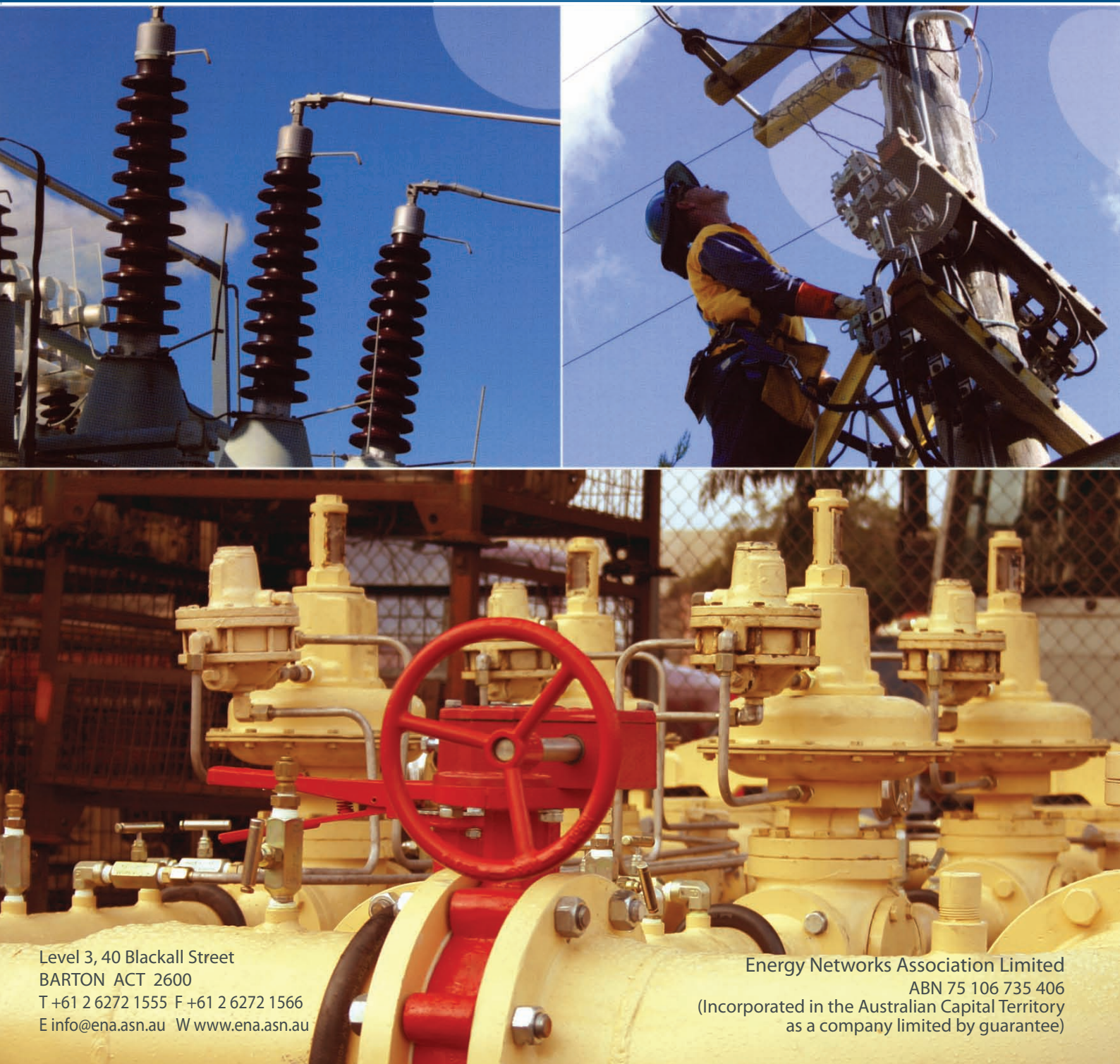


# The Technical and Safety Regulation of the Energy Sector in Australia - A Discussion Paper

July 2007





## **THE TECHNICAL AND SAFETY REGULATION OF THE ENERGY SECTOR IN AUSTRALIA – A DISCUSSION PAPER**

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## **Invitation to make a submission on the Discussion Paper**

All ENA Stakeholders (internal and external) are invited and encouraged to comment on the issues raised in this Discussion Paper.

Following deliberation and discussion by ENA members, this may be followed by a 'white paper' on a preferred ENA model of energy technical and safety regulation.

Submissions must be received at the below address by Friday 31 August, 2007.

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**– A DISCUSSION PAPER**

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## Purpose

ENA has developed *The Technical and Safety Regulation of the Energy Sector in Australia – A Discussion Paper* to assess the issues associated with the ENA objective of establishing a national operating framework for energy technical and safety regulation. In this context, 'energy' shall be taken to mean 'gas and electricity networks'.

This Discussion Paper takes the form of a 'green paper', which poses a number of questions/scenarios, but does not recommend solutions or policy prescriptions. Following submissions on the Discussion Paper and deliberation/discussion by ENA members, this may be followed by a 'white paper' on a preferred ENA model of energy technical and safety regulation.

The Paper poses a number of questions/scenarios in four areas:

1. Technical regulations that are or should be made by economic regulators.
2. Effectiveness of safety management documentation.
3. Effectiveness of Australian Standards.
4. The application of ENA Industry Guidelines.

## Energy Networks Association

The Energy Networks Association (ENA) is the peak national body representing gas and electricity distribution businesses throughout Australia. Electricity transmission businesses are Associate Members and are participants in the ENA asset management policy agenda.

Australia's major electricity network and gas distribution network companies are members of ENA, providing governments, policy-makers and the community with a single point of reference for major energy network issues.

**Members:** ActewAGL, Alinta, Aurora Energy, CitiPower, Country Energy, ENERGEX, EnergyAustralia, Envestra, Ergon Energy, ETSA Utilities, Horizon Power, Integral Energy, Multinet Gas, NT Power & Water Corporation, Powercor, SP AusNet, United Energy Distribution, and Western Power.

Energy network businesses deliver electricity and gas to over 12 million customer connections across Australia through approximately 800,000 kilometres of electricity distribution lines. There are also 75,000 kilometres of gas distribution pipelines.

These distribution networks are valued at more than \$35 billion and each year energy network businesses undertake investment of more than \$5 billion in distribution network operation, reinforcement, expansions and greenfields extensions.

**Associate Members:** SP AusNet (Transmission), TransGrid, ElectraNet, Transend Networks Pty Ltd and Powerlink Queensland.

Electricity transmission network owners operate over 40,000 km of high voltage transmission lines, with a value of \$9.5 billion.

## Questions for Consideration

### *Technical regulations made by economic regulators*

1. Is there duplication between the requirements of instruments made by technical regulators and those contained in safety management documentation? Are there specific examples? (p. 53)
2. Should an economic regulator (probably AER) have the capacity to make technical codes, or place technical conditions in licences, in the manner that jurisdictional economic regulators can now? If not, why not? (p. 53)
3. Should technical rules of a nature currently contained in instruments made by jurisdictional regulators be contained in the National Electricity/Gas Rules, with rules made in the manner set out under the National Electricity/Gas Law? (p. 53)
4. Alternatively, and acknowledging a possible lack of regulator knowledge, should these issues remain in discrete technical legislation made at a jurisdictional level? (p. 53)

### *Safety management documentation*

#### *Electricity*

5. Is it possible for the industry to design the requirements of what a good safety case/safety management system should contain? (p. 57)
6. Is the WA model for developing a safety case sufficient? (p. 57)
7. Is NENS a sufficiently robust document such that it can be used to guide the development of a safety case? (p. 57)

8. Is it possible for the industry to design the requirements of what a good bushfire/vegetation management system should contain? (p. 57)

9. Are there circumstances where a licensee provides services to a very small number of customers in another jurisdiction to the one in which the licensee principally operates? If there are such circumstances, would it be desirable for the safety management system approved for the principal jurisdiction be taken to satisfy the requirements of the secondary jurisdiction? (p. 58)

#### *Gas*

10. Is it possible for the industry to design the requirements of what a good safety case/safety management system should contain? (p. 60)

11. In much the same way as electricity safety cases are to be developed in WA, is it possible to use AS 4568 as the basis around which safety management documentation could be designed for transmission gas pipelines, with AS 2885/an augmented distribution pipeline model used as the guideline to fill out specific requirements? (p. 60)

#### *Safety Management Documentation Generally*

12. Should NEMMCO, or its successor NEMO be vested with the responsibility of determining whether a safety case for the electricity industry has been satisfied? (p. 63)

13. Should something like NOPSA assess safety cases etc in the gas sector? (p. 63)

14. Alternatively – should ENA constituents support an industry-funded specialist technical body to perform the functions such as approving safety management systems? Or, should the Australian Energy Regulator simply accept a safety case/accept that there has been compliance with the contents of a safety case on the certification of an approved auditor/certifier? Or, should state technical regulators remain the entity accepting/monitoring compliance with, safety management documentation? (p. 63)

15. Should the Australian Electricity/Gas Rules be the method by which the content of safety case/safety management system documentation is determined? (p. 64)

16. Is there an effective duplication between the requirements set out in asset management systems and requirements set out in safety management systems? Are there any tangible examples? (p. 65)

17. Can an asset management system cover all the legitimate safety concerns that a safety management system does? (p. 65)

18. Should compliance with a safety plan be taken to be sufficient to require a distributor to have 'deemed to comply' with OHS obligations? (p. 72)

### *Australian Standards*

19. Are you satisfied with the quality of Australian Standards? (p. 80)

20. Are the cost of accessing standards an issue for either you or your contractors etc? (p. 80)

21. Would it be satisfactory if regulation only reflected international standards? (p. 80)



## **Guidelines**

22. Do contractors and employees find it easy to apply outcomes-based standards, or do they find process-based standards easier to comply with? (p. 84)

23. Would process based standards be a more appropriate basis to develop company safety documentation and safety case/safety management documentation? (p. 84)

24. Should more time be spent developing ENA guidelines rather than standards? (p. 84)

25. In what circumstances should guidelines be developed? (p. 84)

26. Should documentation such as the Victorian 'Bluebook', or Service and Installation Rules such as the WA Electrical Requirements ever appear in regulation? (p. 84)

27. Is there a need for ENA to develop something like ENA guidelines/NENS for the gas sector? (p. 85)

## Executive Summary

This paper seeks to advance the ENA policy of ENA of encouraging a common framework for safety and technical regulation in the Australian gas and electricity sectors.

### *Technical Regulation in Economic Regulatory Instruments*

The national regulatory structure for the energy sector is generally designed to permit interstate trade of energy, investment in infrastructure and allocative efficiency.

However:

- the National Electricity Rules contain technical regulation;
- the National Electricity Market Management Company Limited (**NEMMCO**) can exercise some quasi-regulatory powers; and
- although not structured identically, state licensing provisions for both the electricity and gas sectors can generally require a person seeking a licence to comply with technical conditions stated in instruments such as regulations, authorities, conduct rules, licence conditions, industry codes etc.

It would appear that many of the requirements contained in technical regulation made by economic regulators duplicate requirements contained in safety management documentation. This is largely because of the desire to ensure 'reliability' of both the supply of product to the consumer and the asset.

The current presumption is that when economic regulation of distribution and retail entities are transferred to the Australian Energy Regulator (**AER**), that regulator will issue a simple authority to operate issued on the basis of an assessment of financial capacity, managerial/financial competence and general fitness.

Like a driver's licence, the authorisation instrument will merely attest that the entity is entitled to provide services to the energy market.

All obligations associated with holding a licence will be specified outside of it, with 'technical and safety' regulation (nominally) remaining with the jurisdictions.

However, what has been described by one regulator as the 'legislative carve-up' of functions between jurisdictions – that is, which areas should be considered 'technical and safety' and thus properly dealt with by jurisdictional legislation and that which should be regarded as 'economic' regulation – is not settled.

As illustrated in the paper, some technical codes and licence conditions set by jurisdictional regulators do impose some degree of statutory obligation relating to technical and safety issues – even if at a relatively high level.

It is possible that the national regulator could be allowed to make technical codes or to condition licences.

As well, it would appear from the AEMC publication *Review of Enforcement and Compliance with Technical Standards* that the Commission is recommending the more 'robust' investigation and sanctioning of technical breaches of the Rules.

That would have to include (however nominally) action for not operating assets according to 'applicable' Australian Standards or for not operating assets in accordance with 'good electricity industry practice'.

The AEMC also proposes to review the process for revising technical standards by 30 June 2008. The Reliability Panel will also review technical standards over the same period.

As at June 2007, this work has yet to commence. However, the clear inference is that there will still be some technical regulation contained in national regulatory instruments.

