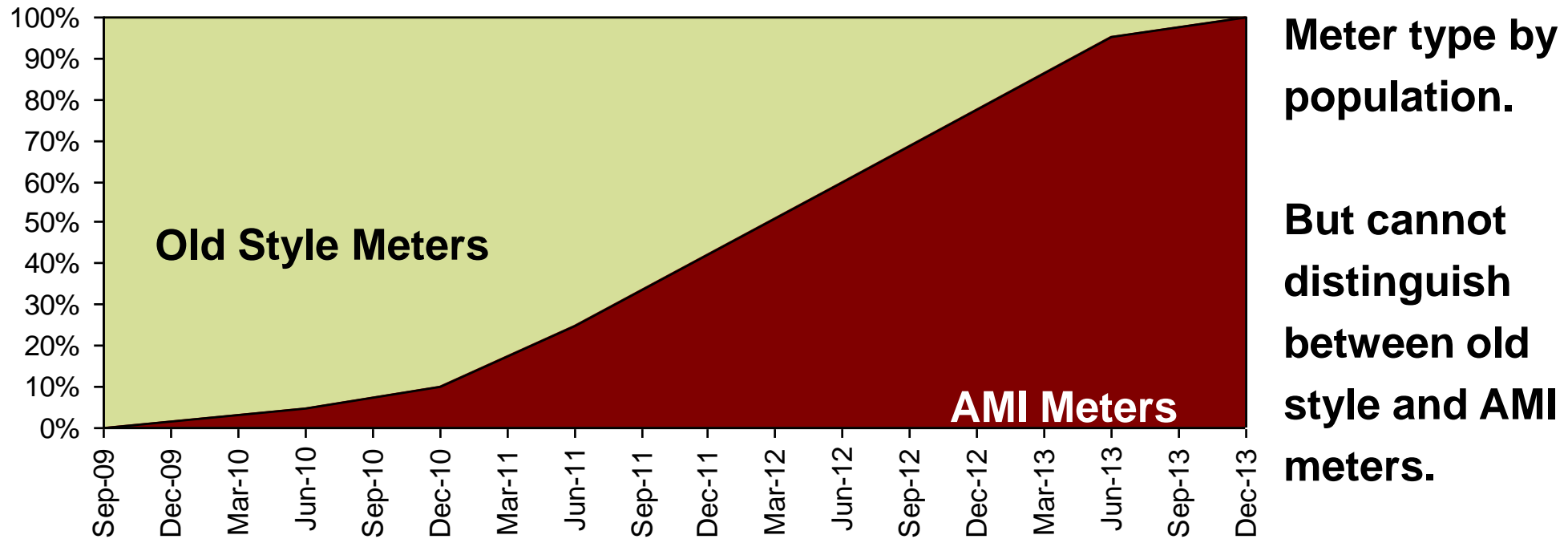
countryenergy

We live here too.



Complication of Transition

During the 3 ½ year AMI Program both old style meters and new AMI meters will be deployed; each with different capabilities but the meters will be indistinguishable.



Complication of Transition (Cont.)

Retailers are required to be able to:

- Receive and process interval meter data in progressively increasing volumes; and
- receive and process network invoices with significantly more network charges per invoice;

from the commencement of the smart meter deployment.

Yet are unable to:

- identify or predict with certainty the frequency of meter data delivery for the premise, with associated uncertainty regarding the frequency of network billing and the consumption profile that will be associated with the wholesale settlement for the premise;
- ...

Complication of Transition (Cont.)

from the commencement of the smart meter deployment.
Yet are unable to:

- ...
- determine whether a customer's request for a de-energisation or re-energisation service can be performed remotely, with the associated lower cost, or if it must be performed by the DNSP with a site visit at a higher cost;
- take advantage of the ability for the customer to churn ahead of the Next Scheduled Read Date (NSRD) based on availability of daily meter data in the market.

Competitive Advantage Through Innovation

The quarterly meter reading cycle for old style metering drove the business process and system solutions for customer billing, customer churn and other products and services that exist today.

Smart metering will *liberate Retailers and other service providers* from current analogue-based processes.

The AMI enabled digital utility environment will allow:

- Near real-time data availability,
- Completion of customer churn whilst customer is on the phone,
- Increased flexibility to billing and service presentment, and
- New products to serve better informed consumer.

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