



Climate change policy principles



APPEA has developed these climate change policy principles to assist policymakers in developing efficient and effective responses to deal with climate change.

APPEA supports a national climate change policy that delivers greenhouse gas emissions reductions at least cost and facilitates broad-based investment decisions consistent with an international price on carbon.

Climate policy must be fully integrated and consistent with policies in other areas – including energy, international trade, taxation, economic growth, population, and environmental and social responsibility.

Policy principles

1. International engagement is crucial.

Australia should continue to engage the international community to pursue environmentally effective and economically efficient climate change policies¹.

An international policy framework should:

- Promote international participation.
- Minimise the costs and distribute the international burden equitably.
- Be comprehensive in its coverage.
- Allow for the unrestricted flow of credible emissions units between international jurisdictions.
- Be underpinned by transparent reporting arrangements.

2. Climate change and energy policies must be integrated and harmonised.

Australia's policy response should seek to:

- Deliver lowest cost greenhouse gas emissions abatement through an appropriately designed mechanism that provides an economy-wide transparent price signal to shape business and consumer plans and investments. The mechanism should be efficient, have low compliance costs, and support international trade that recognises different national circumstances.
- Recognise and allow the use of the widest range of credible domestic and international offsets.
- Provide a level playing field for new entrants.
- Avoid penalising early movers who have previously implemented abatement measures.
- Support research into low-emissions technologies, and development and deployment of such technologies.

In the event Australia takes action before comparable action is taken by the nations with which we compete, the Australian policy response should maintain the competitiveness of Australian trade exposed industries, such as LNG, by minimising the costs the industry faces in the absence of a carbon price being imposed on energy sources in customer countries and competitors.

Policies inconsistent with the principles should be phased out and additional measures should only apply to sectors of the economy that are not covered by the price signal on greenhouse gas emissions.

3. Climate change adaptation strategies are necessary.

Australia must:

- Continue to support international and national modelling to provide location-specific climate change forecasts.
- Develop risk-management strategies to reflect likely impacts of climate variability.

4. Climate policy must not compromise national or global economic development or energy security.

Australia's policy response should recognise that:

- Increasing global population and urbanisation generate growing demand for energy.
- Secure energy supply is crucial for a strong modern economy and a healthy, vibrant society.
- Natural gas has a key role to play in the transition to a low-carbon economy – switching to gas could halve the emissions from the Australian electricity sector – and if solar and wind power are to deliver genuine emissions reductions they must have gas-fired back-up.

¹ Australia's contribution to the global climate change effort as set out here reflects the principle in Article 3.1 of the United Nations Framework Convention on Climate Change (UNFCCC) (see unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveg.pdf). In determining Australia's differentiated responsibilities and capabilities, consideration should be given to matters such as Australia's economic growth and structure, population growth, energy production and energy use.



Australian LNG exports can make an important contribution to reducing global greenhouse emissions intensity.

The global challenge

Throughout the world, policymakers are implementing a variety of regulatory responses to reduce greenhouse gas emissions and mitigate the risks of global climate change.

The Intergovernmental Panel on Climate Change (IPCC) found in its Fifth Assessment Report (AR5) that:

- The human influence on the climate system is clear.
- The more we disrupt our climate, the more we risk severe, pervasive and irreversible impacts.
- Humans can limit climate change and build a more prosperous, sustainable future.²

The multilateral United Nations Framework Convention on Climate Change (UNFCCC) has elicited a global commitment to holding the increase in the global average temperature to well below 2 degrees Celsius above pre-industrial levels and to pursuing efforts to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels.³

APPEA's stance on climate change

Societies around the world will continue to face two major, interdependent challenges:

- Maintaining and expanding affordable, secure energy supplies to meet growing consumer demand.
- Addressing the social and ecological risks posed by rising greenhouse gas emissions and climate change.

Managing greenhouse gas emissions and meeting growing energy demand requires action by individuals, companies, and governments. Making genuine progress requires an integrated set of solutions. This includes increasing energy efficiency, advancing lower carbon energy technologies, and supporting effective national and international policies.

Reliable and competitively priced energy underpins economic growth and stability, and is crucial to raising living standards in both developing and advanced nations. Therefore, policies aimed at reducing greenhouse gas emissions must do so at the lowest possible cost.

² IPCC (2014), Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland (available at www.ipcc.ch).

³ UNFCCC (2015), Adoption of the Paris Agreement, 12 December (available at unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf).

Natural gas: integral to a low-carbon economy

Natural gas is a lower-carbon form of energy suitable for electricity generation, industry and households.