<b>In this context, this discussion paper asks:</b>
<b>1. Is there duplication between the requirements of instruments made by technical regulators and those required to satisfy safety management documentation?</b>
<b>2. Should an economic regulator (probably the AER) have the capacity to make technical codes, or place technical conditions in licences, in the manner that jurisdictional economic regulators now can?</b>
<b>3. Should technical rules of a nature currently contained in instruments made by jurisdictional regulators be contained in the National Electricity Rules, with rules made in the manner set out under the National Electricity law?</b>
<b>4. Alternatively, and acknowledging a possible lack of regulator knowledge, should these issues remain in discrete technical legislation made at jurisdictional level?</b>

### *Safety Management Documentation*

The energy sector is adopting systems based management regimes to manage assets and safety.

The electricity sector was previously regulated under a command/control model of regulation, in which regulators specify what should be done and how to do it.

The sector is migrating towards a safety case/safety management scheme system, in which licensees fashion compliance methods to satisfy high level outcome-based regulation.

There are some minor variations between jurisdictions as to what safety management documentation should provide.

However, all of them have at their heart a structure deriving from AS/NZS 4360:2004 *Risk Management*.

The standard requires those preparing a risk assessment plan to:

- establish the context;
- identify risks;
- analyse risks;
- evaluate risks; and
- treat risks.

In WA, safety cases are to comply with AG606 (1997) *Code of Practice for the Preparation of a Safety and Operating Plan for Gas Networks* (now referred to as AS4568).

This standard has as its inspiration the structure of AS 4360:2004, to such an extent that the identify/analyse/evaluate/treat risk diagram contained in AS 4360 is repeated in AS 4568.

The ENA document NENS 01 has been prescribed as the guideline to assist the development of safety cases.

<b>The discussion paper asks:</b>
<b>5. Is it possible for the industry to design the requirements of what a good safety case/safety management system should contain?</b>
<b>6. Is the WA model for developing a safety case sufficient?</b>
<b>7. Is NENS a sufficiently robust document such that it can be used to guide the development of a safety case?</b>
<b>8. Is it possible for the industry to design the requirements of what a good bushfire/vegetation management system should contain?</b>
<b>9. Are there circumstances where a licensee provides services to a very small number of customers in another jurisdiction to the one in which the licensee principally operates?</b>
<b>If there are such circumstances, would it be desirable for the safety management system approved for the principal jurisdiction be taken to satisfy the requirements of the secondary jurisdiction?</b>

With respect to gas, most state technical regulations impose a general duty on operators to maintain and operate a safe gas network, or to keep leaks to a minimum.

Most jurisdictions also require safety case/safety management documentation to be prepared.

The Council of Australian Government (**COAG**) accepted as early as 1994 that *AS 2885 Pipelines—Gas and liquid petroleum* should be the standard for transmission pipelines.

The industry has spent millions of dollars in the development of the standard, which encompasses all elements of pipeline management including asset and worker safety.

The industry is also working towards the development of a similarly all embracing standard for distribution pipelines.



It is also noted that AS 4568 (nee AG 606) has been developed to assist the formulation of safety plans for gas networks.

Finally, most jurisdictions require the development of safety cases/management plans.

While generally prescribing the same requirements, there are nonetheless some minor variations in requirements between jurisdictions.

As a general proposition, it would appear that both the energy networks industry and regulators are comfortable with the development and regulation of these sorts of documents as a result of some years of operation.

<b>The discussion paper asks:</b>
<b>10. Is it possible for the industry to design the requirements of what a good safety case/safety management system should contain?</b>
<b>11. In much the same way as electricity safety cases are to be developed in WA, is it possible to use AS 4568 as the basis around which safety management documentation could be designed, with AS 2885/an augmented distribution pipeline model used as the guideline to fill out specific requirements?</b>

#### *General Issues Relating to Safety Management Documentation*

It is noted that some technical regulators are stricter than others when accepting a safety case.

Others are satisfied that documentation received from an accredited entity:

- certifying that a safety scheme being submitted satisfies the outcomes required by legislation; or alternatively
- showing that there has been compliance with a submitted scheme over a particular period

(as the case requires) is evidence that safety issues are being satisfactorily managed, without the need for collateral audits conducted by government officers.

This is a result of (among other things):

- the maturity of the sector;
- the economic imperatives that drive corporations with assets worth millions of dollars to continuously provide safe and consistent supply of product to consumers;
- a certain lack of in-house expertise within regulators to make many technical decisions; and
- general staff shortages.

It has been recognised that different agencies invariably build a separate culture, meaning that they can very easily interpret the same set of regulations differently.

In the context of electricity, NEMMCO has to make various technical decisions – and there is a possibility that this role could be extended.

There is no NEMMCO equivalent for the gas sector. However, the National Offshore Petroleum Safety Authority (**NOPSA**), an industry funded statutory authority, has as its charter approving safety cases for the offshore petroleum safety industry. Its personnel include officers with some expertise with among other areas, the terms of AS 2885.

<b>This discussion paper therefore asks:</b>
<b>12. Should NEMMCO, or its successor NEMO, be vested with the responsibility of determining whether a safety case for the electricity industry has been satisfied?</b>
<b>13. Should something like NOPSA assess safety cases etc in the gas sector?</b>
<b>14. Alternatively – should ENA constituents support an industry funded specialist technical body to perform the functions such as approving safety management systems?</b> <b>Or, should the Australian Energy Regulator simply accept a safety case/accept that there has been compliance with the contents of a safety case on the certification of an approved auditor/certifier?</b> <b>Alternatively, should state technical regulators remain the entity accepting/monitoring compliance with safety management documentation?</b>

Earlier, it was asked whether it is possible for the sector to develop a single set of outcomes that safety management documentation should meet.

<b>15. The discussion paper therefore asks whether the Australian Electricity/Gas Rules should be the method by which content of safety management documentation is determined.</b>
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In that way, the contents of what should be captured in safety management documentation would be harmonised throughout Australia.

It would then be an issue to determine the relevant regulator to be responsible for monitoring compliance.

Finally, there is a suggestion that an *asset management system* would be a better way of managing assets, rather than the traditional safety management documentation currently prepared.

<b>This discussion paper asks:</b>
<b>16. Is there an effective duplication between the requirements set out in asset management systems and requirements set out in safety management systems? Are there any tangible examples?</b>
<b>17. Can an asset management system cover all the legitimate safety concerns that a safety management system does?</b>

#### *OHS*

Most jurisdictions have OHS regulations requiring employers to embark on a risk management exercise to identify hazards, assess risks and then eliminate and control risks.

These requirements are also contained in AS/NZS 4360 (the Australian Standard for Risk Management), the standard against which energy sector safety management systems are drawn.

The intention is to ensure that risk management complies with the ALARP (**As Low As Reasonably Practicable**) principle.

While there are some examples in which there is an interrelationship between OHS and energy specific legislation, the safety requirements energy sector licensees are obliged to document by law are generally exhaustive and attuned to the particular safety issues specific to the particular product. They are as exhaustive as those required by the *Occupational Health and Safety (Major Hazard Facilities) Regulations 2001* (Vic), (largely regarded as being best practice OHS regulation) and similar to that which must be made by operators authorised to operate offshore facilities under the *Petroleum (Submerged Lands) Act 1967* (Cth).

As such, there are grounds to argue that complying with safety documentation has meant the employer has discharged OHS obligations, rather than compliance being merely an 'evidentiary' provision that a court may take into account.

This is particularly the case where the safety plan has been approved by a technical regulator with the expertise to rigorously assess plans submitted by applicants.

**18. This discussion paper asks whether compliance with a safety plan should be taken to be sufficient to regard a licensee as having deemed to have complied with OHS obligations.**

#### *Australian Standards*

ENA has a policy objective of supporting a nationally consistent approach and a common framework for safety and technical regulation in gas and electricity.

It has decided that this will be provided through the creation and maintenance of ENA Industry Guidelines and Australian Standards.

Australian Standards tend to be outcomes based. This is consistent with a memorandum of understanding (MOU) signed by Standards Australia with the Australian Government to strengthen the national standard system, which called on standards to have clearly identifiable outcomes and where appropriate, contain performance or outcomes-based requirements rather than input-based or other prescriptive requirements. Where more input based guidance is required, ENA policy suggests that guidelines should be made.

To address specific electricity network issues not being address by other Standards committees, Standards Australia has established committee EL – 52 (Electrical Energy Networks, Construction and Operation). The prime function of the committee is the development of standards in the fields of the safe design, construction, maintenance and operation of electricity transmission and distribution networks.

In 2006 the Productivity Commission conducted a review entitled *Standard Setting and Laboratory Accreditation*. It reviewed the role of Australian Standards in Australian legislation and made a number of criticisms including the absence of a systemic and transparent consideration of costs and benefits in considering the need for, and the priority of, standards development, the need for more rigorous impact assessment when standards are referenced in regulation and the cost of Australian Standards.

**19 & 20. This discussion paper asks whether there is satisfaction with the quality of Australian Standards and whether the cost of accessing standards is an issue.**

It is noted the legislation standards endorsed by COAG anticipate that unless there is good reason, regulation should be consistent with international standards.

Thus, there is an argument to merely accept standards published by organisations such as the International Electrotechnical Commission (**IEC**), Institute of Electrical and Electronics Engineers (**IEEE**) and the International Organization for Standardisation (**ISO**). That would reduce the cost involved in donating staff etc towards the development of standards.

That said, it has been suggested that the benefit of developing Australian Standards is that their promulgation can be used to influence the development of international standards that recognise Australian work procedures, customs and usages, and climatic conditions.

**21. This discussion paper therefore asks whether it would be satisfactory if regulation only reflected international standards.**



## *Guidelines*

### *Electricity*

There has been a suggestion that more time and resources should be directed towards developing process oriented documentation such as ENA Guidelines.

This has become necessary because some users find outcomes-based documentation either too hard to comply with or too vague to be helpful.

Some have argued an increase in process based regulation is desirable to enable some industry participants to have the comfort of a set of regulations where, if they are followed, they are 'deemed to comply' with regulatory obligations.

It has also been said that greater specificity of what is required is particularly important for jurisdictions where connection services are contestable – people need to know what standards they must meet before offering themselves for accreditation by network operators.

It is finally noted that it is technically possible for ENA Guidelines can be called up as codes of practice for OHS purposes.

Arguably, the more universal process-based rules are, the less variance there will be in company safety documentation that safety management documentation typically require workers etc. must follow.

This will maximise the chances that service providers will be able to provide services in a manner compatible with company safety guidelines.

It could also reduce the costs incurred in preparing low level safety documentation.

However, this could inhibit work practice ingenuity. There can also be a degree of difficulty in determining what process should be 'the' process. For example, should restricting access to substations in particular circumstances be on a 'barrier in' or a 'barrier out' basis – something that has been an issue amongst technical experts in the electricity sector.

The current proposal to review establishing uniform service and installation rules so there is one set of reasonable technical requirements that relevant parties throughout Australia must comply with illustrate the challenges that attempting to harmonise practices brings.

The cost to an entity resulting from having to change work/asset management practices to comply with a harmonised work practice or standard should also be remembered.

Because electricity provision has been jurisdictionally based, ENA constituents operating in particular jurisdictions have followed work practices developed over decades, and they are loathe changing.

Compromise is necessary if there is to be harmonisation.

Care must also be taken that any harmonised work practice is not reduced to the lowest common denominator, such that the documentation becomes so vague it is unhelpful.

Finally, there is a strong argument that non-regulatory initiatives such as the proposed 'national passport', which records the current competencies of a worker, coupled with sufficiently exhaustive company safety documentation, are more likely to lead to greater safety outcomes than prescription of specific work practices.

<b>The discussion paper therefore asks:</b>
<b>22. Do contractors and employees find it easier to apply process based standards, or do they find process based standards easier to comply with?</b>
<b>23. Would process based standards be a more appropriate upon which to develop company safety documentation and safety case/safety management documentation?</b>
<b>24. Should more time be spent developing ENA guidelines rather than standards?</b>
<b>25. In what circumstances should guidelines be developed?</b>
<b>26. Should documentation such as the Victorian 'Bluebook', or Service and Installation Rules such as the WA Electrical Requirements ever appear in regulation addressed to ENA constituents?</b>

### *Standards, Guidelines and the Gas Industry*

The gas industry has a different history to the electricity industry.

As we have already indicated, the gas industry has spent a lot of time and money to develop the 'gold standard' AS 2885, while work is progressing in developing a similar standard for distribution pipelines.

Moreover, all industry participants (including regulators) appear to satisfactorily operate under legislation using outcomes-based standards.

**27. This discussion paper asks if there is a need to develop something like ENA guidelines/NENS for the gas sector.**

### *Note on costs and challenges*

It should be noted that particular practices designed to accommodate specific requirements contained in instruments made by state regulators may require some amendment if rules are harmonised. This could impose a cost to individual market participants.

Finally, the Australian Energy Market Agreement (**AEMA**) between the state and federal governments made on 30 June 2004 allocated states and territories responsibility for:

- licensing and authorisation schemes that require demonstration of technical capacity and service reliability standards;
- enunciation of community service obligations;
- administration of existing distribution tariff equalisation schemes; and
- land use, planning and environmental approvals.

