



Energy Reform

The way forward for Australia

A report to the Council of
Australian Governments
by the Energy Reform
Implementation Group

January 2007

© Commonwealth of Australia 2007

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without prior written permission from the Commonwealth. Requests and inquiries concerning reproduction and rights should be addressed to the Commonwealth Copyright Administration, Attorney General's Department, Robert Garran Offices, National Circuit, Canberra ACT 2600 or posted at <http://www.ag.gov.au/cca>

Produced by the Energy Reform Implementation Group
Contact: erig@industry.gov.au
Department of Industry, Tourism & Resources
10 Binara Street
Canberra ACT 2601

Energy Reform
Implementation Group
GPO Box 9839
Canberra ACT 2601

The Hon John Howard MP
Prime Minister
Chair, Council of Australian Governments
Parliament House
CANBERRA ACT 2600

Dear Prime Minister

It is with much pleasure that I present you with the final report of the Council of Australian Governments' (COAG) Energy Reform Implementation Group (ERIG).

In undertaking its analysis, ERIG has made a number of key findings and recommendations:

- » Australia is respected internationally for its past reforms in energy with these reforms producing one of the most competitive and efficient energy sectors in the world. However, while Australia has been well served by its energy sector in the past, ERIG considers that further reforms are necessary; both to maintain the productivity improvements of Australia's energy sector and to better equip it for the future.
- » Australia's good performance in general masks significant jurisdictional variation.
- » There is a strong case for the establishment of a more co-ordinated strategic approach to the development of the energy sector. This applies generally, but applies particularly in relation to transmission planning. In this regard, ERIG considers that the potential benefits from better coordinated development of the national transmission grid are sufficient to warrant the establishment of a strategic national planner under a reformed NEMMCO.
- » Disaggregation and privatisation of government owned assets in the energy sector would address private sector concerns about barriers to entry and budgetary pressures which threaten to curtail the investment requirements of the sector. If full privatisation is not an option, privatisation of some elements of the contestable parts of the market (retail and generation) would help and initiatives to strengthen competitive neutrality safeguards are important.
- » A number of improvements can be made to strengthen the national character of energy market governance. Specifically, I draw your attention to ERIG's findings that: the Australian Energy Market Commission needs to be refocused and adequately funded; the establishment of a national energy market operator is an important longer term objective; and proposed changes to the governance of the National Electricity Market Management Company would make it more market oriented.
- » Regarding energy financial markets, while ERIG found that they are generally maturing well, significant proposals are presented to improve interstate trading arrangements and market settlement. Important proposals are also presented relating to gas markets and removing barriers that discourage an appropriate demand management response within the sector.

In preparing this report, ERIG considered over 90 written submissions from a wide range of organisations and individuals across Australia. My Panel colleagues, Geoff Carmody, David Swift and Alan Rattray, and I have found strong and widespread support for further reform of Australia's energy markets.

We consider that Australia is at a very important juncture in the evolution of its energy sector. Significant opportunities and challenges exist for governments to build upon the success of previous reforms to ensure that access to reliable and competitive energy continues to underpin wealth and job creation.

Our economic analysis (also supported by the recent Productivity Commission assessment of the NRA) indicates that the potential benefits in the electricity sector of further reform are in the order of \$400 million per year over the medium term. These benefits translate into price reductions of around two to three per cent across states at the household level.

We strongly believe that these gains will be realised if governments implement the recommendations contained in this report as a mutually supporting package. We commend our report to you for the consideration of COAG.

Yours sincerely



Bill Scales AO
Chair
Energy Reform Implementation Group
12 January 2007

Contents

ERIG's Key Findings	1
Executive Summary	3
Background	3
ERIG Terms of Reference	4
ERIG's Approach	4
ERIG's Key Findings	7
Benefits of Reform	18
ERIG Recommendations	19
1 ERIG's task	35
ERIG Terms of Reference	35
ERIG panel members	35
ERIG process	36
The importance of energy	36
Reforms to date	36
The Parer Review	37
MCE energy market reforms	37
Results of reform to date	37
2 An efficiency focus	39
What does 'efficiency' mean in practice?	39
The need for system-wide economic efficiency	39
Scope of ERIG's analysis	40
Only two policy choices: efficiency or inefficiency	40
A comment on reliability	41
Gas	42
3 A coordinated national approach	43
Market size imperatives	43
Energy's role in improving Australia's productivity	44
Creating a national energy market	45
National governance: an essential efficiency ingredient	45
4 Market performance	49
Performance focus	50
Productivity measures	52
Investment signals	61
Market performance overall	65

5	Market structures	73
	Market structures terms of reference	74
	Impediments to competitive energy markets	75
	Government budgets as barriers to market entry	77
	Market governance	106
	Regulatory inadequacies: Australian energy markets	125
6	Transmission	143
	Introduction	145
	The transmission framework today	146
	Delivering a fully national and efficient system	149
	Impediments to the delivery of a fully national and efficient system	153
	The way forward	177
7	Energy financial markets	207
	Introduction	210
	The issues identified	211
	Capital markets and investment	211
	Contract trading in the NEM	215
	Vertical integration	221
	Institutional arrangements and market design	223
	Inter and intra-regional trade	229
	Settlement of the spot and contract markets and credit	243
	Demand response	251
	Government and regulatory issues	256
	Gas Financial Markets	261
8	The benefits of market reform	269
	Expected benefits of reforms: electricity sector	269
	Economy-wide benefits of electricity reform	277
9	Energy reform as a process	279
	Energy market reform and the NRA agenda	279
	Maintaining Australia's energy sector's performance	279
	Current challenges: the need for market flexibility	280
	Energy reform as a process, not a one-off event.	280
	ERIG's recommendations and ongoing reform	280
	References	283

figures

1	Spot market price level outcomes in the NEM	51
2	Retail electricity price indexes by capital city	52
3	Capital productivity in the transmission sector	55
4	Labour productivity in the transmission sector	56
5	Transmission to load factors	57
6	Labour productivity in the generation sector	58
7	Capital productivity in the generation sector	59
8	Capacity factor trends	60
9	Availability factor trends by generator plant	61
10	Illustrative annual price duration curve	62
11	Governance arrangements	107
12	Generation location and region boundaries	155
13	MT PASA vs actual limit for QNI	158
14	Generation and transmission cross-ownership	170
15	Factors that limit southward flows on QNI	174
16	Proposed national network development arrangement	185
17	Two tier decision making - coordinated approach	192
18	Traded OTC instruments in the NEM	217
19	Turnover of OTC instruments by region	217
20	OTC traded volume Vs NEM system load	218
21	Annual traded volumes on SFE	218
22	Base futures curve	219
23	Comparison of trade in exchange traded commodities	219
24	Proportion of generation by retailers	222
25	VIC-SA flow when price separation greater than \$100/MWh	234
26	QLD-NSW flows when price separation greater than \$100/MWh	235
27	Snowy-VIC flows when price separation greater than \$100/MWh	235
28	Snowy-NSW flow when price separation greater than \$100/MWh	236
29	Vic-Snowy flow when price separation greater than \$100/MWh	236
30	Relationship between spot and forward market settlement	243
31	Demand side management by industry	254
32	Capacity of gas fired generation by state; 1997 – 2005.	262
33	Australia's major gas pipeline systems	263
34	Annual benefits of reform relative to BAU assumptions	271
35	Levelised time weighted 'prices' by region	272
36	Resource savings due to improved competitive outcomes	274
37	Impact of improved transmission planning	275
38	Impact of improved demand side response	276

tables

1	National Electricity Market performance summary	49
2	Average aggregate price spike revenue: base-load	63
3	Average aggregate price spike revenue: peaking plants	64
4	Impact of withholding on the 2004 market price	68
5	State and Territory Public Sector Performance	80
6	Return on assets: government-owned generation 2004-05	89
7	Allowed retail margins across jurisdictions	96
8	Number of retail customers changing contracts	131
9	Inter-regional hedging: Premium collected versus spot	232
10	SRA premium and settlement residues	232
11	Credit Support Provided to NEMMCO	245
12	Cost of Credit Support by Long Term Issuer Credit Rating	246
13	Summary of Proposals to AEMC on Amendment to Settlement Re-Allocation Process	248
14	ETEF Phase Out Timeline	257
15	Structure of cost saving with Efficient Development	273

boxes

1	What is market power?	66
2	Competitive neutrality fee – Queensland	92
3	Government ownership – the case of Snowy Hydro Limited	101
4	Congestion pricing and efficient generation location	155
5	The complexity of inter-regional constraints	158
6	The link between regulatory regime and regulatory test	162
7	The need for national planning – TransGrid's proposed development of supply to the Newcastle–Sydney–Wollongong Area	172

appendices

	ERIG's Terms of reference	286
	ERIG Panel and Secretariat members	287
	Membership of ERIG reference groups	288
	List of submissions and expert advice	289
	Abbreviations	292

ERIG's Key Findings

Australia's energy markets are world-leading. However, ERIG concludes further reforms would deliver more economic benefits. More market contestability, improved transmission planning and regulation, and facilitating efficient financial markets, are priority reform areas.

