

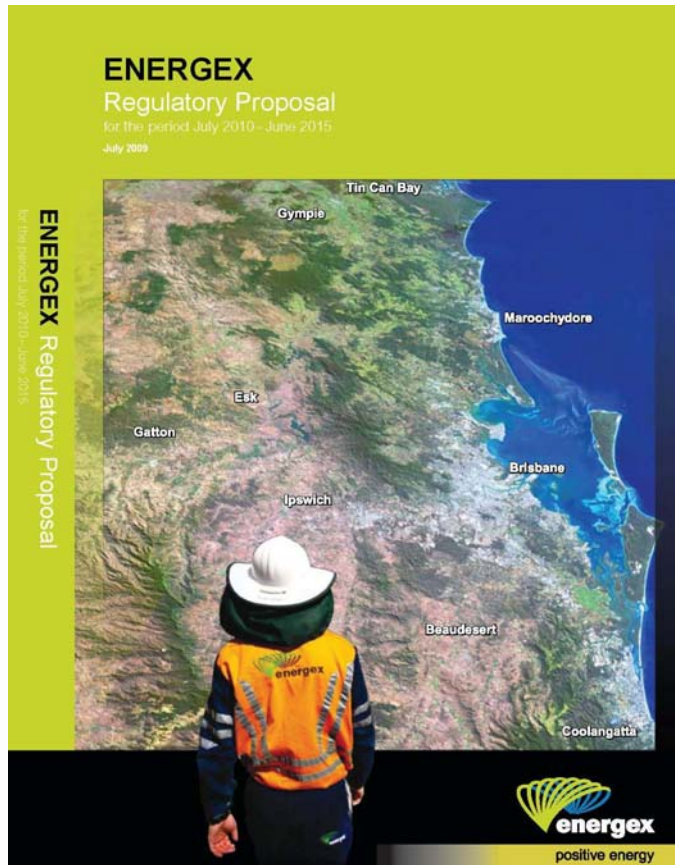


# **ENERGEX's Regulatory Proposal 2010-15**

**Chief Executive Officer – Terry Effeney**

**AER public forum – 3 August 2009**

# This Regulatory Proposal



- This is ENERGETX's first Regulatory Proposal under the new national framework.
- This Regulatory Proposal is an integrated package built on balanced outcomes.

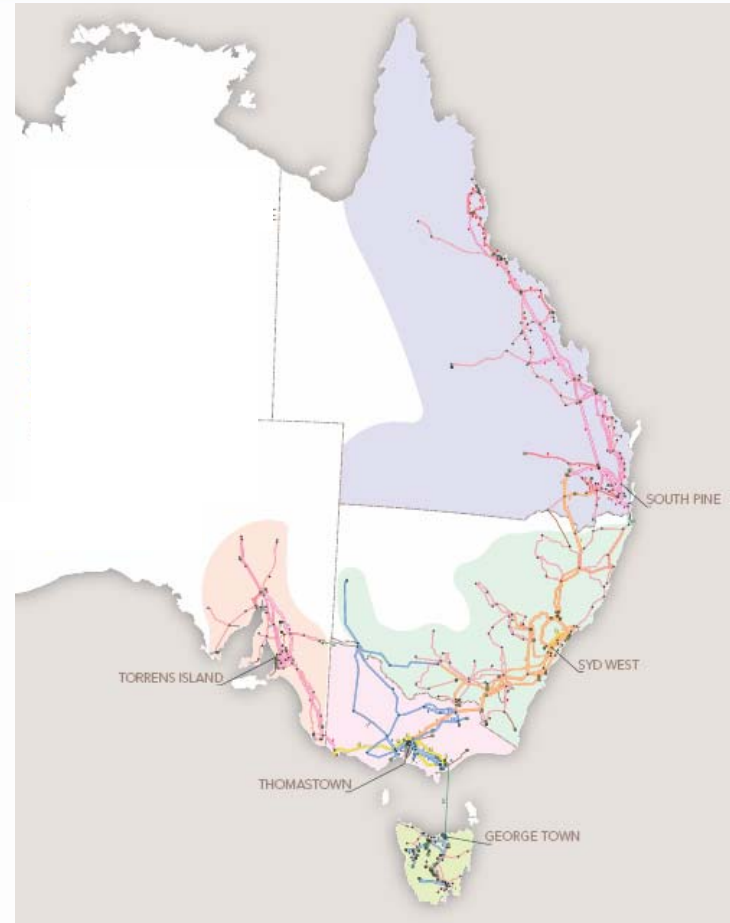


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# National regulatory framework

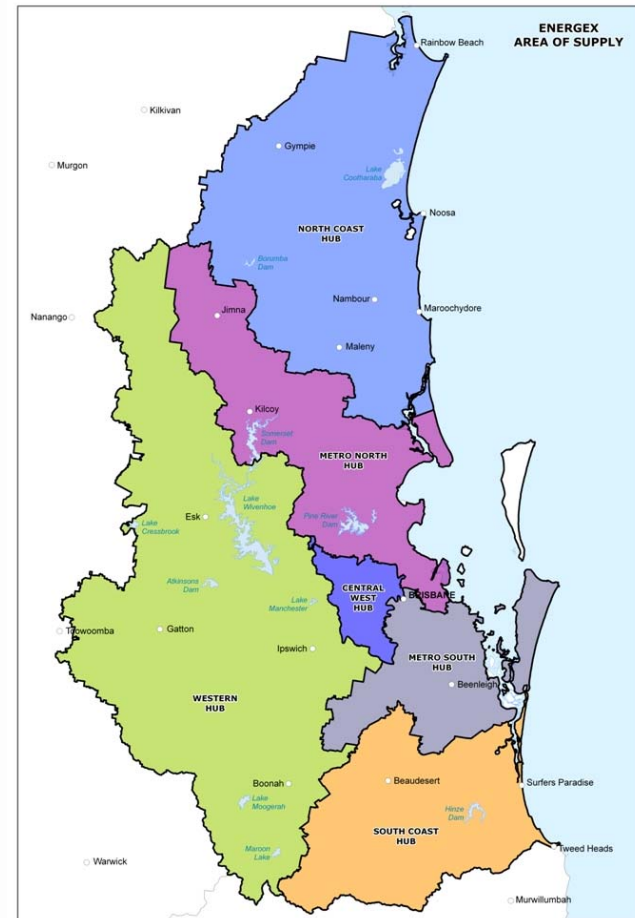
The shaded area represents the approximate geological range of the interconnected network of the National Electricity Market.

Source: AEMO



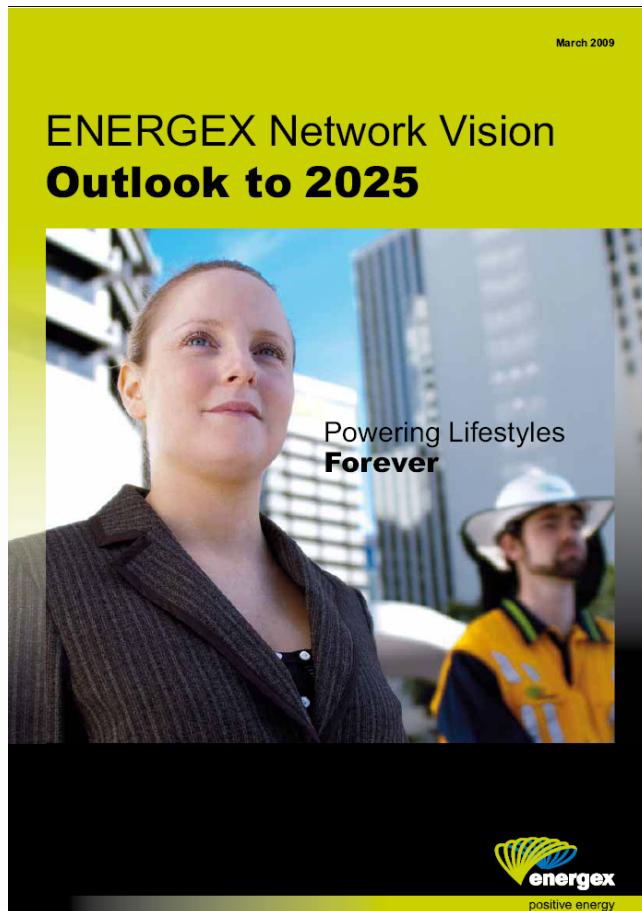
# ENERGEX's network

- 1.3 million customers over 25,000 km<sup>2</sup> in 11 local government areas
- 250 substations, 43,000 distribution transformers, 50,000km of lines and cables, more than 600,000 power poles, and in excess of 300,000 streetlights
- Employs more than 3800 staff plus contract resources to operate and manage assets valued at \$7.4 billion (2007-08)



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# Network vision



- Manage immediate network requirements
- Establish platform for the future
- Provide a balanced outcome