Some policy positions that may be developed as a result of considering this paper may ultimately require an amendment to the AEMA.

However, the intention of the paper is to encourage debate about how best to harmonise technical and safety legislation. Any propositions flowing from consideration of it can then be defined and tested for economic and operational efficiency.

# THE TECHNICAL AND SAFETY REGULATION OF THE ENERGY SECTOR IN AUSTRALIA

## – A DISCUSSION PAPER

### Introduction

An electricity substation has a fire causing damage to the substation and a loss of service to consumers.

In law, this has significance from both an *economic* as well as a *technical/safety* regulatory perspective.

From the economic regulatory viewpoint, a licensee has failed to provide a reliable service.

Sanctions under the National Electricity Rules for failing to meet required performance standards could apply.

From the technical/safety aspect, the asset failure is relevant as not only does it place the continuous supply of product in jeopardy, the safety of both workers having to deal with the asset failure and members of the community near the asset could be at risk.

Both suites of regulation deal with the issue from their own perspectives.

As well, some jurisdictions would deal with the issue in different ways.

Entities involved in the energy sector have largely remained focussed on the individual jurisdictions in which the entity (or their corporate predecessor) has always traded.

However, as they (or new participants) invariably provide services in different jurisdictions (an inevitable outcome of a national market) harmony of regulation will be of increasing corporate importance.

The drift towards further harmonisation of rules can be displayed in a number of ways.

For instance, the Council of Australian Government (**COAG**) has asked for all remaining jurisdictional derogations from the national electricity framework to be removed or harmonised by June 2008.

Another more practical illustration of this desire is the proposal by the Victorian SIR Management Committee to encourage national consistency of service and installation rules.<sup>1</sup>

ENA believes the Ministerial Council on Energy (**MCE**) agreement to transfer economic regulation of energy distribution to the Australian Energy Regulator (**AER**) may trigger a major rethink on the national consistency of technical and safety regulation.

This discussion paper will explore the thesis of the ENA.

It should be noted that this discussion paper predominantly deals with the pathways by which regulation and quasi-regulation directly affecting ENA constituents are made.

Therefore, issues relating to:

- the licensing and supervision of licensed contractors;
- the approval of electrical equipment; and
- the content, or appropriate interpretation of particular laws or standards

are outside the scope of this paper.



Two final points should be noted:

- national agreements allocate safety and technical issues to jurisdictions. Any transfer of functions to national regulation or national regulators may require amendment to the Australian Energy Market Agreement and the National Electricity and Gas Laws; and
- any harmonisation to remove jurisdictional variations may lead to a need to change some work or asset management practices of individual companies. This could lead to some degree of cost to ENA constituents.

However, the intention of the paper is to encourage debate about how best to harmonise technical and safety legislation. Any propositions flowing from the consideration of it can then be defined and tested for economic and operational efficiency.

This paper reflects:

- the law; and
- the declared policy intention of governments

available as at 20 June 2007.

**K.M.Corke and Associates**

**June 2007**

## How We Came to Where We Are

Leaders and representatives acknowledged that past inefficiencies can no longer be tolerated and that changes are needed to make the Australian economy more competitive and flexible. An integral part of any microeconomic reform strategy is a more effective public sector. Leaders and representatives therefore declared their intention to use this unique opportunity to maximise cooperation, ensure a mutual understanding of roles with a view to avoidance of duplication and achieve significant progress towards increasing Australia's competitiveness.

*From the communiqué of the Special Premiers' conference, Brisbane 30 – 31 October 1990*

### *The Beginning*

Towards the end of the 1980's micro-economic reform of the Australian economy was the nation's most important public policy issue.

To establish a more flexible and outward looking economy decisions such as floating the currency, deregulating financial markets and reducing trade barriers were made.

These reforms led Australian governments to then focus on a range of domestic reforms including:

- the performance of government business enterprises;
- the harmonisation of regulations among jurisdictions; and
- the creation of national energy markets.

The Special Premiers' conference held on 30 – 31 October 1990 was the genesis for what evolved into national competition policy (**NCP**).

## *Electricity*

The 1990 premiers' conference decided to study whether extensions to the interstate electricity network were justified and if so, what was the best way of achieving it.

This led to a decision to separate the generation and transmission elements in the electricity sector.<sup>2</sup>

At the Council of Australian Government (**COAG**) meeting held in Melbourne on 8 – 9 June 1993 the Commonwealth, New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory agreed to have the necessary structural changes put in place to allow a competitive electricity market in those jurisdictions.

This included the establishment of interstate transmission networks.

The next COAG meeting held on 25 February 1994 made decisions that established today's regulatory framework, including:

- development of a code of conduct dealing with issues such as network pricing, pool rules, operation and system control and network connection and access, authorised by the Trade Practices Commission (**TPC**), or its successor;
- national regulation of market conduct, undertaken by something like TPC or its successor;
- a general body like the Prices Surveillance Authority or its successor to be used where national pricing oversight is undertaken;
- development of a code of conduct by the successor of the National Grid Management Committee, authorised by the Trade Practices Commission or its successor; and
- that safety and environment issues remain the responsibility of the states.

## Gas

The 1994 COAG received a report called *Working Group on Gas Reform on Progress Towards A Pro-Competitive Framework for the Natural Gas Industry Within and Between Jurisdictions*.

It noted the benefits of free and fair trade in gas that would be facilitated by further developments aimed at stimulating a more competitive framework for the gas industry including:

- no legislative or regulatory barrier to both inter and intra-jurisdictional trade in gas;
- third-party access rights to both inter and intra-jurisdictional supply networks;
- uniform national pipeline construction standards;
- increased commercialisation of the operations of publicly-owned gas utilities;
- no restrictions on the uses of natural gas (e.g. for electricity generation); and
- gas franchise arrangements consistent with free and fair competition in gas markets and third party access.

As with electricity, COAG then made the decisions that formed the foundation of the current gas regulatory regime, including:

- an agreement to implement complementary legislation so that a uniform national framework applied to third party gas transmission pipelines between and within jurisdictions;
- an agreement to adopt AS 2885 to achieve uniform national pipeline construction; and
- separation of transmission and distribution activities.

## *National Competition Policy*

The national competition policy agreements (**NCP**) were signed in April 1995. They constituted the:

- competition principles agreement;
- conduct code agreement; and
- agreement to implement NCP and 'related reforms'.

The electricity and gas sectors were among the 'related reforms'.

On 9 May 1996, NSW, Queensland, SA, Victoria and the ACT signed an agreement that established the framework for the National Electricity Market (**NEM**), including the acceptance of a uniform code of conduct, establishment of the National Electricity Code Administrator (**NECA**) and the National Electricity Market Management Company (**NEMMCO**) and to incorporate as the 'National Electricity Law' legislation made by SA.

At the COAG of 7 November 1997, heads of government signed the *Natural Gas Pipeline Access Agreement*.

Under the arrangements, any supplier, retailer or gas consumer will be able to contract with pipeline owners to carry gas on fair and reasonable terms. As with electricity, SA became the lead jurisdiction to establish the National Gas Law, which was to be adopted by other participating jurisdictions.

## *The Development of the National Energy Market During the 21<sup>st</sup> Century*

*2001*

On 8 June 2001 COAG decided to create the Ministerial Council on Energy (**MCE**).

It was tasked with considering:

- future energy use scenarios for Australia;
- opportunities for increasing interconnection and system security in electricity and gas;
- enhancing cooperative energy efficiency activities;

and, most importantly:

- the potential for harmonising regulatory arrangements.

It was also tasked with reviewing what became known as the **Parer Report**: *Towards a Truly National and Efficient Energy Market*.

One of the major findings of Parer was that there were too many regulators.

It said:

The multiplicity of regulators creates a barrier to competitive interstate trade and adds costs to the energy sector.....Submissions to the Review indicated significant disquiet about the present regulatory burden on energy businesses from national and local regulators, in particular different compliance regimes and the need to develop separate customer management systems for each state and territory to address different regulatory requirements. The National Retailers Forum for example has stated:



**A retailer wishing to compete in those markets open to competition is.....required to obtain a separate retail licence in each state, with different licence conditions attaching to each of these licences. Moreover the codes and guidelines.....that sit under these licences differ in their requirements. The result is that business processes and systems must be tailored for each jurisdiction. The inefficiencies that result from this inhibit a retailer's ability to compete efficiently. Energy efficient codes duplicating general competition regulations exacerbate this problem. (Emphasis in the original)<sup>3</sup>**

The Parer Report recommended the creation of something like the Australian Energy Regulator.<sup>4</sup>

Under a heading *Cooperative approaches are not an alternative to a national regulator*, the Parer Report said:

Cooperative approaches, under which existing regulators work together to achieve consistency in regulation and avoidance of duplication would not achieve a satisfactory outcome.....The Panel's assessment however is that such cooperative approaches are a suboptimal solution. It is in effect a status solution. It is in effect a status quo solution, with no drivers for national solutions. As Delta Electricity states:

Although the various state and federal regulators meet at regulators forums to share views, this does not ensure a consistent national approach to the regulation of the network businesses in the NEM.

**There is little evidence that work on the harmonisation of regulatory requirements would progress as expeditiously as if under the leadership of one agency. Differences, or perceived differences in the actual application of any 'template' arrangements would remain and there would be no clear way forward for rectifying that concern. (Emphasis added)<sup>5</sup>**

The Committee acknowledged the Regulator's role in technical regulation.

It said:

It is appropriate that the NER (now called the AER) assume responsibility for the setting of technical standards for the planning, design and operation of critical elements of the power system which are material to the security of the system.....As noted above, the NER would assume distribution regulation and licensing functions. **Certain functions include technical considerations, for example distribution connection standards and generation licensing. In carrying out these functions, links with appropriate jurisdictional technical regulators are important.** (Emphasis added).<sup>6</sup>

However, the Report went on to say:

Other than this, the NER would not cover technical and safety issues such as energy worker licensing or safety incidents involving electricity and gas infrastructure.<sup>7</sup>

Parer also considered the regulation of gas, given that gas and electricity are increasingly seen as product substitutes.

The new regulatory arrangement was to proceed on the basis that the electricity and gas regulatory regimes should align as far as possible. This is even though national gas legislation largely deals with access rather than market issues.<sup>8</sup>

The MCE largely adopted the Report.<sup>9</sup>

2004

The decision was endorsed when heads of government signed the *Australian Energy Market Agreement* (**AEMA**) on 30 June 2004.<sup>10</sup>

The agreement established the current institutional structure:

**Box 1: The current national institutional structure**

- **the Australian Energy Market Commission (AEMC), responsible for rule-making and energy market development at national level, including the National Electricity Rules and the National Gas Rules;**
- **the Australian Energy Regulator, a constituent yet independent part of the ACCC, responsible for economic regulation and compliance at national level; and**
- **NEMMCO, responsible for day-to-day operation and administration of both the power system and the electricity wholesale spot market in the NEM and other support activities.**

It was also decided that responsibility for distribution and retail regulatory functions previously the responsibility of states and territories would transfer to the Australian Energy Regulator for those jurisdictions participating in the NEM.<sup>11</sup>

States and territories would continue to have responsibility for:

- licensing and authorisation schemes that require demonstration of technical capacity and service reliability standards;
- enunciation of community service obligations;
- administration of existing distribution tariff equalisation schemes; and
- land use, planning and environmental approvals.<sup>12</sup>

2006

At its meeting on 10 February 2006, COAG agreed that, while structural reforms taken under NCP and other COAG initiatives have improved the efficiency of the energy sector, further reform was needed.

COAG therefore:

- recommitted to the reforms being managed by the MCE; and
- established the Energy Reform Implementation Group (**ERIG**) to develop proposals for:
  - achieving a fully national electricity transmission grid;
  - measures that may be necessary to address structural issues affecting the ongoing efficiency and competitiveness of the electricity sector; and
  - any measures needed to ensure transparent and effective financial markets to support energy markets.

2007

The April 2007 COAG agreed with the gist of the ERIG recommendations.

It is proposed that by July 2009 there will be a National Energy Market Operator (**NEMO**) for both electricity and gas, to encompass NEMMCO's role in the day to day administration and operation of the power system and electricity wholesale spot market. Responsibility will also be taken for national transmission planning.

NEMO would also subsume the responsibilities of the proposed Gas Market Operator (**GMO**).

That was a body proposed by the Gas Market Leaders Group in June 2006 and approved by MCE in October of that year, that is to take responsibility for the:

- establishment of a bulletin board to provide information on the status of natural gas supplies around the country;
- establishment of a short term trading market; and
- provision for a mandatory price based balancing mechanism for wholesale gas trading.<sup>13</sup>

The COAG communiqué says the creation of NEMO recognises the convergence of regulatory framework for gas and electricity as well as the economies of scale and scope arising from a single interface with energy industry participants.

