



Inclining block tariffs



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Background



- EnergyAustralia and Integral Energy propose inclining block network tariffs.
- Seeking to address growing system maximum demand.
- DNSPs recognise that it is imperfect instrument in addressing this problem but better than current charge structure.
- Secretariat believes that there are a number of gaps in information presented so far that affect conclusion on inclining block tariffs.



Role of Tribunal



- Purpose of paper to stimulate discussion and encourage transparent debate.
- Regulatory framework leaves decisions about pricing structure in hands of DNSPs, provided consistent with:
 - allowed revenues
 - pricing principles in PPM
 - side constraints
 - other relevant requirements in Determination.
- Issue — should the Tribunal be taking a greater role in setting price structures?



Objectives of proposals



- Better signalling of costs to provide incentives to curb growth in peak demand.
- Improving the equity in charge structure for residential and small business customers.
- Encourage uptake of more flexible tariffs that reward reduced consumption at peak times.

What is the problem with current tariffs?

- Most households and small business customers have single rate meters and pay flat per kWh rate.
- Means larger customers pay a greater share of costs. But...
- in proportion to consumption not demand on system capacity.
- Would be cost reflective if demand for system capacity in proportion to consumption.
- Unlikely to be the case (the issue at hand).

Impact of current charge structure

Chart 3.1 Impact of current charge structure

| | | Peak period demand for network capacity | |
|-----------------------|-----------------|---|--|
| | | Disproportionately lower ^a | Disproportionately higher ^a |
| Consumption of energy | Small customers | Paying too much | Paying too little |
| | Large customers | Paying too much | Paying too little |

^aDisproportionately lower or higher than would be indicated by consumption of energy.



Cross subsidy



- Integral/CRA estimate cross subsidy in order of \$80 to \$110 million a year (1.5 -- 2.0 cents/kWh).
- EnergyAustralia at last PICG meeting estimated that cross subsidy of around \$50 million (A/C vs non-A/C customers).
- Issue raised by PIAC in presentation on Thursday — is it desirable to correct these cross subsidies?



Price signals under current charges



- Customers pay same charge for consumption regardless of time of consumption.
- No signal specific disincentive to consume during system peak period. Higher price could lead to consumption falling in:
 - peak period
 - shoulder period
 - off peak period
 - or all three periods.
- What impact would proposed price increases have on demand?



Proposed inclining block tariff



- Larger customers cover greater share of costs than under current charge structure.
- Is this a cost reflective outcome?

Impact of inclining block tariff

* **Chart 5.1 Impact of inclining block tariff**

| | | Peak period demand for network capacity | |
|-----------------------|-----------------|---|--|
| | | Disproportionately lower ^a | Disproportionately higher ^a |
| Consumption of energy | Small customers | Lower network charges | Lower network charges |
| | Large customers | Higher network charges | Higher network charges |

a) ^aDisproportionately lower or higher than would be indicated by consumption of energy.

Note: Shading indicates customer group for which network charges move in correct direction for cost-reflectivity.

Impact of inclining block tariff

- Improvement in cost-reflectivity for
 - small customers with disproportionately little demand
 - large customers that make disproportionately large use of system capacity.
- However, larger, less capacity intensive customers worse off.
- Key question is how big is this group?
 - How closely correlated is energy consumption with demand on system capacity?

Impact of inclining block tariff

- EnergyAustralia estimated that air conditioned customers consume:
 - 40% more energy than the average non air conditioned customer
 - 200-250% more network capacity on peak summer days
- This suggests these customers fall in the shaded block and are correctly targeted by the IBT.
- Question remains about whether there are large customers that do not have big demands on system capacity?