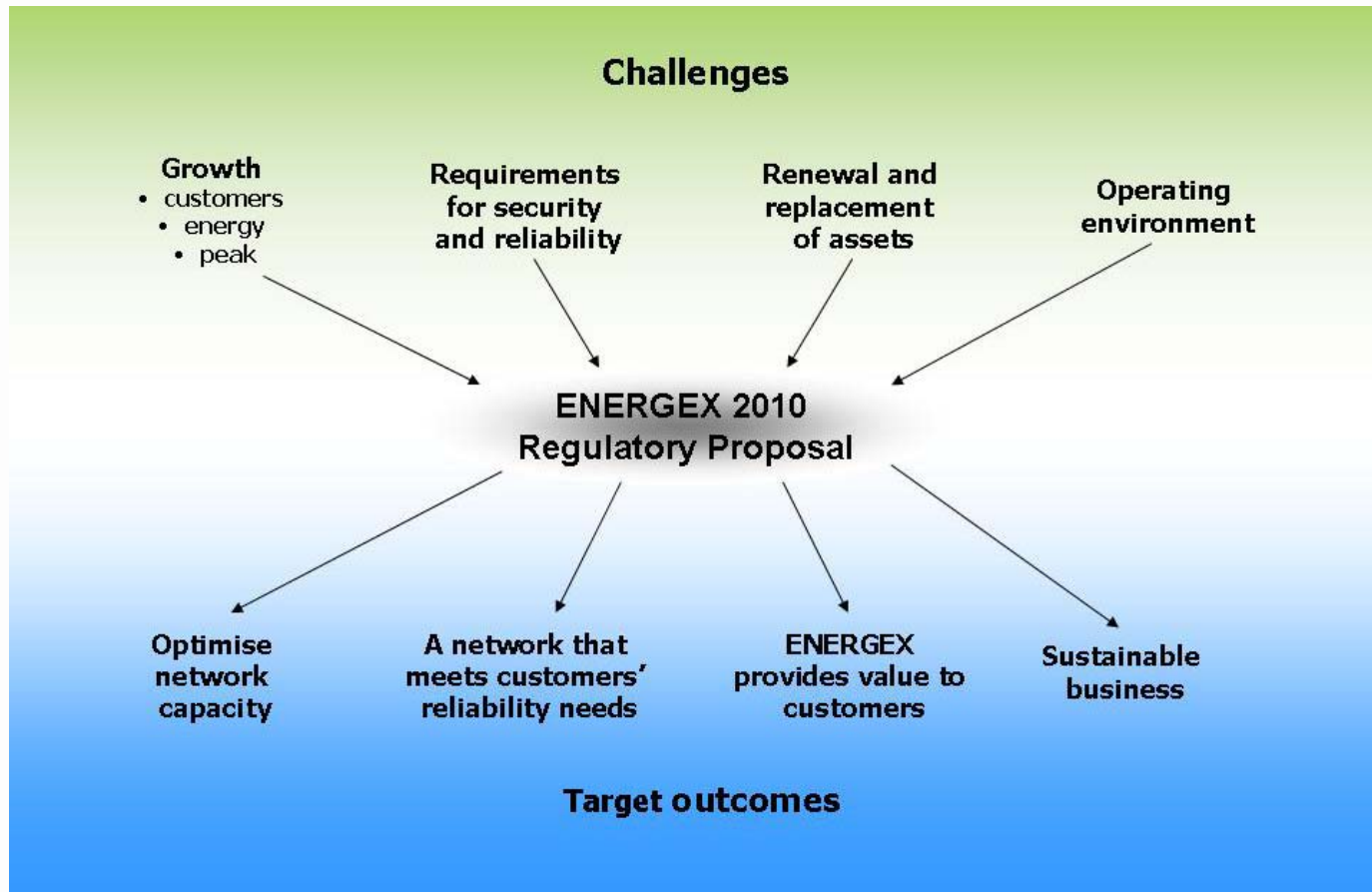


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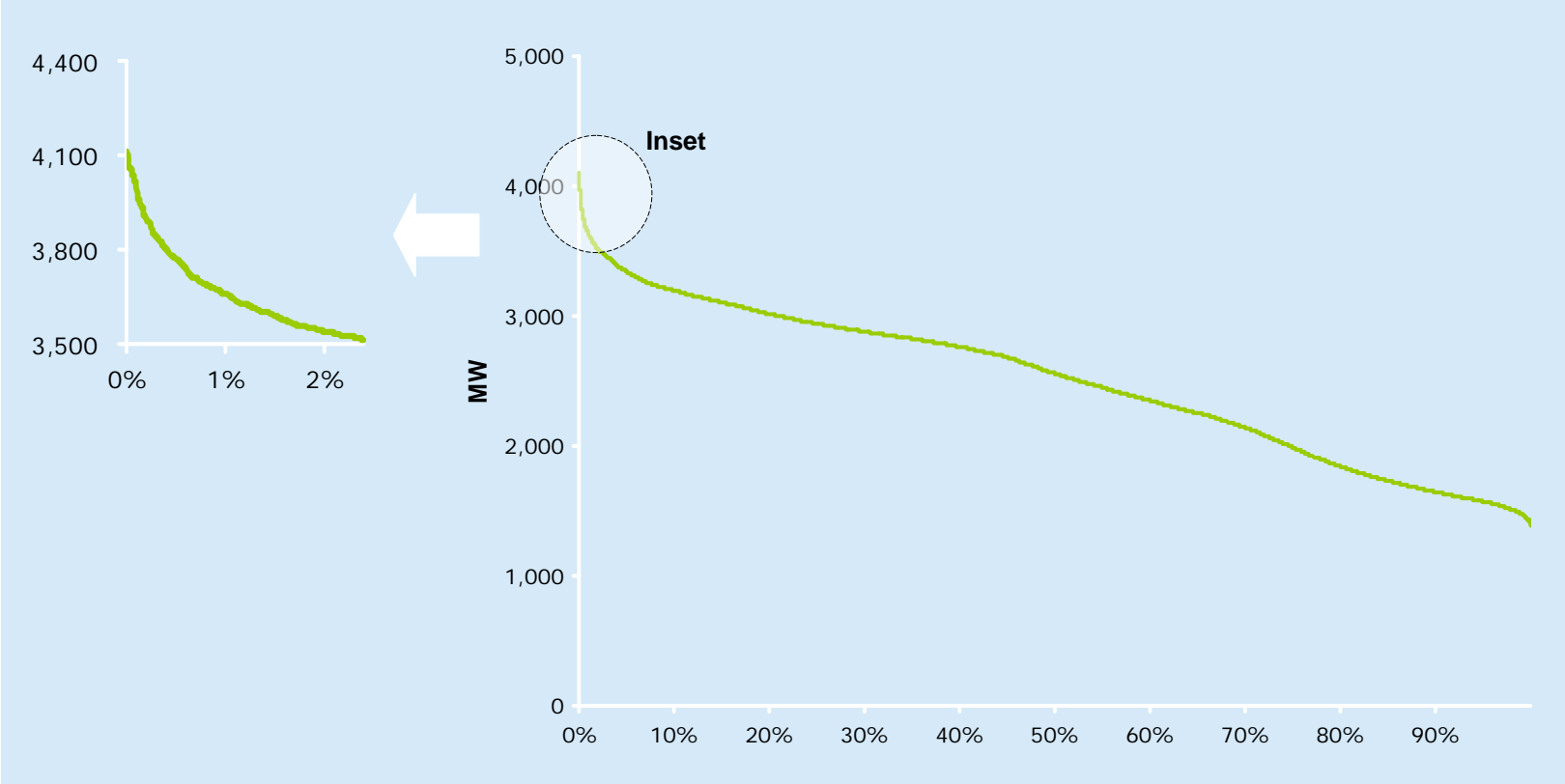
# A balanced outcome