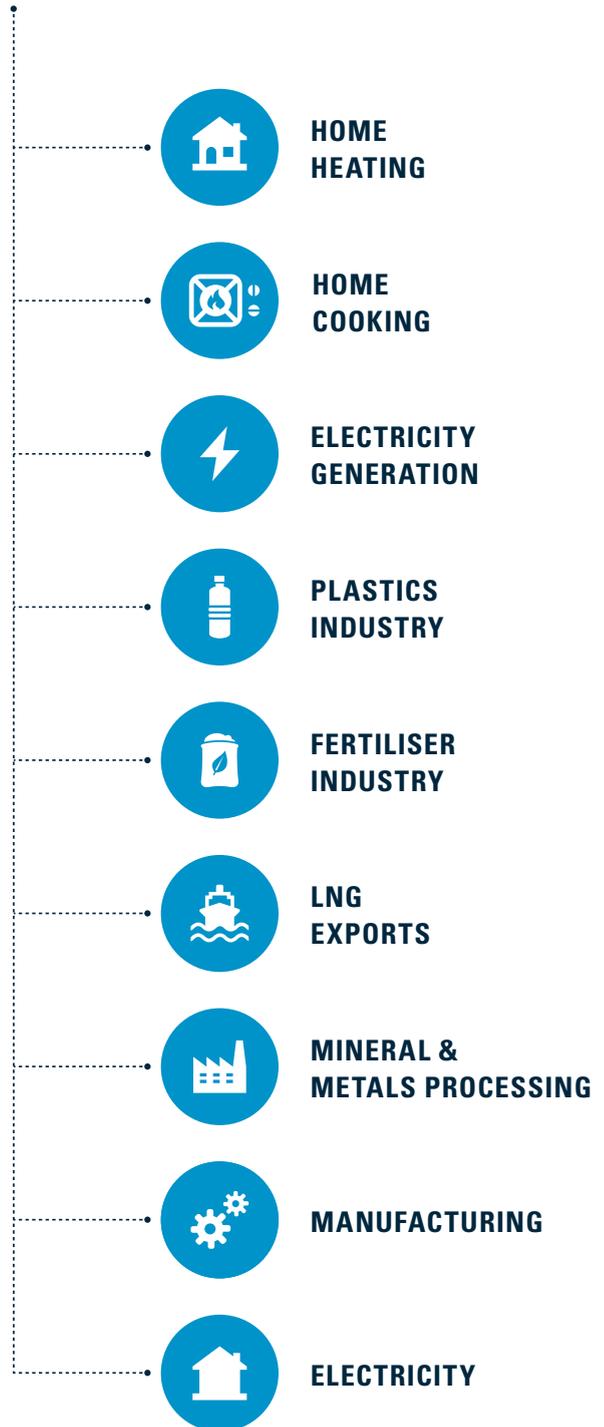
Increasing its use can deliver immediate and substantial carbon savings. Simply switching from coal to natural gas can reduce greenhouse gas emissions by 40-50% and by as much as 75% in some circumstances.⁴

Australia's gas industry, domestically and through our exports of liquefied natural gas (LNG), contributes substantially to the economic development of the nation and reduces global greenhouse gas emissions.

Natural gas is a highly flexible fuel:

- Natural gas is commonly used to generate electricity, heat and steam for industries, including alumina refining, food and beverage manufacturing, and grocery production.
- Natural gas is ideally suited as a complement to renewable electricity generation because gas generation plants can be rapidly turned on and off to respond to changes in intermittent generation from renewable sources.
- Natural gas is the fuel of choice in co-generation and tri-generation. These technologies can provide electricity, heating and cooling at very high thermal efficiencies approaching 80%.⁵
- Compressed natural gas and LNG are used in the transport sector, and this use can be expanded.
- Innovative technologies, such as natural gas fuel cells, have been developed that can provide electricity and heat requirements in applications ranging from a small house to a medium sized office or factory. These technologies can deliver thermal efficiencies as high as 85%.⁶
- Natural gas is also a critical feedstock for industry that often cannot be substituted in producing fertilisers, cleaners, polymers and refrigerants.

NATURAL GAS



4 Australian Council of Learned Academies (2013), Engineering Energy: Unconventional Gas Production, June (available at www.acola.org.au/index.php/projects/securing-australia-s-future/project-6). While the emissions benefit is lower when compared to ultra supercritical coal fired power generation, as the Council has noted "gas-fired electricity generation will generally replace existing coal-fired boilers that are less efficient subcritical facilities".