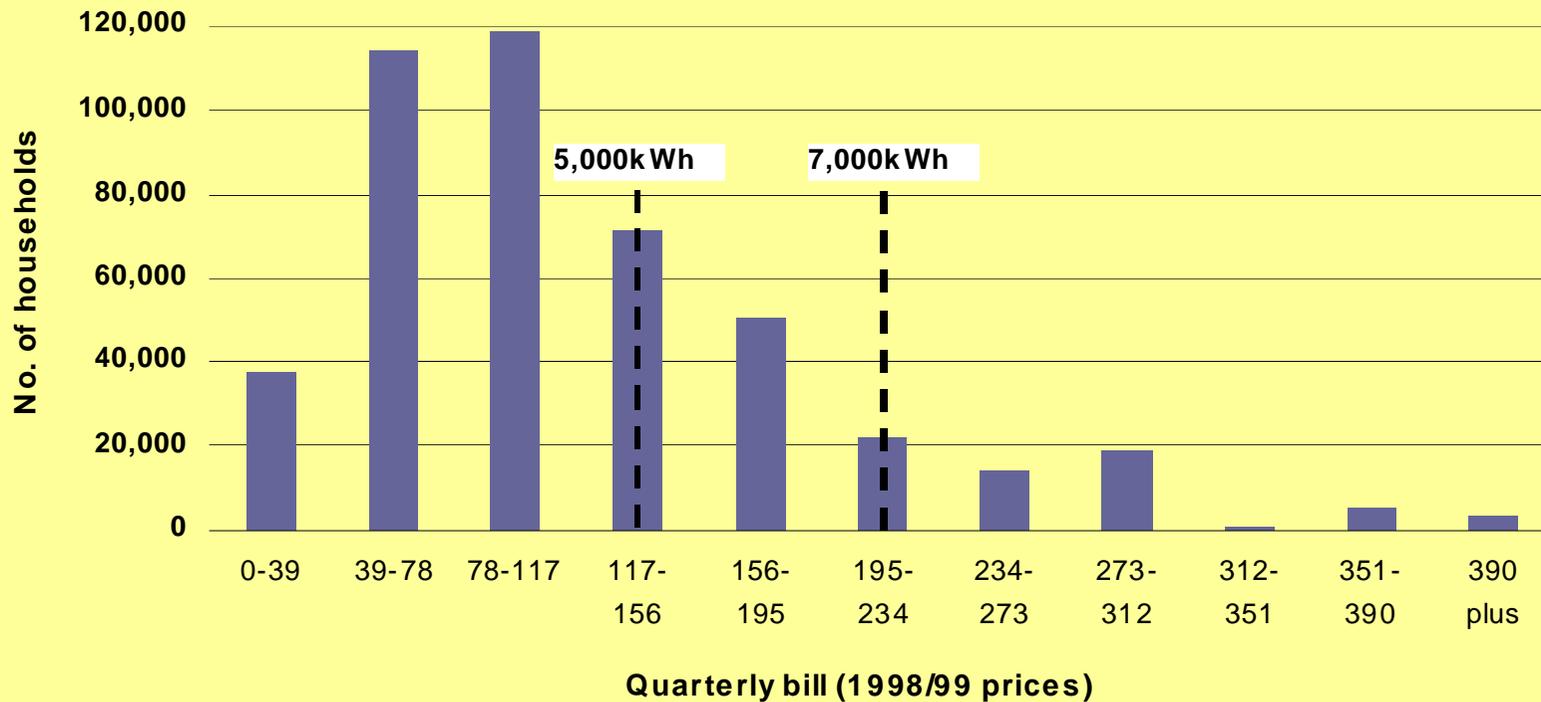
Impacts of inclining block tariff



- Stakeholders such as PIAC have raised questions relating to impact on low income earners.
- Integral is conducting some research on this. Tribunal in process of implementing own survey.
- Data from most recent HES (1998) indicates that lower income households do consume large amounts of electricity.

Low income households

Chart 5.2 Expenditure on electricity by low income NSW households^a



^a Defined as households in survey with lowest 20 per cent of household incomes. Corresponds to households with household incomes less than \$16,000 a year in 1998/99.

Data source: ABS unpublished data from 1998/99 HES survey.



Low income households



- To what extent will current safety nets protect low income households?
 - Would it be all low income households or just 'readily identifiable' groups such as pensioners, welfare recipients?
- To what extent could impacts on low income household be mitigated by selection of threshold?



Demand management signals



- Price does not vary with time of consumption.
- Direct demand management signal is for customers to cut consumption in response to higher price.
- No guarantee that this will be during system peak.
- Could be in non-peak periods worsening capacity utilisation with no impact on costs — higher costs per kWh.
- Evidence on price elasticity is that limited response to changes in price.



Tariff switching



- In face of inclining block tariff, some customers may switch to TOU based tariffs.
- These might be those with more favourable load profiles or who can manage their load to avoid peak periods.
- Could reduce the number of customers in the lower left quadrant of chart 5.1.



Tariff switching — issues



- Are new tariffs being developed?
- What is the likely response in terms of tariff switching?
- To what extent will metering costs be a barrier to switching?
 - Who bears costs of voluntary switching?
 - Are barriers greater for residents of tenanted properties who might have shorter time horizons to write off costs?
- Will DNSPs have sufficient resources to facilitate timely switching?



Tariff switching — issues



- Risk is that price alone will not be sufficient to affect system maximum demand (and so capital expenditure requirements).
- To what extent will we see tariff structures that facilitate non-price demand management measures?
 - For example, load shedding or air-conditioner cycling programs as in US.



Retailer response



- To what extent will retailers pass through inclining block structure in retail prices?
- Even if do not pass through, likely to be incentives for retailers to manage demand. Can these be strengthened?
- To what extent are network businesses in the hands of retailers in terms of encouraging uptake of innovative new tariff options?



What about small commercial customers?



- Little analysis on impact on small business sector.
- What proportion of small business customers will face increases?
 - EnergyAustralia analysis restricted to residential customers — 17% will face higher bills (customers above 8.6MWh).
- What would happen to the share of revenue collected from small business customers?
- Do small businesses contribute disproportionately to system peak demand?
- Should the threshold for these customers be the same as for residential customers?



What about small commercial customers?



- Empirical evidence suggest that less responsive to price changes — is there value in IBT for these customers?
- To what extent are these customers likely to switch tariffs/engage in non-price demand management measures?



Key issues



- Likely that will not know everything about likely impacts of inclining block tariff.
- Introduction of inclining block tariff not without disadvantages
 - impact on low income, high consumption households
 - impact on high consumption, low demand/capacity customers.
- Will the inclining block tariff generate benefits sufficient to offset these disadvantages?
 - Reducing cross subsidy in current tariffs
 - Reduction in system peak capacity through direct reduction in demand and through take up of other tariff options.