Diversity is security:

Promoting small consumer goals in a failing electricity market

- Presentation by Molly Melhuish
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Electricity consumers let down by electricity restructuring

- Competition for small consumers added costs without driving retail prices down
- Retailers compete for large consumers, but often shed small customer blocks, reducing competition
- Billing is less frequent and more unreliable
- Companies do not work with consumers to avoid disconnections - seem at times to promote them
- Small consumers not offered ways to control their spending on electricity

Winter 2003 temporary power shortage is the last straw

- Consumers made real sacrifice to save 10%
- Often people who could least afford to scrimp on electricity use have done so.
- Threats of blackout have led some to invest in alternatives to electricity - LPG heaters, wood stoves, solar water heaters, emergency lighting
- With threat reduced, consumers will question need to pay levy for power stations intended for 1-in-20 dry years.

Large consumers exposed to spot market demanded action

- May 20 announcement addressed 2 problems:
  - high and volatile spot prices put competitiveness of industry at risk
  - not enough investment in reserve capacity or fuel
- Major electricity users welcomed the decision as a return to "sustainable low electricity prices"
- New Zealand's primary energy is no longer cheap by world standards -
- Maui has no cheap replacement - "sustainable low prices" implies subsidy of some kind.

Government will "fix the problem" by costly supply side investment

- Contracting for reserve capacity
- Cost < 0.5c/kWh probably an underestimate
- Transmission will need to be expanded, which will add undisclosed further cost
- Fuel to replace Maui will be more costly
- Market power of generators not eliminated
- Genesis has contracted for 11 million tonnes of coal over 8 years. After 2007, will be subject to a greenhouse tax, locking in further costs

Other ways to “fix” high spot prices

- Investment in demand-side measures could reduce the peak loads that drive prices up
  - Demand exchange will be expanded (and subsidised) but available only to large electricity users
  - Small consumers could invest to reduce power bills, but face many barriers that are not addressed
- Announcement specifically excludes demand side measures from lucrative “reserve market”
- Demand-side measures are most cost-effective way to mitigate market power of generators

Other ways to “fix” high spot prices (continued)

- Mandatory hedging contracts to ensure generators do not profit excessively from spot prices
- Retailers would be required to purchase hedges on behalf of their small-consumer base
- Hedging contracts were set up when ECNZ was split, to smooth the transition to a market
- Generators chose not to renew contracts, but purchased customer blocks to internalise hedging, thus reducing competition

Other ways to “fix” high spot prices (continued)

- Defining “fair” pricing, and improving market surveillance, could identify excessive spot prices
- Excessive revenues could be
  - rebated to consumers; or
  - captured for re-investment in programmes to overcome the shortage that caused them.
- Precedent for former: Transpower “constraints and losses” rebate
- Precedent for latter: original theory of competitive electricity markets

Comparing “turbines and wires” with alternative investments

- Investment is needed to fix NZ electricity problem
- Turbines-and-wires investment can be directly controlled by Commission, but distorts market
- Investment in demand-side cannot be controlled centrally, but is crowded out by supply-side
- Regulatory measures (market surveillance, mandatory contracting, regulation that decouples profits from sales) require investment of time, effort, expertise.

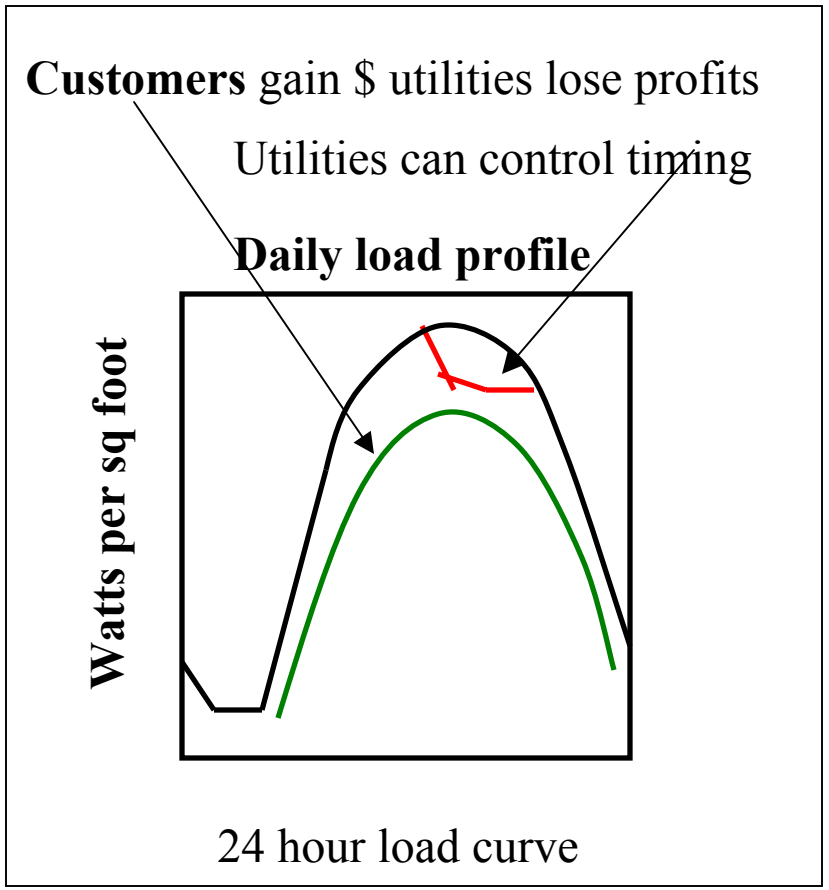
How investment in demand-side measures improves security

- Energy efficiency investments avert shortage of primary energy -
- If targeted to peak times, will reduce system peaks
- Use of existing "standby" equipment can provide energy in dry years, reducing call on "reserve"
- Small-scale renewable energy investments add diversity to primary energy supply
- By contrast Project Aqua depends on SI hydro storage, needs extra firming to use effectively

Targeted energy efficiency gives peak as well as energy savings

Examples

- **insulation, draught stopping for winter peaks, where networks are constrained**
- **efficient lighting and HVAC for summer peaks, where networks are constrained**
- **Retailers and generators both lose profits from reduced sales**
- **Retailers prefer peak load response especially where they control its deployment**



Customer-based investment has multiple benefits

- Energy-efficient houses are healthy houses
- Smart metering and smart appliances give the customer more control over the power bill
- Solar water heaters give immediate protection from hot water cuts
- Efficient wood burners a popular choice
- NO ONE SOLUTION suits every consumer; many consumers want to be, and should be, passive.
- Together the mix of solutions adds diversity and mitigates market power of generators

Putting customer based investment on equal footing with large projects

- Explicit barriers to small-scale - e.g. exclusion from reserve market - must be removed or offset
- Both small- and large-scale investments to meet Government objectives require subsidy;
- Market rule development must be carried out with full stakeholder consultation - including energy service suppliers, small consumers, env'ists
- Electricity Commission's dual roles - intervenor and regulator, must be fully separated

Is power planning a better alternative than the competitive market?

- Customer based investments could be promoted equally well in planned or market systems
- But customer based investments invisible to power planners without more sophisticated modelling
- Market design debate exposed bitter differences between market players
- In a planned system this debate does not go away but goes behind closed doors

What will Government ask of Electricity Commission?

- How will the functions of market intervention be separated from market governance?
- How will the Commission monitor exercise of market power? how will Government define "fair"?
- Will electricity market performance be benchmarked against other jurisdictions?
- How will it ensure large-scale power solutions do not crowd out energy efficiency and customer-based energy investments e.g. solar?
- What KPIs to measure Commission's performance?