



# **PART FOUR** APPENDIXES

# A INSTITUTIONAL ARRANGEMENTS

Since the early 1990s energy policy in Australia has been set at the national level through a series of intergovernmental agreements. In 2004 Australian governments signed a new intergovernmental agreement the Australian Energy Market Agreement 2004 (amended 2006) committing to a new energy reform program. The package includes streamlined regulatory, planning, governance and institutional arrangements for the national energy market.

This appendix outlines the roles and responsibilities of the new and existing national, state and territory stakeholders involved in energy policy and economic regulation.

## A.1 Energy policy institutions

Two key bodies determine the direction of Australia's energy policy. The Council of Australian Governments (COAG) is responsible for making broad in-principle decisions on national energy policy. The Ministerial Council on Energy (MCE), which is the governance body responsible for Australian energy market policy, provides advice to COAG on energy market policy.

## The Council of Australian Governments

COAG is the peak intergovernmental forum in Australia. The council comprises the Prime Minister, state premiers, territory chief ministers and the president of the Australian Local Government Association. The role of COAG is to initiate, develop and monitor the implementation of policy reforms that are of national significance and that require cooperative action by Australian governments, including national competition policy and related energy market reforms.

Since endorsing the Australian Energy Market Agreement, COAG has endorsed a new national competition policy agenda, which includes reforms for the energy sector. At its meeting of 10 February 2006 COAG agreed to three broad actions to further reform in the energy sector.<sup>1</sup>

First, it agreed to improve price signals for energy consumers and investors through a progressive national rollout from 2007 of 'smart' electricity meters. This will allow retailers to introduce time-of-day pricing, giving users the opportunity to better manage their demand

<sup>1</sup> COAG communiqué, meeting of 10 February 2006 ([www.coag.gov.au](http://www.coag.gov.au)).

for peak power. The rollout is to be implemented in accord with a plan that has regard to costs and benefits and differences in market circumstances in each state and territory.

Second, it agreed to ensure the electricity transmission system supports a national electricity market that provides energy users with the most efficient, secure and sustainable supply of electricity from all available fuels and generation sources, including, where appropriate, an increased share of renewable energy. COAG committed to adopting policy settings, governance and institutional arrangements and other actions to improve the framework for planning and network investment and to streamline regulation.

Third, COAG agreed to establish the Energy Reform Implementation Group (ERIG), which comprises industry experts and senior officials, to report on proposals for:

- > measures that may be necessary to address structural issues affecting the ongoing efficiency and competitiveness of the electricity sector
- > achieving a fully national electricity transmission grid
- > measures needed to foster transparent and effective financial markets to support energy markets.

ERIG released reports on these matters in January 2007.

At its meeting of 13 April 2007 COAG considered the recommendations of the MCE in response to the ERIG reports. COAG has agreed to establish an industry-funded National Energy Market Operator (NEMO) for both electricity and gas by June 2009. The new body will replace the functions of the National Energy Market Management Company (NEMMCO) and the gas market operators and undertake a national transmission planning role.

COAG also agreed that the COAG Reform Council should monitor progress with implementing energy market reform and assess the costs and benefits of reforms referred to it unanimously by COAG. COAG has referred the monitoring and assessment of electricity smart meters, NEMO and the new transmission planning function and related reforms to the COAG Reform Council.

## The Ministerial Council on Energy

The MCE comprises Australian, state and territory energy ministers. Ministers from New Zealand and Papua New Guinea have observer status.

As part of implementing the Australian Energy Market Agreement, the MCE subsumed the National Electricity Market Ministers Forum in 2004 to become the sole governance body for Australian energy market policy. Its role is to initiate and develop energy policy reforms for consideration by COAG. It also monitors and oversees implementation of energy policy reforms agreed by COAG.

