



Energy Sector Competition Policy: Implications for the Asian Developing Countries

Alexandra Sidorenko
AJRC APSEM ANU

Fourth Asia Development Forum
November 3-5 2002
Seoul, Republic of Korea

The views expressed herein are the views of the author and do not necessarily reflect the views or policies of the Asian Development Bank (ADB) or its Board of Directors or the governments they represent. ADB makes no representation concerning and does not guarantee the source originality, accuracy, completeness, or reliability of any statement, information, data, finding, advice, opinion, or views presented.

Energy Sector and Development

- ◆ Essential input into production
 - also, social goals such as USO/CSO
 - ◆ 2 bil with no access; 400mil in India, 50-100 mil in China
- ◆ Security considerations
 - » initial endowments differ
 - » importance of trade and diversification of sources
- ◆ One of the largest sectors in the world economy
 - » \$US1.7-2 tril turnover pa
 - » \$US30 tril investment over 1990-2020 (est)

Definition of the Energy Sector

- ◆ Contains both goods and services;
- ◆ Barriers to trade differ
 - tariffs and quotas vs domestic regulation
- ◆ The properties of a commodity and a service are often entangled:
 - eg electricity distribution/ retail electricity
 - gas HP transmission pipelines

Energy Products

- ◆ Energy products:

- Coal
- Oil and Petroleum products
- Gas
- Electricity
- Nuclear energy
- Renewable energy

- ◆ Services components are still present

- eg electricity - transmission and distribution

Energy Services

◆ 1. Business Services category

» F Other-

◆ h. Services incidental to mining

◆ j. Services incidental to energy distribution

◆ m. Related scientific and technical consulting;

◆ n. Maintenance and repair of equipment;

◆ 11. Transport services –

» G Pipeline transport

◆ 12. Other services

Coal: Production and Trade

◆ Producers	Hard Coal (Mt)	Br.Coal (Mt)	Exporters	Hard Coal (Mt)	Importers	Hard Coal (Mt)
◆ 1. China	1171	*	Australia	170	Japan	133
◆ 2. USA	899	77	South Africa	66	Korea	55
◆ 3. India	310	22	United States	57	Chinese Taipei	41
◆ 4. Australia	238	68	Indonesia	55	Germany	22
◆ 5. Russia	169	86	China	37	United Kingdom	21
◆ 6. South Africa	225	0	Canada	34	Spain	20
◆ 7. Germany	37	168	Colombia	30	Netherlands	19
◆ 8. Poland	101	59	Russia	28	India	18
◆ 9. DPR of Korea	67	24	Poland	24	France	17
◆ 10. Ukraine	81	1	Kazakhstan	16	Italy	17
◆ ROW	338	390	ROW	30	ROW	176
◆ World	3637	895	World	547	World	539
◆ 2000 Data		2000 Data		2000 Data		

Natural Gas: Production and Trade

◆ Producers	Mm3	% of World tot	Exporters Mm3	Importers Mm3
◆ 1. Russia	584 200	23.0	Russia 205 354	USA 101 530
◆ 2. United States	548 044	21.6	Canada 94 966	Germany 76 761
◆ 3. Canada	180 618	7.1	Algeria 63 763	Japan 72 154
◆ 4. UK	115 065	4.5	Norway 45 499	Ukraine 60 313
◆ 5. Algeria	89 348	3.5	Indonesia 39 032	Italy 49 484
◆ 6. Netherlands	72 864	2.9	Netherlands 38 106	France 40 625
◆ 7. Indonesia	67 830	2.7	Malaysia 18 359	Korea 16 940
◆ 8. Iran	63 744	2.5	Australia 9 804	Belarus 16 565
◆ 9. Uzbekistan	56 001	2.2	Turkmenistan 9 723	Belgium 15 805
◆ 10. Saudi Arabia	52 811	2.1	Qatar 8 036	Spain 15 222
◆ ROW	706 341	27.8	ROW 61 491	ROW 125 631
◆ World	2 536 866	100.0	World** 594 133	World** 591 030
◆ 2000 Data		1999 Data		1999 Data

