Grid Characteristics and the Interface between Competition and Regulation Policies

ISCR Workshop - Developments in Electricity Network Price Regulation, Victoria University of Wellington, 20 February 2008

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Background

- Potential overlaps and clashes now arise re Transpower as between:
  - The Electricity Commission (EC) as electricity industry governance body
  - The Commerce Commission (CC) under Part 4A of the Commerce Act (CA)
    → Recognised in part by the CC/EC MoU of August 2007

- In general there are questions as to the appropriate boundaries between competition authorities and industry regulators

- This boundary can be affected by grid characteristics, such as those inherent to:
  - Transpower
  - New Zealand
  - Grids in general

- This presentation explores the demarcation of this boundary and how it is affected by grid characteristics, as a first step towards an ongoing comparative analysis of the institutional dynamics of competition and regulation policies in the electricity sector (for presentation at IAEE 2008)
General Demarcation Issues

• Competition policy generally seeks to protect and encourage competition, e.g. through:
  – Controls on mergers and takeovers
  – Prohibitions of certain anti-competitive practices
  – Prohibitions on the acquisition or abuse of market dominance

• Presumption is that but for rules and interventions to curtail anti-competitive practices, workable competition would not prevail (allows for imperfection)

• Competition is seen as the means towards the objectives of enhancing economic efficiency and maximising social welfare

• Sometimes applied with a bias towards consumer welfare (which can be stretched to also allow for producer welfare when investment is recognised as important for consumer welfare)

• One challenge is to recognise the importance of dynamic efficiency over static textbook conceptions of efficiency, particularly in sectors where innovation is an important source of consumer gains → e.g. allowing competition for markets and not just trying to impose competition within markets
General Demarcation Issues – cont’d

• Industry-specific regulation is typically justified on the basis that workable competition is absent and unlikely to arise in some sectors or under certain conditions.

• The aim is to regulate the relevant firms in such a way as to best mimic competitive outcomes (i.e. price, quantity, quality and contestability/entry), recognising industry cost structures will deviate from competitive ideals.

• Perennial problem is the informational advantages enjoyed by the regulated firm.

• As for competition policy, the challenge is to not impede dynamically efficient innovations → made all the more difficult here due to investment impacts (entrants and incumbents).
General Demarcation Issues – cont’d

• Danger is that regulation could impede as much as facilitate the advent of workable competition – e.g.:
  – Creating institutional inflexibilities based on old technologies
  – Using the wrong or inadequate regulatory models

• Important questions include:
  – What are the appropriate boundaries for delimiting workable competition? → a focus of today’s presentation
  – What should be the tests for introducing regulation?
  – What regulatory models should be applied, and how?
  – How should those models be monitored and changed?
  – What tests should be applied for abandoning regulation in favour of competition policy?

• In general, what institutional arrangements do we have/need to ensure an efficient transition between competition and regulation policies (and vice versa)?
Relevant Grid Characteristics – General

- Electrical networks function as an “organic” whole, with important interdependencies and at least partial substitutability between the grid and:
  - **Generation** – location, type/stability, wholesale market (e.g. LMPs versus zonal prices), capacity margins, …
  - **Load** – location, demand flexibility, prices, …
  - **Distribution** – location/creep, technical demarcation …
  - **Competing energies and networks** – gasfields/pipelines, coalmines/railways, LNG terminals/pipelines, …

- Important dynamic considerations:
  - **Real time** – ancillary services and grid constraints affect energy prices, generator/load incentives and competition
  - **Longer-term** – location of generator and load investments affected by grid constraints, affecting competition …
Relevant Grid Characteristics – NZ/TPNZ

- **Physical/technical** – creating problems for competing grid provision:
  - Grid is “long skinny and sparse”
  - Limited DC – hard to secure property rights in loop flows

- **Institutional** – creating problems for grid competition:
  - EC’s transmission pricing methodology – “non-contestable right to tax” (but helps reduce strategic uncertainty for generators?)
  - EC’s grid investment test (GIT) requires Transpower to evaluate generation alternatives to grid upgrades
  - Have locational marginal prices, but no FTRs or TCCs
  - Renewables dominance/preference – lack of locational flexibility compared with other fuel types
  - Limited embedded generation, in part due to EIRA
  - RMA affects generation viability/investment
  - No merchant transmission, and distribution not able to own/operate high voltage network
  - Muted commercial objectives plus state ownership – monopoly rents reduced and socialised anyway? (but efficiency incentives blunted too?)
Commerce Commission and Transpower

- Relevant *purpose* re Transpower is found in s57E of the Commerce Act:

  ... to promote the *efficient* operation of markets directly related to ... transmission services through targeted control for the long-term benefit of *consumers* by ensuring that suppliers—
  (a) are limited in their ability to extract excessive *profits*; and
  (b) face strong incentives to improve *efficiency* and provide services at a *quality* that reflects consumer demands; and
  (c) *share the benefits of efficiency gains* with consumers, including through lower prices.