Making energy markets more contestable, efficient and well-governed

- » Government ownership (especially in electricity) in some jurisdictions is a barrier to entry and is impeding competition. Budget pressures are limiting further government energy investment. Concerns about government businesses having an advantaged position are limiting private sector energy investment. Disaggregation, privatisation and improved competitive neutrality arrangements are needed. Retail price caps are barriers to entry and should be relaxed.
- » Better governance, including reforms to National Electricity Market Management Company (NEMMCO) and the Australian Energy Market Regulator (AEMC), would improve efficiency.
- » Competition and corporate law and regulation are appropriate and adequate, if applied equally to government and private businesses. No special energy sector rules seem needed at present.

Developing an efficient national transmission system

- » Transmission markets also require reforms to ensure a fully national market focus is achieved.
- » An efficient national transmission system requires improved locational signals to generators, better efficiency incentives for Transmission Network Service Providers (TNSPs), and proper national planning, coordination and system integration for national, market-wide grid development.
- » A strategic national planner under a reformed NEMMCO, combined with reform of the currently flawed regulatory test, would ensure better evaluation of transmission investment options.

Facilitating efficient financial markets

- » Mechanisms supporting interstate trade need to be improved. These include: resolving inefficiencies in the operation of the Snowy region, improving firmness of inter-regional trading rights, and contracting relevant generators to support inter-regional flows.
- » Settlement of the spot and contract markets need to be better integrated.
- » Additional key areas for reform are: developing gas financial markets, facilitating the development of a more effective demand response, improving the effectiveness of strategic planning and implementation, and developing the market design to better deal with the trend towards consolidated vertically integrated national players.

Estimated Economic Benefits of Reform

- » These reforms, taken as a whole, could increase real Gross Domestic Product (GDP) by about \$400 million per year, with retail energy price reductions of about 2%.

Executive Summary

Background

Access to competitively priced and reliable energy underpins the competitiveness of Australia's export industries, is a crucial input for the domestic economy and a key enabler for almost every economic activity. In 2004-05, the electricity sector contributed 1.4 per cent to Australia's GDP.

Energy market reforms over the past two decades have played a significant role in facilitating improvements in productivity and have underpinned Australia's impressive economic growth. For a large component of the National Electricity Market (NEM), implementation of National Competition Policy has led to the disaggregation of the previously vertically integrated electricity utilities into their respective supply chain elements and moved Australia towards independent, decentralised decision-making in the energy sector. In the 1990s, the generation and retail elements were separated and exposed to some degree of competition through the introduction of a gross pool electricity market.

The increase in the level of independent, decentralised decision-making in generation and retail in the NEM, driven by an increase in the extent of competitive forces, has been the primary driver for the efficiency gains to date. The increase in the level of competitive pressures has increased the utilisation and performance of generation assets and lowered operating costs and driven real efficiency gains through the NEM-wide dispatch of generation. Retailers have also become more responsive to customers and prices for most customer groups have declined over the past decade.

Energy market reforms by the year 2000 were estimated by ABARE to have resulted in an increase in national income of \$1.5 billion with Australia having some of the lowest electricity prices in the developed world. Industrial and household electricity prices are 38 per cent and 31 per cent respectively below the average across the International Energy Association (IEA) member countries.

The fact that these reforms have produced one of the most competitive and efficient electricity markets in the world has been recognised by the International Energy Agency (IEA). The IEA observed in its review of Australian energy markets that "*Australia was one of the pioneers in energy sector microeconomic reform and should be commended for its vision and implementation of a liberalised (electricity) market. Australia now has one of the most transparent and competitive electricity markets in the world and could serve as a model for other countries*" (IEA 2005).

However, improvements in the performance of the Australian energy sector over the past two decades mask two important realities. First our past performance tells us nothing about our full productive potential in the energy sector. ERIG has attempted to determine how the energy sector can reach its full productive potential and commissioned modelling to help understand the likely benefits which can flow to Australia if it can do so. Second, average Australia wide performance masks significant differences in performance between the states.

ERIG Terms of Reference

On 10 February 2006, the Council of Australian Governments (COAG) agreed to establish an Energy Reform Implementation Group (ERIG) to review certain elements of the operation of Australia's energy sector and to suggest further reforms, where there is a case for them, supporting more efficient energy markets.

ERIG was asked to report before the end of 2006 on reform recommendations for:

- » achieving a fully national transmission grid including the most suitable governance and transitional arrangements having regard for COAG's objective of achieving a truly national approach to the future development of the electricity grid, the legitimate commercial interests of asset owners, and the need to promote investment that supports the efficient provision of transmission services;
- » any measures that may be necessary to address structural issues affecting the ongoing competitiveness and efficiency of the electricity sector; and
- » any measures that may be necessary to ensure there are transparent and effective financial markets to support energy markets.

ERIG Panel members were appointed in June 2006 and ERIG began its work during that month.

ERIG's Approach

Consistent with the focus of the current National Reform Agenda (NRA), ERIG's review focuses on the economic efficiency of the energy sector, particularly the electricity sector.

ERIG considers that the goal for Australia's energy sector should be that:

- » Existing energy assets should be operated at 'best practice' levels (maximising technical/productive efficiency);
- » Investments in energy assets should generate competitive returns (maximising capital efficiency);
- » The allocation of resources to the energy sector should be 'just right' given competing demands for scarce resources (maximising allocative efficiency);
- » Over time, the relevant market and economic signals and incentives should allow all of these efficiency dimensions to be sustained - the right amounts of investment at the right time – and should encourage innovation in the energy sector (maximising dynamic efficiency); and importantly
- » These efficiency dimensions should be seen from a *national* perspective.

Governments are held responsible for ensuring energy is able to be supplied efficiently and as reliably as possible – it is an essential service. ERIG believes that the most efficient roles for governments in securing these outcomes in the energy market are:

- » to ensure appropriate levels of supply reliability standards are set, preferably uniformly across Australia;
- » to make sure that institutions, mandates and governance arrangements are structured to drive broad efficiency outcomes;
- » to eliminate barriers to entry where markets can be contestable;
- » to ensure that markets are well designed and efficient; and
- » for regulated parts of the market, to make sure that regulation tries to replicate the operation of a competitive market so that the regulatory incentives lead to the most efficient outcomes possible.

In undertaking its work, ERIG focused on the extent to which the existing structures and governance arrangements in the energy market are sufficient to support a national energy market across Australia, thereby delivering greater efficiency and lower costs, and are sufficiently flexible to enable rapid responses in an uncertain environment.

In this context, ERIG notes that the energy market in Australia is entering a period of significant uncertainty. The industry will, at some stage in the future, need to respond to the complex risks associated with the greenhouse challenge. Responding to these risks will be even more important given the size of the investment required to underpin future energy demand.

Australia's energy demand, and the investment required to sustain it, are growing. ABARE estimates that the total amount of electricity generated Australia wide will grow at an annual average rate of 2.1 per cent over the medium term. As a result, total generation output is projected to increase from an estimated 245 TWh in 2005-06 to over 600 TWh by 2049-50. An additional 100 GW of additional capacity will be required to meet this increase - more than twice the level of capacity currently installed Australia wide. The Energy Supply Association of Australia (ESAA) has estimated that, by 2030, additional installed generation capacity to meet Australia's electricity demand growth will cost at least \$35 billion. Further, the Energy Networks Association (ENA) has indicated that each year energy network businesses (gas and electricity) undertake investment of around \$5 billion per year.

ERIG has found that more can be done to improve the efficiency of Australia's energy sector. ERIG considers that Australia's energy market arrangements could be made much more flexible to allow for more rapid responses to these changing circumstances.

Given the right market and economic signals and appropriate governance arrangements, private sector investors in energy are inherently more capable of responding rapidly to altered market circumstances than public sector investors – and in this part of the economy, ERIG has found them very willing to do so.

In addition, the current, largely state-by-state approach, to considering energy issues still permeates the energy system. While serving Australia reasonably well in the past, this 'state based' institutional and regulatory framework is unlikely to be able to serve Australia as well into the future. Planning of Australia's electricity transmission network is a good example of where it has been possible in the past to consider matters on a state-by-state basis, but where a more national approach to planning is likely to be required to maximise the efficiency of the energy sector in the future.

ERIG considers more can be done to encourage the development of a national energy market. ERIG believes that all elements of the energy system – generation, transmission, distribution and retail – will be dominated by organisations that, for effectiveness and efficiency reasons, will want to operate in Australia as if it were one national market. ERIG strongly believes that securing Australia's energy future will necessitate the development of a consistent, coherent and national approach to all elements of energy policy, regulation, governance and practice.

Australia's national energy market should be guided, at the highest level, by broad policy objectives covering efficiency and reliability that are set nationally.

