
Network Pricing for the 2004 Determination

Presentation to IPART's Pricing Issues Consultation Group

Harry Colebourn
Manager - Network Pricing & Customer Connection

7 May 2003

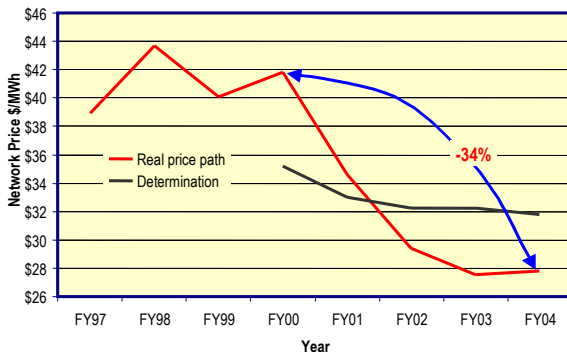
0

Presentation outline

-
- ❑ pricing path 1999 - 2004
 - ❑ pricing proposal for 2005 - 2009
 - *cost drivers*
 - *standards of service*
 - *demand management*
 - *overall pricing impacts*
 - ❑ pricing strategies
 - *improve alignment of prices with network costs*
 - *support demand management*
 - *improve equity between customers*
 - ❑ pricing restructure effects

1

Pricing path 1999 - 2004



- ❑ IPART 1999 determination cited 16% real reduction in prices
- ❑ average network prices have fallen in real terms by 34% since 1999
- ❑ adjustment for over-recovery resulted in 10% nominal reduction in 2000 and 8% reduction in 2001
- ❑ the extent of this price reduction is unsustainable
- ❑ require significant "Po" adjustment to restore prices back to a sustainable price path

2

Forecasting

- ❑ global demand is only indicative of trends
- ❑ EnergyAustralia is moving to a summer peaking system but some areas remain winter critical
- ❑ summer peaks are more onerous because system ratings are lower due to higher temperatures
- ❑ during the 1999 determination:
 - winter demand growth was higher in earlier years and averaged 2.8%
 - summer demand growth has been high in later years and has averaged 4.2%
 - the average energy growth was 2.9%, somewhat higher than the 2% estimate but was initially higher and has slowed in the last two years

3

Pricing proposal for 2005 - 2009



Pricing calculation

- ❑ revenue required based on:
 - 7.5% real pre-tax WACC
 - capital invested since 1999 being "rolled forward" in full
 - accumulated over recovery treated as capital contribution
 - capital expenditure of \$1.75B on distribution system assets
 - opex reflects age of EnergyAustralia system, OH&S and environmental regulations

4

Network cost drivers for 2004



Drivers of capex and opex:

- ❑ forecast growth in demand and energy
- ❑ changing load shape
- ❑ capacity and utilisation
- ❑ asset age profile and condition
- ❑ catch-up on replacement underspend due to 1999 legacy
- ❑ regulatory changes (eg. environmental)

5

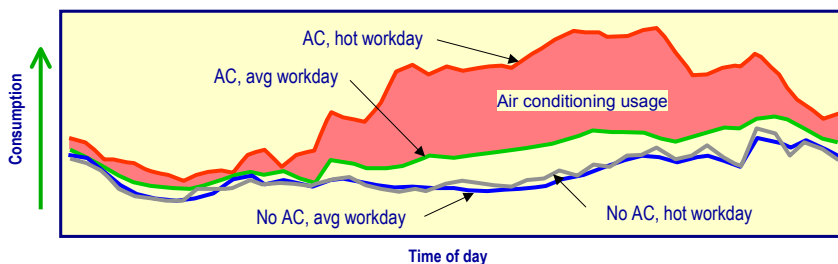
Demand management

- ❑ EnergyAustralia agrees with IPART's emphasis on demand management
- ❑ dramatic increase in air conditioning and peak demands are growing rapidly
- ❑ proposed four-pronged approach:
 - *prices - block tariff and roll out of interval meters (ToU) to deliver the right price signals*
 - *incentives for demand control including infrastructure fees*
 - *efficient building design and the application of demand management at the approval stage for new buildings*
 - *trial projects for non-network solutions*

