

19 March 2021

RET and Energy Section
Clean Energy Regulator
GPO Box 621
CANBERRA ACT 2601*(via email to: CER-RETandEnergySection@cleanenergyregulator.gov.au)***RE: CORPORATE EMISSIONS REDUCTION TRANSPARENCY REPORT CONSULTATION
PAPER: APPEA COMMENTS**

The Australian Petroleum Production & Exploration Association (APPEA) is the peak national body representing Australia's upstream oil and gas exploration and production industry. It has about 60 full member companies. These are oil and gas explorers and producers active in Australia. These members account for an estimated 98 per cent of the nation's petroleum production. APPEA also represents about 140 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 community and industry. APPEA aims to secure regulatory and commercial conditions that enable member companies to operate safely, sustainably, and competitively. Further information about APPEA can be found on our website, at www.appea.com.au.

APPEA welcomes the opportunity to provide comment on the *Corporate Emissions Reduction Transparency report consultation paper* (the CERT consultation paper) and the *Corporate Emissions Reduction Transparency report draft guidelines* (the CERT draft guidelines).

APPEA is committed to working with policymakers as they develop policy responses to climate change. With that in mind, APPEA released a third edition of its *Climate Change Policy Principles* (as part its Australia's cleaner energy future report) – a copy of which is at [Attachment 1](#)¹ – setting out the principles that APPEA considers should underpin Australia's response to climate change.

In addition to this APPEA submission, a number of APPEA members have made individual submissions on the CERT consultation paper and CERT draft guidelines. This response should be read in conjunction with submissions from individual APPEA members.

APPEA is also a member of the Australian Industry Greenhouse Network (AIGN)², a network of industry associations and individual businesses that are actively involved in monitoring and

¹ A copy of *Australia's cleaner energy future* (incorporating the third edition of APPEA's *Climate Change Policy Principles*) can also be found at www.appea.com.au/wp-content/uploads/2021/02/2021-APPEA-Climate-Change-Policy-Principles.pdf.

² See www.aign.net.au for more information.

participating in deliberations on climate change policy in order to pursue the Network's object of promoting development of Australia's industrial resources. AIGN provides a focus for cooperative industry policy responses on key greenhouse issues and plays a facilitating and coordinating role in an industry contribution to key greenhouse policy and abatement measures. APPEA has contributed to and supports AIGN's submission to the CERT consultation paper.

APPEA's submission addresses specific aspects of the CERT consultation paper the CERT draft guidelines, focussing on those areas that are particularly important for the upstream oil and gas industry.

GENERAL COMMENTS

APPEA members have, over a number of years, announced a range of emissions reduction commitments, including establishing emissions reduction ambitions and targets, setting out actions, pathways to action, areas of low emissions/cleaner technology research focus and industry collaboration.

At an industry-wide level, APPEA released an *Industry Action on Emissions Reduction*³ report in June 2020, that highlights through a series of case studies the range of the practical actions and initiatives undertaken by the upstream oil and gas industry to reduce its greenhouse gas emissions. These actions encompass the entire oil and gas exploration and production life cycle.

With this in mind, APPEA welcomes the Regulator's efforts to consider some of the issues that have been raised in discussions with companies and industry associations about improvements to NGER reporting to better capture voluntary emissions reductions and other actions, particularly in relation to in the treatment of electricity-related (Scope 2) emissions. There is significant interest in finding a way to report scope 2 data more clearly, in relation to targets. This issue stems from the current NGERs reporting approach to scope 2 emissions, which does not clarify factors such as proportion of renewable energy. APPEA also supports consideration by the Regulator of ways to bring together information on corporate emissions reduction targets and actions across the economy, in a manner that would allow to such information to be accessed in a more central and coordinated way, without increasing the compliance and reporting burden on companies.

There are, however, a range of challenges that the approach proposed in the CERT consultation paper and the CERT draft guidelines would need to address before the CERT report would be ready for implementation. Some of these issues are considered further below, but in summary include:

- The proposed short-term focus – the approach proposed would compare emissions reductions year-on-year. While this approach may be adequate in some circumstances, it is unlikely to appropriately represent progress against the longer-term targets some companies employ, particularly in situations where the targets may be linked to technology improvements and/or innovation-related developments.