The MCE was asked to review all remaining derogations to ensure that, to the extent practicable and appropriate, derogations from the national framework and other state-specific differences are removed or harmonised by June 2008 for report to COAG by December 2008.

It is finally noted that the AEMC proposes to review the process for revising technical standards by 30 June 2008. The Reliability Panel will also review technical standards over the same period.<sup>14</sup>

# The Regulation of Electricity

## *Regulation at National Level*

The Parer Report spent little time on considering issues relating to safety and technical safety regulation, concentrating instead on economic issues.

This is no real surprise. As we've just explored, the real spur for change was a wish to create a national economic market for energy – something heavily influenced by the Hilmer Report, the report that established the intellectual foundation for the adoption of national competition policy in Australia.

Its major finding was that:

(t)he Committee has not taken a blinkered or dogmatic view over the role of competition in society; in some cases competitive market outcomes will not meet the national interest, because they failed to deliver either efficiency or some other valued social objective. However, the Committee is satisfied that the general desirability of competition was so well established that those who wish to restrict or inhibit competition should bear the burden of demonstrating why that is justified in the public interest.<sup>15</sup>

The national regulatory structure is therefore generally designed to permit interstate trade of energy, investment in infrastructure and allocative efficiency.

It follows that the National Electricity Rules are designed in the manner that they are.

However:

- the National Electricity Rules contain technical regulation; and
- NEMMCO can exercise some quasi-regulatory powers.

As the statement on the NECA website covering the link to the December 2001 *Review of Technical Standards* Report said:

The report stresses that appropriate standards for plant connecting to the network are vital to protect the integrity of the power system. They can, however, easily stifle innovation. New technologies and different approaches will and should emerge as the market reacts to changing commercial, social and environmental pressures. Ensuring a level playing field for all technologies, and not favouring incumbents over potential new entrants, are key objectives of the market. To the extent that new approaches or alternative technologies may be able efficiently and effectively to contribute towards meeting end-use customers' demands, they should not be restricted from doing so by unnecessarily rigid standards or standards limited by existing technology and historical practice.

The report also acknowledges, however, that an approach based on mandating a single set of standards with which everyone who is connected, or who wants to be connected, to the network must comply risks inefficient outcomes. The cost of meeting those standards will vary dramatically for different types of plant. Some types will have the capability significantly to over-achieve a mandatory standard at low cost. Others may be unable to achieve that standard except at prohibitive cost. Thus, an approach based on mandatory standards will often not achieve the lowest cost and may create unnecessary barriers to entry.

**The report concludes that the overriding imperative of maintaining the security and integrity of the power system means that there need to be clear and clearly-defined standards for the performance of the network and the power system itself overall.** At the same time it concludes that, consistent with achieving those system-wide requirements there should be flexibility within a defined range around the particular standards that individual plant should be required to meet in order to gain access to the network. This is consistent in practice with the existing grandfathered arrangements under which plant that were connected to the network at the launch of the market have a variety of capabilities based on requirements at the time of their connection.<sup>16</sup> (Emphasis added)

Thus, the National Electricity Law, the South Australian law applied in each Australian jurisdiction participating in the NEM, generally requires a person to be registered with NEMMCO to own, control or operate a transmission or distribution system.<sup>17</sup>

NEMMCO must be satisfied they can comply with the Rules.<sup>18</sup>



And the Rules prescribe some technical standards: the AEMC describes the requirements set out in clauses 4.13, 4.14, 5.2.3, 3.2.4, 5.2.5, 5.3.4A(g) and Schedules 5.1, 5.2, 5.3 and 5.3a of the National Electricity Rules as being technical standards.<sup>19</sup>

Therefore, for example:

- voltage fluctuations should be less than the compatibility levels set out in Australian Standard AS/NZS 61000.3.7.200<sup>20</sup>;
- a market network service provider must ensure that the earthing of primary plant in a substation must be in accordance with the ESAA (now ENA) Safe Earthing Guide; and<sup>21</sup>
- network service providers are required to comply with system wide technical standards set out in Schedule 5A and access standards set out in Schedule 5.1 of the Rules.

The Rules also require NEMMCO to exercise some decisions that require a degree of technical capacity. For example, it:

- can give instructions so as to facilitate the operation of that part of the national grid for which a registrant has control;<sup>22</sup>
- has the capacity to take steps considered necessary to direct registered participants to do anything necessary for reasons for public safety;<sup>23</sup>
- can work with a registered participant if a performance standard has been breached to have it corrected, or otherwise inform the AER of the breach;<sup>24</sup>

- determine whether the performance standards of Tasmanian market network service providers performance standards satisfied Schedule 5 of the Rules at the time Tasmania entered the NEM; and<sup>25</sup>
- accredit metering providers.<sup>26</sup>

Finally, the Rules require licensees to operate equipment in accordance with:

- relevant laws;
- good electricity practice. This requires a licensee to exercise skill, diligence, prudence and foresight that can be reasonably expected from a significant proportion of operators of facilities forming part of the power system, consistent with applicable regulatory instruments; and
- applicable Australian Standards.<sup>27</sup>

Failure to do so can lead (nominally, at least) to sanction.

It would appear from the *Review of Enforcement and Compliance with Technical Standards* that the AEMC is recommending the more 'robust' investigation and sanctioning of technical breaches of the Rules.

That would have to include (however nominally) action for not operating assets according to 'applicable' Australian Standards or for not operating assets in accordance with 'good electricity practice'.

Finally, as previously noted the AEMC proposes to review the process for revising technical standards by 30 June 2008, and that in parallel with this review, the Reliability Panel will also review technical standards.

As at June 2007, this work has yet to commence. However, the clear inference is that there will still be some technical regulation contained in national regulatory instruments.

### *Regulation at Jurisdictional Level*

Although not structured identically, state licensing provisions generally require a person seeking a licence to comply with:

- the technical conditions of operating the transmission grid stated in the authority or prescribed under the regulations;
- conduct rules made by economic regulator;
- conditions stated in the authority (licence); and
- any industry codes, protocols and standards that are made.<sup>28</sup>

Some of these contain some technical regulation, albeit at a high level.

As an example, clause 3.1 of the Electricity Distribution Code made by the Essential Services Commission of Victoria reads:

#### **3.1 Good asset management**

A distributor must use best endeavours to:

- (a) assess and record the nature, location, condition and performance of its distribution system assets;
- (b) **develop and implement plans for the acquisition, creation, make notes, operation, refurbishment, repair and disposal of its distribution system assets and plan for the establishment and augmentation of transmission connections:**
  - **to comply with the laws and other performance obligations which apply to the provision of distribution services including those contained in this Code;**
  - **to minimise the risks associated with the failure or reduced performance of assets;**  
**and**

- in a way which minimises costs to customers taking into account distribution losses; and
- (c) **develop test or simulate and implement contingency plans to deal with events which have a low probability of occurring, but are realistic and would have a substantial impact on customers.**

(emphasis added)

Under a heading ‘substations’ clause 4.2.4 of the South Australian Electricity Transmission Code reads:

#### **4.2.4 Equipment Inspections and Tests**

A transmission entity **must inspect and test its transmission system:**

in accordance with the manufacturer’s requirements and good electricity practice; and

to ensure that its transmission system is operating safely and within the requirements of the NEC or as specified in any connection agreement.

It is also the case that in some circumstances, a duty to do something is imposed on different people in different jurisdictions.

**EXAMPLE:** In Victoria, distributors are required to ensure harmonic levels in the voltage. In South Australia the customer is required to ensure its electrical appliances do not exceed permissible harmonic limits under the standard connection and supply contract.

As a final example, in the ACT the economic regulator has made the *Management of Electricity Network Assets Code*, which sets out the safety case requirements that must be met in that jurisdiction.

It would appear that many of the requirements contained in technical regulation made by jurisdictional regulators duplicate requirements contained in safety management plans/safety cases.

**Is there duplication between the requirements of instruments made by technical regulators and those required to satisfy safety management documentation?**

**Are there specific examples?**

## *Transfer of Regulatory Responsibility*

Now, the current presumption is that when economic regulation of distribution and retail functions are transferred to the AER, that regulator will issue a simple authority to operate issued on the basis of an assessment of financial capacity, managerial/financial competence and general fitness.

Like a driver's licence, the authorisation instrument will merely attest that the entity is entitled to provide services to the energy market.

All obligations associated with holding a licence will be specified outside of it, with 'technical and safety' regulation remaining with the jurisdictions.

Such an outcome would be in line with previously published ENA policy.

In response to an AEMC paper on business authorisation, ring-fencing and retail future arrangements, ENA indicated:

The *Working Paper* appears to propose a dual licensing regime to apply to distribution businesses with a national licence for economic regulation, and the potential for jurisdictional licences for technical and safety matters. The ENA **does not support an outcome that leads to a dual licensing regime applying to distribution businesses. This appears to be a potential outcome under both options 4 and 5 in the *Working Paper*.**

As outlined earlier, the ENA supports a national licensing regime on the basis that the role of the licence is limited to identifying key market players, and setting some high level market level entry requirements. The ENA supports the principle set out in the *Working Paper* that licences should not bestow or impose substantive rights or obligations. The ENA considers that this principle should apply at both the national and jurisdictional levels. No licence, regardless of whether it is granted by a state agency or regulator, or by a national agency or regulator, should bestow or impose substantive rights and obligations.

**Given this limited role for licences, creating a dual licensing regime appears redundant. Only one instrument is required to identify relevant market participants, to which both jurisdictional and national regulators could refer.**

It may be appropriate for the AER and jurisdictional safety and technical regulators to work together to ensure that any market provisions are satisfied through the allocation of a single licence.<sup>29</sup> (Emphasis added)

That said, what has been described by one regulator as the ‘legislative carve-up’ of functions between jurisdictions – that is, which areas should be considered ‘technical and safety’ and thus properly dealt with by jurisdictional legislation and that which should be regarded ‘economic’ regulation is not settled.

As illustrated in the Victorian, South Australian and ACT examples, some technical codes and licence conditions set by jurisdictional regulators do impose some degree of statutory obligation relating to technical and safety issues – even if at a relatively high level.

It is possible that the national regulator could be allowed to make technical codes or to condition licences.

At an internal ENA workshop held on 7 June 2007 to discuss the issues in this paper, participants thought that, while acknowledging overlap, there are three general types of regulation directly affecting the energy sector:

- economic – dealing with issues relating to product quality and reliability;
- technical – dealing with asset standards and work processes; and
- safety – dealing with employee safety issues covering areas colloquially described as ‘slips, trips and falls’.

As we discussed earlier, the National Electricity Rules regulated:

- the level of voltage fluctuation; as well as
- how a primary plant should be earthed.

This is not unreasonable.

If it is accepted that an economic regulator has an interest in ensuring 'reliability' of product, it not only has an interest in ensuring the quality of product (voltage fluctuation), it also has an interest in ensuring that product will be continuously produced; therefore, issues such as ensuring primary plants are appropriately earthed and thus operating are within scope.

The 7 June workshop felt that if there was to be a divide between 'economic' and 'technical' regulation, issues dealing with voltage fluctuation were properly matters for economic regulation as it went to product quality, while the issue of how plants should be earthed are matters more properly contained in technical regulatory instruments because it went to the efficient operation of the asset.

Nevertheless, it appears probable that there will be some technical regulation contained in instruments made under the National Electricity Rules even after laws giving effect to the transfer of the economic regulation of distribution and retail operations are settled.

**Should an economic regulator (probably AER) have the capacity to make technical codes, or place technical conditions in licences, in the manner that jurisdictional economic regulators can now?**

**If not, why not?**



It must be noted that should this occur, it would run counter to the philosophy of the national scheme, which is that the regulator itself should not be the generator of regulation.

Rather, the market participants are best left to develop the technology and work practices to implement high-level policy outcomes. That is, the reason why lower level regulations such as rules are developed at the request of market participants is as a result of market experience.

We have noted that some technical standards are already contained in the National Electricity Rules. There is scope to consider whether all technical regulation considered necessary to ensure the reliability of the Australian electricity supply system is:

- made in the manner set out by the Rules, (put simply, a rule is proposed by a participant; the proposal goes to consultation; the AEMC makes the final rule); and
- housed in a discrete schedule of the Rules.

If this occurred, all relevant technical regulation would be contained in one instrument, without in any way affecting the structure of regulation dealing with 'pure' economic regulation, such as the hierarchy for negotiating access to infrastructure, the manner by which revenue applications are accessed and determined etc.

Given the above, it becomes a balance between the desires for harmony with the recognition that the AEMC probably does not possess in-house technical capacity to make decisions that relate 'purely' to technical issues. Regulator error, through lack of knowledge, could impose unnecessary costs on industry participants and therefore inefficient market outcomes.

**Should technical rules of a nature currently contained in instruments made by jurisdictional regulators be contained in the National Electricity Rules, with rules made in the manner set out under the National Electricity Law?**

**Alternatively, and acknowledging a possible lack of regulator knowledge, should these issues remain in discrete technical legislation made at jurisdictional level?**

#### *Note on Costs*

It should be noted that particular practices designed to accommodate specific requirements contained in instruments made by state economic regulators may require some amendment if rules are harmonised. This could impose a cost to individual market participants.