ERIG concludes that Australia does not yet have a fully national energy market. For example:

- » there are at least five separate market operators operating gas and electricity markets across Australia (NEMMCO, VENCORP, REMCO, GMC and the IMO). ERIG believes that, ultimately, there should be a single national energy market operator for Australia;
- » the Australian Energy Market Commission (AEMC) has been established as the national rule making and market development body, but ERIG has very serious concerns about its funding, ability to act strategically and to manage its workflow, and the limits to its national reach;
- » Australia is moving towards a single regulator, the Australian Energy Regulator (AER), although full implementation of that policy has not yet been achieved;
- » numerous state derogations from the national rules and regulations covering energy exist, creating a different legal and regulatory framework for the energy market in each state;
- » transmission planning and decision-making is still regionalised with strategic national planning to optimise system-wide investment not occurring effectively;
- » each state has its own requirements in relation to retail competition and licensing of retailers;
- » market arrangements for trading in financial markets between regions is more difficult and risky than it needs to be; and
- » where governments remain as major supply-side participants in the industry by owning and operating substantial energy assets, the impartiality of objectives and mechanisms to achieve a national energy market, including through the Ministerial Council on Energy (MCE), are likely to be compromised.

Ensuring competitive, efficient and national energy markets is even more important at a time when substantial investment is needed in energy supply infrastructure to ensure sufficient supply of competitively priced and reliable energy to meet growing demand into the future. Ongoing reform of the energy sector is also important because of the economy wide benefits that it generates.

ERIG's Key Findings

Market Structures

ERIG's benchmark for encouraging good market outcomes, especially in contestable markets such as generation and retail, is competition. Competition has been proved to be able to deliver the highest level of output at the lowest cost that is sustainable over time. ERIG has identified three threats to competitiveness and efficiency currently affecting Australian energy markets: barriers to market entry; governance improvements and regulatory inadequacy.

Barriers to market entry

ERIG has been struck by the consistent refrain that 'government', particularly some state governments, are a barrier to private sector entry into energy markets. Government policy and government ownership of competing businesses are the two sources of such barriers.

Differences in policy on greenhouse gas abatement arrangements at the national and state level are a key source of investment uncertainty. Government regulation of energy prices (eg, retail price caps) is also a significant barrier to private entry into energy supply markets where price caps are binding and their existence constrains the emergence of retail competition. Use of government-owned assets to drive other government policy objectives is a barrier to entry in some cases.

There are budget pressures that effectively constrain governments from energy market investments. Involving the private sector in the supply of energy assets is likely to be a plus for budget-pressed states. Allowing the private sector to provide capital for energy supply infrastructure frees up scarce government resources for investing in other important social priorities, like hospitals and schools.

Government ownership in some jurisdictions causes serious concerns about competitive neutrality. Perceptions held by private investors that there is no 'level playing field' between publicly owned and privately owned assets directly threatens full market contestability.

The evidence suggests barriers to private entry can take different forms in different states.

In NSW, the dominance of government-owned energy businesses, plus evidence of intermittent but persistent market power, plus the failure to attract new private sector entry despite price signals for it, suggests that private investment in the energy sector may be delayed or prevented compared with what would occur in a fully contestable market.

In Queensland, the problem is different. Government investments, if anything, appear to be undertaken too soon, because of official concerns about reliability (and possibly other state development objectives), potentially stranding some private investments.

On the basis of analysis provided by one consultant engaged by ERIG, and by considering the evidence in submissions and other publicly available research, ERIG is of the view that there is an accumulating body of evidence suggesting that recent productivity gains (after market start) within the NEM have been quite different between jurisdictions within the NEM. This evidence is based on data which ERIG accepts and fully understands is

subject to a number of qualifications. Nevertheless, taking all the evidence as a whole, including broad productivity trends, ERIG believes the weight of evidence suggests that the private ownership model is the most efficient model for the delivery of electricity. It delivers outcomes closest to the competition ideal and the best outcomes for energy users.

ERIG concludes that disaggregation of significant retail and generation portfolios, followed by privatisation, is the most effective solution to most of these problems and would increase the overall efficiency of Australia's energy sectors.

ERIG recognises there are political issues associated with privatisation for some states. However privatisation of even one element of the contestable energy chain would assist in driving more competitive outcomes, improve efficiency, and therefore achieve better outcomes for users of energy. For example, ERIG believes that the recent sale of the Queensland Government's retail energy assets will act as a driver of efficiency in the supply of energy in that state.

ERIG notes that some state and territory governments have ruled out privatisation of some or all of their currently owned energy assets at this time. Who owns and operates certain assets used to provide services to the people of a state or territory is a matter for governments.

If governments wish to retain the ownership of their energy assets, then ERIG considers that initiatives to improve competitive neutrality should be implemented immediately to place government businesses, as far as is possible, on the same commercial footing as their private sector counterparts. That said, ERIG considers that the playing field between public and private sector businesses cannot ever be completely level.

For those governments who decide to retain their existing energy assets but seek to encourage the private investment for new investment, ERIG considers that clear and unequivocal signals about their intention to do so is fundamental. Without such signals, private investor perceptions of 'sovereign risk' at best adds to hurdle rates of return (and therefore energy costs) before investment occurs, or, at worst, may delay or prevent desirable energy investments from taking place.

The Government of Western Australia appears to be the most advanced within Australia in following this 'clear signal' strategy. Placing a cap on generator expansion and other limits on the government owned market incumbents in the Western Australian energy market appears to have sent a positive message to the private sector about the intentions of the WA Government.

For jurisdictions where signals are less clear (such as in NSW and to a much lesser extent Queensland), industry participants strongly asserted that continued public ownership of a large amount of a state's competitive energy assets is a significant impediment to future private investment in those states. Private sector operators cited government ownership, and particularly the apparent willingness of government owners of these assets to be guided in their investment and operational decisions by drivers other than purely commercial considerations, such as political factors and/or desires for regional development, as one of the biggest impediments to private investment in the energy sector in those states. Perceptions, strongly held, whether well founded or not, can be real barriers to market entry and timely capacity expansion.

ERIG is not suggesting that some private investment will not occur under these less than ideal circumstances. But this private investment is more likely to require special, case-by-case incentives or even specific guarantees before this private investment is committed. ERIG does not regard this as consistent with an efficient investment and energy market where private investors are continually seeking out sound investment decisions that will meet the needs of their shareholders and potential customers, and rapidly and efficiently investing to take advantage of these emerging opportunities.

ERIG considers that there is a clear willingness of the private sector to invest where it is faced with a level playing field and sustained demand for additional investments in energy assets. These considerations together, in ERIG's view, establish a strong case for making sure that signals are sent clearly and unequivocally to the market that future investment within the NEM and the Wholesale Electricity Market (WEM), will be for the private sector to undertake.

On retail price caps, ERIG notes that retail price controls have meant that many consumers do not receive accurate pricing signals about the cost of using electricity, particularly at peak times. As a result, the demand side of the NEM is relatively inactive and this has significant implications for the efficient operation of the electricity market. In addition, price caps are a barrier to entry.

ERIG endorses the commitments made by state and territory governments to remove retail price caps after competition exists in electricity markets. However, ERIG concludes that there is an inherent contradiction between (i) waiting for competition to emerge before removing price caps, and (ii) the fact that binding price caps themselves constitute impediments to competition. ERIG considers this contradiction should be reviewed and resolved so that faster progress can be made in this area.

ERIG also considers that governments should conduct a detailed review of arrangements for community service obligations in the energy sector with the objective of identifying non-distorting, transparent and targeted delivery mechanisms to replace the 'blunt instrument' of retail price caps.

Governance improvements

ERIG believes that improvement in the governance arrangements that support Australia's energy markets is a critical pre-condition for the continued improvement in the performance of Australia's energy sector.

Good governance principles—ensuring no conflicts of interest, clearly allocating responsibilities, getting incentives 'right'—are relatively easy to enunciate, but are sometimes difficult to implement.

Australia's energy market governance arrangements have been improved somewhat as a result of reforms implemented since the 1990s. However, ERIG believes that further refinements can and should be made to support the emergence of a national and efficient energy market in Australia.

ERIG strongly believes that single Australia-wide, energy market-wide, independent (and preferably separate) institutions covering planning, market operation, market regulation and rule making are urgently required and would be the logical evolution of current market governance arrangements.

Privatisation of remaining government-owned electricity assets would eliminate potential conflicts of interest and facilitate improved governance arrangements by removing intra-market jurisdictional biases.

Sharpening the separation between the role of the MCE as the peak policy-making body, and the bodies responsible for planning, operating, rule-making and regulation of Australia's energy markets, would improve governance, including by ensuring the independence of market operators from governments. Increasing the influence of the Commonwealth or COAG in the oversight and development and monitoring of Australia's energy policy and clarifying and strengthening the role of the Commonwealth Government within the MCE would help as well.

The AEMC is in need of substantial governance reforms. It needs to be adequately and transparently funded, preferably by the Commonwealth Government, and to have more control over its own work programme, subject to being required to develop rules that enhance market efficiency. It needs a full time Board of Commissioners.

Australia's electricity market rules are not uniformly applied across Australia because of numerous state derogations. This is inconsistent with ensuring a national, efficient, energy market. Uniform rule application should be applied as soon as possible, with annual independent reviews of progress.

NEMMCO's governance would be improved by providing for more independence in relation to Board appointments, and more industry representation on its Board to further improve its service culture. These reforms are crucial pre-requisites for other reforms recommended by ERIG potentially involving NEMMCO, including in relation to transmission planning; more efficient financial market settlement arrangements; and the feasibility of a single energy market operator.