# Key challenges

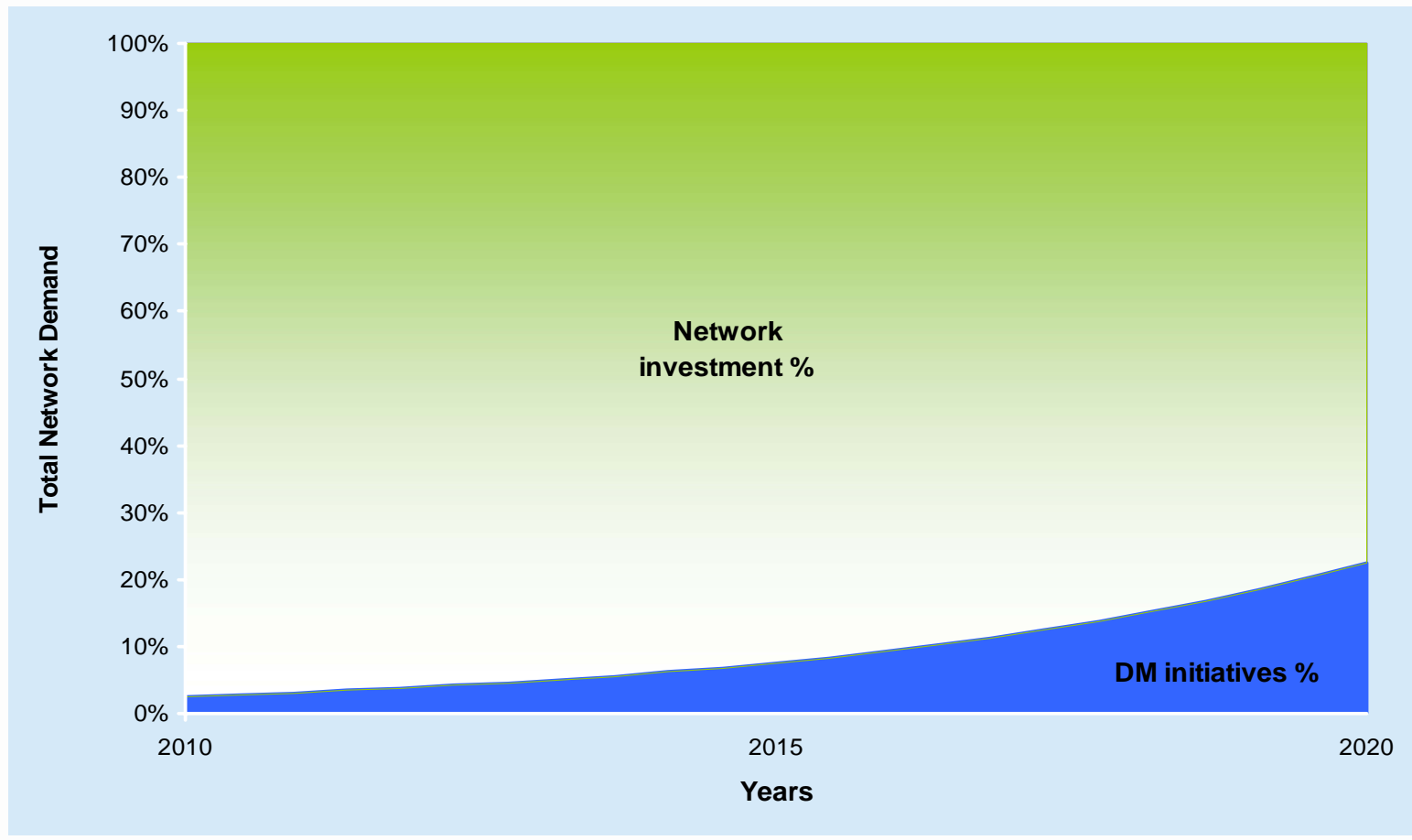


# Increasing peak demand





# Network of the future



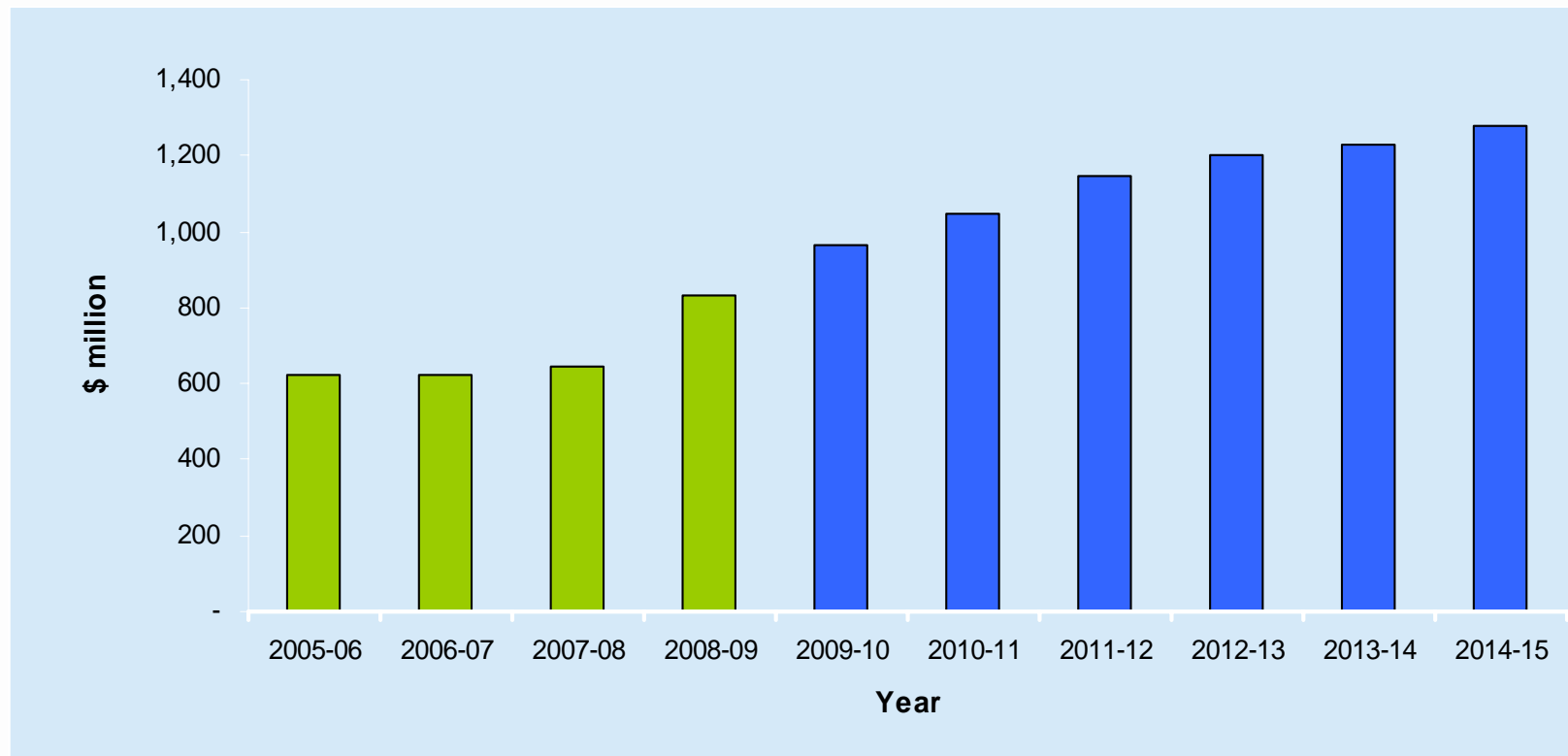
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# Program elements for sustainable future

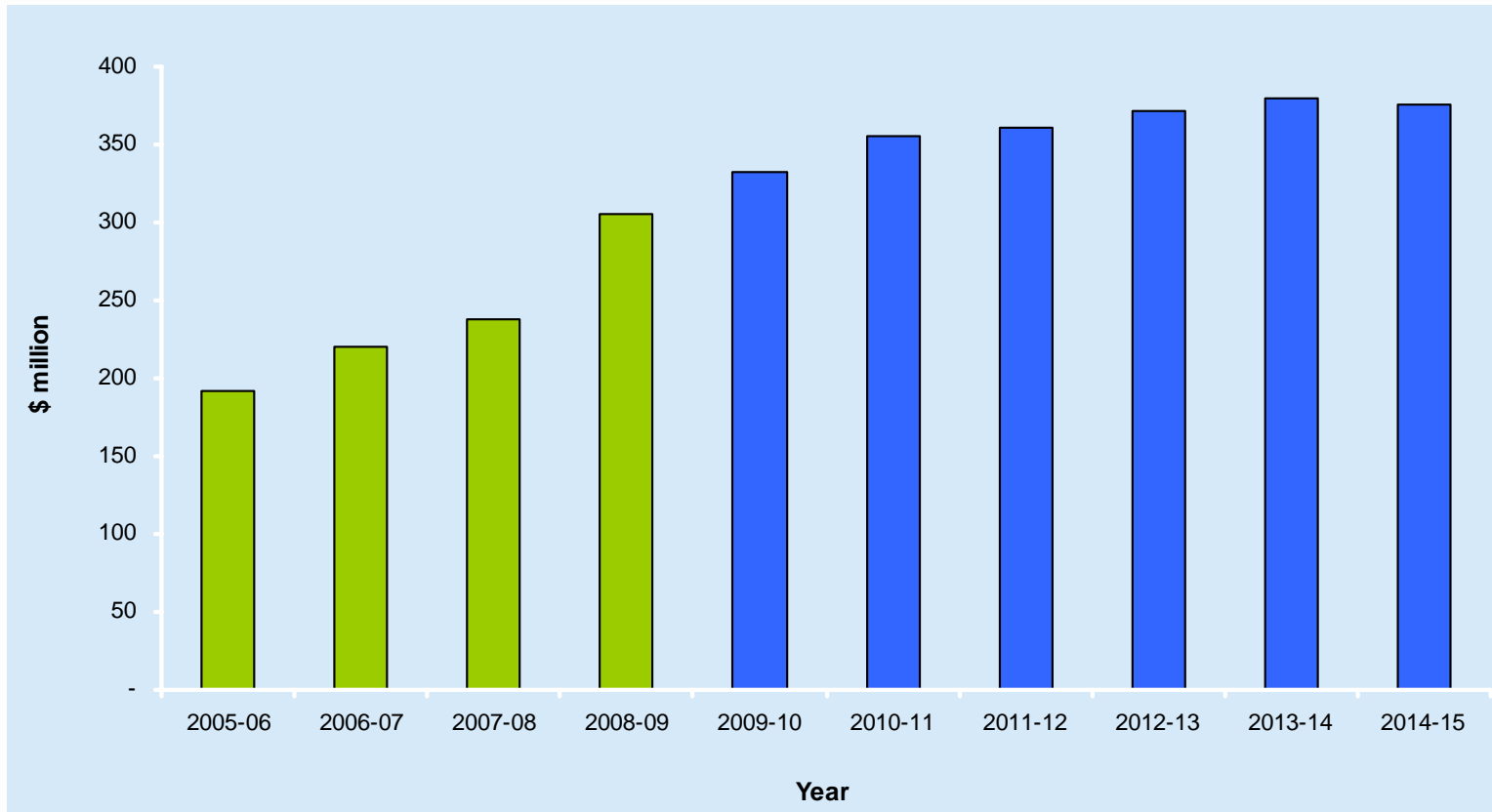
- Managing capacity requirements of growth
- Meeting customer reliability and service requirements
- Progressing toward security compliance
- Prudent management of assets
- Working effectively with the community in SEQ to meet the challenges of our changing environment
- Establishing a sound platform to manage electricity in a contemporary age



# Network capital expenditure

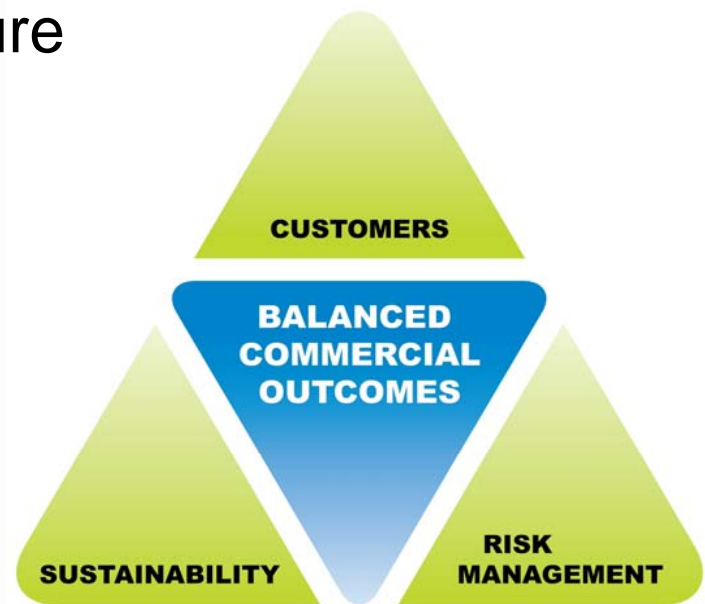


# Total operating expenditure



# Delivering our vision

- Manage immediate network requirements
- Establish platform for the future
- Provide a balanced outcome



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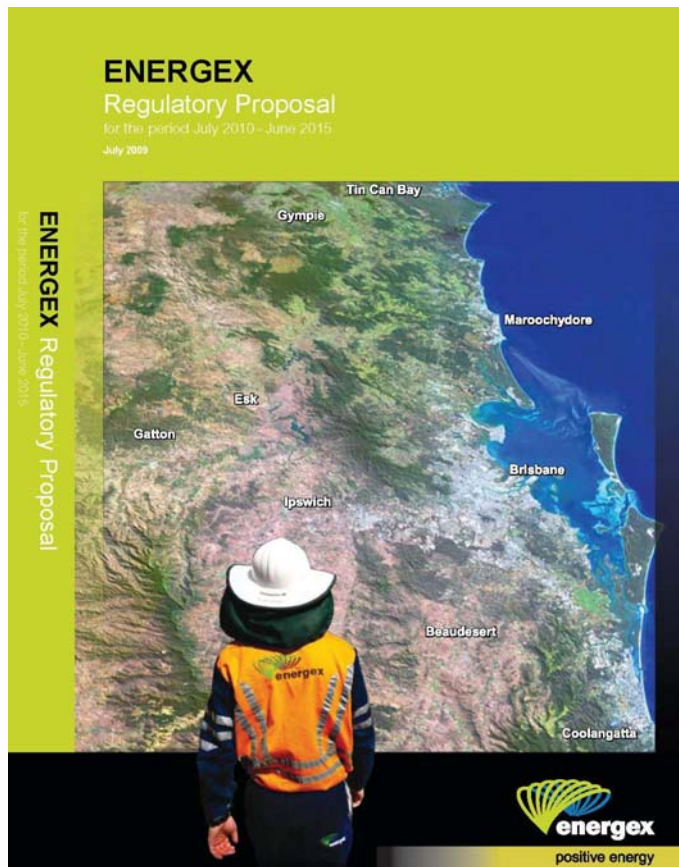


# **ENERGEX's Regulatory Proposal 2010-15**

**General Manager Network Performance - Chris Arnold**

**AER public forum – 3 August 2009**

# Outline



- Our key challenges
- What the challenges mean for the SEQ network
- ENERGETX's response to the challenges
- The Regulatory Proposal necessary to meet the challenges and deliver sustainable and balanced outcomes

# ENERGEX's network strategy

## Network Business Objectives

ENERGEX will transform into a customer-centric organisation providing sustainable energy solutions.