³ See [appea.com.au/wp-content/uploads/2020/08/Industry-Action-on-Emissions-Reduction-1.pdf](https://www.appea.com.au/wp-content/uploads/2020/08/Industry-Action-on-Emissions-Reduction-1.pdf) for a copy of the report.

- Using NGERs reported emissions as a base – this would require companies to report ‘gross’ targets, rather than ‘equity’ targets. Such an approach would be problematic for the upstream oil and gas industry (and most likely for other parts of the resources industry) where joint ventures (JVs) are a key feature of the industry’s commercial landscape, which means that while reporting can be on a gross basis, portfolio-wide targets necessarily need to be equity-based.
- In a similar way, the alignment between NGERs reporting in Australia and a corporate emissions reduction target that operates as a global level, for example, for an international oil company (or other company with global operations) requires further consideration.
- The generation of Australian Carbon Credit Units (ACCUs) does not count toward emissions reduction/offset for reporting against targets – to show a reduction, ACCUs have to be surrendered.

APPEA recommends the Regulator convene a series of workshops with relevant companies and industry associations to work through these and other issues ahead of the finalisation of any approach. From an upstream oil and gas industry perspective, APPEA stands ready to work with the Regulator in convening such a workshop⁴.

It may be worth the Regulator delaying the CERT reporting process until these issues are resolved. Alternatively, a pilot of the reporting framework, for volunteers for the process, may be another option to consider. A pilot would allow some of these issues to be tested and solutions explored ahead of a full roll-out of the framework.

SPECIFIC COMMENTS ON THE CERT CONSULTATION PAPER

The following sections set out some specific comments on particularly sections of the CERT consultation. These represent areas of focus that could be the subject of workshop(s) with the Regulator.

Report design

The report, as proposed, is unlikely to adequately reflect the targets, investments or efforts in emissions reduction undertaken by many of APPEA’s members. This type of reporting, for example, may not be able to adequately acknowledge/capture the ‘step-change’ impact of technology on achieving targets.

For example, the proposed table set out on page 3 of the CERT consultation paper, with its relatively simple structure, may not adequately reflect the challenging nature of a particular company’s emission reduction target. For example, a target that may appear on the face of it to be relatively modest may in fact be very challenging if the company is in a growth and investment phase (compared to a company that has steady or shrinking output, where the same emissions reduction target is likely to be less challenging).

⁴ In a similar way, an AIGN / Regulator workshop could work through a number of issues that have broader, economywide, aspects.

In addition, the table as proposed does not appear to allow for multiple targets – for example, the report/table be able to specify/track a net zero target (say, by 2050 or some other period), an interim reduction target by 2030, targets relating to particular greenhouse gases or fuel sources and, for example, a Scope 3 target.

Opt-in mechanism

APPEA supports the voluntary and ‘opt-in’ nature of the proposal. However, as noted above, to support the take-up of the report and ensure that its adoption is meaningful, the various issues identified in this and other submissions will need to be addressed. This will help ensure widespread adoption of the report and that the reporting process makes useful information available to stakeholders. A reporting process that ends up providing little more than a platform for activist investors to ‘name and shame’ companies will be a process that has failed.

In addition, APPEA recommends the Regulator include a “disclaimer” on the reports, which acknowledge this reporting framework is a new and evolving space and provides some context on what is (and is not) being reported. It could also clearly state that targets are voluntary and very much are going above and beyond any legal requirements in Australia. This disclaimer could also explain the difference between operational and equity reporting and briefly discuss that various companies have different types of voluntary targets (different metrics, reporting years, base years, short/medium, long term horizons and so on). This information would significantly aid understanding about the CERT reporting framework and the information it does (and does not) provide and how such information should be understood.

Eligible Units

The CERT consultation paper on page 4 proposes the report separate an ACCU (a ‘higher quality’ unit with a current price of around \$A18) with other units including a Certified Emissions Reductions (CER) (a ‘lower quality’ unit with a current price of around \$A1), but the net scope 1 emissions column treats all units as identical.