5 These technologies are already being deployed in commercial buildings in Australia (see www.urbanenergy.com.au/projects, www.originenergy.com.au/files/Origin_Coca_Cola_place_FactSheet.pdf, www.cityofsydney.nsw.gov.au/vision/towards-2030/sustainability/carbon-reduction/trigeneration and www.qantas.com.au/travel/airlines/electricity/global/en#power for examples).

6 Recently there have been significant advances in ceramic fuel cells that run on natural gas, with a range of commercial available products now on the market.

Reducing emissions

The Australian Council of Learned Academies has found using gas to provide more baseload and peak electrical power generation in Australia – in scenarios of higher use of both renewables and gas – would deliver substantial emissions reductions.

This would reduce the Australian electricity generation sector’s emissions by between 54 Mtpa-103 Mtpa CO₂-e (million tonnes per annum, carbon dioxide equivalent) by 2030 – a reduction of 27% to 52% from the base case of 197 Mtpa CO₂-e in 2012.

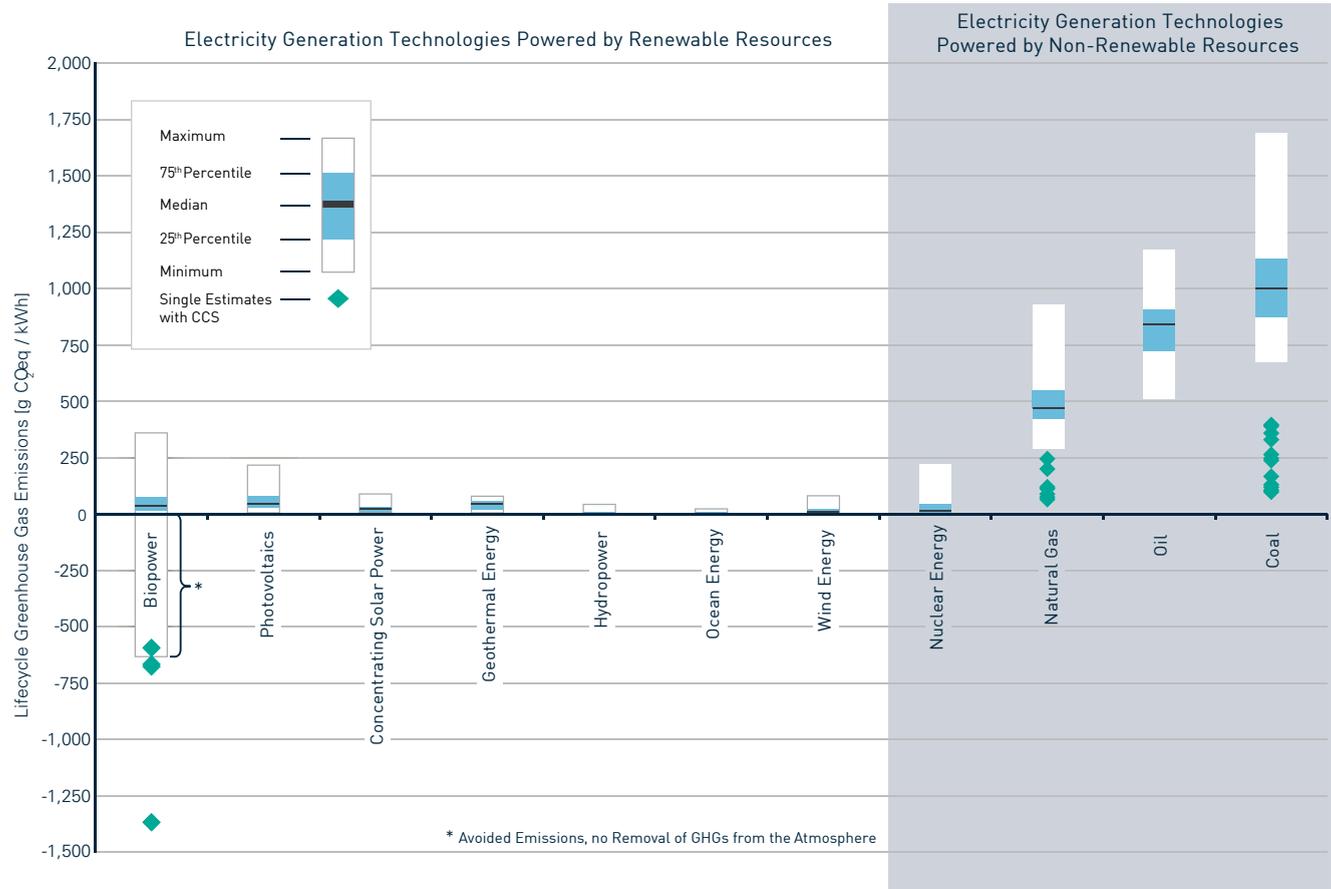
Other environmental benefits

Fuel switching would also have other benefits. Natural gas plants use much less water than coal-fired power and produce much lower levels of noxious substances such as sulphur dioxide, nitrogen oxides and fine particle emissions.