ENERGEX will pursue the long-term development of an intelligent connective network that provides customers with choice and capability to participate in managing their energy needs.

## Network Business Target Outcomes and Strategies

Optimise assets and operate efficiently

Meet reliability and security requirements

Distribute electricity to meet 21<sup>st</sup> century needs and maintain customer value

Be environmentally sustainable

- 10 year refurbishment/ replacement plan
- Operate condition-based risk management approach
- Maintain assets for safety and compliance

- Reliability plan
  - rural reliability initiatives
  - expand remote switching
- Security plan
  - towards N-1 requirements
- Telecommunications upgrade
- Summer preparedness plan (annual)

- Network development plan to meet forecast demand
- Bend the forward demand curve through demand management
- Upgrade LV protection, load and power quality monitoring on distribution transformers
- Prepare for customer interaction (metering)
- Extend network to connect expanding customer base

- Demand management initiatives
- Cost reflective pricing and appliance switching
- Accommodation of distributed generation and storage options
- Material purchasing based on whole of life cycle cost



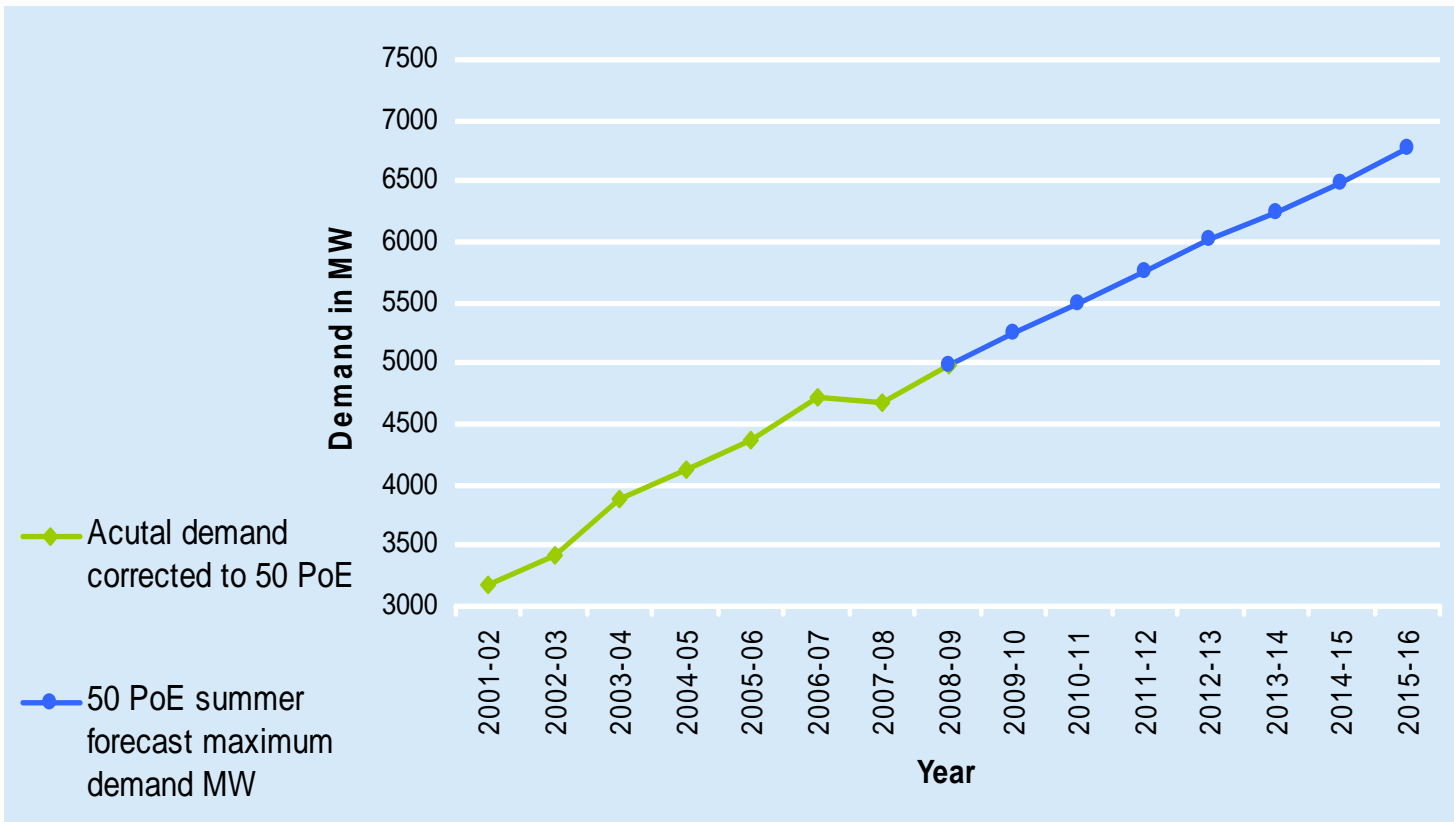
# Key challenges 2010-2015

- Meeting and managing sustained growth
- Progressing to EDSD compliance in terms of security and reliability
- The renewal and replacement of aged assets
- Addressing the changing operating environment
- Providing a balanced outcome for our customers