The MCE's current work program centres on developing and implementing the reforms agreed under the Australian Energy Market Agreement, which aim to:

- > strengthen the quality, timeliness and national character of **governance** of the energy markets, to improve the climate for investment
- > streamline and improve the quality of **economic regulation** across energy markets to lower the costs and complexity of regulation facing investors, enhance regulatory certainty and lower barriers to competition
- > improve the planning and development of **electricity transmission** networks to create a stable framework for efficient investment in new (including distributed) generation and transmission capacity
- > enhance the participation of **energy users** in the markets, including through demand-side management and the further introduction of retail competition, to increase the value of energy services to households and business
- > further increase the penetration of **natural gas** to lower energy costs and improve energy services, particularly in regional Australia, and reduce greenhouse emissions
- > address **greenhouse emissions** from the energy sector in the light of concerns about climate change and the need for a stable long-term framework for investment in energy supplies.

To date the council has:

- > Established the Australian Energy Market Commission (AEMC) and Australian Energy Regulator (AER) putting in place the new governance arrangements for the energy sector.
- > Developed new national electricity law and rules (the NEL and NER), which provide the new legal framework for economic regulation of electricity.
- > Enhanced the national transmission planning process through the development of two key initiatives—the Annual National Transmission Statement and the Last Resort Planning Power.
- > Progressed work to encourage greater user participation, including through the rollout of smart meters.
- > Determined a model for a common approach to transmission and distribution revenue and network pricing across electricity and gas. The detailed arrangements for transfer of energy distribution and retail functions to the national framework were incorporated into the Australian Energy Market Agreement through amendments implemented in June 2006.
- > Released draft legislation to strengthen consumer advocacy arrangements, which is to be passed in the South Australian Parliament with other elements of the 2006 legislative package.
- > Developed draft national gas law and rules (the NGL and NGR) for consultation on the new legal framework for economic regulation of gas. The draft legislative package incorporates a new and light-handed regulatory approach<sup>2</sup> for gas pipelines and changes to merits review.
- > Released a draft national electricity law amendment bill for consultation on conferring functions on the AER in relation to the economic regulation of electricity distribution networks.

## A.2 Economic regulation institutions

Regulatory arrangements across the states and territories are fragmented. Each jurisdiction has a separate regulatory agency, which use differing regulatory approaches. While there is greater consistency in approaches adopted for regulation of the gas sector there are a number of state and territory bodies involved in the regulation of gas pipelines and retail gas markets. The development of a national framework for the energy sector aims to address the costs and uncertainties associated with the current approach.

A key aspect of the new energy reform program is an agreement to streamline and improve the quality of economic regulation across energy markets, to lower the costs and complexity of regulation for investors, enhance regulatory certainty and lower barriers to competition. To achieve this goal, two bodies were created—the AEMC, with responsibility for rule making and market development, and the AER, with responsibility for market regulation. The Australian Energy Market Agreement provides for the transfer of the functions, powers and duties of the National Electricity Code Administrator (NECA), National Gas Pipelines Advisory Committee (NGPAC) and the Code Registrar and certain functions of the ACCC to the AEMC and the AER. The AEMC and the AER will take on additional functions currently performed by state and territory regulators—except in Western Australia—over time.

<sup>2</sup> The gas pipeline access Acts were amended in 2006 to give effect to the decision to provide for binding up-front no coverage rulings for greenfield pipelines and price regulation exemptions for international pipelines.

## The Australian Energy Market Commission

The AEMC commenced operation on 1 July 2005 and has responsibility for national rule-making and market development in the NEM and, over time, the gas market. More specifically, the AEMC is currently responsible for:

- > administrating and publishing the NER, which have replaced the National Electricity Code
- > the rule-making process under the new NEL<sup>3</sup>
- > making determinations on proposed rules
- > undertaking reviews on its own initiative or as directed by the MCE
- > providing policy advice to the MCE in relation to the NEM.

Governments have also agreed to transfer responsibility for rule making in the gas sector to the AEMC from July 2007. At that time it will take over the functions presently performed by the NGPAC and the Code Registrar. The NGPAC manages the process for any amendments to the National Third Party Access Code for Natural Gas Pipeline Systems (the Gas Code). The Code Registrar maintains a public register of information relevant to the code, including amendments to the code.

The AEMC is currently undertaking a number of major reviews of the NER stemming from the package of reforms outlined in the MCE's 2003 *Reform of energy markets* report agreed by COAG.