Surrender required

The proposal requires as outlined on page 1 of the CERT consultation paper that units must be surrendered to be included in the table. This means that generating an ACCU through an emissions reduction project will not be included in the CERT report and so not be captured appropriately through the proposal as it stands.

Gross-operated versus equity-based emissions reporting

Data in the proposed table is gross-operated (as per NGERs), which, as noted above, does not align with the approach taken by members to set and pursue equity-based targets. A report that appropriately reflects equity-based targets and progress towards those targets is required.

The need for flexibility to incorporate corporate versus facility versus joint venture reporting

In a similar way, while the proposed table provides company level information (as per NGER scheme), flexibility to report at a facility/asset/JV level is required.

For example, if a company wanted to ensure its sales of 'carbon-neutral' LNG was to be adequately reflected in the report, an ability to report at a facility/asset/JV level will be required. The report as designed would only display offsets against the Corporate group, rather than potentially JV funded offsets for particular assets.

In addition, flexibility to provide qualitative comments and link to existing reports (for example, sustainability reports) where available would allow the report to provide additional and important contextual information.

Timing (for example, calendar year versus financial year reporting)

In keeping with the report's voluntary nature, flexibility around the reporting period (for example, calendar year as well as financial year, for example) should be part of the reporting framework.

QUESTIONS FOR FEEDBACK

The following sections provide some preliminary answers to the questions posed on page 6 of the CERT consultation paper.

Is the proposed reporting structure suitable for demonstrating how a corporation is offsetting or reducing its scope 1 emissions and scope 2 electricity consumption?

As covered in a number of sections above, the proposed reporting structure presents challenges that will need to be met before it will be fit for purpose as a report that provides valuable information to stakeholders in a manner that does not increase compliance and reporting burden for companies. APPEA would welcome the opportunity to workshop with the Regulator some potential ways to meet these challenges.

Should corporations opt-in each year or should their participation be assumed to continue until they opt-out?

As noted above, APPEA supports the voluntary and 'opt-in' nature of the proposal. This opt-in election could be made once and then be maintained unless an opt-out election takes place.

Should surrenders of ACCUs from NGER facilities delivered under Emissions Reduction Fund contracts be included in the net emissions calculation?

Yes. It is appropriate that surrenders of ACCUs from NGERs facilities delivered under Emissions Reduction Fund / Climate Solutions Fund contracts be included in the net emissions calculation. This will assist in ensuring that emissions reduction activities are appropriately reflected in the reporting framework.

How could NGER reporters' voluntary targets and progress against these targets best be reflected in CERT to align with the NGER framework?

As NGERs only relates to gross-operated emissions at the controlling corporation level, many company targets and associated emissions reduction activities that are equity-based are unlikely to align to the NGERs framework.

As noted above, if the intent of CERT is to provide useful information for stakeholders on company targets and to track progress towards those targets, then the reporting format will require amendment, and a workshop with relevant companies to work through these amendments would be a useful way to develop suitable solutions to these challenges.

For example:

- Company targets are typically calculated from a baseline year, so a consistent calculation methodology to determine the field "progress toward emissions target (%)" may be required. The data in this column needs to be easily understood, with data integrity verified by the Regulator.
- The report should allow for reporting of multiple targets, which may not necessarily be aligned with the NGERs framework.

Are there any other enhancements to CERT that could help build participation? Are there other elements that should be considered in future phases of CERT?