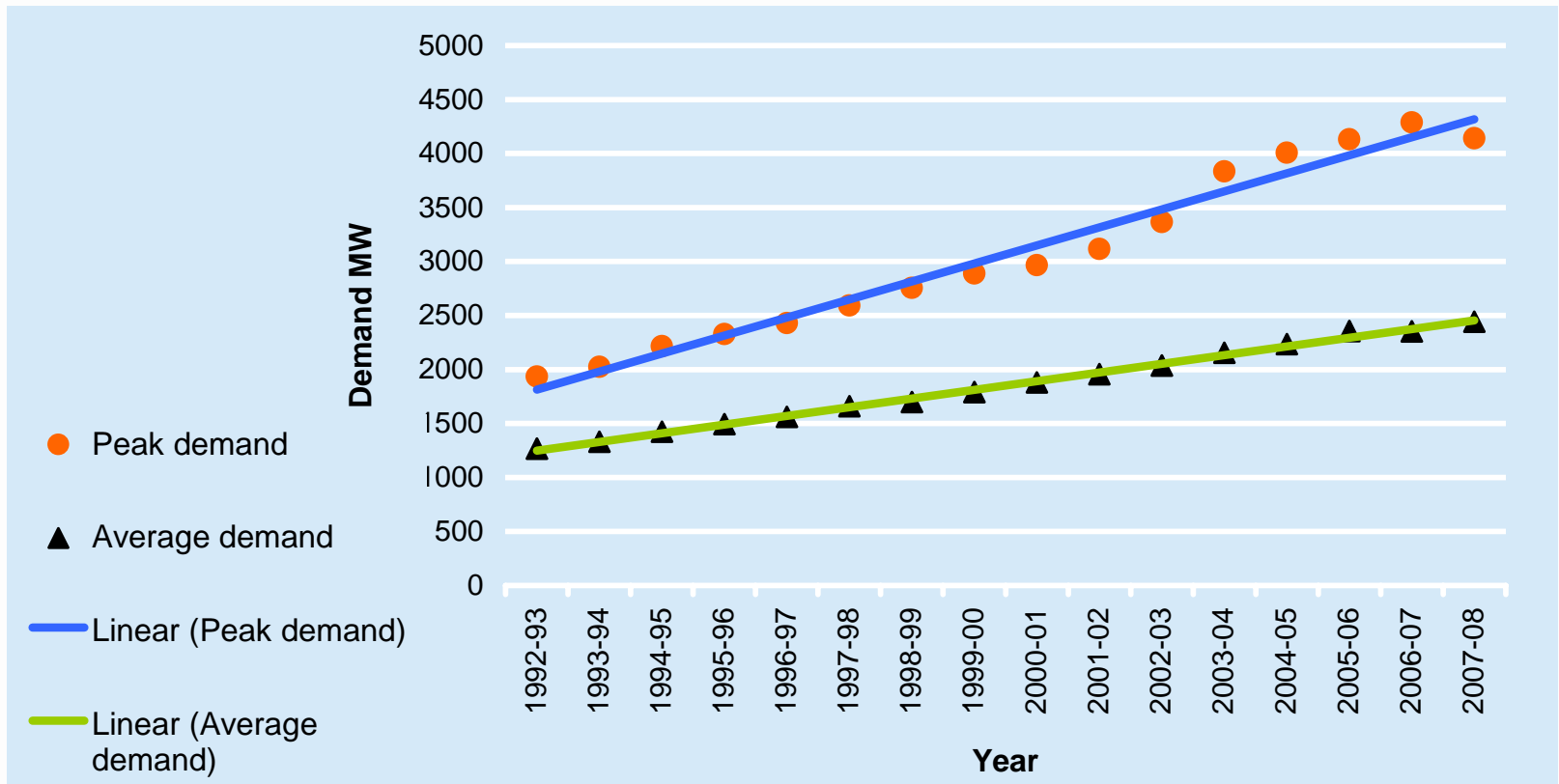
# Peak demand forecast

ENERGEX maximum demand for summer 2001-02 to 2015-16

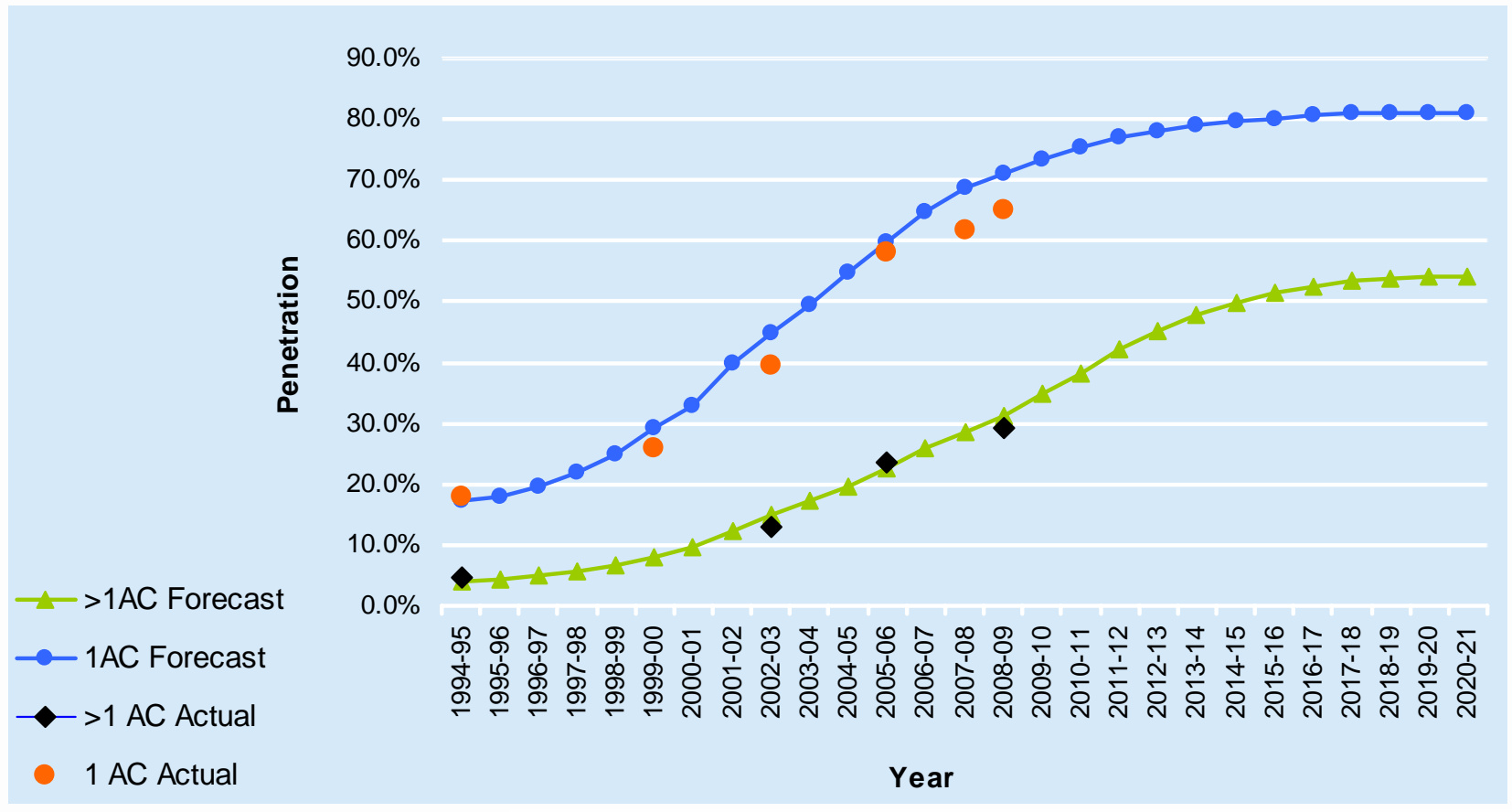


# Demand vs. Energy

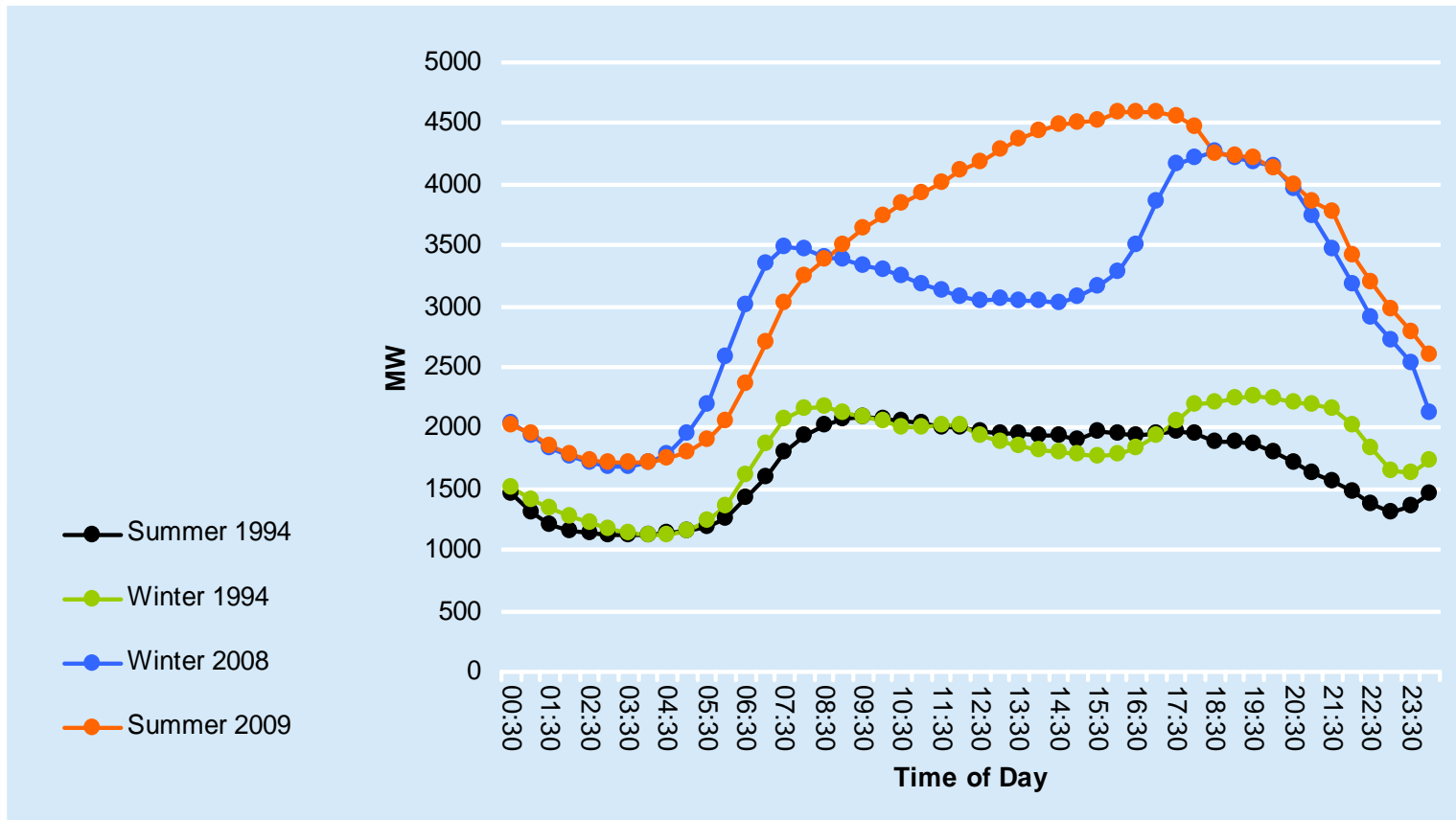
## ENERGEX's average and peak demand trends



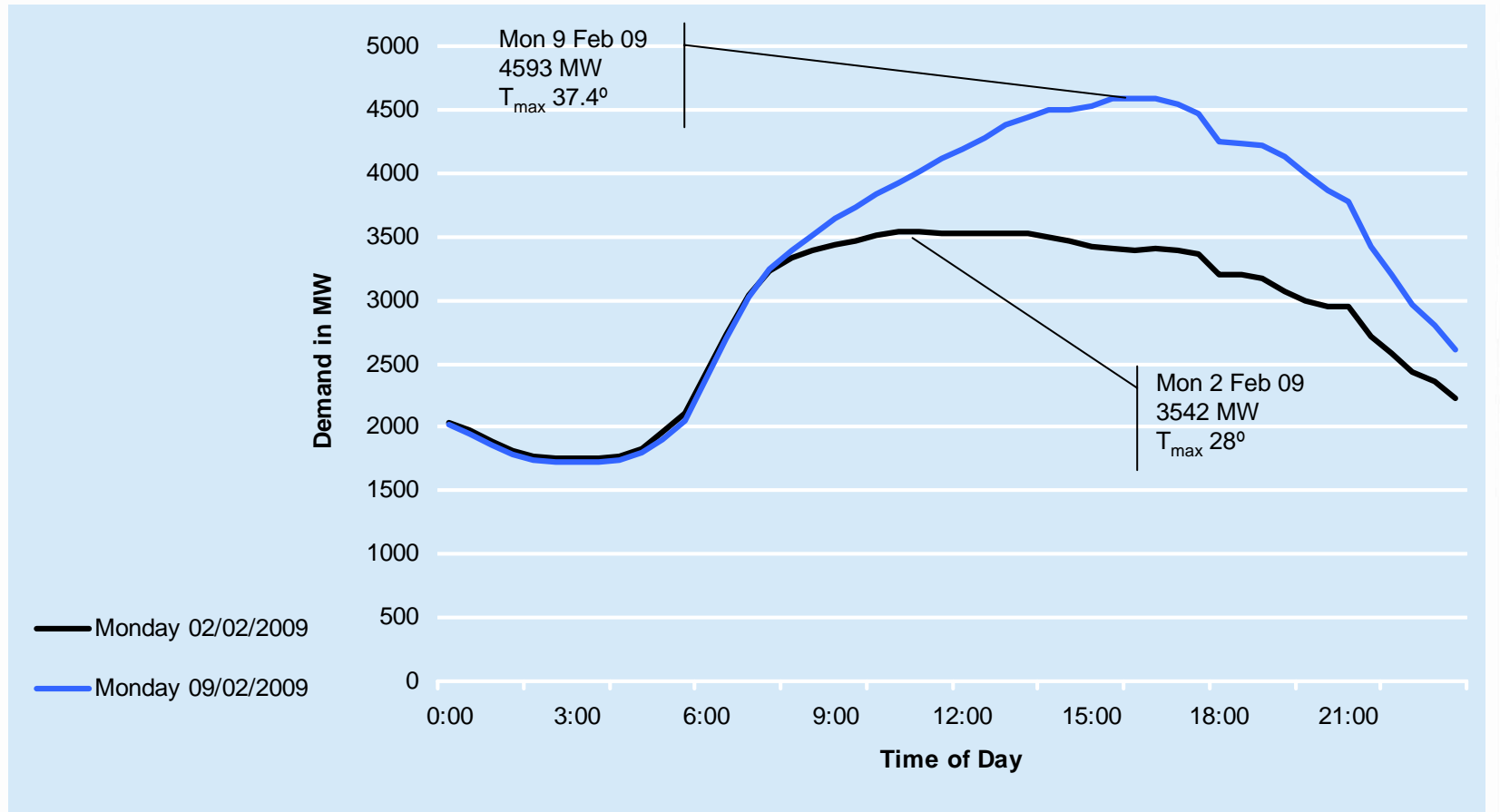
# Air-conditioners driving peak demand



# Changing daily load profile



# System demand temperature sensitivity

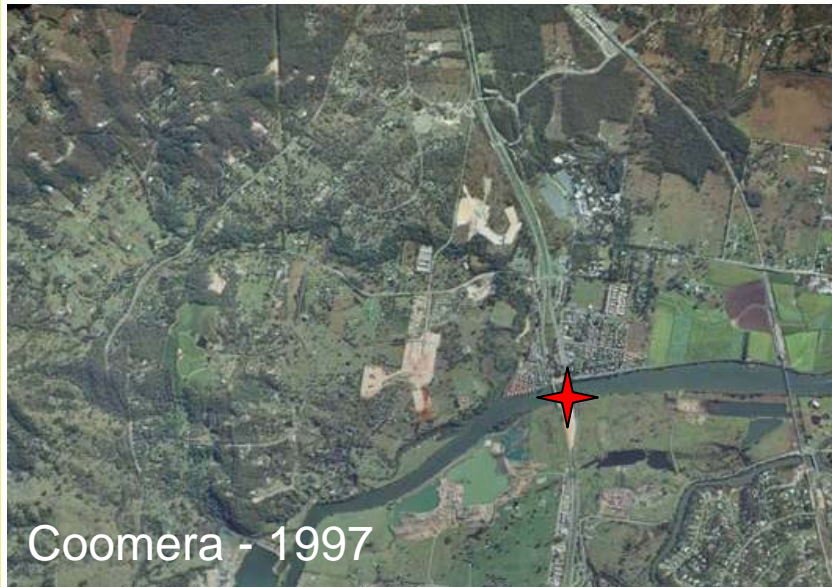


# Western Corridor - Springfield



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# Southern Corridor - Coomera