Importantly, ERIG believes that, ultimately, a national energy market operator should replace the separate operators for gas and electricity. This should be adopted as a longer term governance objective.

Regulatory inadequacy

ERIG has been asked by COAG to consider whether or not the regulatory safeguards protecting markets from uncompetitive behaviour are adequate in the case of Australia's energy markets.

An important issue concerning policy makers and the industry is the extent to which vertical integration, particularly between energy retailers and electricity generators, is inherently anti-competitive and therefore should be prevented.

ERIG notes that there are strong commercial incentives for vertical mergers between contestable sectors (generators and retailers) to form what are sometimes described as 'gentailers'. These incentives arise from the ability of vertical integration strategies to deliver economies of scale and scope and a physical hedge against pool market price risk. ERIG notes that within the contestable segments of the market there may be continued incentives towards vertical integration between generation and retail.

ERIG believes that vertical integration is not anti-competitive *per se*. But anti-competitive problems may arise where it is associated with excessive horizontal aggregation. ERIG can

find no evidence, at this time, that the integration (which in general has been partial anyway) between energy retailers and electricity generators has been anti-competitive.

ERIG does not rule out the possibility that this could become an issue in the future. But were it to become the case, it would be because a horizontal aggregation problem would have arisen. At this stage, ERIG considers the *Trade Practices Act 1974* (TPA) to be the appropriate vehicle for determining the competition impact of mergers and acquisitions in the contestable segments of the electricity market, and, properly applied, it appears adequate to the task at the present time.

Where mergers involve contestable market entities (generation or retail) and 'natural monopoly' entities (transmission or distribution), ERIG concludes that there is a legitimate cause for concern about regulatory adequacy. Natural monopolies, by definition, possess market power. Mergers between natural monopolies and contestable market entities may allow that power to be exercised, in non-transparent ways, undermining competition. Consistent with that principle, ERIG agrees that governments should promulgate cross-ownership rules proscribing such mergers between generators and transmission as soon as possible in the interests of investor certainty. These rules should comply with competitive neutrality principles.

A similar argument, in principle, applies to distribution/retail mergers, however the market trend seems to be that, when privatised, the owners of these assets are separating these two types of businesses anyway.

ERIG has received somewhat conflicting claim about the application of the TPA to government owned businesses. If the TPA does not apply equally to both government and private businesses, competitive neutrality is undermined and regulatory inadequacy exists. If this is the case, ERIG strongly believes that this must be rectified so that the TPA fully applies to state owned corporations.

ERIG notes further evidence that the Corporations Law does not apply equally to state government and to private businesses, because of 'carve-outs' in some states limiting or excluding the application of the Corporations Law to the former. This appears to significantly undermine competitive neutrality and market efficiency. ERIG strongly believes that this must be rectified so that corporations law fully applies to state owned corporations. ERIG concludes that such 'carve outs' should be removed by appropriate state legislation as soon as possible.

A Fully National and Efficient Transmission Grid

ERIG was asked to examine Australia's transmission arrangements. This included examining the most suitable planning and governance arrangements for creating a fully national transmission grid within the NEM, having regard to COAG's objective of achieving a truly national approach to the future development of the electricity grid.

The development of an economically efficient and fully national market is not solely a matter for transmission planning and investment. The development of such a market is also dependent upon competitive markets in each region, open access on a level playing field across the market and well functioning financial markets.

It is also clear that the development of the transmission system cannot be separated from the development and operation of the overall power system or from operation and investment in generation, or from decisions by customers and the broader energy market.

The timely and efficient delivery of transmission services is crucial to enabling the electricity system to meet the emerging challenges posed by Australia's future energy demands. It is, however, also important that there is efficient investment in both the level and location of generation to meet customer demand. In addition to the discussion earlier of the likely future demand for investment in generation, estimates also suggest that around 1,000 MW of additional generation capacity is required every year for the next ten years to meet demand growth. To maintain and build on the benefits of the reforms to date, this investment and the related transmission investment will need to deliver an efficient overall power system.

ERIG considers that its terms of reference do not mean that the national grid should be totally unconstrained and completely 'free flowing'. Rather, ERIG considers that at certain times some level of congestion may be efficient and that transmission congestion does not of itself signal market and investment inefficiency. In fact, the NEM has performed reasonably well to date and ERIG considers that the current level of transmission and interconnection investment is reasonably appropriate for today's level of installed generation capacity and peak demand.

In this context, ERIG considers the key policy question to be addressed is how to ensure the economic regulatory regime, incentives, pricing and approvals processes all work together with the overall planning and governance structures to achieve an efficient mix of generation and transmission investment into the future which will provide the lowest delivered cost of energy to consumers, across the whole of the NEM.

Shortcomings of the current arrangements

ERIG has identified shortcomings in three critical elements for achieving an efficient mix of generation and transmission investment across the national grid:

- » the need for commercial incentives on generators to locate efficiently in respect to the transmission grid, primary energy sources and load locations;
- » the need for improved incentives for both efficient operation of the existing transmission system and efficient investment in a whole of NEM market context; and
- » a requirement for coordination of investment in the transmission system on a national basis.

While the current level of transmission investment is reasonably appropriate, investment decision making is biased toward investment within each state rather than, where it is efficient to do so, having a true national character. The lack of clear incentives or mechanisms to ensure the efficient ongoing development of the national transmission system leads ERIG to the conclusion that opportunities for efficient investment opportunities have been missed in the past. More importantly, substantive improvements need to be made to ensure the future challenges can be efficiently met.

The way forward

The AEMC review into congestion management is an important opportunity to improve the incentives on generators to locate and operate efficiently. This review needs to take account of the allocative and dynamic efficiency gains from doing so. The terms of reference for that review, however, may hamper the AEMC in delivering the most effective solution.

The development of market based incentives on TNSPs by the AER is also important and should be continued to drive overall efficiency gains. The right drivers on TNSPs behaviour are also vital in achieving the national market objective.

ERIG has considered the role and function of the Regulatory Test as it now applies in the evolving regulatory regime. The investment decision making criteria in the Regulatory Test are appropriate and should be retained, however the two criteria for investment should be amalgamated. The Regulatory Test itself, however, does not currently perform the role of a test and its links to the regulatory regime are tenuous at best.

ERIG considers that there is merit in replacing the Regulatory Test with a two step process to guide efficient transmission investment as follows:

- » the establishment of a National Transmission Network Development Plan (NTNDP) aimed at delivering an integrated, national plan for the longer term efficient development of the grid on an integrated, national basis; and
- » a project by project assessment should be made and stakeholders consulted prior to any major network augmentation project being constructed which demonstrates that the most efficient alternative, whether network or non-network, has been adopted to meet reliability standards and deliver market benefits while fitting within the umbrella of the NTNDP.

ERIG also considers that there would be efficiency gains from removing current differences in the reliability and planning criteria between state jurisdictions and disparities in how they are applied. A consistent national framework for these standards could improve certainty and investor confidence as well as providing a level playing field across the NEM.

ERIG considers that the potential benefits from better coordinated development of the national grid are sufficient to warrant the establishment of a national planning function.

After reviewing a number of options, ERIG concludes that the planning model could be either:

- » a National Transmission Planner – involving a strategic national planner to collate, analyse and disseminate information and deliver strong and well informed independent advice on efficient investment across the NEM as a strategic national plan; or
- » a National Transmission Service Procurer – involving the establishment of a NEM-wide, not-for-profit corporate entity responsible for undertaking national planning, making augmentation investment decisions and procuring those services either by negotiation or tender.

ERIG recommends the implementation of the first option, the National Transmission Planner, because it is consistent with the proposed incentive based regulatory regime and is commensurate with the scale of the identified shortcomings in the current arrangements.

The National Transmission Planner model as proposed would maintain the current accountabilities of TNSPs for investment and operating performance and seeks to complement the existing regulatory arrangements. It would also provide a focus for national development of the transmission system as a whole which is not currently being delivered. Arguments that only a small proportion of current network projects have an inter-regional impact are, in ERIG's view, based on a narrow, technical view of the development of the network rather than from the perspective of efficient market outcomes.

ERIG considers that further work is required to develop detailed arrangements to implement the new national planning function. This report outlines recommendations for a review by the AEMC to further detail the planning framework and to rewrite relevant sections of the National Electricity Law (NEL) and Rules (NER). Whilst the new regime would need additional provisions for planning, for investment decision making and for the implementation of the new National Transmission Planner, a number of existing provisions would be made redundant. The National Transmission Planner would replace the role of the Inter-regional Planning Committee (IRPC) and the NTNDP would replace the Annual National Transmission Statement (ANTS) process. Under ERIG's proposals, the implementation of the NTNDP and the arrangements for a Project Assessment and Consultation would replace the current Regulatory Test.

The reform of NEMMCO proposed by ERIG provides an opportunity for the new national planning function to be incorporated within that body. The function if incorporated within NEMMCO would benefit from some organisational synergies and cost savings. However, the function would need to be established anew with a stronger focus within NEMMCO on involving all parties in the development of national plans. It is therefore contingent on implementation of the recommended reforms to NEMMCO.