## The Australian Energy Regulator

The AER was established on 1 July 2005. It is a constituent part of the ACCC but operates as a separate legal entity. Decisions of the AER are subject to judicial review by the Federal Court of Australia and will be subject to merit review by the Australian Competition Tribunal.

The AER enforces the NEL and the NER and is the regulator of the wholesale electricity market and electricity transmission networks in the NEM. These electricity sector-specific regulatory functions were transferred from the ACCC and NECA.

The ACCC currently regulates gas transmission pipelines in all states and territories (except Western Australia) and distribution pipelines in the Northern Territory. The AER is designated to take on this responsibility. Transfer is currently scheduled to occur from 31 December 2007.

The Australian Energy Market Agreement also establishes that the AER will be the economic regulator of NEM and gas distribution networks (except in Western Australia) and retail markets (other than for retail pricing) following the development of a national framework. Retail energy price control will be retained under the existing arrangements, but each jurisdiction has the discretion to transfer this function to the AER and the AEMC.

The additional electricity and gas functions are scheduled to be transferred to the AER from 31 December 2007. The ACCC retains its role as the competition (mergers and anti-competitive conduct) regulator for the energy industry, as part of its role as Australia's general competition regulator.

The functions to be transferred to the AER will include:

- > Considering and approving of access arrangements submitted by service providers under the Gas Code. This involves approving the terms and conditions of access, including reference tariffs.
- > Monitoring and enforcing access arrangement provisions, including ring-fencing and service standards.
- > Arbitrating disputes relating to the terms and conditions of access.
- > Overseeing competitive tendering processes for new transmission pipelines.

3 Rule-making was previously the responsibility of NECA, which administered the National Electricity Code.

## The state and territory regulators

Jurisdictional regulators are responsible for a range of matters, including licensing, regulating third-party access for electricity and distribution networks and retail pricing, monitoring service standards and retail pricing. In Western Australia and the Northern Territory, economic regulation of the electricity sector also extends to generation and transmission services because these

jurisdictions do not currently participate in the NEM. The role of the jurisdictional regulators may extend beyond the energy sector to cover other infrastructure industries and non-economic regulatory functions. Table A.1 lists the energy regulators and key economic regulation functions and indicates those functions to be transferred to the AER.

**Table A.1 Responsibility of energy regulators in Australia**

REGULATOR		ELECTRICITY TRANS.	DISTR.	RETAIL	GAS TRANS.	DISTR.	RETAIL
AER	NSW Vic Qld SA Tas ACT	✓ ✓ ✓ ✓ ✓ ✓	From 31/12/2007	Non-price regulation from 1/7/2008	From 31/12/2007 (incl NT)		Non-price regulation from 31/12/2007 <sup>1</sup>
FUNCTIONS THAT WILL BE TRANSFERRED TO THE AER							
ACCC	NSW Vic Qld SA Tas ACT NT				✓ ✓ ✓ ✓ ✓ <sup>2</sup> ✓ ✓		
IPART	NSW		✓	✓		✓	✓
ESC	Vic		✓	✓		✓	✓
QCA	Qld		✓	✓		✓	✓
ESCOSA	SA		✓	✓		✓	✓
OTTER	Tas		✓	✓		✓ <sup>2</sup>	✓ <sup>3</sup>
ICRC	ACT		✓	✓		✓	✓
FUNCTIONS THAT WILL NOT TRANSFER TO THE AER							
ERA	WA	✓	✓	✓		✓	✓
UC	NT	✓	✓	✓			✓ <sup>3</sup>

ACCC: Australian Competition and Consumer Commission. AER: Australian Energy Regulator. ERA: Economic Regulation Authority. ESC: Essential Services Commission. ESCOSA: Essential Services Commission of South Australia. ICRC: Independent Competition and Regulatory Commission. IPART: Independent Pricing and Regulatory Tribunal. OTTER: Office of the Tasmanian Energy Regulator. QCA: Queensland Competition Authority. UC: Utilities Commission.