Coomera - 1997



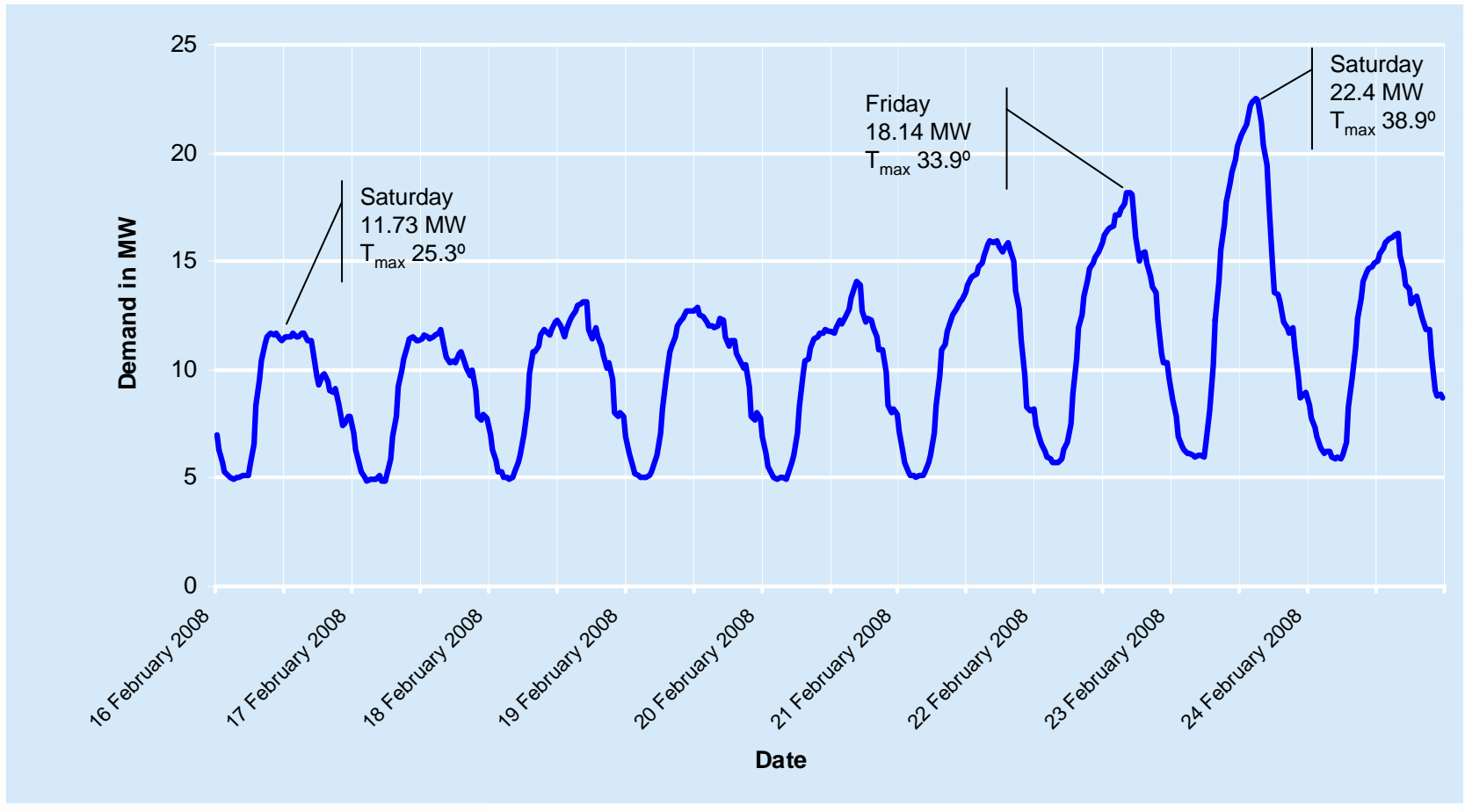
Coomera - 2009



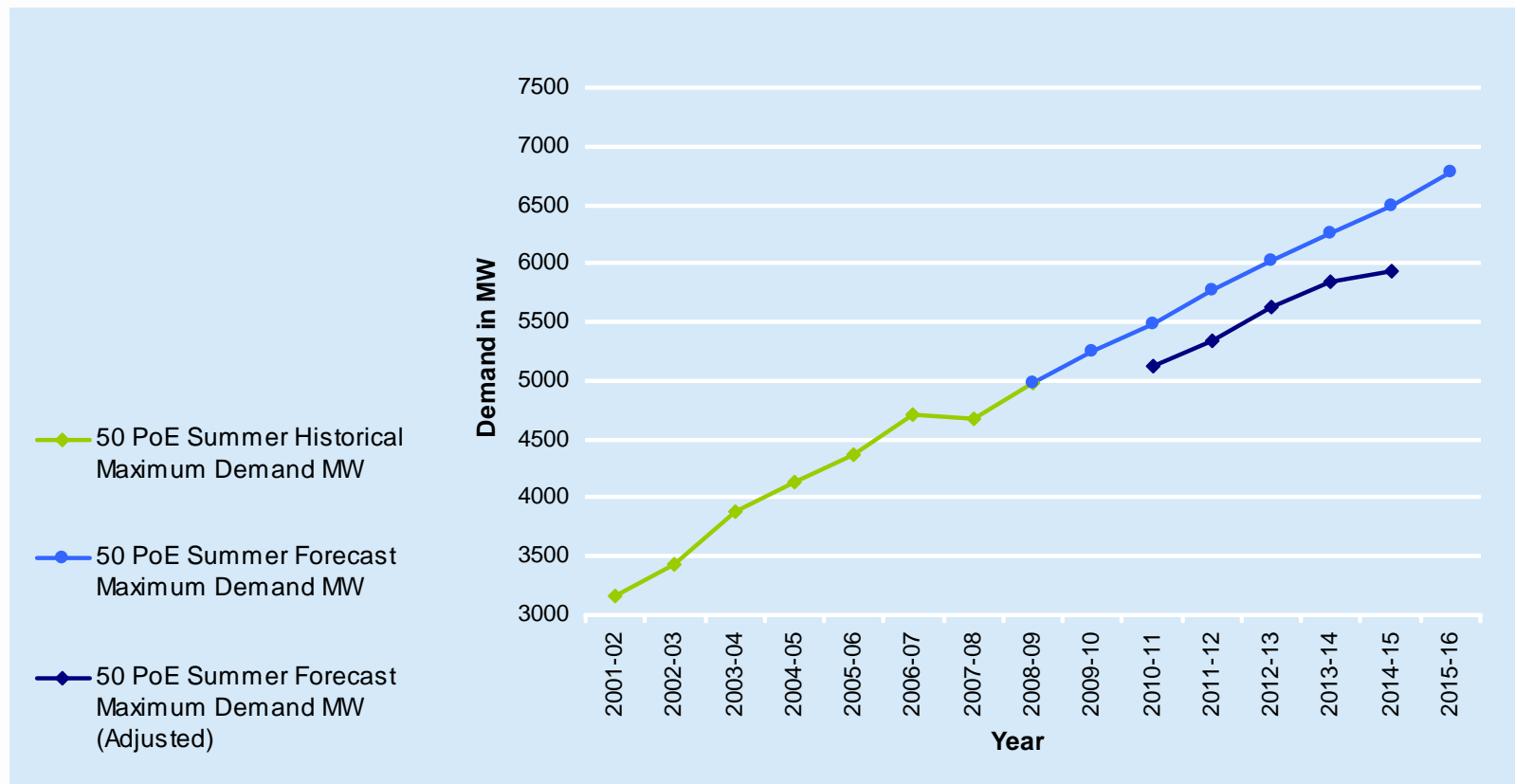
# Northern Corridor – Mango Hill



# Mango Hill Load – February 2008



# Demand forecast – GFC adjusted



# Growth

- The total growth capital expenditure over the 5 years comprises augmentation works resulting from demand growth and customer connection valued at \$2,613.2 million.
- Prepared at a time of unprecedented financial uncertainty, the 5-year forecasts seek to accommodate recent market impacts through a preliminary adjustment to demand growth
- The real impact of GFC will be monitored and incorporated into ENERGEX's Program of Work through annual planning processes.
- ENERGEX must prepare to support continued high growth.



# Key challenges 2010-2015

- Meeting and managing sustained growth
- Progressing to EDSD compliance in terms of security and reliability
- The renewal and replacement of aged assets
- Addressing the changing operating environment
- Providing a balanced outcome for our customers



# EDSD compliance

- Queensland government released *An Action Plan for Queensland Electricity Distribution, August 2004*, which set down ENERGEX's service obligations consisting of:
  - mandatory **Minimum Service Standards** for reliability;
  - a requirement to adopt more **conservative planning assumptions** (often referred to as the equivalent 'N-1' planning requirements);
  - **reduction in system utilisation** for bulk supply stations and zone substations;
  - delivery of an **effective maintenance program**;
  - a requirement to base network planning outcomes on analysis that acknowledged the potential for **very hot weather**; and
  - the development of an **annual NMP** to increase the level of rigour and transparency in capital and maintenance expenditure planning and delivery.