ERIG considers that the development of a NTNDP is not possible without understanding and analysing potential developments in the competitive sectors, the nature and location of likely generation investments and the location and growth of customer load. This planning requires a range of inputs and oversight from a range of industry participants and stakeholders and this input is seen as essential to the plan's quality and usefulness.

ERIG considers the proposed national transmission planning regime should be reviewed within five years to consider whether the incentive regime on TNSPs together with the coordination and advisory function of the National Transmission Planner have produced efficient outcomes or whether the role of the National Transmission Planner should be extended to provide it accountability for decision making and procurement of transmission services.

Arrangements in Western Australia are different from those that apply to the NEM and have only been established for a relatively short period of time. However, Western Australia operates a transmission network over a wide area and in a competitive market context. As such, the key principles for the efficient development of the Western Australian power system should be similar and ERIG has recommended exploring the potential to use national institutions for its development, operation and regulation and to apply the general principles recommended for the NEM in Western Australia.

Energy Financial Markets

ERIG has been asked to examine *'any measures that may be necessary to ensuring there are transparent and effective financial markets to support energy markets.'*

Transparent and effective energy financial markets provide instruments for market participants to manage risks. More importantly financial markets are a critical element in fostering efficiency. Financial markets also provide the signals for investment.

Australia's energy financial markets comprise capital markets, spot markets and contract markets. ERIG has focused on electricity and to a lesser extent, gas markets. In terms of electricity, the primary focus has been the NEM (the interconnected states of Queensland, NSW, Victoria, SA and Tasmania as well as the ACT). However limited commentary is also provided in regard to the newly created electricity market in WA.

Overall the evaluation by ERIG of the NEM is positive in relation to financial markets, notwithstanding that there are areas where useful reform should proceed. Gas financial markets by contrast are still maturing and lacking effective spot markets (except in Victoria).

Capital markets and investment

A survey by KPMG of investors commissioned by ERIG found three major impediments affecting investment and efficiency:

- » government ownership is a significant impediment to investment in the electricity sector in some states;
- » investors regard the implementation of full retail contestability (FRC) in those states which have not already done so as being important to the development of an efficient financial market for energy. The progressive removal of retail price caps or the progressive raising of price caps would, in their view, stimulate competition and capital markets thereby lowering prices for end consumers; and
- » investors have indicated that they are factoring in a carbon price signal to their investment planning and decisions but are uncertain about its nature and timing. Investors view the existing range of government emissions abatement schemes and policies as fragmented and inefficient. This is argued to lead to a lack of liquidity and competition and is brought to the attention of governments.

Contract trading in the NEM

Traded financial markets in energy are evolving in a generally positive way. There seems limited (if any) role for governments in traded financial markets per se other than ensuring expeditious improvements as required in the underlying spot market.

Market liquidity has strengthened in the more visible markets such as the Sydney Futures Exchange (SFE) and brokered Over the Counter (OTC) markets and the aggregate volume of trading has trended up to about 1.3 times system demand. This healthy trend should be supported wherever possible when rule changes are considered.

However, the liquidity and depth of the financial market varies across regions, across time and over products. There are specific gaps in the liquidity and depth of products in South

Australia and Tasmania, gaps in products to manage varying customer demand, and according to some participants, in short term products.

To enhance financial market trade and to deal with evolving trends in the market, such as consolidation and vertical integration, it would be appropriate to attempt to develop a mechanism in relation to South Australia and Tasmania to facilitate trading of these regions without compromising existing arrangements and the basic NEM design integrity. Although ERIG has not had time to address this area in detail, it is believed that such mechanisms may be practical. Similarly, the industry is encouraged to expedite the development of simplified tradable products to manage varying customer demand.

Financial market trading activity has increased in the face of the limited vertical integration which has occurred to date. Having said this, there is a need for a watching brief to monitor market developments over time to assess this impact. The key strategic consideration is whether the market design and rules should evolve to better manage the evolution of the market to a lesser number of vertically integrated players.

Institutional arrangements and market design

ERIG has identified a weakness in the development and implementation of key strategic policy in the energy market. In addition, industry should have a greater role in the oversight of a reformed NEMMCO's market operations functions through the formation of a market operations panel.

The energy-only design for the NEM has been effective and should be retained. The material progress represented by the WEM is also acknowledged and supported, however some improvements are proposed for the mechanisms of the capacity market.

Inter and intra-regional trade

There is a need for refinement of intra-regional location signals to enhance efficiency. However full nodal pricing should not be considered as a solution in part because of the adverse effects this would have on energy financial markets. Signals are also required for embedded generation, and firm demand side within the distribution system or generators connected to transmission to receive the benefit of avoided transmission investment and where relevant, credit for supporting transmission operations. Some form of transmission pricing to signal the locations where generation is able to best support transmission should be considered.

The mechanisms supporting inter-regional trade are not working efficiently and adding to risk premiums in the market. The rationalisation of the Snowy Region is a key priority and will also enhance the effectiveness of financial markets. There is a need to improve the design of the instrument supporting inter-regional trade, particularly, the settlement residue auction process by creating firmer transmission rights. The benefits of this measure, based on recent history, would be around \$100 million per year for NEM customers.

Settlement of the spot and contract markets and credit

Under the current NEM design, spot and contract markets are largely settled separately. This results in the duplication of credit requirements in the spot and contract markets. This situation increases systematic risk, creates timing differences, increases barriers to entry and

is increasingly important with the privatisation of retail businesses in Queensland. Proposals are presented to advance the integration of spot and contract markets. In addition, the removal of barriers to the increased use of SFE settlement to offset spot market settlement is proposed.

Demand response

As noted earlier, the demand side in the NEM remains relatively inactive compared with its potential. Achieving its potential would drive major benefits in the NEM.

The commitments made by state and territory governments to remove retail price controls will be helpful when implemented in supporting cost reflective prices and demand response. The work program of the MCE on demand side response and the progressive rollout of electricity smart meters from 2007 provides a further building block and is supported. However, smart meters alone would not be sufficient to create an efficient demand side response.

In the large customer segment, while progress in demand side management (DSM) has been only fair, there seems to be little basis for a policy response as the market is working to a degree. However significant participation of small customers in DSM initiatives can not be expected without automation. For this reason, the development of automated DSM for small and medium customers is required to facilitate DSM but may not develop without initial sponsorship by governments and supportive changes in the institutional arrangements to ensure that market mechanisms can work in practice.

Government and regulatory issues

There are government and regulatory issues in a number of areas where the Commonwealth through the Australian Securities and Investments Commission (ASIC) could consider action to better support and remove barriers to the development of more efficient financial markets in electricity and gas, thereby fostering reduced risk premiums.

Furthermore, the removal of the Electricity Tariff Equalisation Fund (EETF) in NSW accordance with the published timetable, as well as the removal of the Long-Term Energy Procurement (LEP) in Queensland would enhance financial market trade and efficiency.

Gas financial markets

The Gas Market Leaders Group (GMLG) recommendations offer worthwhile progress and are generally supported by ERIG. The establishment of a gas spot market and a gas market operator, with ultimately a National Energy Market Operator, is strongly supported by ERIG.

Greater standardisation of gas market structures, gas market processes, pipeline access and supply points for pricing across the market is required to enhance gas financial trade. This is becoming of increasing importance given the trend towards the development of gas fired generation and to foster gas retail competition. Finally, further work is required to assess the upstream areas of acreage management and joint marketing.

Other Matters

Greenhouse gas abatement measures & renewable energy

In the context of considering investment impediments, ERIG was struck by the significant concerns raised by market participants about market uncertainty in relation to possible future greenhouse gas abatement initiatives. Market participants have indicated to ERIG that greenhouse risk constitutes one of the most important barriers to investment in the energy industry, particularly to new base load coal investments. ERIG notes that most market participants desire a coordinated and sustainable policy approach to greenhouse and are already pricing greenhouse risks into their future investment plans.

ERIG also notes the current relatively uncoordinated proliferation of state-based renewable and greenhouse schemes. Market participants have noted that these schemes raise regulatory risks, impose additional costs and red tape on energy investors and lead to uncoordinated and inefficient outcomes and reduced liquidity in financial markets.

However, ERIG notes that greenhouse matters require detailed analysis and such analysis has been beyond both the scope of ERIG's review and its timeframe. ERIG notes, however, that greenhouse gas emissions and climate change are global problems. Unilateral action by Australia is unlikely to contribute significantly to global greenhouse gas abatement *per se*, even if it has some 'signalling value' encouraging others to act as well, because of 'carbon leakage' effects. Whatever the mechanism chosen, ERIG is of the view that effective solutions to achieving a reduction in greenhouse gas production will require an efficient price signal.

Benefits of Reform

ERIG's economic analysis indicates that the potential benefits in the electricity sector from further reform as recommended in this report result in improvements to GDP of around \$400 million per year over the medium term. Associated with this, retail prices of electricity can be expected to fall over the medium term by around 2% or so.

This analysis is constrained by the inherent limitations of general equilibrium and other modelling approaches, and limitations on the data that is used in such modelling approaches. However, benefits in the form of dynamic efficiency gains cannot be well quantified but over time these may be the most important gains of all. Accordingly, ERIG regards the estimates presented above as conservative.