Petroleum Products: Production and Trade

◆ Producers	Mt	%tot	Exporters	Mt	Importers	Mt
◆ 1. USA	808	23.8	Netherlands	60	United States	61
◆ 2. Japan	208	6.1	Russia	48	Germany	51
◆ 3. China	176	5.2	Singapore	45	Japan	41
◆ 4. Russia	163	4.8	USA	41	Netherlands	40
◆ 5. Korea	120	3.5	Saudi Arabia	39	Singapore	37
◆ 6. Germany	115	3.4	Korea	37	China	27
◆ 7. Italy	94	2.8	Venezuela	37	France	25
◆ 8. Canada	92	2.7	Kuwait	36	Italy	21
◆ 9. UK	88	2.6	United Kingdom	22	India	20
◆ 10. France	85	2.5	Italy	20	Hong Kong (China)	17
◆ ROW1	442		ROW	328	ROW	317
◆ World	3 391	100.0	World	713	World	657
◆ 1999 data			1999 data		1999 data	

Electricity: Production and Trade

◆ Producers	TWh	% total	Exporters TWh	Importers TWh
◆ 1. USA	3 910	26.5	France 68	USA 43
◆ 2. China	1 239	8.4	Paraguay 46	Italy 43
◆ 3. Japan	1 057	7.2	Canada 45	Germany 41
◆ 4. Russia	845	5.7	Germany 40	Brazil 40
◆ 5. Canada	577	3.9	Switzerland 32	Netherlands 22
◆ 6. Germany	551	3.7	Russia 23	Switzerland 22
◆ 7. India	527	3.6	Sweden 16	Canada 16
◆ 8. France	520	3.5	USA 14	UK 15
◆ 9. UK	364	2.5	Austria 14	Spain 12
◆ 10. Brazil	332	2.2	Czech R 12	Austria 12
◆ ROW	4 842	32.8	ROW 135	ROW 185
◆ World	14 764	100.0	World 445	World 451
◆ 1999 Data		1999 Data		1999 Data

Regulation of Energy Sector

◆ Why regulate?

- Market power / natural monopoly characteristics
- Social goals (access)

◆ Market definition and market structure

- product, geographic, functional
- traditionally vertically integrated monopoly in generation, transmission and distribution

Regulatory Rules

◆ ROR regulation

» Averch-Johnson effect, inefficient input mix & over-investment)

◆ Incentive-based regulation

» price caps, CPI-X

» multi-product utility: incentive to reduce cross-subsidies and move towards the Ramsey rule

◆ Yardstick competition

◆ Static vs dynamic effects

Benefits of Competition and Trade

- ◆ Increased productivity, technology transfer
- ◆ Cheaper intermediate inputs
- ◆ Lower retail prices and greater variety of final goods
- ◆ Higher aggregate welfare...but
 - if market isn't working, opening to trade may lead to re-allocation of rents
 - hence, domestic reform and liberalisation of the energy sector should go together
 - The role of competition policy

Competition Policy

- ◆ Deals with restrictive trade practices (anti-trust, anti-monopoly) within countries
- ◆ More broadly, includes trade liberalisation
 - WTO GATS Reference Paper on basic telecommunications

Models of Competition in Electricity and Gas

- ◆ Vertically integrated monopoly (generation, transmission, distribution)
- ◆ Unbundling (transmission TSO, IPP/generator, distribution)
- ◆ State of wholesale competition
 - monopsony or competition (pool)
- ◆ Retail competition

The Australian National Competition Policy Agenda

- ◆ Eliminate restrictive trade practices
- ◆ Review laws and regulations restricting competition
- ◆ Restructuring of public monopolies, disbundling of services
- ◆ Competitive neutrality (gov't businesses)
- ◆ Separate gov't roles in regulation and provision

Competition Policy Reform Act 1995

- ◆ Part IV TPA 1974 amended to cover State and local gov't business and corporations
- ◆ New Part IIIA TPA, National Access Regime
- ◆ Price Surveillance Act 1983 amended to extend price surveillance on gov't business
- ◆ ACCC and NCC created

National Competition Council

- 1995 Competition Policy Agreements signed by Commonwealth, State and Territory gov'ts
- ◆ Advisory and information dissem'n body
 - third party access to essential infrastructure
- ◆ Recommends price surveillance of State&Terr gov't businesses
- ◆ Assesses progress of gov'ts implementing competition policy reform
 - (Competition Transfers)

Australian Competition and Consumer Commission

- ◆ Established 1995
 - CPAs signed by the COAG
- ◆ Focuses on abuse of market power, pricing and consumer protection
- ◆ Monitors pricing performance of organisations and services declared by the Minister