## The Regulation of Gas

### *Regulation at National Level*

For the historical reasons discussed in the earlier part of this paper, national legislation for gas almost exclusively revolves around access to infrastructure.

Thus, the *National Gas Law* does not expressly anticipate the making of rules with regards to technical and safety issues while the proposed *National Gas Rules* has no equivalent to Schedule 5 of the *National Electricity Rules*.<sup>30</sup>

It therefore follows that if the *National Gas Rules* were to contain technical/safety regulation, the *National Gas Law* would require revision.

The 1994 COAG recognised AS 2885 as a ‘gold standard’ technical standard for gas transmission pipelines, while AS 1697, which deals with distribution pipelines has been universally called up in state level legislation.

It is finally noted that under AEMA, the responsibility for transmission and retail regulation will be transferred to the AER in most jurisdictions.<sup>31</sup>

### *Regulation at Jurisdictional Level*

However, the licensing/safety legislation for distribution pipelines structure at state level is much like electricity.

For instance, in NSW a person requires either a reticulation or supplier authorisation to convey natural gas. Authorisations can contain conditions.<sup>32</sup>

These conditions include a requirement that an authorisation holder comply with technical or prudential criteria to determine that a person is able to operate a viable business.<sup>33</sup>

Some economic regulators can make instruments that touch on technical issues.<sup>34</sup>

Therefore, in Victoria clause 2.1 of the *Gas Distribution System Code*, made by the Essential Services Commission reads in part:

## **2.1 Distributor Obligations**

In operating the distribution system, a Distributor must:

- (a) establish operational and system security standards for its distribution system and for all connections and proposed connections to its distribution system;
- (b) maintain the delivery pressure of gas from the distribution system to ensure the minimum supply pressure is maintained at the outlet of the meter as set out in Schedule 1, Part A to the Distributions Systems Code to the extent to which it is within its power

An ENA constituent also reports that gas transmission licences commonly contain technical requirements that are explicitly for the purpose of ensuring safety and protecting the environment.

As an example, one particular licence specifies:

- the steel grade the pipe must satisfy (API 5L Grade X52, Grade X65 and Grade X70);
- wall thicknesses;
- coating (Fusion Bonded Epoxy (FBE) 0.40mm thick (minimum));
- a pressure control system;
- a cathodic protection system;
- pigging facilities;

- a telemetry monitoring and control system to facilitate emergency shutdown;
- two Solar Taurus 60 gas turbine compressor sets; and
- an odourant injection facility.

Sometimes, different regulatory instruments require the making of plans to deal with what is in effect the same subject matter.

For example, one ENA constituent reports that the Victorian Gas Distribution Code requires an asset management plan to deal with network capacity augmentation. At the same time, the safety case made for the technical regulator requires the establishment of systems and processes to maintain the safety and integrity of the system.

It has also been reported that the Tasmanian economic regulator requires licensees to report compliance with legal obligations to the standards required by AS3806<sup>35</sup>, replicating many of the obligations contained in safety plans.

The issues pertaining to the regulation of electricity at jurisdictional level also apply to gas.

**1. Is there duplication between the requirements of instruments made by technical regulators and those required to satisfy safety management documentation?**

**Are there specific examples?**

**2. Should an economic regulator (probably AER) have the capacity to make technical codes, or place technical conditions in licences, in the manner that jurisdictional economic regulators can now?**

**If not, why not?**

**3. Should technical rules of a nature currently contained in instruments made by jurisdictional regulators be contained in the National Gas Rules, with rules made in the manner set out under the National Gas Law?**

**4. Alternatively, and acknowledging a possible lack of regulator knowledge, should these issues remain in discrete technical legislation made at jurisdictional level?**

### *Note on Costs*

It should be noted that particular practices designed to accommodate specific requirements contained in instruments made by state economic regulators may require some amendment if rules are harmonised. This could impose a cost to individual market participants.

## Safety Management Documentation

The energy sector is adopting systems-based management regimes to manage assets and safety.

A system-based approach:

...involves managing OHS, product quality, or any other problem, in terms of systems of work rather than concentrating on individual deficiencies. That is, it involves the assessment and control of risks and the creation of an inbuilt system of maintenance and review. Its focus is on the organisational structure, responsibilities, practices, procedures, processes and resources for implementing and maintaining OHS management. A management system thus 'spans the entire organisation by relating the organisation to its environment, setting the goals, developing comprehensive, strategic, and operational plans, designing the structure and establishing control processes.' Of particular importance will be the setting of objects and targets, the establishment of management programme, procedures for achieving the targets and measurement techniques to ensure that they are reached. In effect, this approach is a direct application of Roben's exhortation that regulation should be:

..... predominantly concerns not with the detailed prescriptions for innumerable day to day circumstances but with influencing attitudes and with creating a framework for better safety and health organisation by industry itself. <sup>36</sup>

### *Electricity*

The electricity sector was previously regulated under a command/control model of regulation, under which regulators specify what should be done and how to do it.

Some requirements were clearly aimed to eliminate all possible risk. They were also so costly to implement economic regulators would not approve revenue applications seeking to recover the cost of literal compliance.

**EXAMPLE 1** In one jurisdiction, it was proposed that all lines had to be 4.6m high – high enough for an interstate transporter to pass. The likelihood of such a transporter being located in suburban areas is very low. One ENA constituent estimated that it would cost \$1.2bn to comply with the regulation.

**EXAMPLE 2** Regulations require earthing systems to be inspected every ten years. It is both impractical and unnecessary to inspect every customer over such an arbitrary period.

The sector is migrating towards a safety case/safety management scheme system, in which licensees fashion compliance methods to satisfy high level outcome-based regulation.

In those jurisdictions that specify the contents of a safety management plan/safety management systems in legislation, there are some minor variations.

**EXAMPLE 1** In NSW, a customer installation safety case must be provided, which includes amongst other things the requirement for a network operator to have in place an inspection regime so faulty work can be remedied and unsafe installations of electrical equipment made by service providers disconnected.<sup>37</sup>

**EXAMPLE 2** A Victorian safety management system must not specify technical standards other than technical standards published by either Standards Australia, Standards New Zealand, the British Standards Institute the OPS, the OEC or other approved standards organisation to be applied in connection with electricity work carried out on the design, construction, operation and maintenance of the upstream networks of a network operator. In NSW, the requirements are similar, however it implicitly can contain other provisions if it can be shown that the arrangements in place ensure an equal or better outcome.

The trend is continuing. Proposed legislation to be introduced in Victoria will require distribution and transmission companies to develop an electricity safety management scheme similar in nature to gas company safety cases currently required under Victorian law.

However, all of them have at their heart a structure deriving from AS/NZS 4360:2004 *Risk Management*.



It requires those preparing a risk assessment plan to:

- establish the context;
- identify risks;
- analyse risks;
- evaluate risks; and
- treat risks.

In WA, safety cases are to comply with AG606 (1997) *Code of Practice for the Preparation of a Safety and Operating Plan for Gas Networks*.

- This Standard is now renumbered as AS 4568 – 2005.

Unless a safety case has been accepted, a network operator in that state must comply with a number of documents such as:

- the Office of Energy, WA (Code of Practice, *Safe Electrical Work on Low Voltage Electricity Installations*);
- the Utility Providers Code of Practice for Western Australia;
- the Western Australian Electrical Requirements;
- the Electricity Council of NSW (e.g. EC5 1992 *Guide to Protective Earthing*);
- the ESAA (e.g. ESAA D(b)26 1995 *Guide for Working on Cables and Ancillary Equipment Under Induced Voltage Conditions and Transferred Earth Potentials*) and
- various Australian Standards as called up in the regulations.<sup>38</sup>

This standard has as its inspiration the structure of AS 4360:2004, to such an extent that the identify/analyse/evaluate/treat risk diagram contained in AS 4360 is repeated in AS 4568.<sup>39</sup>

NENS has been prescribed as the guideline to assist the development of safety cases.

**5. Is it possible for the industry to design the requirements of what a good safety case/safety management system should contain?**

**6. Is the WA model for developing a safety case sufficient?**

**7. Is NENS a sufficiently robust document that can be used to guide the development of a safety case?**

Many jurisdictions also require vegetation or bushfire management plans to be implemented. It is noted that land use, planning and environmental approvals remain the province of jurisdictions.<sup>40</sup>

It has been suggested that jurisdictions would be loathe to lose a role in approving plans that deal with environmental risk.

**8. Is it possible for the industry to design the requirements of what a good bushfire/vegetation management system should contain?**

Finally, it was noted at the 7 June workshop that in some circumstances a licensee providing services in one jurisdiction may provide services to a small number of customers located in another jurisdiction. This can happen in some rural locations. This means licensees would need to technically comply with two separate safety management systems.

It was felt desirable that where there is a minimal supply of services to one jurisdiction, the safety management system in force that complies with what may be described as the 'parent' jurisdiction should be taken to satisfy the requirements of the second jurisdiction.

**9. Are there circumstances where a licensee provides services to a very small number of customers in another jurisdiction to the one in which the licensee principally operates?**

**If there are such circumstances, would it be desirable for the safety management system approved for the principal jurisdiction be taken to satisfy the requirements of the secondary jurisdiction?**

## *Gas*

Most state technical regulations impose a general duty on operators to maintain and operate a safe gas network, or to keep leaks to a minimum.<sup>41</sup>

Most jurisdictions also require a safety case/safety management documentation to be prepared.

The Council of Australian Government (**COAG**) accepted as early as 1994 that AS 2885 should be the standard for transmission pipelines.

The industry has spent millions of dollars in the development of the standard, which encompasses all elements of pipeline management including asset and worker safety.

It is also working towards the development of a similarly all-embracing standard for distribution pipelines.

It is also noted that AS 4568 (nee AG 606) has been developed to assist the development of safety plans for gas networks.

Finally, most jurisdictions require the development of safety cases/management plans.

While generally prescribing the same requirements, there are nevertheless some minor variations in requirements between jurisdictions.

**EXAMPLE 1:** NSW requires a plan to document how 'emergencies' are to be dealt with, and lists as a minimum requirement how 'fires, explosions, leaks and impacts (with particular reference to those caused by the activities of other parties), natural disasters and civil disturbances are to be dealt with' whilst Victoria requires a response plan 'designed to address all reasonably foreseeable emergencies through the formal safety assessment'.

**EXAMPLE 2:** Queensland requires a safety management plan for operating plant characterised as a major hazard facility to deal with various issues contained in the standard NOHSC 1014 (1996) *National Standard for the Control of Major Hazard Facilities*.

As a general proposition, it would appear that both the industry and regulators are comfortable with the development and regulation of these sorts of documents as a result of some years of operation.

**10. Is it possible for the industry to design the requirements of what a good safety case/safety management system should contain?**

**11. In much the same way as electricity safety cases are to be developed in WA, is it possible to use AS 4568 as the basis around which safety management documentation could be designed, with AS 2885/an augmented distribution pipeline model used as the guideline to fill out specific requirements?**

## *General Issues Relating to Safety Management Documentation*

In the publication *Towards a Truly National and Efficient Energy Market* (the **Parer Report**), it was said:

There is little evidence that work on the harmonisation of regulatory requirements would progress as expeditiously as if under the leadership of one agency. Differences or perceived differences in the actual application of any template arrangements would remain, and there would be no clear way forward for rectifying that concern.<sup>42</sup>

It is noted that some technical regulators are stricter than others when accepting a safety case.

For example, one ENA constituent reports that a regulator will not accept any variation from established codes or standards even if those deviations achieve the same safety outcome, thus defeating the idea behind safety case regulation.

Other regulators are satisfied that documentation received from an accredited entity provides assurance that:

- a safety scheme being submitted satisfies the outcomes required by legislation; or alternatively
- there has been compliance with a submitted scheme over a particular period

without the need for collateral audits conducted by government officers.

This is a result of (amongst other things):

- the maturity of the sector;
- the economic imperatives that drive corporations with assets worth millions of dollars to continuously provide safe and consistent supply of product to consumers;
- a certain lack of in-house expertise within regulators to make many technical decisions; and
- general staff shortage.

Now, we noted earlier that Parer recognised that different agencies invariably build a culture that means that they can very easily interpret the same set of regulations differently.

In the context of electricity, NEMMCO has to make various technical decisions – and there is a possibility that this role could be extended.

However, it has been suggested the current technical capacity focuses around knowledge of generation and connectivity issues - the competency base would need extension if new functions were to be conferred.

There is no NEMMCO equivalent for the gas sector. Moreover, NEMO, the proposed National Energy Market Operator that will encompass many of the roles performed by NEMMCO for electricity, is currently only slated to establish in the gas context a bulletin board to provide information on the status of natural gas supplies, a short term trading market and a mandatory price balancing mechanism for wholesale gas trading.