ERIG's Recommendations

1	<p>Improving Market Contestability and Efficiency</p> <p>The following recommendations are intended to improve contestability and efficiency in Australian energy markets. The first five are presented in ERIG's descending order of preference.</p>
1.1	<p>Privatisation of all energy supply assets</p> <p>ERIG recommends disaggregation and full privatisation of government-owned energy assets throughout Australia, as soon as is feasible given the practicalities of the privatisation process.</p> <p>This recommendation potentially applies to NSW, Queensland, Western Australia, Tasmania, the Northern Territory, the Australian Capital Territory, and to the government owners of Snowy Hydro Limited. Given the dominance of NSW (33%), Queensland (28%) and Victoria (26%) in terms of generation output shares within the NEM, the efficiency benefits from this recommendation depend most heavily upon implementation within NSW and Queensland (Victoria having already privatised its energy supply assets).</p> <p>ERIG acknowledges that the small size of the ACT and Northern Territory markets may militate against significant gains from disaggregation in the Territories, although privatisation plus appropriate regulation may still be desirable over time. ERIG regards this as a 'first best' recommendation. In part at least, it is not consistent with current government policy in NSW, Queensland, Western Australia, Tasmania, the Australian Capital Territory, the Northern Territory and for Snowy Hydro Limited.</p>
1.2	<p>Privatisation of some energy supply assets</p> <p>Where recommendation 1.1 is not considered feasible at present, ERIG recommends disaggregation and privatisation of some electricity assets, such as those in the contestable market segments (generation and retail), as soon as is feasible given the practicalities of the privatisation process.</p> <p>ERIG welcomes the decision by the Queensland Government to privatise its retail electricity assets, and notes public statements by the Tasmanian Government about the possibility of a similar initiative.</p> <p>This recommendation potentially applies to NSW, Queensland, Tasmania, Western Australia, the Northern Territory, the Australian Capital Territory and to the government owners of Snowy Hydro Limited. That said, ERIG acknowledges that the small size of the ACT and Northern Territory markets may militate against significant gains from disaggregation in the Territories, although privatisation plus appropriate regulation may still be desirable over time.</p>

<p>1.3</p>	<p>Encouraging private investment in energy</p> <p>Where recommendation 1.1 is not considered feasible at present, but where Governments, for budgetary reasons, do not wish to allocate additional public resources to investment in electricity assets, ERIG recommends that the clearest possible signals be given to the private sector that it will be permitted to invest on a ‘level playing field’ to meet forecast demand.</p> <p>ERIG considers that Western Australia has given relatively clear signals to date. Enshrining these in legislation, beyond Ministerial Directions, and allowing incumbent government businesses to sell down assets to allow them to compete, may make signals even clearer. Other States, notably New South Wales, could improve the clarity of signals currently presented to the private sector. ERIG notes that, even when effective, this ‘hybrid’ model, where both public and private sector ownership exist in competition, increases tensions between government- and privately owned businesses. This intensifies the need for effective governance arrangements and genuine competitive neutrality (see below).</p> <p>This recommendation potentially applies to NSW, Queensland, Tasmania, Western Australia, the Northern Territory, and the Australian Capital Territory. ERIG acknowledges that the small size of the ACT and Northern Territory markets may militate against significant gains from new investment by the private sector in those markets because of the ‘lumpiness’ of investment, at least until there have been significant increases in demand. Contestability for the ACT market entails supply from elsewhere in the NEM, anyway.</p>
<p>1.4</p>	<p>Disaggregation of government electricity assets</p> <p>Where recommendation 1.1 is not considered feasible at present, ERIG recommends disaggregation of government-owned electricity assets.</p> <p>That said, ERIG is sceptical about whether disaggregation, and continuing government ownership, will provide significant benefits. For it to do so, further reforms enhancing competitive neutrality and improving governance arrangements will be crucial (see below).</p> <p>This recommendation potentially applies to NSW, Queensland, Western Australia, Tasmania, the Northern Territory, and the Australian Capital Territory. It may be of particular value in NSW, if competitive neutrality arrangements can be improved (see below). ERIG acknowledges that the small size of the ACT and Northern Territory markets may militate against gains from disaggregation in the Territories.</p>

1.5	<p>Strengthening competitive neutrality safeguards</p> <p>Where recommendation 1.1 is not considered feasible at present, ERIG recommends strengthening of safeguards for competitive neutrality between government- and privately-owned energy businesses. See also recommendation 3.1 below.</p> <p>These cannot fully deliver competitive neutrality, but they can improve on the status quo. Specific competitive neutrality recommendations under recommendation 1.5 are set out below. These recommendations potentially apply to NSW, Queensland, Tasmania, Western Australia, the Northern Territory, the Australian Capital Territory and Snowy Hydro Limited.</p>
1.5.1	All debt to be arranged through commercial mechanisms, eliminating explicit benefits (and minimising implicit benefits) from perceptions of government guarantees.
1.5.2	State-owned Electricity Corporations to be subject to the <i>Corporations Act 2001</i> .
1.5.3	Electricity Corporations to pay all government taxes and charges, including company tax, with state governments to receive no company tax advantages from company income generated by such businesses.
1.5.4	Board appointments to be independently determined, based on appropriate skills for appointment.
1.5.5	Dividend payout policy to be determined by the Board based on commercial requirements for the business in question, rather than by government decision.
1.5.6	Corporations to report to governments on their business activities in compliance with ASX listing rules.
1.5.7	Independent decision making on operational and strategic management directions by government owned enterprises.
1.6	<p>Retail price caps as barriers to competition</p> <p>The MCE has agreed retail price caps should be removed after competition exists in electricity markets. ERIG concludes there is an inherent contradiction between (i) waiting for competition to emerge before removing price caps, and (ii) the fact that binding price caps themselves constitute impediments to competition.</p> <p>ERIG recommends that this contradiction be reviewed and resolved, either by COAG and/or by the MCE. The Victorian practice of fostering competition and easing price caps simultaneously may be a useful guide to solving this problem Australia-wide.</p> <p>ERIG also recommends that governments conduct a detailed review of CSO arrangements, directed to delivery via non-distorting, transparent and targeted mechanisms in place of such ‘blunt instruments’ as retail price caps.</p> <p>These recommendations apply to COAG and most States and Territories.</p>

2	<p>Improving Market Governance</p>
2.1	<p>Ministerial Council on Energy</p> <p>To support its own 2003 agreement to strengthen the national character of energy market governance, and to sharpen its own broad policy-making function, ERIG recommends that the MCE’s role should be reviewed by COAG. The focus of the review should be (i) to ensure the MCE concentrates solely on broad policy-making for the energy market; (ii) to eliminate more detailed intervention by the MCE and its officials in detailed rule-making; and (iii) to evaluate the merits of an increased policy oversight by the Commonwealth Government or COAG to support a more ‘national character of governance of the energy markets’. (See also recommendation 5.3)</p> <p>This recommendation applies to COAG.</p>
2.2	<p>Planning</p> <p>ERIG recommends that planning functions be strengthened beyond those embodied in the SOO/ANTS processes, in order to enhance system-wide energy investment efficiency (covering both generation and energy transmission/distribution) on a truly national market basis. (See also recommendation 4.3)</p> <p>This general recommendation applies to COAG. More detailed recommendations on planning are presented in chapter 6 below.</p>
2.3	<p>AEMC</p> <p>Of all the governance recommendations made by ERIG, those relating to the AEMC are amongst the most urgent.</p> <p>ERIG recommends that the AEMC’s funding, autonomy, accountability and board structure be improved as a matter of urgency. More specifically, in the interests of a national market approach, ERIG recommends that: (i) the AEMC’s funding be made transparent and adequate for its role, and, preferably, be the responsibility of the Commonwealth Government; (ii) the AEMC have more control over its own work programme, subject only to being fully accountable to governments for its performance in delivering against government policy objectives for Australia’s energy markets (eg, efficiency and reliability); and (iii) AEMC’s resources should allow it independently to appoint a full-time Board, comprising members with appropriate experience and, consistent with good governance, free from perceptions of (actual or perceived) conflicts of interest.</p> <p>These recommendations apply to COAG.</p>