6

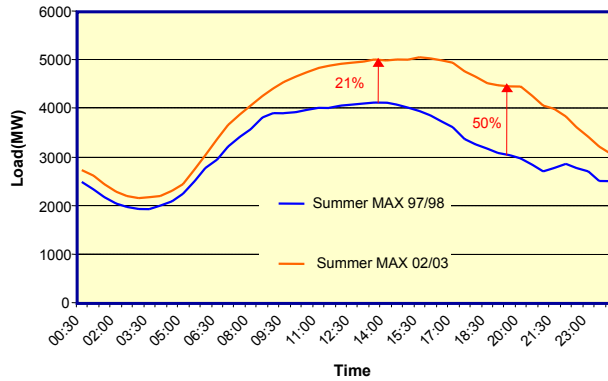
Customers' increased use of air-conditioning drives demand

- ❑ on hot days the average demand of air conditioned domestic premises more than doubles
- ❑ this has a dramatic effect on the system demand in residential areas
- ❑ network capacity is also lower on hot days
- ❑ the load factor of domestic air conditioners is only about 7%



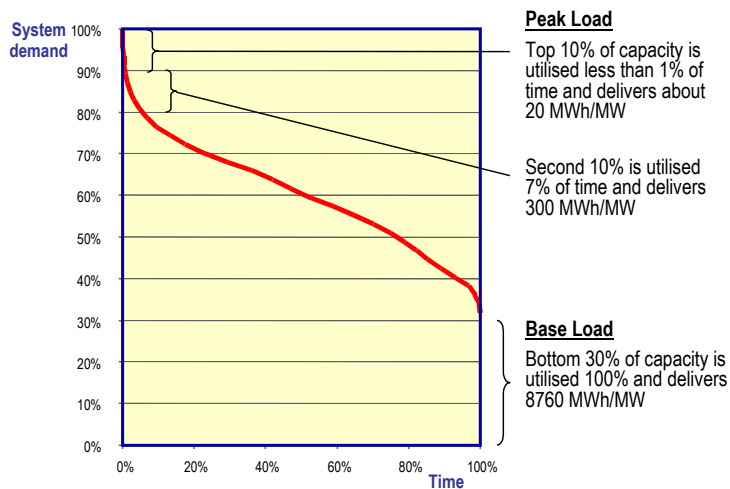
7

Load shape



- network stress is being driven by summer peak loads which are growing rapidly and changing shape

Effect of system peak demand

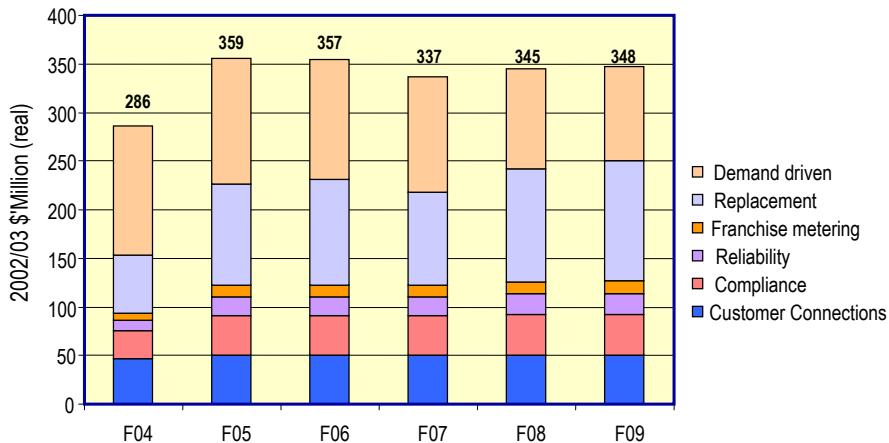


Expenditure on distribution assets

- ❑ directly linked to customer growth and new distribution substations
 - currently EnergyAustralia has 23 substations in this category
 - demand growth is expected to add 31 more by 2009
 - if proposed capital program is implemented, 44 substations will be augmented by 2009
- ❑ reliability spend is all on 11 kV and 415 V network
- ❑ compliance program focusing on Distribution assets in the 2004 Determination
- ❑ replacement of old 5kV networks with 11 kV
- ❑ catch-up in 11 kV development from the 1999 Determination as capacity development focussed on zone substations