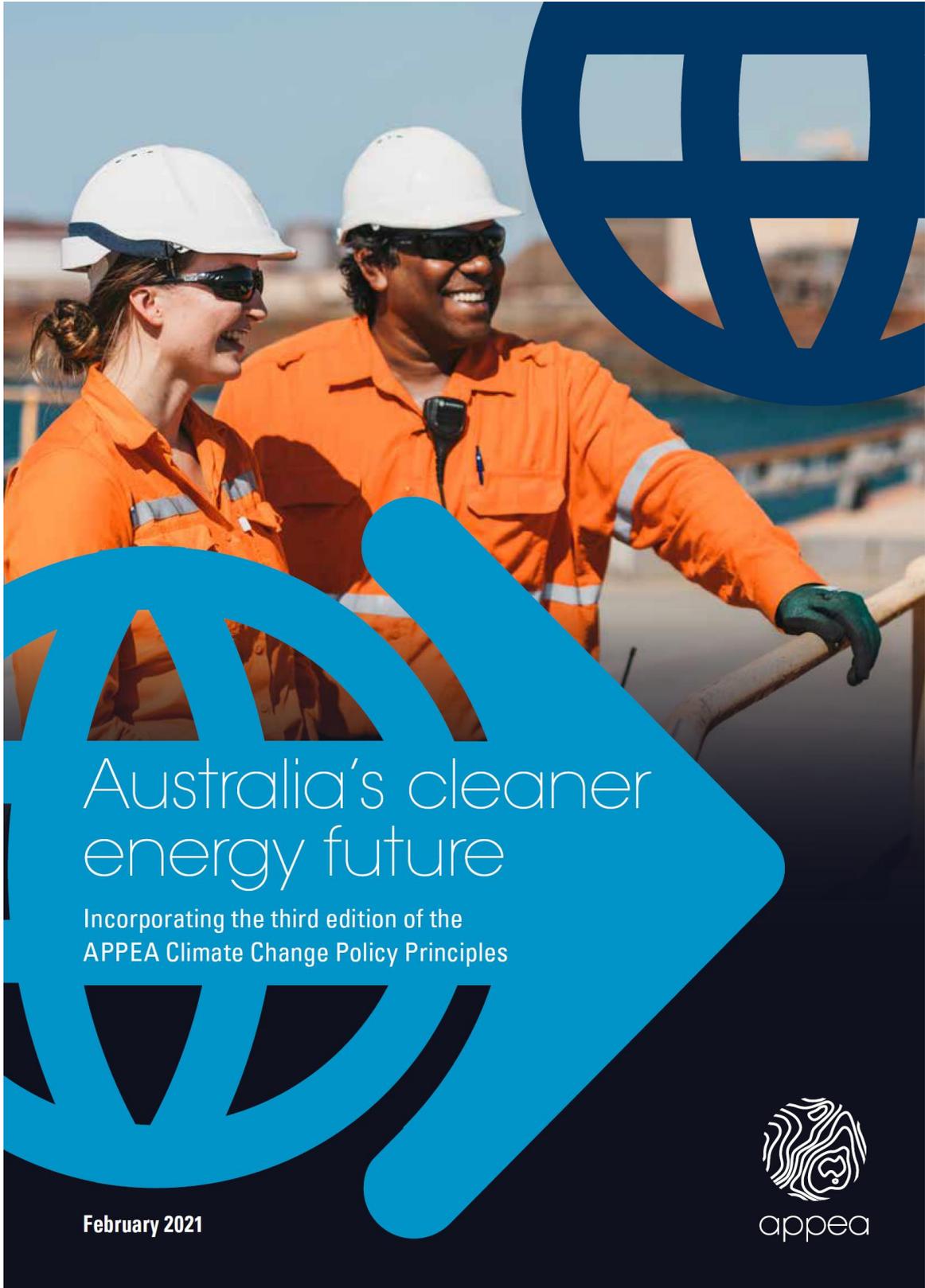
Yes. As noted above, APPEA recommends the Regulator convene a series of workshops with relevant companies and industry associations to work through these and other issues ahead of the finalisation of any approach. From an upstream oil and gas industry perspective, APPEA stands ready to work with the Regulator in convening such a workshop(s).

If you have any queries, please feel free to contact me at ddwyer@appea.com.au or on 0422 800 201. We will look forward to further consultation with the Clean Energy Regulator as both the CERT reporting framework and guidelines are further developed and would welcome the opportunity to meet with you to discuss our comments.

Yours sincerely



DAMIAN DWYER
Deputy Chief Executive



Australia's cleaner energy future

Incorporating the third edition of the
APPEA Climate Change Policy Principles

February 2021

APPEA's position on climate change

APPEA supports the science of climate change and the need to reduce global emissions, consistent with the objectives of the Paris Agreement. This will require action by individuals, companies, and governments.