2.4	<p>Electricity market rules and other matters</p> <p>ERIG recommends that operating rules and other state-specific legislation and regulatory instruments should be harmonised across Australia's energy markets to support a more national market framework. As part of this process, the current numerous state derogations from existing rules, and differences in retail regulation and other state regulations, should be greatly reduced.</p> <p>ERIG also recommends that there be an independent review of the implementation of energy market reform and, as part of this, progress towards national consistency, as part of any NRA outcomes monitoring arrangements.</p> <p>These recommendations apply to COAG and all States and Territories.</p>
2.5	<p>NEMMCO</p> <p>ERIG recommends that NEMMCO's governance be reformed for it to operate more autonomously. See also recommendations 4.5 and 5.4 below.</p> <p>In particular, ERIG recommends that industry representatives be involved in the appointment of NEMMCO's Board. The NEMMCO Board appointment process should seek to ensure that the board is independent of individual jurisdictional or sectional interests and contains the appropriate range of skills.</p> <p>The reform of NEMMCO's governance would contribute to NEM-wide efficiency and is justified in its own right. This recommendation also has important implications for other recommendations presented in chapters 6 and 7 below, as well as a possible national energy market operator function (see recommendations 2.7 and 5.11). These recommendations apply to COAG, and all NEM States and the ACT.</p>
2.6	<p>The Western Australian IMO</p> <p>While it is too soon to assess the performance of the Western Australian Electricity Market (the WEM), ERIG is concerned about the multiplicity of functions allocated to the IMO. These seem to involve significant potential governance problems (mainly functional conflicts of interest).</p> <p>ERIG recommends a review by the Western Australian Government of these governance issues in order to identify whether actual problems exist, and to deal with them if they do.</p> <p>In this context ERIG recommends that Western Australia investigate the merits, at least over time, of using the AER, the AEMC and NEMMCO as the regulator, rule-maker and operator, respectively, of the WEM. (See also recommendations 2.3, 2.7, 4.7 and 5.6)</p> <p>This recommendation applies to Western Australia.</p>

2.7	<p>A national energy market operator</p> <p>From a national efficiency perspective, there is much to be said for moving as quickly as possible to a national energy market operator in place of the current electricity market operators (several), and gas market operators (several).</p> <p>Subject to acceptance of recommendations concerning NEMMCO's governance presented in this chapter and in chapters 6 and 7, ERIG recommends COAG agree to establish a single energy market operator as a longer term governance improvement for the Australian energy market, rather than having separate gas and electricity market operators.</p> <p>ERIG recommends COAG develop a detailed program timetabling the steps to the establishment of a single energy market operator. (See also recommendation 5.11)</p> <p>This recommendation applies to COAG.</p>
2.8	<p>AER and ACCC</p> <p>For Australia's energy markets, the regulatory function seems to be relatively well settled (subject to resolution of the issues raised under the 'regulatory adequacy' recommendations set out below). From a national market/efficiency perspective, the main issue is the sub-national coverage of the AER.</p> <p>ERIG recommends that the AER should have responsibility for energy market regulation across Australia. (See also recommendation 2.6)</p> <p>This recommendation applies to Western Australia and the Northern Territory.</p>
3	<p>Improving regulatory adequacy</p>
3.1	<p>Proscription of generator/transmission mergers</p> <p>ERIG agrees with the 10 February 2006 COAG decision to proscribe generator/transmission mergers. ERIG recommends that this policy—still being developed by the MCE—should be announced as soon as possible to remove avoidable investment uncertainty. ERIG also recommends that this policy should apply equally to government- and privately-owned businesses.</p> <p>These recommendations apply to COAG and all States and Territories.</p>
3.2	<p>Removing ambiguities in the coverage of the TPA</p> <p>ERIG recommends that any ambiguities or uncertainties about the application of the TPA to government-owned businesses—eg, due to 'crown immunity' considerations—should be removed as soon as possible through appropriate state legislation.</p> <p>This recommendation applies to COAG and all States and Territories.</p>

3.3	<p>Applying the Corporations Law consistently</p> <p>Substantial ‘carve-outs’ from full application of the Corporations Law to government businesses currently apply in three states and one Territory. These confer a potential competitive advantage on government businesses relative to private competitors, undermine good governance, and weaken even-handed application of competition regulation. ERIG recommends that these ‘carve-outs’ should be abolished through appropriate state/territory legislation (see also recommendation 1.5.2 above).</p> <p>This recommendation applies to NSW, Queensland, Western Australia, and the Northern Territory.</p>
4	<p>Achieving a fully national efficient transmission grid</p> <p>ERIG considers that to develop an efficient, national transmission grid the following inter-related elements are required:</p> <ul style="list-style-type: none"> » improved locational signals to generators; » stronger incentive framework for TNSP’s to better support outcomes in the electricity market; and » an appropriate national mechanism for coordinating and integrating the national development of the power system. <p>These are the critical elements of a total reform package which can be expected, over time, to lead to significant benefits for Australia. The proposed regime would not aim to remove all transmission constraints but would seek to drive the most efficient mix of well located generators and transmission investment to meet Australia’s future electricity needs. It would also seek to deliver at all times the most effective use of the existing transmission infrastructure and support trading in the competitive market. Specific recommendations follow in each area as do a number of related supporting recommendations.</p>

4.1	<p>Locational Signals to Generators</p> <p>The AEMC is currently conducting a review of congestion management in the NEM “to consider the requirement for and scope of enhanced trading arrangements in relation to constraint management and pricing”. The scope of that review needs to be widened to ensure the review addresses the need for efficiency of operations and dispatch in the short term and to drive efficient investment in the longer term.</p> <p>An efficient regime in a competitive market context must, either explicitly or implicitly, price the cost of material congestion in the grid. In doing so, it will enhance the incentives to generators to invest in favourable locations relative to the grid. The need for appropriate locational signals for generators is a pressing matter given the scope of new generation investment required to meet Australia’s growing needs.</p> <p>ERIG recommends that the AEMC congestion review should deliver a management regime which will both improve the efficiency of operations and dispatch in the short term and meet the allocative efficiency imperatives in the longer term.</p> <p>ERIG recommends that the MCE review the terms of reference for the AEMC’s congestion management review to ensure consistency with the broader recommendations of ERIG and economic efficiency principles to ensure they have the scope to recommend such arrangements.</p> <p>ERIG recommends that the MCE implement the recommended regime (and the appropriate transition measures) if it meets the criteria set out in the amended terms of reference by end 2008. The MCE should report to COAG on the review of the terms of reference and the outcomes of AEMC’s review within 6 months of the completion of the review.</p>
4.2	<p>Improved incentives on TNSPs</p> <p>The ACCC and now the AER have been developing performance measures and an incentive regime to apply to TNSPs for a number of years. The work has led to the publication during 2006 of valuable market impact measures but has fallen short of any improvements to the incentives applying. ERIG supports the implementation of an initial incentive scheme as set out in the revised Rules (para 6A.7.4). Within that timeframe, the AER will not be able to develop as comprehensive a scheme as necessary to drive efficient outcomes and the new congestion management scheme and national planning arrangements will not be in place.</p> <p>ERIG recommends that the MCE require the AER to commit to a timetable for the development and implementation of a comprehensive incentive regime for TNSPs by end 2007.</p>

4.3

Improved national planning arrangements

ERIG believes that Australia must develop a more national approach in relation to energy network planning and investment, particularly in regard to transmission planning and investment. While our energy system needs to be enhanced to ensure a national approach is adopted where this enhances efficiency, its design needs to integrate 'local' requirements for reliability.

ERIG recommends that a new national planning function be implemented to undertake transmission planning, to inform the market and the regulatory processes and to coordinate the efficient development of the national transmission network. (See also recommendation 4.6)

ERIG further recommends that the new national planning function be developed consistent with decision making, performance and investment accountability remaining with individual TNSPs in a manner which complements and informs the Regulatory Regime.

The MCE should commission a review by the AEMC to detail the planning framework recommended by ERIG and to rewrite relevant sections of the law and the Rules including:

- » detail the role and functions of the National Planner;
- » implement rules requiring the National Planner to develop a National Transmission Network Development Plan (NTNDP) on an annual basis in accordance with network development objectives;
- » develop Rules setting out the network development objectives under which the NTDP is developed based on integrating the two limbs of the current Regulatory Test;
- » establish responsibilities for market participants and network service providers to provide information to the National Planner;
- » put in place a formal mechanism for the involvement of industry participants and other stakeholders in the development of the NTNDP;
- » link the role of the National Planner and the NTNDP to the regulatory regime and, in particular, to provide for these to inform the process for setting the ex-ante revenue cap;
- » consider the development of any links between the congestion management regime and the national planner;
- » introduce requirements for network service providers to undertake a Project Assessment and Consultation process on all major augmentations prior to final commitment. This process should ensure transparency around the decision to implement a particular solution including the assessment of non-network alternatives and demonstrate how the project is consistent with longer term development directions in the NTNDP; and