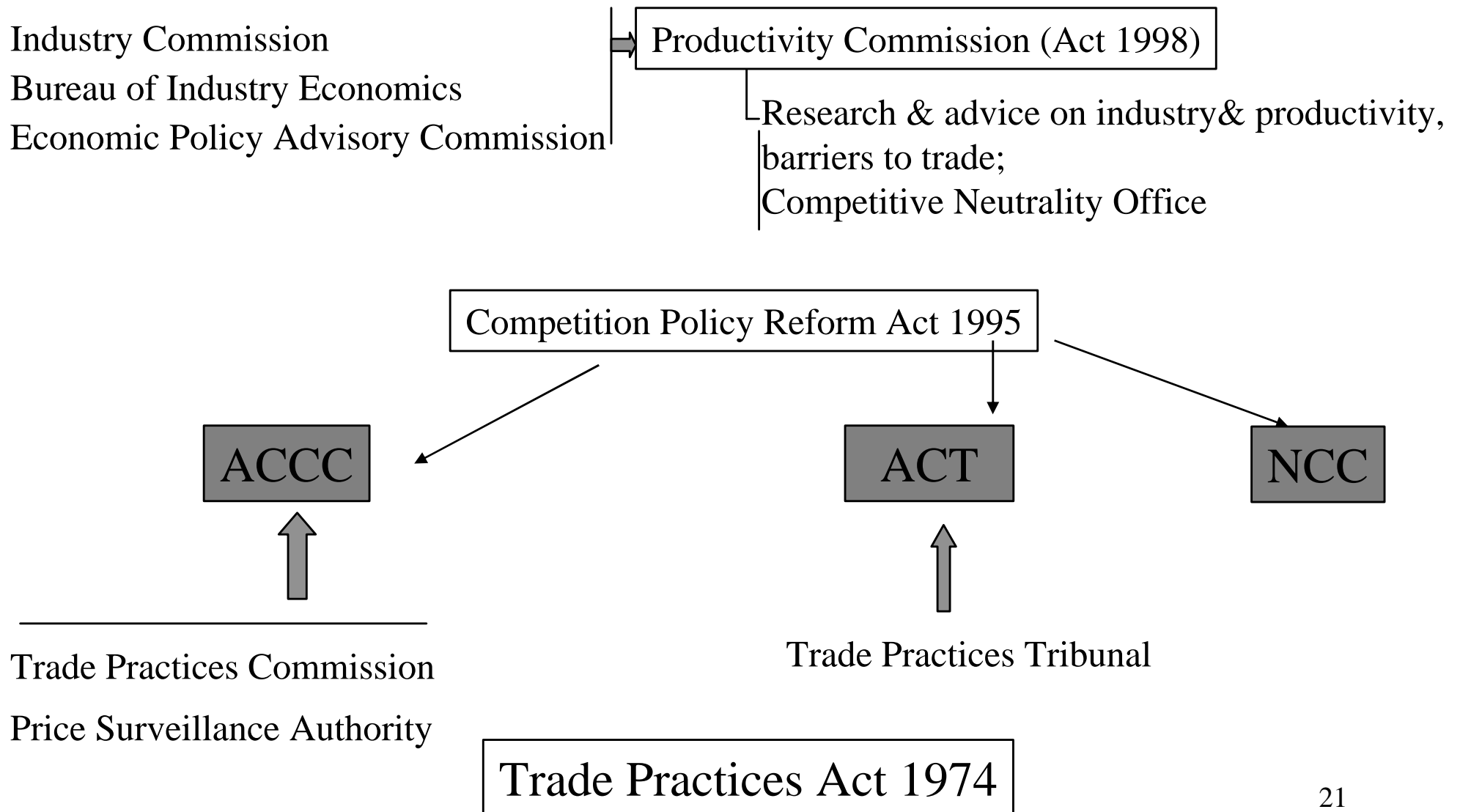
Australian Competition Tribunal

- ◆ Quasi-judicial body
- ◆ Reviews decisions on appeal from the ACCC and designated Ministers
 - anti-competitive conduct and mergers
 - third party infrastructure access
- ◆ ACT decisions can be appealed to the Federal Court and the High Court