1. Each jurisdiction has the discretion to transfer retail energy price control to the AER and the AEMC.

2. The Tasmanian transmission and distribution pipelines are not covered and therefore are not subject to third party access regulation.

3. Gas retail services in Tasmania and the Northern Territory are not regulated.

# B GREENHOUSE GAS EMISSIONS POLICY

## Greenhouse gas emissions policy and measures affecting the energy sector

Greenhouse gases include carbon dioxide, methane, nitrous oxide and chlorofluorocarbons. Australia contributed 1.6 per cent of world greenhouse emissions in 2003, with over two-thirds of the emissions resulting from the production and use of energy. The stationary energy sector — comprising electricity generation and non-transport fuel combustion in the industrial, commercial and residential sectors—alone contributed 49 per cent of all emissions in 2003. Electricity is the single largest contributor, accounting for 33 per cent of total emissions.<sup>1</sup>

Australian governments have agreed to address greenhouse emissions from the energy sector on a national basis and to ensure that energy reform initiatives consider innovations for combating climate change and strategies for adapting to it. Such objectives form part of the Australian Energy Market Agreement.

Clauses 2.1(v)–(vi) of the agreement set out the following greenhouse-related aims:

- (v) further increase the penetration of natural gas, to lower energy costs and improve energy services, particularly to regional Australia, and reduce greenhouse emissions;<sup>2</sup> and
- (vi) address greenhouse emissions from the energy sector, in light of the concerns about climate change and the need for a stable long-term framework for investment in energy supplies.

At its 10 February 2006 meeting, the Council of Australian Governments (COAG) agreed to an agenda for a national action plan to reduce greenhouse emissions and respond to the environmental, social and economic impacts that may result from climate change. The proposed actions are to be progressed by the interjurisdictional Climate Change Group and the ministerial councils. The framework envisages that all jurisdictions will work collaboratively and individually to accelerate the development and take-up of renewable and other low-emission technologies. Governments have

1 Australian Greenhouse Office, *Tracking to the Kyoto target 2005, Australia's greenhouse emissions trends 1990 to 2008–2012 and 2020*, Canberra, 2005.

2 Life-cycle emissions from natural gas are approximately half those of Victorian brown coal, and on average approximately 38 per cent less than those of Australian black coal (Australian Gas Association, *Assessment of greenhouse gas emissions from natural gas*, 2000).

agreed on the need to accelerate significantly Australia's conversion to low-emissions practices and technologies to reduce the risk of dangerous climate change and provide greater investment certainty in the light of greenhouse risk.

Key initiatives in the plan include:

- > a national framework for the take-up of renewable and low emission technologies
- > a national climate change adaptation framework to assist effective risk management by business and community decision makers
- > a study to identify the gaps in technology development
- > a study to examine options for ensuring that Australia's scientific research resources are organised to effectively support climate change decision-making at the national and regional levels
- > the acceleration of work by the ministerial councils on emissions reporting and the development of options for strengthened reporting approaches.

In July 2006, based on advice from the Environment Protection and Heritage Council and Ministerial Council on Energy, COAG decided that a single, streamlined emissions reporting system that imposes the least cost and red-tape burden should be adopted.

All relevant ministerial councils are to consider any climate change implications of their decisions and activities.

The plan will complement existing Australian, state and territory government measures to reduce greenhouse gas emissions. The broad suite of measures to address stationary energy greenhouse gas emissions represent a mix of mandatory/regulatory measures, quasi-market measures, voluntary measures and the provision of subsidies for emissions abatement. Key measures are listed in box B.1.

In addition to existing measures and those measures being pursued through COAG processes, the states and territories are investigating options for a national emissions trading scheme for Australia. The governments have established the National Emissions Trading Taskforce, a multi-jurisdictional body, to develop a proposal for consideration by state and territory governments. The taskforce released a discussion paper entitled *Possible design for a national greenhouse gas emissions trading scheme* in August 2006. The taskforce puts forward a cap and trade scheme initially covering the stationary energy sector, which could commence around 2010 and be structured to achieve emission reductions of around 60 per cent by the 2050 compared with 2000 levels. On 9 February 2007 the state and territory governments agreed that this proposal will be implemented unless the Australian Government agrees to a national or international carbon trading system after receiving a report on the issue at the end of May.