	<p>» consider the value of other Rule changes consequent to the introduction of the national planning process and the formation of the National Planner such as changes to any Planner of Last Resort role.</p> <p>There would need to be consequential changes to the law and the Rules to integrate the new planning arrangements with existing requirements and to replace current provisions where appropriate. The National Planner would replace the role of the IRPC, the NTDP should replace the ANTS and the new provisions would replace the current Regulatory Test arrangements.</p>
4.4	<p>National consistency of reliability standards</p> <p>Chapter 3 of this report highlights the need for a consistent national approach to the national energy market. Where possible, the current plethora of different state government arrangements should be progressively examined and abolished in favour of consistent national measures. This is a particular issue in the efficient development of the national transmission network where different reliability standards exist in each state. The differences exist in terms of form, function and interpretation.</p> <p>ERIG recommends that the Reliability Panel, which is formed under the AEMC, coordinate a national review to rewrite schedule 5.1 in the NER to provide a consistent national framework for Reliability Standards by end 2008. As part of this process, each state should review its requirements for individual connection points and publish them in that format.</p>
4.5	<p>Formation of the National Planner under a reformed NEMMCO</p> <p>The Market Structures chapter of this report recommends changes to NEMMCO's governance. The proposed changes along with the inherent synergies make the reformed NEMMCO the appropriate body to undertake the new national planning function. The placement of this much expanded function in NEMMCO would require significant change in NEMMCO and would benefit from a set of specific objectives to guide its Board and management.</p> <p>ERIG considers that the development of a 'National Transmission Network Development Plan' is not possible without understanding and analysing potential developments in the competitive sectors, the nature and location of likely generation investments and the location and growth of customer load. The planning requires a range of inputs and oversight from a range of industry participants and stakeholders is seen as essential to the plan's quality.</p> <p>ERIG recommends that the National Planner be formed under the umbrella of a reformed NEMMCO and that NEMMCO be provided with a clear set of objectives for the carriage of this function. ERIG also recommends provision be made for the formal involvement of industry representatives and stakeholders in the development of the National Transmission Network Development Plan. (See also recommendations 2.5 and 4.3)</p>

4.6	<p>Future review of national planning arrangements</p> <p>The arrangements for the introduction of the new national planning regime depend upon the development and implementation of effective commercial incentives on generators and TNSPs. The success of the regime needs to be reviewed within five years. This review should consider whether the incentive regime on TNSPs together with the coordination and advisory function of the National Planner have produced efficient outcomes or whether the role of the National Planner should be extended to provide it accountability for decision making and procurement of transmission services.</p> <p>ERIG recommends that COAG review the arrangements for the introduction of the new national planning regime including the success of the regime. This review is to be completed within five years. (See also recommendation 4.3)</p>
4.7	<p>Recommendations for Western Australia</p> <p>The arrangements described above relate specifically to the interconnected transmission grid covering Tasmania and the eastern states from South Australia to Queensland. Arrangements in Western Australia are different and have only been established for a relatively short period of time. However Western Australia operates a transmission network over a wide area and in a competitive market context. As such, the key principles for the efficient development of the Western Australian power system should be similar and ERIG has recommended exploring the potential to use national institutions for its development, operation and regulation. There are also potential advantages in applying the general principles recommended for the NEM in Western Australia in terms of:</p> <ul style="list-style-type: none"> » an appropriate congestion management regime in the short term forward market which is predictable and delivers productive efficiency, » market based incentives for efficient service delivery by network service providers, » the importance of power system and network planning information to inform the competitive market and network regulation. <p>ERIG recommends that COAG request the Western Australian government examine the potential benefits from introducing arrangements for the efficient development of the SWIS based on the general principles recommended for the NEM.</p>

5	Energy Financial Markets
5.1	<p>Capital markets and investment</p> <p>ERIG recommends that COAG note that many existing participants in the market and a range of potential investors raised concerns with both the uncertainty about government policy on greenhouse gas emissions and the lack of a carbon pricing signal. The disparate range of State and Commonwealth greenhouse schemes also impose costs on participants and cause inefficiencies in the choice of fuels, plant and location and timing of investment and increased risk premiums. Development of greenhouse policy is outside ERIG’s terms of reference, however the issue has been unavoidable in our work and consultation and is brought to COAG’s attention for its consideration because of its adverse effects on market efficiency (noting also the comments under greenhouse gas abatement policy in chapter 5).</p>
5.2	<p>Contract trading in the NEM</p> <p>ERIG recommends that the MCE sponsor a strategic study on the potential for simplifying key aspects of trading across the NEM (without compromising the basic NEM design). Such work would include additional mechanisms to support interstate trade and the simplification of trading into SA and Tasmania.</p>
5.3	<p>MCE Governance</p> <p>ERIG recommends that the MCE develop a greater strategic and implementation capability, initially to address the issues identified in this Report. (See also recommendations 2.1 and 2.3)</p> <p>This might include:</p> <ul style="list-style-type: none"> » empowering the AEMC to take a more proactive role in the development of market rules, but perhaps take a lesser role in more strategic market reviews; » establishing a new strategic group (reporting to MCE) to manage the development of strategic policy; and » increasing the use of expert groups where specific expertise, knowledge or industry involvement is required.
5.4	<p>NEMMCO Governance</p> <p>ERIG recommends that industry should have a greater role in the oversight of a reformed NEMMCO’s market operations function through the formation of a Market Operations Panel, to oversee the specification and procurement of market operations functions. The MCE should commission work to detail and implement reforms to NEMMCO in consultation with stakeholders. (See also recommendation 2.5 and 4.5)</p>

5.5	<p>Institutional arrangements and market design</p> <p>ERIG recommends that the ‘energy only’ design of the NEM be retained.</p>
5.6	<p>Improvements to the WEM</p> <p>The material progress represented by the WEM is acknowledged and supported.</p> <p>ERIG recommends that COAG negotiate with the WA Government with a view to the AEMC taking responsibility for the market rules of the WEM before the end of 2008; and</p> <p>COAG request the WA Government to instruct the IMO to improve the workings of the capacity mechanism by strengthening significantly the capacity signal in the WEM and making it more market orientated. ERIG sees no reason why this could not be achieved within 12 months. (See also recommendations 2.6 and 4.7)</p>
5.7	<p>Inter and intra regional trade</p> <p>ERIG recommends that the AEMC clarify the roles of Network Service Providers (NSPs) and NEMMCO in contracting generation to support transmission capacity and flows.</p> <p>ERIG recommends that the AER with the AEMC, develop the framework for encouraging NSPs to enter into network support contracts where generators or demand side contribute to avoiding or deferring transmission investment. These should be simple and standardised arrangements for DSM or generation embedded in the distribution system.</p> <p>ERIG recommends that NEMMCO develop market support contracts where generators or demand side are able to support flows on transmission assets which improve energy market outcomes and where the costs exceed the benefits.</p> <p>ERIG recommends that the inefficiencies created by the operation of the Snowy Region be resolved as a matter of urgency. AEMC should be provided with a broad brief by MCE to resolve this matter by December 2007, including an interim solution if the Snowy Region is abolished, to cover the 3 years notice before a regional change can be implemented.</p> <p>ERIG recommends, to ensure the settlement residue instrument delivers the most efficient outcome, the MCE commission an independent feasibility study designed to improve the management of settlement residues as detailed herein.</p>

5.8	<p>Settlement of spot and contract markets and credit</p> <p>Under the current NEM design, spot and contract markets are largely settled separately. This results in duplication of credit requirements in the spot and contract markets. This situation increases systemic risk, creates timing differences and increases barriers to entry and is increasingly important with the privatisation of retail in Queensland.</p> <p>While ERIG would expect a restructured NEMMCO would deal with all operations related to the market, it is recommended in the interim that:</p> <ul style="list-style-type: none"> » the MCE commission an expert group with industry representation to develop a plan for the integration of spot and forward markets in the NEM. This investigation should explicitly examine the feasibility of establishing a <u>voluntary</u> national settlements and clearing facility and a strategy for implementation should the benefits outweigh the costs. This group should report back to the MCE by December 2007 with options and solutions. » AEMC and NEMMCO develop a plan for integrating SFE contracts into the NEMMCO settlement process, to be implemented by September 2007, subject to the risks being managed appropriately.
5.9	<p>Demand response</p> <p>ERIG recommends that the MCE develop a strategy for automation of DSM suitable for application to small customers; and review the institutional arrangements to ensure that participants can capture the benefits of DSM and drive the DSM development process.</p>
5.10	<p>Government and regulatory issues</p> <p>There are a number of areas where Governments and ASIC could consider action to better support and remove barriers to the development of more efficient financial markets, thereby fostering reduced risk premiums.</p> <p>ERIG recommends that the NSW Government remove ETEF in accordance with the timetable it has communicated to the market.</p> <p>ERIG recommends that the Queensland Government phase out or abolish the LEP.</p> <p>ERIG recommends that ASIC clarify to industry participants their obligations under the FSR Act.</p> <p>ERIG recommends that CAMAC, in consultation with the industry and large DSM customers, review its requirements under the FSR Act for wholesale participants in the energy markets, keeping requirements to those relevant and necessary.</p> <p>ERIG recommends that CAMAC, in consultation with the gas industry, considers the FSR Act obligations to ensure they do not impede the efficient development of financial markets in gas.</p>

5.11

Gas Financial Markets

The GMLG recommendations offer worthwhile progress and are generally supported.

ERIG recommends that the MCE provide the necessary support for the timely implementation of the GMLG recommendations including supporting the establishment of a National Gas Market Operator (GMO).

ERIG recommends that the MCE ultimately oversee the merger of the GMO with NEMMCO after NEMMCO's governance has been modified as proposed elsewhere. Resolution of this matter should not be allowed to impede the development of a national gas market operator. (See also recommendations 2.5, 2.7 and 4.5)

Greater standardisation of market structures, market processes, pipeline access and supply points for pricing across the market is required. Further work is required to assess the upstream areas of acreage management and joint marketing.

ERIG recommends that the GMLG, or a successor group, develop an implementation plan for the standardisation of market structures, rules, conventions and systems in the gas market.