Productivity Commission

- ◆ Established in 1998; functions:
 - Hold inquiries and report on industry development & productivity
 - Provide research services to the gov't
 - Investigate competitive neutrality compl'ns
 - » CN = elimination of distortions due to the public ownership of businesses, eg tax exempt status, lower cost of finance, public funding

Competition Policy Institutions in Australia



Authorisation Provision of the TPA

- ◆ Allows for exemptions from anti-competitive provision of the TPA
- ◆ Provides protection from any party (immunity from court action)
- ◆ ACCC makes authorisation decision based on trade-off between “public benefits” and “anti-competitive detriments”
- ◆ ACT reviews ACCC decision
 - “future-with-and-without” test

What May Be Covered by Authorisation

- ◆ Substantially lessening competition
- ◆ Primary boycotts
- ◆ Exclusive dealing
- ◆ Third line forcing
- ◆ Resale price maintenance
- ◆ Mergers likely to lessen competition

Public Benefits

- ◆ “... anything of value to the community generally...” eg
 - economic development
 - promoting efficiency & industrial rationalisation
 - positive effect on empl't + region + environ't
 - assistance to small businesses
 - improved quality, safety & consumer satisfaction
 - import replacement & export growth

Third Party Access Regimes

◆ Part IIIA TPA

- national legislative regime to facilitate third party access to the facilities of national significance

◆ NCC uses following criteria:

- access promotes competition in another market
- uneconomical to duplicate;
- national significance; no effective regime
- no risk to health & safety; not against public interest