However, the National Offshore Petroleum Safety Authority, an industry funded statutory authority, has as its charter approving safety cases for the offshore petroleum safety industry. Its personnel include officers with some expertise with among other areas, the terms of AS 2885.

And in that context, it is noted that energy sector licensees already fund the costs of ensuring compliance with safety management documentation to some degree. For example, in Victoria the technical regulator can require a licensee to provide independent audits to demonstrate compliance, with costs borne by the licensee.<sup>43</sup>

**12. Should NEMMCO, or its successor NEMO be vested with the responsibility of determining whether a safety case for the electricity industry has been satisfied?**

**13. Should something like NOPSA assess safety cases etc in the gas sector?**

**14. Alternatively – should ENA constituents support an industry funded specialist technical body to perform the functions such as approving safety management systems?**

**Or, should the Australian Energy Regulator simply accept a safety case/accept that there has been compliance with the contents of a safety case on the certification of an approved auditor/certifier?**

**Alternatively, should state technical regulators remain the entity accepting/monitoring compliance with safety management documentation?**

Earlier, it was asked whether it is possible for the sector to develop a single set of outcomes that a safety case/safety management system should meet.



If it *is* possible, there is an argument to say such requirements should be contained in a schedule to the National Electricity Rules or the National Gas Rules (as the case requires), with changes made using the standard amendment procedure set out in, for instance, Division 3 of Part 7 of the *National Electricity Law*:

- a participating party proposes a rule;
- AEMC considers there are reasonable grounds for making the rule;
- submissions are called for and considered;
- a rule is then determined by the AEMC.

Monitoring compliance/responding to reportable incidents would then be the responsibility of specifically nominated national/jurisdictional entities.

<b>15. Should the Australian Electricity/Gas Rules be the method by which the content of safety case/safety management system documentation is determined?</b>
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Finally, there is a suggestion that an *asset management system* would be a better way of managing assets.

It is said that asset management systems are actually a method of delivering many safety case requirements, however they also aim to balance optimum performance and expenditure requirements – very much the domain of economic regulators.

To that extent, it is noted that (for example) the Victorian Gas Distribution Code and electricity distribution licences granted by the WA Economic Regulation Authority require an asset management system to be in place.

An *asset management system* can be described as:

a systemic process of effectively maintaining, upgrading and operating assets, combining engineering principles with sound business practice and economic rationale, and providing the tools to facilitate a more organised and flexible approach to making decisions necessary to achieve the public's expectations.<sup>44</sup>

A *safety management system* involves:

the assessment and control of risks and the creation of an inbuilt system of maintenance and review. Its focus is on the organisational structure, responsibilities, practices, procedures, processes and resources for implementing and maintaining OHS management. A management system thus spans the entire organisation by relating the organisation to its environment, setting the goals, developing comprehensive, strategic and operational plans, designing the structure and establishing control processes.<sup>45</sup>

**16. Is there an effective duplication between the requirements set out in asset management systems and requirements set out in safety management systems?  
Are there any tangible examples?**

**17. Can an asset management system cover all the legitimate safety concerns that a safety management system does?**

## OHS

**A nationally consistent approach to OHS regulation is essential for employers and employees. Regulatory requirements must remain relevant, effective, clear and practicable and not unnecessarily prescriptive.**

**Outcomes must be expressed clearly in terms of the levels of performance required. There must be a balance between allowing for flexibility in achieving the required outcomes and prescribing certain actions or processes where necessary.**

**Regulatory requirements should not place unnecessary restrictions on competition or international trade.**

**- National Occupational Health and Safety Council *National OHS Strategy 2002 – 2012* May 2002 p.10**

In his review of the Victorian *Occupational Health and Safety Act 1985* Chris Maxwell QC observed that OHS coverage 'must have adequate coverage, so that it applies to all risks to health and safety arising from workplace activity, and must impose appropriate duties on those who are in a position to eliminate or control risks'.<sup>46</sup>

Modern legislation places broad duties on employers.

For example, in NSW the legislation reads:

### **8 Duties of employers**

#### *(1) Employees*

An employer must ensure the health, safety and welfare at work of all the employees of the employer.

That duty extends (without limitation) to the following:

(a) ensuring that any premises controlled by the employer where the employees work (and the means of access to or exit from the premises) are safe and without risks to health,

(b) ensuring that any plant or substance provided for use by the employees at work is safe and without risks to health when properly used,

(c) ensuring that systems of work and the working environment of the employees are safe and without risks to health,

(d) providing such information, instruction, training and supervision as may be necessary to ensure the employees' health and safety at work,

(e) providing adequate facilities for the welfare of the employees at work.

(2) *Others at workplace*

An employer must ensure that people (other than the employees of the employer) are not exposed to risks to their health or safety arising from the conduct of the employer's undertaking while they are at the employer's place of work.

Increasingly, Australian jurisdictions are imposing a test of 'reasonable practicability' to ensure worker safety – that is, employers are being expected to take 'all reasonably practicable steps' to minimise risk.

To purportedly add clarity to the 'reasonably practicable' test, section 20 of Victoria's current occupational health and safety legislation defines the concept thus:

(1) To avoid doubt, a duty imposed on a person by this Part or the regulations to ensure, so far as is reasonably practicable, health and safety requires the person –

(a) to eliminate risks to health and safety so far as is reasonably practicable; and

(b) if it is not reasonably practicable to eliminate risks to health and safety, to reduce those risks so far as is reasonably practicable.

(2) To avoid doubt, for the purposes of this Part and the regulations, regard must be had to the following matters in determining what is (or was at a particular time) reasonably practicable in relation to ensuring health and safety –

- (a) the likelihood of the hazard or risk concerned eventuating;
- (b) the degree of harm that would result if the hazard or risk eventuated;
- (c) what the person concerned knows, or ought reasonably to know, about the hazard or risk and any ways of eliminating or reducing the hazard or risk;
- (d) the availability and suitability of ways to eliminate or reduce the hazard or risk;
- (e) the cost of eliminating or reducing the hazard or risk.<sup>47</sup>

Most jurisdictions contain OHS regulations requiring employers to embark on a risk management exercise to identify hazards, assess risks and then eliminate or control risks.

These requirements are also contained in AS/NZS 4360 (the Australian Standard for Risk Management), the standard against which energy sector safety management systems are drawn.

The intention is to ensure that risk management complies with the ALARP (**As Low As Reasonably Practicable**) principle.

ALARP has been interpreted as meaning:

...in every case, it is the risk that has to be weighed against the measures necessary to eliminate the risk. The greater the risk, no doubt, the less will be the weight to be given to the factor of cost.

As well:

'Reasonably practicable' is a narrower term than 'physically possible' and seems to imply that a computation must be made by the owner in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) is placed in the other, and that, if it be shown that there is a gross disproportion between them – the risk being insignificant in relation to the sacrifice – the defendants discharge the onus on them.

As such, determining that risks have been reduced to levels that are ALARP involves an assessment of the risk to be avoided, of the sacrifice (in money, time and trouble) involved in taking measures to avoid that risk, and the comparison of the two.

This process can involve varying degrees of rigour which will depend on the nature of the hazard, the extent of risk and the control measures to be adopted. The more systematic the approach, the more rigorous and transparent it is to the regulator and other interested parties. However, duty holders (and the regulator) should not be overburdened if such rigour is not warranted. The greater the initial level of risk under consideration, the greater the degree of rigour is required to show that those risks have been reduced to ALARP.<sup>48</sup>

There is some interrelationship between OHS and energy specific legislation.

For instance, in NSW, the statutory requirement for an employer to ensure a safe system of work does not apply with respect to electricity work carried out under a plan lodged under the *Electricity Supply (Safety and Network Management) Regulation 2002*.<sup>49</sup>

In Queensland, there is a close relationship between the *Electrical Safety Act 2002* and the *Workforce Health and Safety Act 1995*.

The OHS legislation provides that where that Act and the electricity safety legislation apply in particular circumstances, the electricity safety legislation prevails.<sup>50</sup>

The *Electrical Safety Act* imposes a general obligation of electricity safety on electricity entities to ensure that works are electrically safe and are operated in a way that is electrically safe.<sup>51</sup>

A code of practice can be declared that sets out what a person's 'electrical obligations' are.<sup>52</sup>

Codes have been made with respect to:

- electrical work;
- working near live parts; and
- works (protective earthing, underground cable systems and maintenance of supporting structures for powerlines).<sup>53</sup>

Regulations and codes of practice do not exhaustively set out what must be done before a person can be said to have discharged their 'electrical obligation'.

However, it is an offence not to follow the code or regulation (as relevant).<sup>54</sup>

And distributors are still required to make a safety management plan.<sup>55</sup>

There is an intention to harmonise OHS safety standards:

- the states and territories (without the Commonwealth) promised between themselves to increase harmony of OHS provisions at the Council of the Australian Federation<sup>56</sup>;
- there is a clear intention that in an increasingly harmonised environment the Australian Safety and Compensation Council (**ASCC**) will be setting standards for Australian safety using the methods contained in its *National OHS Standards Framework*;<sup>57</sup>
- the COAG meeting of July 2006 asked for a report on progress on consistency of OHS standards for its 2007 meeting; and<sup>58</sup>

- the COAG meeting of April 2007 set a timetable for achieving national OHS standards and harmonising elements in principal OHS Acts, subject to there being no reduction or compromise in worker safety.

Earlier, we asked whether it could be possible to develop a single set of rules for the development of safety management documentation for each element of the energy sector.

Safety requirements that licensees are obliged to document are generally exhaustive and attuned to the particular safety issues specific to the particular commodity. They also require consideration of the same worker safety considerations as other OHS legislation.

For instance, regulation 10 of the *Gas Safety (Safety Case) Regulation 1999* prescribes this requirement to be contained in a safety case:

#### **10. Formal safety assessment**

(1) A safety case must contain a formal safety assessment.

(2) The formal safety assessment for a facility must be consistent with the facility description for the facility and must provide-

- (a) a description of the methodology used and investigations undertaken for the formal safety assessment; and
- (b) an identification of all hazards having the potential to cause a gas incident; and
- (c) a detailed and systematic assessment of risk, including the likelihood and consequences of a gas incident; and
- (d) a description of technical and other measures undertaken, or to be undertaken, to reduce that risk as far as practicable.

(3) The formal safety assessment must include copies of any reports arising from the studies and investigations undertaken for the purposes of the formal safety assessment.

More generally, safety management documentation required of energy sector participants over and above this appear as exhaustive as those required by the *Occupational Health and Safety (Major Hazard Facilities) Regulations 2001* (Vic), which is largely regarded as being best practice OHS regulation.



They are also similar to that which must be produced by operators authorised to operate offshore facilities under the *Petroleum (Submerged Lands) Act 1967*. (Cth)<sup>59</sup>

As such, there are grounds to argue that complying with safety documentation has meant the employer has discharged OHS obligations, rather than compliance being merely an 'evidentiary' provision that a court may take into account.

This is particularly the case where the safety plan has been approved by a technical regulator with the expertise to rigorously assess plans submitted by applicants.

To that extent it is noted that in Victoria gas licensees who have complied with their obligations under an accepted safety case are taken to have complied with their safety obligations to the public and customers.<sup>60</sup>

**18. Should compliance with a safety plan be taken to be sufficient to require a distributor to have 'deemed to comply' with OHS obligations?** <sup>61</sup>

It should be noted that this proposition would not oust OHS in those areas not dealt with in a safety plan (such as, for instance the head office environment), nor would it oust the residuary capacity for an OHS officer to take action where there are reasonable grounds to believe that a breach of OHS legislation has or is occurring.

## Australian Standards and ENA Guidelines

**ENA believes the Ministerial Council on Energy agreement to transfer economic regulation of energy distribution to the Australian Energy Regulator (AER) by 1 January 2007, may also trigger a major rethink on the national consistency of technical and safety regulation.**

**- ENA submission to the Productivity Commission Review of the Australian Government's Relationship with Standards Australia Limited and the National Association of Testing Authorities (April 2006)**

ENA has a policy objective of supporting a nationally consistent approach and a common framework for safety and technical regulation in gas and electricity.

It has decided that this will be provided through the creation and maintenance of ENA Industry Guidelines and Australian Standards.<sup>62</sup>

To that extent, Standards Australia has established committee EL – 52 (Electrical Energy Networks, Construction and Operation) the prime function of which is the development of standards in the fields of the safe design, construction, maintenance and operation of electricity transmission and distribution networks.<sup>63</sup>

Standards Australia sees itself as a responsive and proactive standards approver and developer, capable of working with industry sectors and governments to recognise, assist, service and/or develop nationally and internationally consistent self regulatory regimes.<sup>64</sup>

Standards Australia and ENA signed an agreement on 19 December 2005 to promote a nationally consistent approach to the development and adoption of technical standards in the energy industry.