Societies around the world continue to strive towards two major and interdependent objectives:

- Meeting greenhouse gas emissions reduction commitments to reduce the environmental, economic and social risks posed by rising greenhouse gas emissions and climate change.
- Maintaining and expanding affordable, secure energy supplies to meet growing consumer demand for energy as populations and living standards grow.

Working together to meet the global challenge

The central aim of the Paris Agreement,² which entered into force in 2016, is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels. The agreement also aims to achieve net zero greenhouse gas emissions globally in the second half of this century.³

More recently, the Intergovernmental Panel on Climate Change (IPCC)⁴ found that limiting global warming to 1.5°C above pre-industrial levels would require changes on an unprecedented scale, including:

- deep emissions cuts across all sectors
- a range of technologies
- behavioural changes
- increased investment in low carbon options.

The IPCC also found these changes would have benefits to people and natural ecosystems.

Making genuine progress requires an integrated set of solutions. This includes actions by industry to reduce emissions, provide and advance lower carbon energy technologies, and support effective national and international policies.

COVER IMAGE COURTESY OF WOODSIDE



Policy principles

1 Net zero emissions by 2050 should be the goal of national and international policy

The objectives of the Paris Agreement are to keep a global temperature rise this century to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels. Policies should be consistent with and support these objectives.

Policies should achieve emissions reductions consistent to achieve net zero emissions across the Australian economy by 2050 as part of a contribution to a goal of global net zero emissions by 2050.⁵ The Australian Government has the responsibility to set interim targets and for the policy framework that meets them.

Australia should continue to engage the international community to pursue environmentally effective and economically efficient climate change policies.⁶ An international policy framework should:

- promote international participation
- minimise the costs and distribute the international burden equitably
- ensure the task of reducing emissions is inclusive of all sectors and countries
- allow for the unrestricted flow of credible emissions units between international jurisdictions
- be underpinned by transparent reporting arrangements.

2 Climate policies should be efficient, enduring and integrated with economic, social, technology and energy policies

Australia's policy response should seek to:

- Set clear, long-term targets for emissions reduction that are consistent with the objectives of the Paris Agreement and provide predictability to industry to support planning and future investment.
- Deliver low cost greenhouse gas emissions abatement through an appropriately designed price mechanism that provides an economy-wide transparent 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 and avoid penalising early movers who have previously implemented abatement measures.
- Support the development and deployment of pre-commercial/new and emerging low-emissions technologies.
- Support climate adaptation efforts, including through international and national modelling to provide location-specific climate change forecasts and impacts, risk-management strategies to reflect likely impacts of climate variability and protect people and critical infrastructure from the negative impacts of climate change.

In delivering this policy response, the Australian Government and the state/territory governments have separate and distinct roles. The Australian Government should set the Nationally Determined Contributions (NDCs). States and regulators should support delivery of the nationally set target and avoid any overlap or duplication.

“ Australia should continue to engage with the international community to pursue environmentally effective and economically efficient climate change policies ”

3 Australia’s international competitiveness should be enhanced

The Australian Government should pursue climate policies that maximise growth in jobs and investment. 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.

As part of its international engagement, Australia should:

- Continue to pursue economically efficient climate change policies, including the development of international accounting of greenhouse gases and offset markets, e.g. through Article 6 of the Paris Agreement.
- Support the use of its gas resources to assist in the decarbonisation pathways of other countries by promoting its LNG export sector in trade negotiations.

4 Universal access to affordable, reliable, sustainable and modern energy must be achieved

Australia’s policy response should recognise:

- UN Sustainable Development Goal 7¹ to ensure universal access to affordable, reliable, sustainable and modern energy—noting that increasing global population and urbanisation are generating 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 as we continue to move towards a low-carbon economy.