10

Proposed capital expenditure program

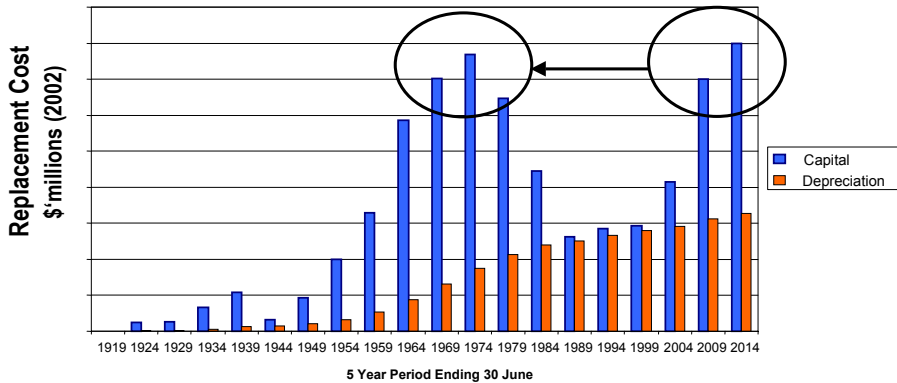


- ❑ the proposed levels of capex compare with \$207 M approved for FY04 in the 1999 determination

11

Asset investment trend

Investment now comparable to the 1970's



12

Proposed operating expenditure

- ❑ increased O&M is required due to:
 - adding assets to the system
 - existing assets ageing
- ❑ requirement for catch-up on outstanding corrective maintenance underspent in 1999-2004
- ❑ allowance for regulatory changes going forward, i.e. OH&S and environment
- ❑ EnergyAustralia is targeting efficiency gains and seeking opex funding below SKM benchmarks
- ❑ however, increases in allowed opex are still required to maintain service levels

13

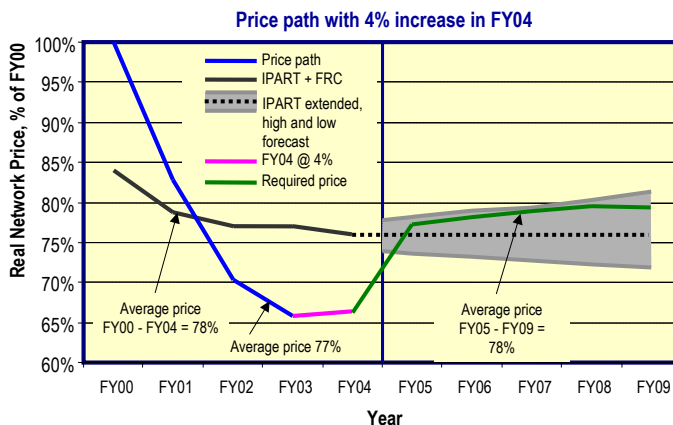
EnergyAustralia proposal



- ❑ a base case where customer outcomes held steady, with improved extreme SAIFI
- ❑ reliability program will target customers below standard service levels in line with EnergyAustralia's proposed public customer service quality commitment
- ❑ to allow consideration of community expectations, our submission also illustrates:
 - a capital constrained scenario where risks increase and outcomes deteriorate
 - an enhanced outcomes program where improvements are targeted over a five year period
- ❑ agreement by IPART on:
 - capital governance test to establish prudence
 - commitment to consistency in real WACC framework
 - a paper trial to development outcomes-linked incentives
 - support for non-network trial solutions for demand management

14

Proposed prices 2004-2009



- ❑ price path must accommodate FRC and higher O&M and Capex
- ❑ essentially restoration to the price path set at the 1999 determination
- ❑ Po adjustment of 16.4% real at 2004/05

15

Pricing initiatives to support demand management



Pricing initiatives focus on:

Pricing Initiative	Targeted impact
Increasing block tariff	Signal seasonal and large usage costs
Increase demand charge	Signalling capacity demand at peak
Profile meter roll-out	Allow price signals through time of use tariffs
Seasonal tariffs	Improves demand management signals
Demand - extension to small/medium business tariffs	Provide a demand management signal to customers
Infrastructure charge	Recoup cost of providing system capacity to low load factor loads