ENA Industry Guidelines are typically prescriptive and focussed on work practice issues. They are also developed when it is considered prudent to conduct an initial trial through a guideline.<sup>65</sup>

Australian Standards tend to be outcomes based. This is consistent with a memorandum of understanding signed with the Australian Government to strengthen the national standard system, which called on standards to have clearly identifiable outcomes, and where appropriate, contain performance or outcomes-based requirements rather than input-based or other prescriptive requirements.<sup>66</sup>

It is noted that international standards are outcomes based. It should be also noted that COAG guidelines on standard setting and regulatory action also require instruments to be outcomes based unless it is unavoidable. This provides further reasons as to why Australian Standards are presented in the manner they are.<sup>67</sup>

This table sets out the ENA policy on when an ENA guideline will be made and when an Australian Standard is to be made:<sup>68</sup>

ENA Guideline	Australian Standard
Where a gap in the suite of Guidelines and Standards is identified and an Industry Guideline offers flexibility in addressing the issue in the short term.	<b>Public and worker safety.</b> The extent to which an Australian Standard can facilitate and improve public and worker safety, through better compliance and adoption.
Perceived improvement in safety and/or technical outcomes through a consistent industry approach and which approach is environmentally sustainable.	In considering this, the following should be taken into account:  Will the document provide a substantial benefit through common familiarisation training & induction requirements for work across companies and jurisdictions?
The benefit of collectively considering alternative approaches to existing issues thus positively promoting lateral and innovative solutions.	Will the document provide significant benefit in shared effort in undertaking

Potential prohibitive cost to comply versus cost benefits through consistency or cost recovery under existing economic regulatory regimes.

The requirement for industry to retain copyright and ownership of any particular industry guideline.

Creation of an Industry Guideline will create a simplified process and practices, and/or provide guidance for consistent application of processes and practices for complying with an existing Australian Standard.

It is considered good practice to trial a new process or standard through an Industry Guideline, before converting it to an Australian Standard.

Where the matter is substantially only relevant to network operators and does not have wider stakeholder implications.

detailed risk analysis?

Will the document improve the safety environment through providing additional reference material?

### **Stakeholders - extent to which there is broad stakeholder impact.**

The extent to which there is a level of agreement required from stakeholders who wouldn't otherwise be closely involved with Industry Guidelines. Alternately, the application of the proposed Standard to other sectors beyond the electricity and gas network industries.

### **Outcomes Based Vs Other.**

The extent to which the proposal is likely to be outcomes based (thus inclined towards an Australian Standard) or contains detailed methodologies, information source or for use to complement an Australian Standard (thus inclined towards an ENA Guideline).

### **National regulatory uniformity.**

The extent to which the new Standards provides a basis for the removal of jurisdictional based technical, safety and reliability regulations or legislation, and promotes the development of Distributor

developed Safety Management Plans that are also environmentally sustainable.

This would also include the ability to incorporate Australian Standards (through appropriate referencing) in regulations or legislation.

In considering this, the following should be taken into account:

Does the document provide a legally sustainable methodology?

Does the document provide risk benchmarking?

Does the document improve mobility of resources?

**Industry economic efficiency.**

The extent to which an Australian Standard will facilitate economic efficiencies through the standardisation of performance requirements for common equipment, components and processes. In considering this, the following should be taken into account:

Will the document provide substantial cost benefit through consistency?

Will the document provide a useful reference for substantiating submissions to economic or technical regulatory authorities?

Will the document provide substantial benefits in sharing the cost associated with development, benchmarking or risk analysis?

The extent to which industry stakeholders can reasonably recover the investment in the new Standard.

**Network reliability/security.**

The extent to which an Australian Standard can facilitate and improve network reliability and security, through better compliance and adoption.

**Environmental impact.**

The extent to which an Australian Standard can facilitate and improve any environmental impact, through better compliance and adoption. In considering this, the following should be taken into account:

Will the document provide a substantial benefit through common familiarisation training & induction requirements for work

across companies and jurisdictions?

Will the document provide significant benefit in shared effort in undertaking detailed risk analysis?

Will the document improve the impact on the environment through providing additional reference material?

## *Criticisms of Australian Standards*

In 2006 the Productivity Commission conducted a review entitled *Standard Setting and Laboratory Accreditation*.

It reviewed the role of Australian Standards in Australian legislation, and found the following concerns:

- the absence of a systemic and transparent consideration of costs and benefits in considering the need for, and the priority of, standards development;
- the need for more rigorous impact assessment when standards are referenced in regulation;
- a lack of representation or balance on some technical committees;
- the first incentive effects arising from the legal relationship between Standards Australia and SAI Global, by which SAI Global has an exclusive licence to sell standards etc;
- the accessibility, and in particular the cost, of Australian Standards;
- difficulties accessing suitable expertise on a volunteer basis to participate on standards writing committees;
- poor project management; and
- the need for a more formalised appeals and complaints mechanism.<sup>69</sup>

There is particular concern about the cost of accessing Australian Standards.



The Australian Pipeline Industry Association indicates that even though it and its constituents have provided millions of dollars to develop AS 2885, its constituents (and undoubtedly their contractors) have to pay SAI Global to access what could be regarded as being their own intellectual property.

**19. Are you satisfied with the quality of Australian Standards?**

**20. Are the cost of accessing standards an issue for either you or your contractors etc?**

That said, it should be noted that partly in response to this review, Standards Australia underwent a restructure and refocussed their committee activities around a new Strategic Plan.

The legislation standards endorsed by COAG anticipate that unless there is good reason, regulation should be consistent with international standards.<sup>70</sup>

Thus, there is an argument to merely accept standards published by organisations such as the IEC, IEEE and the ISO.

However, it has been suggested that the benefit of developing Australian Standards is that their promulgation can be used to influence the development of international standards that recognise Australian work procedures, customs and usages, and climatic conditions.

**21. Would it be satisfactory if regulation only reflected international standards?**

## *Standards, Guidelines and the Electricity Industry*

There has been a suggestion that more time and resources should be directed towards developing process oriented documentation such as ENA Guidelines.

ESAA (now ENA) guidelines such as C(b)1 *Guidelines for the Design and Maintenance of Overhead Distribution and Transmission Lines* are still cited in modern legislation such as the National Electricity Rules as well as in SA and WA legislation.

This has become necessary because some users find outcomes based documentation either too hard to comply with or too vague to be helpful.

Some have argued that there is desirability for an increase in process based regulation to enable some industry participants to have the comfort of a set of regulations where, if they are followed, they are 'deemed to comply' with regulatory obligations.

- To that extent, AS 3000 is being redeveloped so that the outcomes based nature of that document contains some process-based documentation that can be used for 'deemed to comply' purposes in circumstances where regulations call up the standard.

It has also been said that greater specificity of what is required is particularly important for jurisdictions where connection services are contestable – people need to know what standards they must meet before offering themselves for accreditation by network operators.

- It may well become more relevant nationally if in the legislative 'carve up' between economic and technical/safety regulation, subject matters such as who should be able to provide things like connection services is regarded as a matter for economic regulation (in the same way as who may be accredited to provide metering services is regarded) and thus within the purview of the AER/AEMC.

Process standards such as ENA Guidelines are frequently called ‘safe harbour’ provisions, used usually where businesses that do not have the resources to comply with the outcomes based approach elect to use them. Moreover, there is some evidence to suggest there is little difference in compliance levels between legislative régimes that are command-control in nature, and that which are more performance based.<sup>71</sup>

It is finally noted that ENA Guidelines can be called up as codes of practice for OHS purposes.

Paragraph 5.3 of the *National OHS Standards Framework Handbook* reads:

The ASCC acknowledges the important role industry bodies can play in the development of practical solutions for the control of occupational hazards. The availability of industry advice and expertise is critical to the development of all codes of practice whether this is initiated through an ASCC, jurisdictional or an industry process.

The ASCC notes that industry bodies may wish to bring forward proposals for the development of a code under the lead of industry. The ASCC will consider such proposals on their merit noting that formal declaration of an industry – developed code would need to be subject to the normal assessments of priority, quality and regulatory impact, and to requirements for public consultation, **The ASCC notes that in the event an industry developed code is declared, it would be subject to WRMC endorsement, and to approval through jurisdictional OHS regulatory regimes.** (Emphasis added)<sup>72</sup>

Arguably, the more universal process based rules are, the less variance there will be in company safety documentation that safety management documentation typically require workers etc must follow.

This will maximise the chances that service providers will be able to provide services in a manner compatible with company safety guidelines.

It could also reduce the costs incurred in preparing low level safety documentation.

However, this could inhibit work practice ingenuity.

There can also be dispute about what process should be 'the' process adopted. For example, should restricting access to substations in particular circumstances be on a 'barrier in' or a 'barrier out' basis?

The current proposal to review uniform service and installation rules so there is one set of reasonable technical requirements that relevant parties throughout Australia must comply with illustrate the challenges that attempting to harmonise practices brings.<sup>73</sup>

Moreover, because electricity provision has been jurisdictionally based, ENA constituents operating in particular jurisdictions have followed work practices developed over decades, and they are loathe changing.

The cost to an entity resulting from having to change work/asset management practices to comply with a harmonised work practice or standard should therefore be remembered.

That said, compromise is necessary if there is to be harmonisation.

Care must also be taken that any harmonised work practice is not reduced to the lowest common denominator or that the documentation is becomes so vague it is unhelpful.

Finally, there is a strong argument that non-regulatory initiatives such as the proposed 'national passport', which records the current competencies of a worker, coupled with sufficiently exhaustive company safety documentation are more likely to lead to greater safety outcomes than prescription of specific work practices.

22. Do contractors and employees find it easier to apply outcomes-based standards, or do they find process based standards easier to comply with?

23. Would process based standards be a more appropriate basis to develop company safety documentation and safety case/safety management documentation?

24. Should more time be spent developing ENA guidelines rather than standards?

25. In what circumstances should guidelines be developed?

26. Should documentation such as the Victorian 'Bluebook', or Service and Installation Rules such as the WA Electrical Requirements ever appear in regulation?

### *Standards, Guidelines and the Gas Industry*

The gas industry has a different history to the electricity industry.

As we have already indicated, the gas industry has spent a lot of time and money to develop the 'gold standard' AS 2885 while work is progressing in developing a similar standard for distribution pipelines.

Moreover, all industry participants (including regulators) appear to satisfactorily operate under legislation using outcomes-based standards.

**27. Is there a need for ENA to develop something like ENA guidelines/NENS for the gas sector?**

## ATTACHMENT



### Scope for a Discussion Paper on National Energy Technical & Safety Regulation<sup>1</sup>

#### **Purpose**

The purpose of this paper is to examine the current Australian energy safety and technical regulatory regime that exists in different jurisdictions. It will propose options but will not recommend specific solutions or policy prescriptions.

#### **Aim**

The aim is to generate discussion about a preferred ENA model of energy technical and safety regulation.

#### **Background**

ENA believes the Ministerial Council on Energy agreement to transfer economic regulation of energy distribution to the Australian Energy Regulator may also trigger a major rethink on the national consistency of technical & safety regulation.

One of the drivers for the creation of the AER was that there were too many regulators, with the multiplicity of regulators creating a barrier to competitive interstate trade and added costs to the energy sector – arrangements inappropriate for a situation in which cross-border energy flows are now a reality.<sup>2</sup>

The emergence of an Australian energy market necessarily means that national consistency of technical and safety regulation is increasingly becoming a major regulatory and asset management issue for energy network service providers.

It is also noted that safety issues are increasingly becoming harmonised – the States and Territories (without the Commonwealth) promised to commence the increased harmonisation of OHS provisions at the Council of the Australian Federation<sup>3</sup>, while the

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<sup>1</sup> Scope approved by ENA Asset Management Committee at AMC 11 on 15 February 2007.

<sup>2</sup> *Towards a Truly National and Efficient Energy Market* COAG 2002 p.74

<sup>3</sup> Council of the Australian Federation communiqué, Melbourne 13 October 2006 p.3

COAG meeting of July 2006 asked for a report on progress on consistency of OHS standards for its 2007 meeting.<sup>4</sup>

It therefore logically follows that if it is desirable for the economic regulation of the national energy market to be subjected to one legislative framework, it is equally desirable for the tangible aspects of energy provision – the issues directly related to technical and safety standards to be equally harmonised.

Since its formation in January 2004, ENA has had a major objective of establishing a national operating framework for energy technical & safety regulation, a policy objective which continued the principles established by the former National Electricity Network Safety (NENS) Code.

The purpose of the former NENS Code and the ENA objective of establishing a national operating framework for energy technical & safety regulation is to ensure a nationally consistent approach to the development and enforcement of energy technical and safety standards.

In this context ENA has developed a policy on “National Consistency, Industry Guidelines and Australian Standards”, in order to define the role of ENA Industry Guidelines and Australian Standards in a national framework. This policy outlines the background and provides the general principles that will apply to any decision by ENA to develop/review an ENA Industry Guideline or recommend the development of an Australian Standard.