On 10 December 2006 the Prime Minister established a government–industry task group to advise on the nature and design of a workable global emissions trading system in which Australia would participate and to report on additional steps that might be taken in Australia, consistent with the goal of establishing such a system.

The Prime Ministerial Task Group on Emissions Trading provided its final report to the Prime Minister on 31 May 2007. The task group concluded that Australia should not wait until a genuinely global agreement on climate change has been negotiated, finding that the benefits of early adoption of an appropriate emissions constraint outweigh the costs.<sup>3</sup>

3 The Prime Ministerial Task Group on Emissions Trading, *Report of the task group on emissions trading*, Department of Prime Minister and Cabinet, 2007.



The task group recommends that Australia introduce a 'cap and trade' model by 2012 that incorporates the following key features:

- > a long-term aspirational emissions abatement goal and associated pathways to provide an explicit guide for business investment and community engagement
- > an overall emissions reduction trajectory that commences moderately, progressively stabilises and then results in deeper emissions reductions over time with flexibility for change after five-year reviews and that provides markets with the ability to develop a forward carbon price path
- > national and comprehensive coverage, where practicable, of emissions sources and sinks
- > initially placing permit liability on direct emissions from large facilities and on upstream fuel suppliers for other energy emissions
- > subject those sectors initially excluded from the emissions trading scheme, such as agriculture and land use, to other policies designed to deliver abatement
- > use of free allocation of emissions permits to ameliorate the impact of the scheme on new investments in trade-exposed, emissions-intensive industries, with the remaining permits to be auctioned
- > use of a 'safety valve' to limit unanticipated costs while ensuring an ongoing incentive to abate
- > recognition of a wide range of credible carbon offset regimes, domestically and internationally
- > capacity, over time, to link to other comparable national and regional schemes in order to provide the building blocks of a truly global emissions trading scheme
- > incentives for firms to undertake abatement in the lead-up to the commencement of the scheme
- > revenue from permits and fees to be used, in the first instance, to support emergence of low-emissions technologies and energy efficiency initiatives.

On 3 June 2007 the Prime Minister accepted the recommendations of the report and announced that a target for reducing carbon emissions will be determined in 2008 following detailed economic modelling of the impact any target will have on Australia's economy.<sup>4</sup>

On 17 July 2007 the Prime Minister announced that:

- > the Department of the Prime Minister and Cabinet will be responsible for implementing the emissions trading system
- > a team is to be established in the Australian Government Treasury to oversee modelling of the impact of various emissions targets and to advise the government on the implications of reducing greenhouse gas emissions
- > the long-term emissions target will include built-in flexibility so it can be reset in light of new information, technologies and changes to the international framework
- > legislation will be introduced in 2007 for a comprehensive and streamlined national emissions and energy reporting system
- > from 2009, an independent regulator for emissions trading will be established in the Australian Government Treasury, with responsibilities that include allocating and auctioning permits, certifying offsets and ensuring compliance
- > additional funding will be provided to support initiatives such as research, development and demonstration of low emissions technologies and the installation of solar hot water systems in schools and homes.<sup>5</sup>

4 Howard, Hon J. W (MP), 'Address to the Liberal Party Federal Council', The Westin Hotel, Sydney, 3 June 2007.

5 Howard, Hon J. W (MP), 'Address to the Melbourne Press Club', Hyatt Hotel, Melbourne, 17 July 2007.



### Box B.1 Key greenhouse gas reduction measures in the energy sector

#### **Australian Government measures**

National Greenhouse Strategy (NGS)—energy use and supply measures, including:

- the acceleration of energy market reform
- the Mandatory Renewable Energy Target, which requires the generation of 9500 GWh of extra renewable electricity a year by 2010
- support for renewable energy, including solar and geothermal energy projects
- strategies for energy retailers—for example, Green power.