16

Increasing block tariff



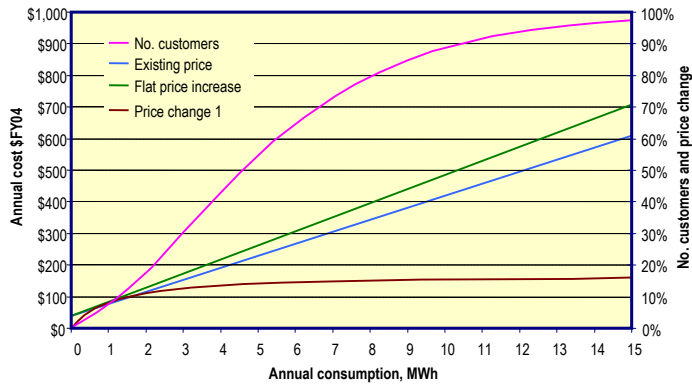
- proposed for residential and non Time of Use businesses for FY05
- only consumption above a given threshold would attract the higher rate
- example here is based on FY03 prices with a 25% difference in rates

Network bill per quarter

Consumption kWh		Fixed charge ¢/day	Rate 1		Rate 2		Total \$/qtr	Change %
Quarterly	Annual		kWh	¢/kWh	kWh	¢/kWh		
Standard flat rate								
500	2000	\$ 11.40	500	\$ 18.95			\$ 29.35	
1000	4000	\$ 10.40	1000	\$ 37.90			\$ 48.30	
2000	8000	\$ 10.40	2000	\$ 75.80			\$ 86.20	
3000	12000	\$ 10.40	3000	\$ 113.70			\$ 124.10	
3750	15000	\$ 10.40	3750	\$ 142.13			\$ 152.53	
Increasing block, threshold 1,750 kWh per quarter (7,000 kWh p.a.)								
		11.40		3.62		4.53		
500	2000	\$ 10.40	500	\$ 18.12	0	\$ -	\$ 28.53	-2.8%
1000	4000	\$ 10.40	1000	\$ 36.25	0	\$ -	\$ 46.65	-3.4%
2000	8000	\$ 10.40	1750	\$ 63.43	250	\$ 11.33	\$ 85.16	-1.2%
3000	12000	\$ 10.40	1750	\$ 63.43	1250	\$ 56.64	\$ 130.47	5.1%
3750	15000	\$ 10.40	1750	\$ 63.43	2000	\$ 90.62	\$ 164.45	7.8%

17

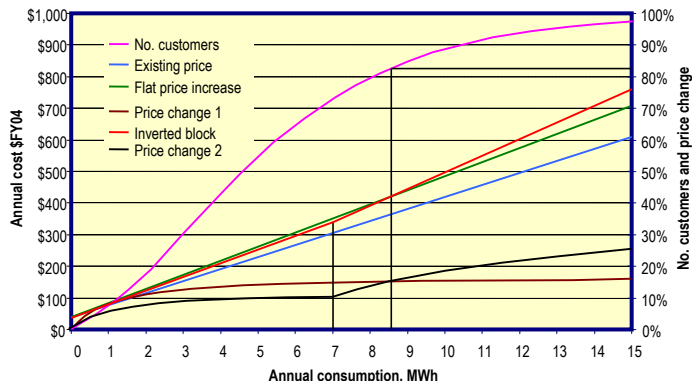
Network price change for residential customers in FY05 - 1



- a flat price increase would result in the network price change above
- assume fixed component does not increase in real terms
- note that percentage price change plateaus at around 3 MWh p.a.