To assess the issues associated with the ENA objective of establishing a national operating framework for energy technical & safety regulation, it is proposed to develop a Discussion Paper on National Energy Technical & Safety Regulation. In this context, “energy” shall be taken to mean “gas and electricity networks”.

The Paper should take the form of a “green paper”, which traces the history of legislative development in the area, and then propose options, but does not recommend solutions or policy prescriptions. Following deliberation and discussion, this may be followed by a “white paper” on a preferred ENA model of energy technical and safety regulation.

## **Scope**

The Paper will address the following:

- A discussion of the rationale behind the establishment of the Australian Energy Regulator (AER) and the Australian Energy Market Commission (AEMC).
- A brief discussion as to how the AER and the AEMC are designed to operate.

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<sup>4</sup> COAG communiqué July 2006



- An overview of the legislative framework that supports the current energy economic, technical and safety regimes in each Australian jurisdiction, including the level of uptake of Australian Standards.
- The Paper will draw the standard distinction between energy network (ie public) safety and employee (ie OHS) safety regulation.
- A case study of how the current national energy technical and safety regime impacts on a business operating across jurisdictions. This may include a quantitative analysis of costs and benefits which could possibly accrue through a national energy technical and safety regulatory system.
- A history of the increasing legislative harmonisation of OHS standards, including the formation of the Australian Safety & Compensation Council (ASCC), the ASCC national standards and harmonisation project and the development of the ASCC national OHS standards framework.
- A general discussion as to whether it is desirable to have energy industry OHS issues dealt with through the OHS standards framework developed by the ASCC, or through a specific national energy industry body.
- An example of such a national body is the National Offshore Petroleum Safety Authority (NOPSA), the role of which is to administer offshore petroleum safety legislation.
- A discussion on the increasing use of a “safety case” approach to regulation rather than more traditional “command/control” regulation. It is noted that technical regulators have already moved to the safety case model for gas distribution systems in several states including WA (where it is optional at present).
- An examination of “light-handed” or “industry” regulation and how this approach may deliver social, economic and community (ie sustainable) outcomes without the need for prescriptive or detailed legislative instruments. This should include an analysis of ENA Industry Guidelines as an appropriate regulatory instrument.
- The capacity for Australian Standards to be used as a document that can be incorporated by reference in jurisdictional legislation as the appropriate technical standards to be used universally throughout Australia. This should include a discussion on:
  - Whether standards have been or can be made in a way that “covers the field” of the areas to be regulated?
  - If Standards are to be used as the basis of technical standards generally, whether they need to be more prescriptive (command/control) regulation, or outcome (performance) based regulation?

- The practice of some jurisdictional energy technical and safety regulators to have additional requirements over and above Australian Standards thus creating a variation in technical and safety requirements.
- It may also require a discussion about whether complying with an ENA Industry Guideline should be taken to be a “safe harbour” – that is, compliance with the industry based guideline will be taken to be compliance with any outcome based requirement contained in a standard.
- The desirability for energy technical and safety regulations to be made under a mechanism such as the National Electricity Rules<sup>5</sup>, which are administered and published by AEMC.
- The AEMC has power to make National Electricity Rules with respect to the operation of the national electricity system “for the purposes of safety, security and reliability of that system”. The proposed National Gas Rules may serve a similar purpose for gas.
- A recognition that any national approach will need a process that manages the “local requirements” enforced through state regulation that are additional to, but do not conflict with, national energy technical and safety regulations.
- A discussion on the extent to which jurisdictional regulators recognise the impact one set of regulations may have on overall business conditions and how extra costs associated with energy safety and technical regulations are recognised and allowed for by economic regulators. An example is the additional costs of dealing with asbestos contaminated switchboards, which is initially a decision by the OHS regulator but one with immediate economic impacts on businesses.

The Paper should discuss and make recommendations on how ENA might deal with this issue.

## **March 2007**

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<sup>5</sup> Paragraph 34(1)(b) of the Schedule to the National Electricity Law. Item 7 to the Schedule includes as objectives of the National Electricity Market the reliability, safety and security of the national electricity system.

## Endnotes

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<sup>1</sup> Victorian Service and Installation Rules Management Committee *Investigate the Potential for Common SIR and Supplementary Rules* Business Case Submission to ENA February 2007.

<sup>2</sup> Originally made at a Heads of Government meeting held on 11 May 1992 and confirmed at the first COAG meeting, held in Perth on 7 December 1992.

<sup>3</sup> Council of Australian Government Energy Market Review Final Report *Towards a National and Efficient Energy Market* pp 74-5.

<sup>4</sup> The Committee called the body the National Energy Regulator (the NER).

<sup>5</sup> *Towards a National and Efficient Energy Market* p.85.

<sup>6</sup> *Ibid* p.87.

<sup>7</sup> *Ibid*.

<sup>8</sup> Standing Committee of Officials of the Ministerial Council on Energy *Statement of Approach – A New Legislative Framework for Gas* September 2005 pp. 7-8; MCE Standing Committee of Officials *Responses to Key Issues Raised in Submissions to the Statement of Approach – A New Legislative Framework for Gas* December 2005 pp.10-11.

<sup>9</sup> See Ministerial Council on Energy *Reform of Energy Markets – Report to the Council of Australian Governments* 11 December 2003, particularly p.6.

<sup>10</sup> As amended 2006.

<sup>11</sup> WA and the NT are not NEM jurisdictions – see clauses 6(c)(ii) and (iii) and (d)(ii) of the Australian Energy Market Agreement, as amended 2006.

<sup>12</sup> Clause 9 and Schedule 2 to the Australian Energy Market Agreement, as amended 2006.

<sup>13</sup> The COAG Reform Council has been tasked to assess how these decisions of COAG are being implemented.

<sup>14</sup> Australian Energy Market Commission *Review of Enforcement and Compliance with Technical Standards* Draft Report May 2006 p.10.

<sup>15</sup> Independent Committee on National Competition Policy *Report by the Independent Committee of Inquiry* (The Hilmer Report) August 1993, p.18.

<sup>16</sup> <http://www.neca.com.au/SubCategory7f22.html?SubCategoryID=188> accessed 5 June 2007.

<sup>17</sup> Paragraph 11(2)(a). A person must be registered unless operating under a derogation or exempted from registration by the AER: see paragraph 11(2)(b). Clause 2.5.1(a) of the AER subsequently requires an applicant to register with NEMMCO unless exempted by the AER under clause 2.5.4.

<sup>18</sup> Clauses 2.9.2 and 5.2.3.

<sup>19</sup> Australian Energy Market Commission *op.cit* p.10.

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<sup>20</sup> Electromagnetic Compatibility (EMC) – Limits – Assessment of Emission Limits for Fluctuating Loads in MV and HV Power Systems, as required by Schedule 5.1a.5; also Schedule 5.1.5.

<sup>21</sup> Schedule 5.3a.12.

<sup>22</sup> Clause 5.2.3(e) and (f).

<sup>23</sup> Subsection 116(1) and paragraph 116(6)(g).

<sup>24</sup> Clauses 4.15(i) – (k).

<sup>25</sup> Rules 4.13 and 4.14.

<sup>26</sup> Clause 7.4.2 and Schedule 7.4.

<sup>27</sup> Clause 5.2.1.

<sup>28</sup> Examples include sections 31 Sections 36 and 64FA of the *Electricity Act 1994* (Qld); Section 37 of the *Utilities Act 2000* (ACT); section 20, 21 and 25 of the *Electricity Industry Act 2000* (Vic); section 22 of the *Electricity Supply Act 1995* (Tas); Section 21 of the *Electricity Act 1996*(SA);section 21 of the *Electricity Act 1996*(WA).

<sup>29</sup> ENA Submission *Response to Retail Policy Working Group Working Paper 3* March 2007.

<sup>30</sup> Subsection 19(1) of the *National Electricity Law* permits rules to be made with respect to the operation of the national electricity system for the purposes of the safety, security and reliability of the system and the activities of people participating in the national electricity market or involved in the operation of the national electricity system.

<sup>31</sup> Western Australia will retain its current economic regulator, the Economic Regulation Authority.

<sup>32</sup> Sections 6 and 11 of the *Gas Supply Act 1996* (NSW).

<sup>33</sup> Paragraph 11(2)(c).

<sup>34</sup> Examples include sections 29 and 31 of the *Gas Industry Act 2001* (Vic); *Gas Supply Act 2003*(Qld); section25 *Gas Act 1997* (SA); section 29 *Gas Act 2000* (Tas); Insert (ACT); section 11M *Energy Co-Ordination Act*(WA).

<sup>35</sup> AS 3806: *Compliance Programs*.

<sup>36</sup> Gunningham and Johnstone *Regulating Workplace Safety: Systems and Sanctions* 1999 pp. 8-9. The indented quotation is from the *Report of the Committee on Health and Safety at Work 1970 – 1972* (the Robens Committee), which informed the thinking behind all modern OHS legislation.

<sup>37</sup> A safety requirement thought necessary because installation services are contestable in NSW; the work of non-employees are inspected by an area of the company 'ring fenced' from the business unit competing in the installation service market.

<sup>38</sup> Regulations, 11,15 and 16 and Schedules 2 and 3 of the *Electricity (Supply Standards and Systems Safety) Regulation 2001* (WA).

<sup>39</sup> Figure 4.1 from the Standard, which acknowledges that it is an extract from AS 4360.

<sup>40</sup> See paragraph 14(7)(c) of AEMA.

<sup>41</sup> See for example Regulation 3 of the *Gas Supply (Safety Management) Regulation 2002* (NSW); sections 699 and 700 of the *Petroleum and Gas (Production and Safety) Act 2004* (Qld).

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<sup>42</sup> Parer *loc.cit.*

<sup>43</sup> Subsection 114A(3) of the *Electricity Safety Act 1998* (Vic).

<sup>44</sup> OECD definition of asset management, as adapted by the World Road Association.

<sup>45</sup> Cunningham and Johnstone *loc.cit.*

<sup>46</sup> Maxwell C *Occupational Health and Safety Act Review 2004* p.6.

<sup>47</sup> Section 20 of the *Occupational Health and Safety Act 2004* (Vic).

<sup>48</sup> From the English Court of Appeal case *Edwards v. The National Coal Board*.

<sup>49</sup> Subregulation 207(5) of the *Occupational Health and Safety Regulation 2001* (NSW).

<sup>50</sup> Section 3A of the *Workforce Health and Safety Act 1995* (Qld).

<sup>51</sup> Sections 26 and 29 of the *Electrical Safety Act 2002* (Qld).

<sup>52</sup> Section 44.

<sup>53</sup> Schedule 2 to the *Electricity Regulations 2006* (Qld).

<sup>54</sup> Subsections 41(2) and (3); section 45.

<sup>55</sup> Part 5.

<sup>56</sup> Council of the Australian Federation communiqué, Melbourne 13 October 2006. p.3.

<sup>57</sup> Under the provisions of the *Australian Workplace Safety Standards Act 2005*. (Cth) While the Workplace Relations Ministerial Council has decided that Australian Standards should not be called up in regulations, it is still appropriate to call them up in codes of practice.

<sup>58</sup> COAG communiqué July 2006.

<sup>59</sup> See *Petroleum (Submerged Lands) (Management of Safety on Offshore Facilities) Regulations 1996* (Cth).

<sup>60</sup> See sections 32 and 50 of the *Gas Safety Act 1997* (Vic).

<sup>61</sup> Should this be considered, it should be noted that Australia's international obligations under the International Labour Organisation convention and COAG guidelines anticipate there will be tripartite participation in the development of standards.

<sup>62</sup> ENA Policy on National Consistency, ENA Industry Guidelines and Australian Standards.

<sup>63</sup> It also is responsible for overseeing the rewrite of ENA Guideline C(b)(1).

<sup>64</sup> Productivity Commission *Standard Setting and Laboratory Accreditation* November 2006 p.33.

<sup>65</sup> Page 4.

<sup>66</sup> Productivity Commission *op.cit* p.53.

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<sup>67</sup> Council of Australian Governments *Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard Setting Bodies* (Endorsed COAG April 1995, as amended June 2004) p.5.

<sup>68</sup> Contained in the *ENA Policy on National Consistency, ENA Industry Guidelines and Australian Standards* May 2007.

<sup>69</sup> Page xxi.

<sup>70</sup> COAG Guidelines, p.8

<sup>71</sup> It was noted that compliance levels and accident reduction levels reduced at that the same rate in both the United States (which had a command-control model of occupational health and safety legislation) and the United Kingdom, which had a duty based system of regulation: RT Gun *Regulation of self-regulation: is Robens style legislation a formula for success?* Journal of Occupational Health Safety Australia and NZ 1992: 8(5) pp. 383-388.

<sup>72</sup> Page 20.

<sup>73</sup> See discussion contained in the minutes to the meeting to investigate the potential for common SIR and supplementary rules 7 – 8 May 2007.

# Energy Networks Association

## Member Companies



ETSA Utilities