#### **Greenhouse Challenge Plus**

A largely voluntary program to support and encourage businesses to manage greenhouse emissions through emissions inventory reporting and action plans for cost-effective abatement. The program includes generator efficiency standards to encourage generators using fossil fuels to achieve best practice performance in their power plants to lower greenhouse emissions.

#### **Greenhouse Gas Abatement Program**

A program that provides funding to leverage private sector investment in greenhouse abatement activities or technologies. Funding is provided for projects such as co-generation (the use of waste heat or steam from power production or industrial processes for power generation), energy efficiency, coal mine gas technologies and fuel conversion.

Projects supporting renewable energy industry development including:

- Advanced Electricity Storage Technologies
  - identifies and promotes strategically important advanced storage technologies
- Renewable Energy Equity Fund
  - provides venture capital for small innovative renewable energy companies
- Renewable Remote Power Generation Program
  - support for the installation of renewable energy in remote areas
- Renewable Energy Development Initiative
  - grants for renewable energy innovation and commercialisation
- Photovoltaic Rebate Program
  - rebates towards the cost of installing solar energy cells for householders and owners of community use buildings.

Energy Efficiency and Performance Standards including:

- improving energy efficiency in government operations
- the energy efficiency best practice benchmarking program for electricity generators
- Energy Efficiency Opportunities, where businesses identify, evaluate and report publicly on cost-effective energy saving opportunities.

#### **State and territory government measures**

##### **Greenhouse Gas Reduction Scheme (GGAS)**

A greenhouse trading scheme operated jointly by New South Wales and the Australian Capital Territory that requires electricity retailers and certain other parties that buy or sell electricity in New South Wales to meet mandatory statewide greenhouse gas reduction benchmarks. The benchmarks may be achieved using project-based activities to offset the production of greenhouse gas emissions. Participants are required to reduce greenhouse gas emissions to a benchmark of 7.27 tonnes of carbon dioxide equivalent per head of state population by the end of 2007, which remains as a benchmark until the end of 2020 or until an effective national emissions trading scheme is developed.

##### **New South Wales renewable energy target scheme (NRET)**

The New South Wales Government has announced plans for a mandatory renewable energy target scheme to commence in 2008. The scheme will require electricity retailers to meet renewable energy targets of 10 per cent (1317 GWh) of the state's end use consumption by 2010 and 15 per cent (7250 GWh hours) by 2020.

##### **New South Wales Energy Savings Action Plans**

High energy users, state agencies and local councils, are required to prepare energy savings action plans in which they determine current energy use, undertake a management and technical review, and identify energy savings. The action plans are designed to encourage cost-effective investment in energy efficiency and to fulfil the requirements of the Energy Efficiency Opportunities program.

→ *Victorian renewable energy target scheme (VRET)*

This scheme imposes requirements on electricity retailers to purchase electricity generated from renewable sources. The scheme sets annual targets with the aim that Victoria's consumption of electricity generated from renewable sources will be 10 per cent (3274 GWh hours) by 2016.

VRET is complemented by a range of other measures including promotion of voluntary renewable energy programs, solar power on houses, technology support and smart energy zones with the aim of meeting the 10 per cent target by 2010.

→ *Industry Greenhouse Program*

This program requires Environment Protection Authority (Vic) licensees that are medium to large energy users to: report their energy use and associated greenhouse gas emissions; conduct an energy audit; identify best practice options and determine payback periods; invest in option with a payback of three years or less; and report annually on implementation and emissions.

Solar hot water rebates of up to \$1500 are available when replacing an existing gas or solid fuel hot water system, or converting an existing hot water system to solar. Only householders, community groups, farmers and local governments are eligible for the rebate.

→ *Queensland 13 per cent gas scheme*

A scheme requiring electricity retailers to source at least 13 per cent of the electricity they sell in Queensland from gas-fired generation. The scheme aims to encourage greater penetration of gas and the development of new gas sources (including coal seam methane) and infrastructure in Queensland and to reduce greenhouse gas emissions from the Queensland electricity sector.