Burning gas instead of coal improves urban air quality. This is particularly important in many Asian countries that are importing Australian LNG or considering imports.

Baseload power is the level of generation needed to meet forecast minimum demands. Baseload power plants must run constantly and at predictable levels. Peaking power is power that can be brought online quickly in periods of peak demand. Intermittent power is any source of energy (such as solar and wind) that is not continuously available.

The range of life cycle emissions for electricity generation (tonne CO₂-e/MWh) from a range of energy sources



Count of Estimates	222(+4)	124	42	8	28	10	126	125	83(+7)	24	169(+12)
Count of References	52(+0)	26	13	6	11	5	49	32	36(+4)	10	50(+10)

Source: IPCC (2011)⁷

7 IPCC (2011), Summary for Policymakers. In: IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation [O. Edenhofer, R. Pichs-Madruga, Y. Sokona, K. Seyboth, P. Matschoss, S. Kadner, T. Zwickel, P. Eickemeier, G. Hansen, S. Schlomer, C. von Stechow (eds)], Cambridge University Press, Cambridge, UK and New York, NY, USA (available at srren.ipcc-wg3.de/report/IPCC_SRREN_SPM.pdf).

Australia has substantial natural gas resources. Natural gas offers a relatively low-cost emissions abatement opportunity. This means developing these resources can provide significant national environmental, economic and social benefits.



The Moomba gas plant in South Australia.

Carbon capture and storage (CCS)

Greenhouse gas storage is seen as one of the pathways to the continued use of fossil fuels in a low-carbon economy.

The global oil and gas industry is leading the world in the practical deployment of this technology. Norway's Statoil has developed large carbon capture and storage (CCS) projects at Sleipner and Snøhvit. In Canada, Shell has developed the Quest CCS project.

In Australia, the oil and gas industry has been at the leading edge of researching and deploying greenhouse gas storage technologies.

The industry instigated significant research efforts into greenhouse gas storage in the late 1990s through the Australian Petroleum Cooperative Research Centre (which has continued through the CO2CRC Limited).

Since that time, several hundred million dollars has been invested in assessing large greenhouse storage projects.

The Gorgon Carbon Dioxide Injection Project⁸ – soon to be commissioned – is the world's largest greenhouse gas mitigation project undertaken by industry.

8 See www.chevronaustralia.com/our-businesses/gorgon/carbon-dioxide-injection for more information.



appea

the voice of australia's
oil and gas industry

APPEA supports a national climate change policy that delivers greenhouse gas emissions reductions at least cost and facilitates broad-based investment decisions consistent with there being an international price on carbon.

APPEA climate change policy: key points

1. International engagement is crucial.
2. Climate change and energy policies must be integrated and harmonised.
3. Climate change adaptation strategies are necessary.
4. Climate policy must not compromise national or global economic development or energy security.

APPEA and its members will continue to work with all of Australia's governments to:

- Support a national climate change policy response consistent with the policy principles outlined in this paper.
- Expand the use of natural gas in the domestic economy, with consequent reduction in the emissions intensity of the Australian economy, for example, in electricity generation and resource processing.
- Promote development of lower emissions technologies, such as high-efficiency electricity generation and greenhouse gas storage.
- Make Australia more attractive as an investment destination for LNG projects, so that Australian LNG can help Australia's trading partners reduce their greenhouse gas emissions, thereby contributing to a potential significant reduction in global emissions when compared to the use of higher-emitting fuels.

About APPEA

The Australian Petroleum Production & Exploration Association is the peak national body representing Australia's oil and gas exploration and production industry. APPEA has about 80 full member companies. These are oil and gas explorers and producers active in Australia. APPEA members account for an estimated 98 per cent of the nation's petroleum production. APPEA also represents more than 230 associate member companies that provide a wide range of goods and services to the upstream oil and gas industry.

APPEA works with Australian governments to help promote the development of the nation's oil and gas resources in a manner that maximises the return to the Australian industry and community. APPEA aims to secure regulatory and commercial conditions that enable member companies to operate safely, sustainably, and profitably. The Association also seeks to increase community and government understanding of the upstream petroleum industry by publishing information about the sector's activities and economic importance to the nation.