- Note that producer profits are material here only to the extent they are excessive, and that producers cannot expect to pocket all of the efficiency gains they make

- **Processes**: CC sets thresholds, assesses compliance with those thresholds, conducts inquiries following any threshold breach, and can control prices, quantities and/or quality if breach leads to a declaration of control

- Transpower faces CPI-X price threshold, and reliability maintenance (plus consumer engagement) threshold

- CC only examines Transpower’s grid expenditures or other relevant matters in the event of a breach of either or both of these thresholds
Electricity Commission and Transpower

• Principal objective (Government Policy Statement, October 2006) is to:
  – Ensure that electricity is produced and delivered to all classes of consumers in an efficient, fair, reliable, and environmentally sustainable manner; and
  – Promote and facilitate the efficient use of electricity

• Note the absence of any consideration of producer surplus here, but see below

• EC approves Transpower’s economic and reliability investments and its interim grid expenditure, as well as its pricing methodology, and develops/recommends benchmark agreements and interconnection rules

• Under the GPS Transpower is entitled to recover the full economic costs of its services, and make an appropriate return on its investments
EC and Transpower – cont’d

• Transpower thus sets its own revenue requirements subject to the average price constraints imposed on it by the CC under Part 4A

• EC’s pricing methodology allocates Transpower’s revenue requirement across its customers (the “right to tax”), while the GIT controls Transpower’s grid expenditures (based on “net benefits”, not the CC’s wider “efficiency” test)

• Areas of functional overlap between EC and CC include:
  – How expenditures under approved grid investments are treated under the Part 4A thresholds
  – Interface between CC’s price thresholds and EC’s transmission pricing methodology
  – Respective body’s treatment of valuation and pricing methodologies, pricing, quality and information disclosure
Discussion

• **Pre-1986** – old school industry regulation:
  – No competition policy (or objective)
  – Generation and transmission integrated in state-owned monopoly with slack commercial objectives and political pricing
  – Consequently little prospect of (or place for?) workable competition in generation or transmission

• **1980s reforms** – mix of old and new:
  – Now have Commerce and State-owned Enterprises Acts, and only light-handed regulation (Part 4A not yet born)
  – Transmission and generation still bundled, but commercial objectives and embryonic contestability (generation)
  – Monolithic generation provided workable competition and coordination with grid, so lack of Part 4A and EC OK?
Discussion – cont’d

• **1990s** – competition focus in generation, with grid issues parked:
  – Same regulatory regime, but transmission and energy prices unbundled, and Transpower separated from ECNZ
  – Advent of NZEM and split of ECNZ paves way for generation contestability, but gentailing advent and lines/energy split after EIRA undermines?
  – Oligopolistic generation less able to workably compete with grid (coordination problems) – rationale for Part 4A and EC?

• **2000s** – specific regulation of grid:
  – Part 4A added to Commerce Act, and EC created
  – Oligopolistic competition in generation, with possible increase in embedded generation (more workable competition with grid?)
  – A new stalemate …?
Discussion – cont’d

• Any functional conflicts or discontinuities between EC and CC should in principle be resolvable

• Real question is whether the existing arrangements resolve, or create/perpetuate, the perceived problems:
  – Grid faces emerging/changing competition from embedded generation and gas (imagine a major gas find in the Southern Basin …)
  – But do the EC’s GIT and transmission pricing methodology aid competitive generation, or prefer the grid? Do they necessitate Part 4A?
  – What are the technical and institutional barriers to merchant transmission – if we (can) fix these, is Part 4A redundant, or are both 4A and the EC part of the problem (i.e. already redundant)?
  – With Transpower state owned, do we even care (or care enough to warrant the costly protections)?
  – If we do care, would lines company ownership of Transpower be the least-cost alternative to regulation, with open access rules the only required constraints? cf new proposals for reversion to light-handed regulation of customer-owned lines companies, unregulated US G&T cooperatives, …
Conclusion

• In general we should wish for a healthy and ongoing arm-wrestle between competition and regulation policies

• Certain grid characteristics, viewed alone, suggest the likely absence of workable competition in transmission

• Taking a broader view, grid competition can arise from many quarters – or not – in a large part due to institutional arrangements (and over time, from technological and other changes)

• New Zealand’s current arrangements (Part 4A and the EC) are perhaps a consequence of our reform path, but potentially also perpetuate any lack of workable competition in transmission and thus themselves

• Stones not yet fully turned over include:
  – Greater use of merchant transmission
  – Making Transpower’s “right to tax” (per the EC’s pricing methodology) contestable
  – Customer (i.e. lines) ownership of the grid
Thank You – Any Questions?