→ *South Australia – Climate Change and Greenhouse Emissions Reduction Bill*

- The Bill sets targets: to reduce greenhouse gas emissions in the state by at least 60 per cent of 1990 levels by the end of 2050 and to increase the share of renewable electricity generated and used in the state to at least 20 per cent by the end of 2014. The Bill was introduced to parliament on 6 December 2006 following a consultation period in mid 2006.
- Solar hot water rebates of up to \$700 are available to residents who purchase a new solar hot water system or retrofit kit for domestic purposes and install it at their principal place of residence. The rebate is subject to a range of other eligibility conditions.

→ The Western Australian Government has set a renewable energy target of 6 per cent on the South-West Interconnected System electricity transmission grid by 2010. In February 2007 the Premier announced that the state government will be also required to purchase 20 per cent of its electricity requirements from renewable energy sources by 2010.

- Solar hot water rebates of up to \$700 are available to householders who install certain gas-boosted solar water heaters. The rebate is subject to a range of other eligibility conditions.

**Cooperative measures**

The National Framework for Energy Efficiency Minimum incorporates energy efficiency performance standards for appliances, equipment and buildings:

- Mandatory energy efficiency design standards (MEPS), which requires that certain products sold in Australia (for example, fridges, freezers, electric water heaters and air conditioners) meet minimum energy efficiency standards.
- All jurisdictions, except New South Wales, have adopted the national energy efficiency standards for commercial and residential buildings in the Building Code of Australia, which sets energy efficiency design standards for new buildings and major refurbishments. New South Wales operates the building sustainability index (BASIX), which mandates energy and water saving targets house and home unit developers must reach before a building application can be approved.

# C AUSTRALIAN TRANSMISSION PIPELINES

Table C.1 lists Australia's main onshore natural gas transmission pipelines. Not all licensed pipelines are listed.

**Table C.1: Main Australian onshore transmission pipelines, 2006**

LICENCE NUMBER	NAME	LICENSEE	LENGTH (KM)	DIAMETER (MM)	YEAR CONSTRUCTED
NEW SOUTH WALES AND THE AUSTRALIAN CAPITAL TERRITORY					
16, 17-23	Moomba to Sydney (and associated laterals)	EAPL	2 013 <sup>1</sup>	864	1974-1993
24	Vic-NSW border to Culcairn	GasNet	57	457	1999
25	Marsden to Dubbo	APT	255	168, 219	1999
26	Vic-NSW to Wilton	Alinta	467	450	2000
27	Dubbo to Tamworth	Central Ranges Pipeline	254	219, 168	2006
28	Llabo to Tumut	Country Energy	64	219	2001
29	Hoskintown to ACT	ACTewAGL	22	273	2001
VICTORIA					
various	Victorian transmission system	GasNet	1935	80-750	1969-2006
75	Longford to Dandenong	GasNet	174.20	750	1971
179	Carisbrook to Horsham	Coastal Gas Pipelines	182.00	200, 100	1998
226	SA-Vic border to Mildura	Envestra	105.20	100	1999
227	Iona to North Paaratte	TXU	7.10	150	1999
240	Otway Basin to Heytesbury Gas plant	Origin Energy	8.50	219	2002
243	Kilcunda to gas processing Lang Lang	Origin Energy	32.00	350	2003
247	EGP and TGP to GasNet Longford to Dandenong	Alinta DVH	2.10	350	2002