Australia’s Cleaner Energy Future 3

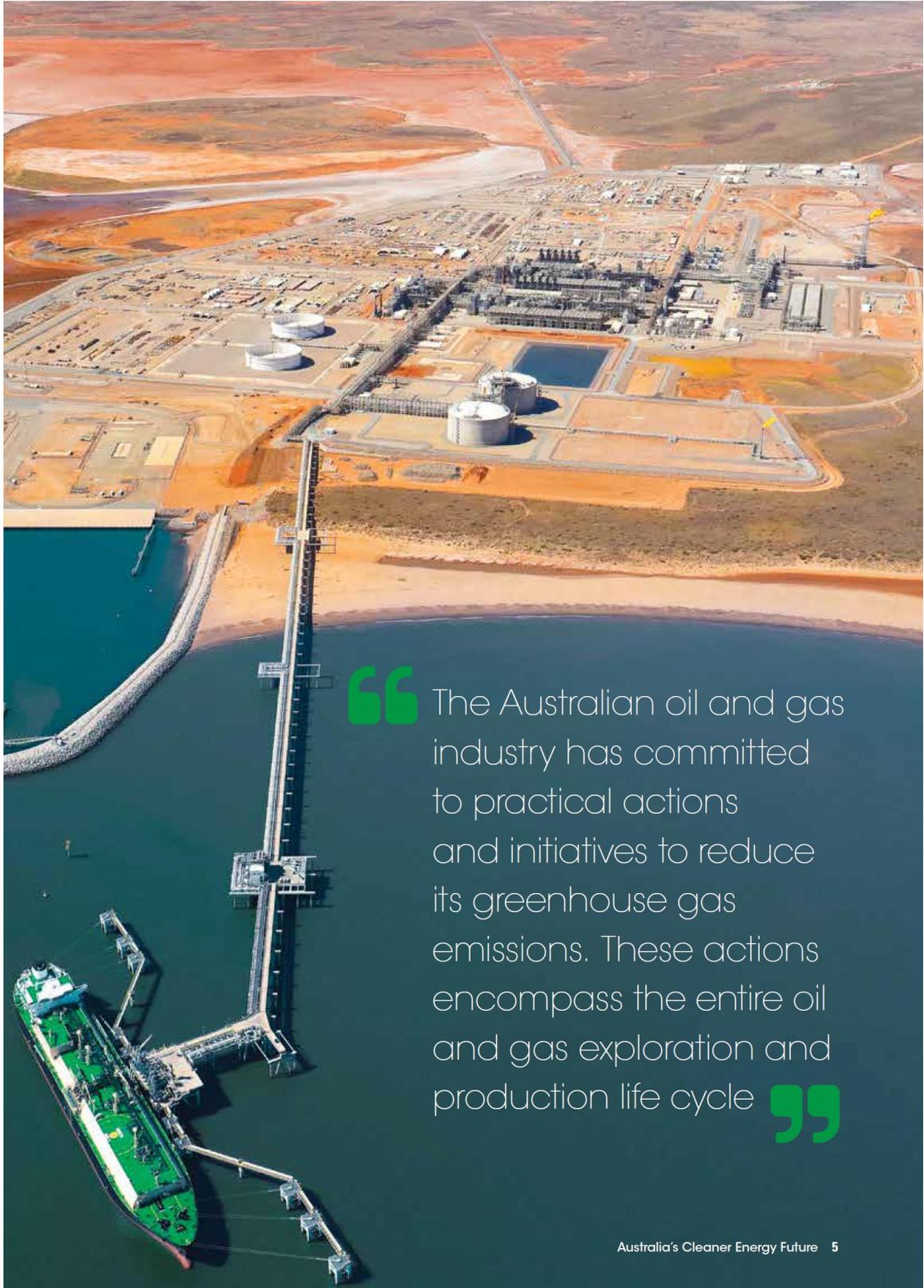
Commitment to action

The Australian upstream oil and gas industry has a long history of engagement in the discussion around the most effective and efficient policy measures to reduce global greenhouse gas emissions.

APPEA's role in that process is to provide a forum where member companies can engage and share information on the initiatives each company is undertaking to generate greater collaboration and action across the industry. While there are some common approaches amongst many APPEA members, individual members are free to pursue initiatives that best meet the needs of their business and its investors and stakeholders.