# Security compliance

- Following the EDSD report ENERGETX adopted the recommendations including a move to an “N-1 planning” philosophy for the sub-transmission backbone.
- ENERGETX has made significant progress toward N-1 status delivering record capital and operating programs.
- Employs a prioritised approach to manage major risks first
- This Regulatory Proposal is based on network infrastructure progressing towards security standards\* when the program was prepared and comprises \$1,817.4 million

\* Based on revised security standards proposed to QME at time of regulatory program development



# Reliability

Expenditure based on capital expenditure required to ensure that average performance remains within levels mandated by Minimum Service Standards (MSS) valued at \$306 million

## Targets for Minimum Service Standards for 2010-11 to 2014-15

	SAIDI (minutes p.a.)			SAIFI (interruptions p.a.)		
	CBD	Urban	Short rural	CBD	Urban	Short rural
2010-11	15	106	218	0.15	1.26	2.46
2011-12	15	102	216	0.15	1.22	2.42
2012-13	15	98	214	0.15	1.20	2.38
2013-14	15	94	212	0.15	1.18	2.34
2014-15	15	90	210	0.15	1.16	2.30



# Key challenges 2010-2015

- Meeting and managing sustained growth
- Progressing to EDSD compliance in terms of security and reliability
- **The renewal and replacement of aged assets**
- Addressing the changing operating environment
- Providing a balanced outcome for our customers

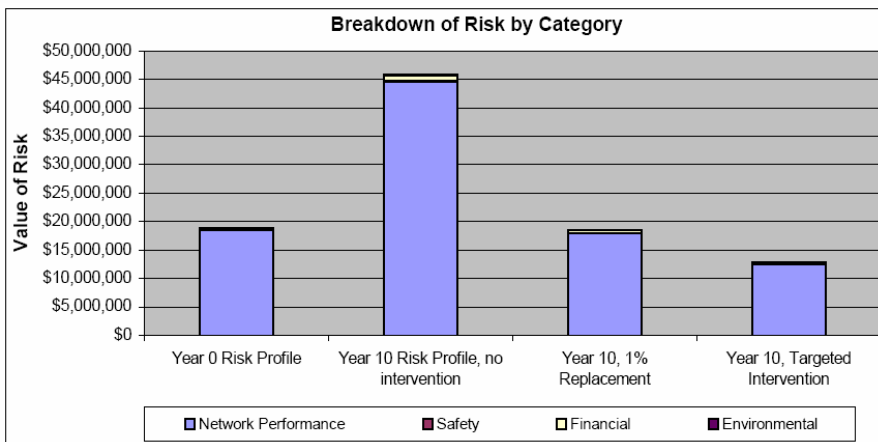


# Asset renewal and replacement

- To address the network assets age profile and modernise the network valued at \$1,165.3 million
- Recently introduced Condition Based Risk Management (CBRM) to provide commercial and risk based approach to asset replacement
- Asset Renewal and Replacement program is coordinated with growth and security compliance programs
- Significant SCADA and communications replacement/modernisation program
- Number of replacement programs based on network performance and identified defects
- Capex/Opex tradeoffs also included – replacement of open wire LV mains with ABC

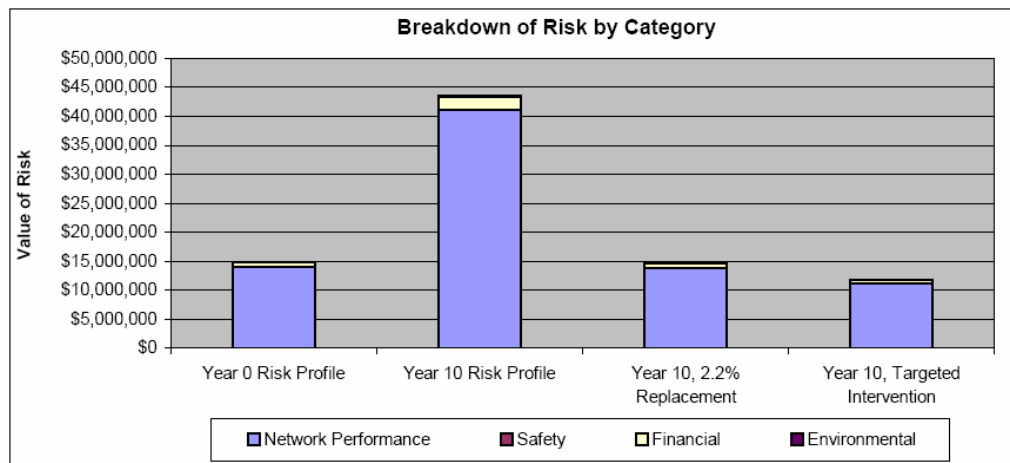


# CBRM – power transformers



**Health Index Profile for  
110/132kV Power  
Transformers in Year 10 (1.0%  
Replacement)**

**Health Index Profile for 33kV  
Power Transformers in Year  
10 (2.2% Replacement)**

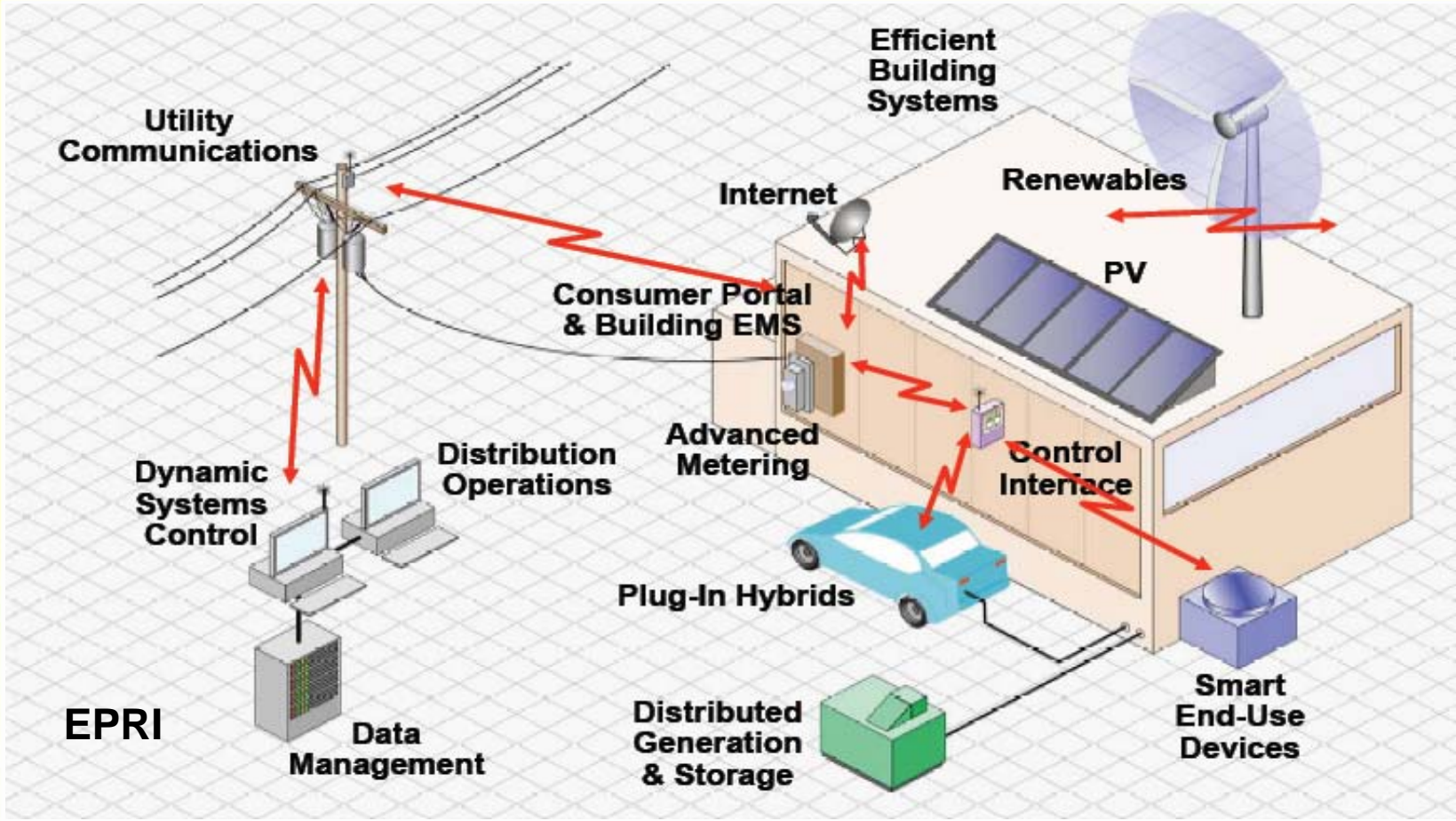


# Key challenges 2010-2015

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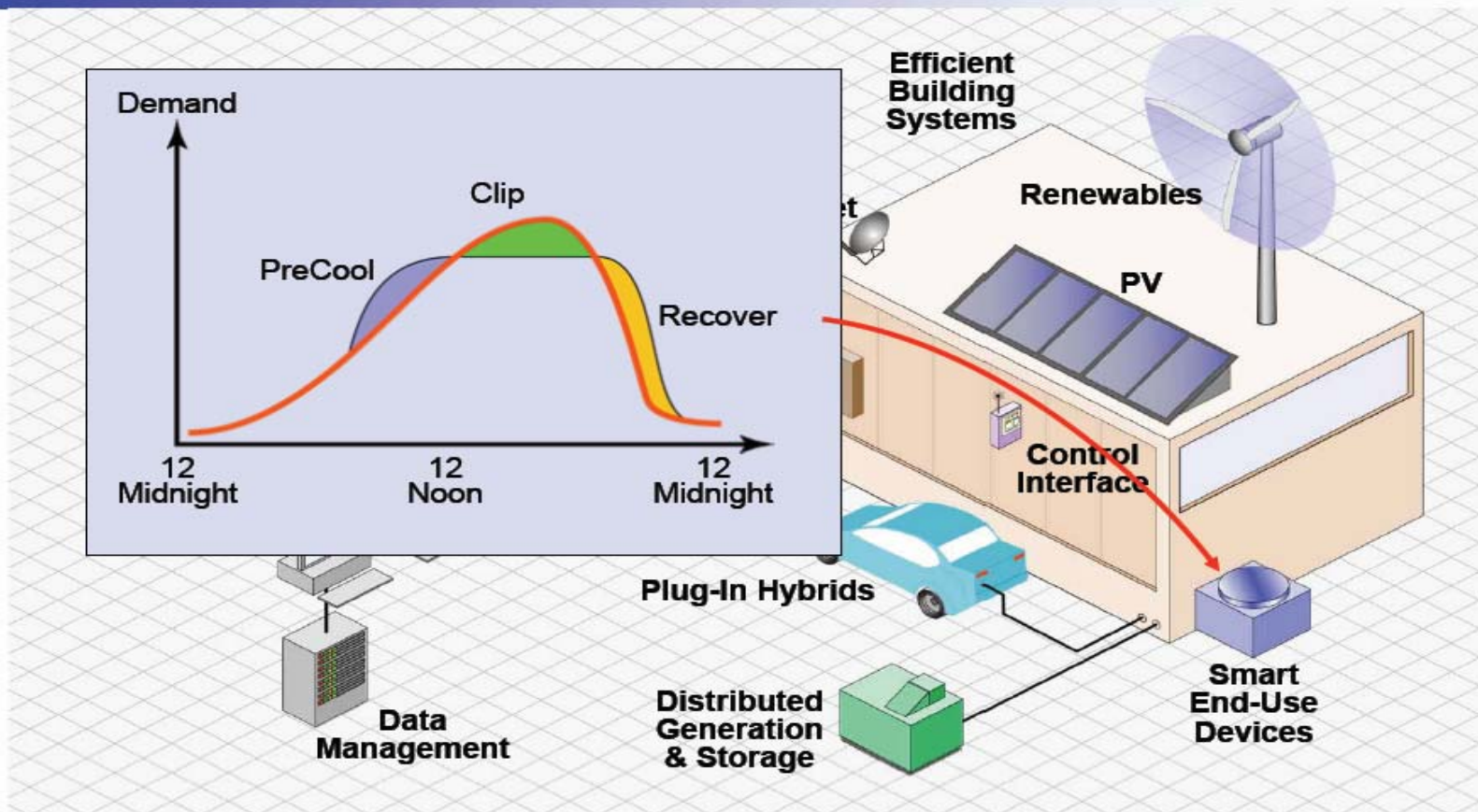
# One view of the future