LICENCE NUMBER	NAME	LICENSEE	LENGTH (KM)	DIAMETER (MM)	YEAR CONSTRUCTED
<b>QUEENSLAND</b>					
2	Roma to Brisbane	APT	434	273–400	1967
3	Kincora to Wallumbilla	Origin Energy	53	219	1977
13	Ballera to SA Border	Santos Ltd	90	400	1993
15	Cheepie Barcaldine Gas Pipeline	Enertrade	420	168	1994
21	Moomba to Sydney (Qld section)	EAPL	56.2	864	1974
24	Ballera to Wallumbilla	Epic Energy	756	406	1996
26	Dawson River to Wallumbilla–Gladstone	Anglo Coal	na	168	1996
30	Wallumbilla to Gladstone, Gladstone to Rockhampton	Alinta	629	219–324	1989–91
41	Carpentaria Gas Pipeline	Roverton	841	324	1997
42	Cannington Lateral from Carpentaria Gas Pipeline	APT	100	150	1998
45	Bunya/Vernon/Cocos to Central Treatment Plant	Australian Gasfields Ltd	130	89	1998
52	Maryborough to Gladstone via Bundaberg	PG&E	309	100	1999–2000
60	Wallumbilla–Gladstone to Bundaberg/Maryborough	Envestra	274	114.3	2000
89	Moranbah to Townsville Pipeline	Enertrade	393	273.1	2004
<b>SOUTH AUSTRALIA</b>					
1	Moomba to Adelaide (incl. Whyalla Lateral)	Epic Energy	781	89–610	1969
3–4	Katnook Pipeline and laterals	Epic Energy	4.5	60–160	1991, 2000
5	Ballera to Moomba (SA portion)	Santos Ltd	92	1993	1993
6	Angaston to Berri	Envestra	234	1994	1994
7	Moomba to Qld border (MSP)	EAPL	101	864	1974–1976
11	Berri to Mildura	Envestra	42.3	114	1999
13, 14	SEA Gas Pipeline	SEA Gas P/L	680 <sup>2</sup>	60–457	2003
16	SESA Pipeline	Origin Energy	23.3	219	1976–89
<b>TASMANIA</b>					
na	Tasmanian Gas Pipeline system	Alinta	576	168–350	2002–05
<b>WESTERN AUSTRALIA</b>					
1–3 R1, 5 R1	Dongara to Pinjarra (including laterals)	APT	444	114–356	1972
8 R1	Robe River Pipeline	Robe River Mining Co	58	273	1984
18	Beharra Springs to Parmelia	Origin Energy	1.6	168	1992
16, 19–20	Tubridgi and Griffin pipelines	BHP Billiton	180	168, 273	1992–93
22	Karratha to Port Hedland	Epic Energy	215	450	1994
23, 52–53	Parmelia Pipeline	APT	0.45	168	1994
24–28	Goldfields Gas Pipeline and laterals	Southern Cross Pipelines	1426	350–400	1996
40	Dampier to Bunbury (DBNGP) (including a number of laterals under this licence)	DBNGP (WA) Nominees P/L (and Epic Energy)	1845	660	1984
43	Midwest Pipeline	APT	352	219–168	2000
44–46	Parmelia Pipeline laterals	APT	–	200	2000
59	Kambalda to Esperance Gas Pipeline	Esperance Pipeline Co.	340	150	2004
60, 63, 68	Telfer Pipeline	Gas Transmission Services WA (Operations)	464.00	250	2004

LICENCE NUMBER	NAME	LICENSEE	LENGTH (KM)	DIAMETER (MM)	YEAR CONSTRUCTED
NORTHERN TERRITORY					
1	Palm Valley to Alice Springs	NT Gas Pty Ltd	140	200	1983
4	Mereenie to Tylers Pass, Katherine and Tennant Creek laterals	NT Gas Pty Ltd	147	114, 273	1986
4	Palm Valley to Darwin	NT Gas Pty Ltd	1512	356, 324	1986
7	Brewer Estate	Energy Equity	10	114	1989
8	Cosmo Howley Lateral	International Oil/ NT Gas	25	90	1988
17	Daly Waters to McArthur River Mine	PAWA/NT Gas Pty Ltd	333	168	1995
18	Darwin City Gate to Berrimah	NT Gas Pty Ltd	19	168	1996
19	Mt Todd Mine Lateral	NT Gas Pty Ltd	10	219	1996
20	Bayu Undan to Darwin	ConocoPhillips	92 (NT portion)	660	2004–05

EAPL: East Australian Pipeline Limited; APT: Australian Pipeline Trust.

1. Includes Queensland component. 2. Includes Victorian component.

Source: Australian Pipeline Industry Association, *2007 Directory yearbook*, no. 16, 2007; ESAA, *Electricity gas Australia 2006*, 2006.