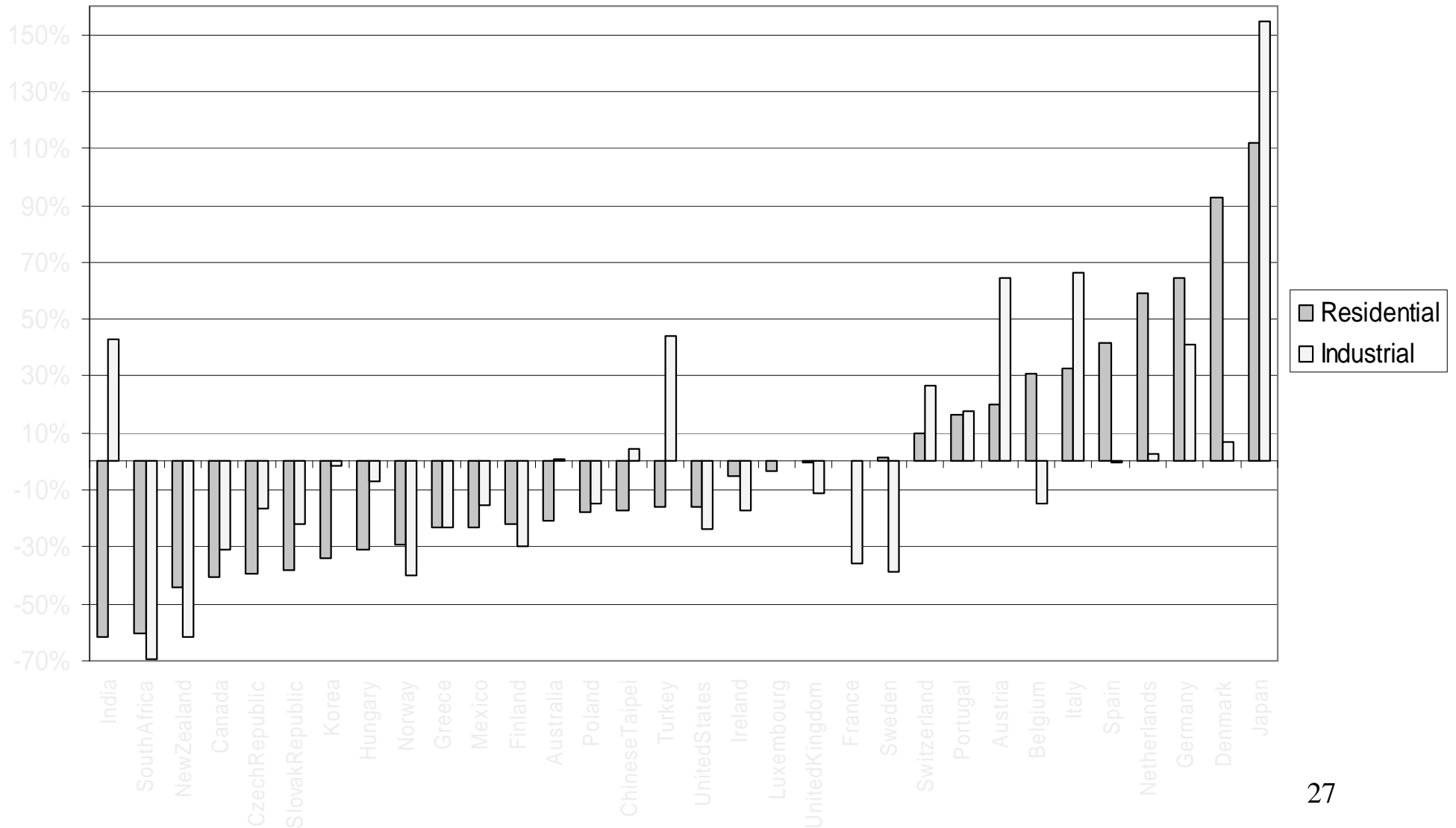
Energy Reform: Australia

- National Electricity Market, 1993
 - » NSW, VIC, Qld, SA, ACT
- Gas market follows
- Estimated effect (PC 1999) of the reforms in:

	Electricity & Gas, %	NCP reforms, %
Real GDP	1.1	2.5
Real consumption	1.0	2.8
Real investment	1.0	2.8
Export volumes	2.2	3.4
Import volumes	0.7	2.0
Terms of trade	-0.2	-0.7
Post-tax real wages	1.4	3.4

Comparison of Electricity Prices

Electricity Tariffs, Deviation from the Mean



Reform of the Australian Electricity Industry

– *Structural Separation*

- ◆ Competitive electricity generation (merit order dispatch); Liberalised wholesale bulk electricity market; Disaggregation of generation to promote competition; Transmission and distribution grid run by a separate company, with an independent regulator; Ring fencing of retailing from the distribution network; Removal of regulatory barriers to competition in generation and distribution; Privatisation of some elements

– *Access to monopoly infrastructure*

- ◆ Open access to an interstate electricity transmission network; Two-part tariffs based on access-usage charges

– *Improved interconnections*

Reform of the Australian Gas Market

– *Structural Separation*

- Legislation passed by the states to adopt the National Access Code;
- Applications to the NCC to approve access regimes;
- Privatisation of pipelines (SA, QLD, WA)
- Corporatisation and privatisation of public gas utilities in some states (Victoria), “ring fencing” of transmission and distribution activities.

– *Access to monopoly infrastructure*

- ◆ a legislated regime for third party access to the pipelines;

– *Removal of legislative and regulatory barriers to competition*

International Competition Regimes in Energy - EU

- ◆ EU, Electricity Directive (1996) Art 16-18:
 - Negotiated TPA, Regulated TPA, or Single Buyer
 - Varying degree of liberalisation
 - » Full competition (Finland, Sweden, England&Wales)
 - » Structural separation (Austria, Belgium, Italy)
 - » Ring-fencing (France, Germany)
- ◆ The Energy Charter Treaty (ECT)
 - 1994, 51 signatories, rules for transit of energy products

International Competition Regimes in Energy - USA

- ◆ Energy Reform Act 1992
 - restructuring of the electricity sector;
competition;
- ◆ Order 636 of FERC, 1992
 - TPA to the gas pipelines, unbundling
- ◆ NAFTA coverage
 - Ch. 6 “Energy..” and Ch 12 “C-B trade in svcs”
- ◆ Lessons from the California energy crisis
 - » wrong incentives created by the regulatory design

International Competition Regimes in Energy - APEC

- ◆ Energy Regulators Forum
 - best practices in energy regulation
- ◆ Non-binding energy principles (Energy Ministers, 1996)
 - liberalisation of the energy market (Pr.3), and pricing to reflect full cost (Pr. 5)

Trade in Energy Services: WTO GATS

- ◆ Limited commitments in MA and NT
- ◆ Definition of the energy sector
- ◆ Candidate for sectoral negotiations/cluster approach
- ◆ Position of the developing countries

Electricity Reform in ADCs

- ◆ Setback due to the 1997 financial crisis
- ◆ Need to attract private investment
 - risk mitigation instruments
- ◆ Lessons:
 - design of the restructuring program
 - the role of competition
 - sequencing of the reform
 - market design