The APPEA website (www.appea.com.au) provides up-to-date information on individual member initiatives. Reference should also be made to the individual APPEA member company websites.





“ The Australian oil and gas industry has committed to practical actions and initiatives to reduce its greenhouse gas emissions. These actions encompass the entire oil and gas exploration and production life cycle ”

Australia's Cleaner Energy Future 5

Natural gas:

Integral to a low-carbon economy

Australia generates significant national economic, environmental and social benefits through the use of its substantial natural gas resources.

Using more natural gas in Australia's power generation and resource processing would enhance the nation's ability to meet increasing energy needs and reduce emissions.

Increasing its use can deliver immediate and substantial emissions savings. With structural changes underway in the power generation sector and growth in renewable energy technologies, natural gas is the perfect partner to intermittent renewable energy that requires 'on-call' electricity generation to manage falls in renewable output or peaks in demand. As more renewable energy is integrated into the grid, this balancing role becomes more critical.⁹





Natural gas is a highly flexible fuel with a diverse range of uses:

- Natural gas is commonly used to generate electricity, heat and steam for industries, including alumina refining and food and beverage manufacturing.⁹
- Natural gas is also a critical feedstock for industry that often cannot be substituted in producing fertilisers, cleaners, polymers and refrigerants.
- 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.¹⁰
- Natural gas is the fuel of choice for technologies that can provide a combined system electricity, heating and cooling at very high thermal efficiencies approaching 80 per cent.¹¹
- 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 per cent.¹²
- Natural gas can provide a fuel source for hydrogen made through the process of steam methane reforming (SMR), with any greenhouse gas emissions generated during SMR managed through market offset or technical abatement (such as carbon capture and storage) to offer a carbon-neutral product.¹³
- Demand for energy as part of the industrialisation of Asian economies and properties of natural gas as a lower emitting and cleaner burning fuel is driving sustained international demand for Australia's LNG exports.

Natural gas:

A key part of a cleaner energy future in Australia and in the Asia-Pacific

The role of natural gas in a cleaner energy future in Australia

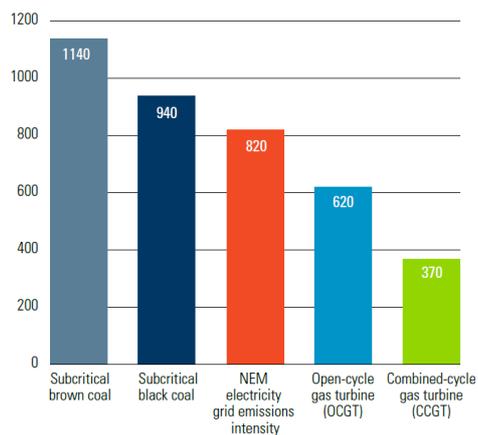
Using more natural gas in Australia's power generation and resource processing could significantly enhance the nation's ability to meet increasing energy needs and reduce emissions. These outcomes are possible because available natural gas power generation technologies can reduce greenhouse gas emissions compared to the average across the National Electricity Market and by even more compared to traditional power generation technologies.¹⁴

In addition, intermittent renewable energy requires 'on-call' electricity generation to manage falls in renewable output or peaks in demand. Gas-fired generation is a key technology capable of delivering that flexible response. As more renewable energy is integrated into the grid, this balancing role becomes more critical.

Natural gas-fired generation also has the advantage of providing long-duration energy firming. As the electricity market evolves, a portfolio of energy storage and firming options will be required which will likely include natural gas-fired generation, hydro and batteries.

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.

Estimated operating emissions for new coal and gas-fired power stations (kg CO₂-e/MWh)



Source: Data from *Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future* (2017).





The role of natural gas in a cleaner energy future in the Asia-Pacific

Australia's resources of natural gas and proximity to growing markets make us well placed to meet the global climate change challenge while substantially contributing to Australia's economic growth.

While the demand for energy as part of the industrialisation of Asian economies is a key driver, the properties of natural gas as a lower emitting and cleaner burning fuel is also driving much of the international demand for LNG.

There are three key drivers for international LNG demand:¹⁵

- Increasing energy needs as nations develop.
- Emissions and air quality challenges from the alternative energy sources currently available to meet that demand.
- The need for energy security.