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# Where are we headed? Customer participation

## Dynamic Systems Infrastructure – Example



# Demand management strategy

## Demand Management Objectives

ENERGEX will transform into a customer-centric organisation providing sustainable energy solutions.  
ENERGEX will deploy demand management initiatives that better utilise network assets and, over the long-term, reduce capital expenditure and benefit electricity customers.

## Demand Management Target Outcomes and Strategies

Reduce peak demand and better utilise network

Minimise environmental impacts of energy-intensive living

Enable non-network solutions

Customers embrace energy efficiency

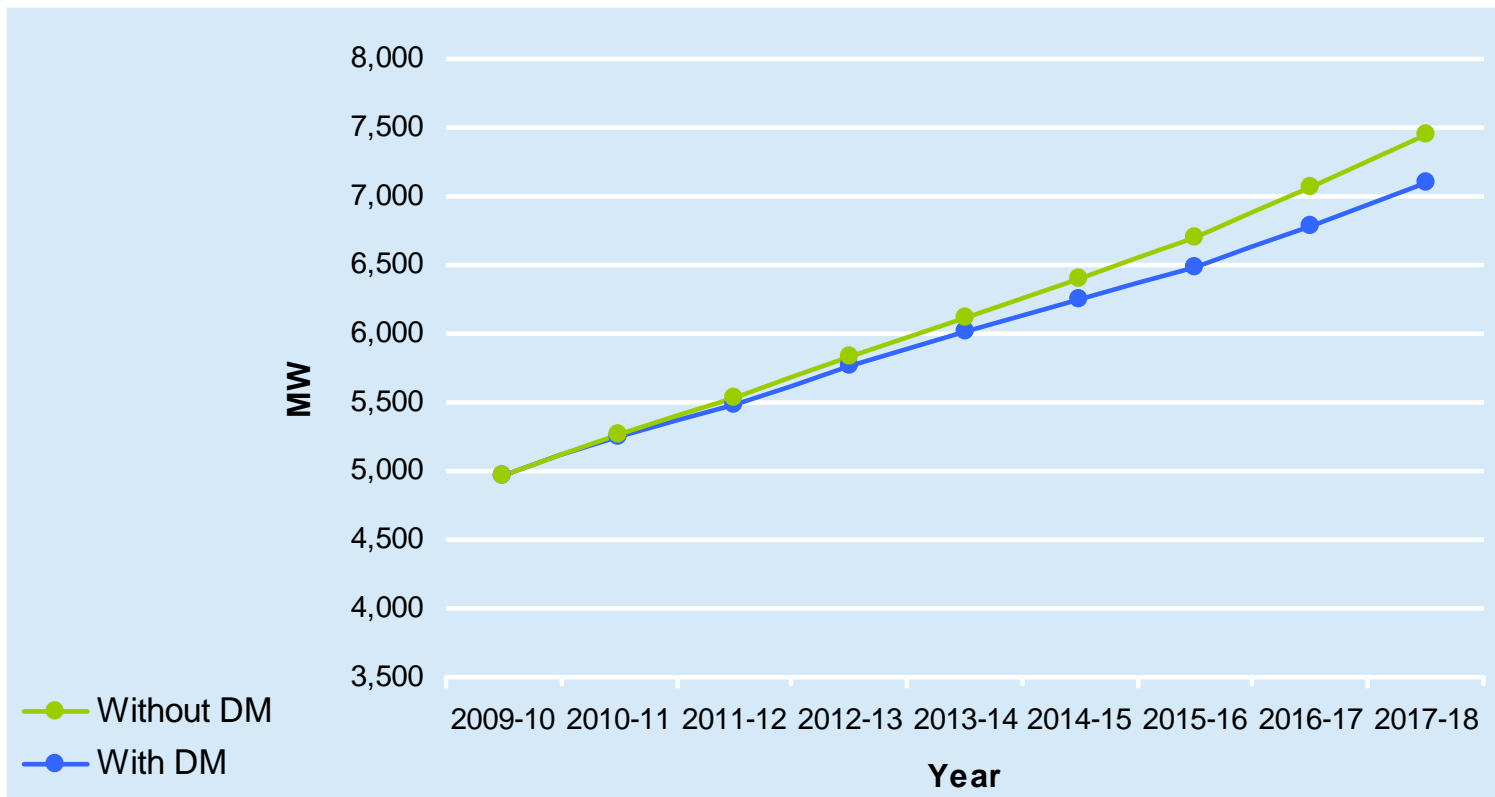
- Network support agreements
- Expand residential air-conditioning trial
- Encourage voluntary load control of pool pumps and hot water
- Research and deploy emerging demand management technologies
- Incorporate demand management in network planning

- Establish Centre of Excellence in energy efficiency, conservation and demand management
- Encourage Queenslanders to consider energy efficient models of air-conditioning
- Work with Queensland Department of Housing to improve energy efficiency of properties

- Match commercial and industrial customers with appropriate technology solutions
- Quantify potential of solar PV for network
- Summer Preparedness program
- Identify embedded generation opportunities

- Establish Energy Conservation Communities
- Work with retailers and governments to develop reward-based tariff structure
- Trial Time of Use and dynamic pricing tariffs in SEQ
- Run targeted energy efficiency education programs
- Offer rebates for conversion of hot water systems to T33

# Demand management outcomes



Expenditure of \$126.9M focussed on demand reduction of 144 MW



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# Key challenges 2010-2015

- Meeting and managing sustained growth
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# Outcomes

ENERGEX's Regulatory Proposal represents a balanced outcome that provides value for our customers, manages risk, and builds a sustainable future. In summary, this Regulatory Proposal provides for:

- **Customer outcomes** – ENERGEX has balanced customer price needs and expectations against the investment program necessary to meet and manage forecast demand, improve reliability and provide security of electricity supply
- **Reliability outcomes** – ENERGEX's forecast expenditure contains the programs required to deliver statutory reliability performance



# Outcomes (cont)

- **Security outcomes** – A significant component of ENERGEX's capital program is allocated to deliver compliance with security standards. The programs and projects contained in ENERGEX's forecast expenditure will result in an improved security outcome for customers
- **Financial outcomes** – ENERGEX has assessed the impacts of this Regulatory Proposal in terms of the financial sustainability of its network business



# Proposed capital expenditure 2010-15

2009-10 \$M	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Growth	416.7	457.0	533.0	569.3	637.2	<b>2,613.2</b>
Asset replacement/renewal	160.5	255.7	212.9	280.2	256.0	<b>1,165.3</b>
Reliability and quality of service enhancement	85.8	50.6	72.6	51.6	45.7	<b>306.3</b>
Security compliance	384.0	381.6	385.0	328.1	338.6	<b>1,817.4</b>
<b>Total system*</b>	<b>1,047.1</b>	<b>1,144.9</b>	<b>1,203.6</b>	<b>1,229.2</b>	<b>1,277.5</b>	<b>5,902.3</b>
End-use computing assets	3.2	4.3	1.3	1.8	2.2	<b>12.8</b>
Land and buildings	143.0	67.8	44.4	18.5	24.7	<b>298.4</b>
Fleet	32.8	41.8	42.0	32.3	47.4	<b>196.3</b>
Tools and equipment	13.3	10.9	10.7	10.6	10.7	<b>56.2</b>
<b>Total capital expenditure**</b>	<b>1,239.5</b>	<b>1,269.7</b>	<b>1,301.9</b>	<b>1,292.4</b>	<b>1,362.5</b>	<b>6,466.0</b>



# Proposed operating expenditure 2010-15

2009-10 \$M	2010-11	2011-12	2012-13	2013-14	2014-15	Total
Network operating costs	25.5	26.8	27.4	28.3	28.9	137.0
Network maintenance costs	211.0	215.4	221.0	225.1	228.6	1,101.0
Other costs	90.8	90.9	95.1	101.4	94.7	473.0
<b>Subtotal operating expenditure</b>	<b>327.3</b>	<b>333.0</b>	<b>343.5</b>	<b>354.8</b>	<b>352.2</b>	<b>1,710.9</b>
Debt raising allowance	7.2	8.1	9.0	9.9	10.7	44.8
Equity raising allowance	20.6	19.8	18.8	15.7	12.6	87.4
<b>Total operating expenditure</b>	<b>355.1</b>	<b>360.9</b>	<b>371.3</b>	<b>380.4</b>	<b>375.5</b>	<b>1,843.1</b>



# Network revenue and pricing outcomes

- Proposed revenue increase of CPI + 25.3% in 2010-11 followed by CPI + 8.4% for each of the following four years
- This translates to average network charges increasing from 4.20 c/kW.h in 2009-10 to 5.37 c/kW.h in 2010-11
- Based on all other components of the notified prices increasing at the rate of inflation, ENERGEX forecasts that the electricity tariffs seen by customers will be approximately 10% higher in 2010-11 followed by an annual increase of approximately 4% for the remainder of the period.



# Summary

- ENERGETX's Regulatory Proposal has been developed within a balanced framework to ensure that the forecast programs deliver against our key challenges.
- Meeting customer demand growth, as well as progressing the delivery of our EDSD compliance obligations, are key elements of our future programs.
- There are a number of other changes arising from the move to the new national regulatory framework which include the regulatory arrangements for streetlighting and large customer connections.





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