18

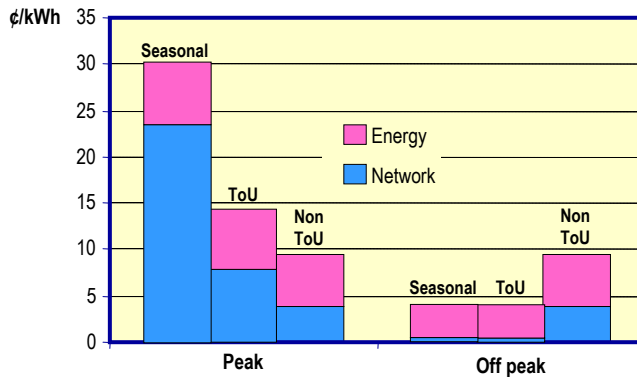
Network price change for residential customers in FY05 - 2



- an increasing block structure would result in the network price change above
- a reduced rate would apply to all energy consumed below 7 MWh p.a. and an increased rate only to energy consumed above that point
- note that the break-even point is around 8.6 MWh p.a. and about 83% of customers would receive a lower price than the flat rate

19

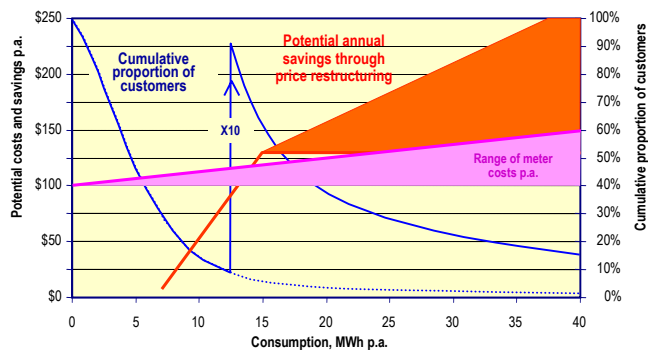
Time of Use and Seasonal pricing



- ❑ time of use pricing is more cost reflective than a flat energy rate
- ❑ seasonal pricing could be made much more so, and more likely to influence demand

20

Meter rollout



- ❑ benefits of price restructuring exceed costs for larger customers
- ❑ about 82,000 EnergyAustralia customers have a consumption > 15 MWh p.a.
- ❑ for these larger customers the annual savings are likely to exceed the costs of metering changeover

21

Indicative infrastructure charge

Installation	Infrastructure charge rule	Average charge	Number of connections p.a.	Annual revenue \$M
Single phase up to 100 amps	Nil		12,200	0
Three phase up to 100 amps	\$2-3,000 flat charge	\$2-3,000	2,000	4-6
Three phase over 100 amps	maximum circuit amperes per phase multiplied by 200	\$30,000	1,000	30
Low voltage substation connected	maximum transformer amperes per phase multiplied by 125	\$90,000	410	37
High voltage	maximum HV circuit amperes per phase multiplied by 3,300	\$220,000	50	11
Total			15,500	82-84

- ❑ would apply to new connections
- ❑ cost of augmenting for new load is \$800 - \$1000 per kW
- ❑ charge captures part of upstream augmentation cost

22

Individually calculated customer prices

- ❑ EnergyAustralia's largest customers, generally >10 MWh have their prices individually calculated (CRNP customers)
- ❑ prices take into account the network assets used and the extent of their utilisation, similar to transmission prices calculated in accordance with the Code
- ❑ at the regulatory reset, each distribution network asset is allocated an individual share of the accrual building block components (return on capital, depreciation and opex) -
 - *there is an annual cost associated with each asset*
- ❑ distribution prices are then recalculated annually
 - *asset annual costs are adjusted by (CPI-X)*
 - *using most recent system configuration and operating conditions*
- ❑ CRNP customers are not exposed to overall price changes to the same extent as smaller customers
- ❑ transmission component of charge usually dominates for these customers

23

Distribution price movement for CRNP customers



- ❑ following the regulatory reset:
 - *asset values will be adjusted to ODRC quantities (in effect, adjusting for inflation and average age)*
 - *Rate of Return on assets will be adjusted to whatever is allowed by the regulator*
 - *depreciation will be adjusted to correspond with asset values and age*
 - *opex allowed by the regulator will be apportioned amongst assets*
- ❑ overall change to asset annual costs is expected to be small
- ❑ prices will then be recalculated using most recent system configuration and operating conditions
- ❑ overall adjustment of CRNP distribution price component is expected to be small

24



Any questions?

25