The use of Australian LNG by our key trading partners can help improve air quality, reduce greenhouse gas emissions and improve energy security.

A landmark report by the CSIRO's Gas Industry Social and Environmental Research Alliance (GISERA) confirmed the greenhouse gas emissions benefits from increased use of natural gas in domestic and export markets. The report¹⁶ analyses whole-of-lifecycle greenhouse gas emissions, including extraction, transportation and usage of natural gas in Queensland's Surat Basin.

This is the first time estimates of lifecycle greenhouse gas emissions associated with an operating Queensland LNG project in Australia have been used—and provides data about the benefits of natural gas for electricity generation. The report presents a comparison of greenhouse gas emissions from electricity production in Australia from Queensland thermal coal or natural gas derived from CSG operations. Its findings show a reduction in emissions of up to 50 per cent when the full lifecycle of greenhouse gas emissions from all parts of the supply chain is incorporated.

The report found:

... considerable climate benefits are possible where natural gas replaced coal for electricity generation; particularly in developing countries.

A similar lifecycle analysis was performed by Environmental Resource Management (ERM),¹⁷ and peer reviewed by CSIRO, and shows the development of the Browse and Scarborough projects could avoid 650 million tonnes of CO₂-e in greenhouse gas emissions between 2026 and 2040 by replacing higher emission fuels in countries that import Australian gas.

The report found:

... increasing natural gas contributes to lower greenhouse gas (GHG) emissions when it replaces the burning of coal and oil for power generation, as well as combustion for heat. In Europe, the USA and China, increasing consumption of natural gas has substantially contributed to lower GHG emissions ...

The role of technology in reducing greenhouse gas emissions

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 Australian oil and gas industry has its own emissions reduction journey. The industry also works both in Australia and around the world directly and in partnership with others to accelerate the development of low emissions technologies with the potential to deliver step-change emissions reductions from the processing and use of our products over a longer time horizon.

Two examples as part of this broader range of technologies and emissions reduction activities and initiatives¹⁸ include carbon capture and storage and hydrogen.



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The role of carbon capture and storage (CCS) in a cleaner energy future

CCS is already well established as a safe, large-scale permanent greenhouse gas emissions abatement solution and is seen in several scenarios, like some IPCC scenarios, essential to achieve global climate goals. In those scenarios, acceleration of CCS deployment to reach capacity of more than two billion tonnes per annum by 2040 is essential.¹⁹

Australia has a natural competitive advantage to implement CCS with known high quality, stable geological storage basins, existing infrastructure, world-class technical expertise and regulatory regimes (environment protection, carbon accounting and reporting, financial services).²⁰

Australia needs low cost carbon abatement to maintain its position as a leading energy exporter and ensure international competitiveness in a lower-carbon future. With scale and experience, the cost of CCS will decrease, creating the potential to deliver competitive, large-scale abatement for existing industries and new industries such as hydrogen and ammonia.

Just as LNG exports are playing an important role in reducing global emissions, CCS in Australia can play an important role in securing the future of Australia's oil and gas industry in a cleaner energy future.

February 2021



Natural gas is a pathway to a large-scale and innovative commercial hydrogen industry

An Australian hydrogen industry and a local market could generate significant opportunities for the country. Australia's upstream oil and gas industry is well placed to assist in the development in one of the pathways²¹ to a large-scale and innovative commercial hydrogen industry. This is both in using natural gas to produce hydrogen and using gas infrastructure to process and transport hydrogen.

Australia's LNG export success story means the Australian upstream oil and gas industry has the technology, expertise, commercial and trade relationships to make, in particular, hydrogen exports a reality. This means Australia is well placed to capitalise on our already abundant natural advantage. Hydrogen is already being produced from Australian LNG exports.

Developing a local hydrogen industry could enable lower emissions both in Australia and internationally, reduce energy costs, deliver energy security, together with new employment and manufacturing opportunities.

The Australian oil and gas industry has a key role to play in a cleaner energy future, both in Australia and globally

APPEA supports a national climate change policy that delivers greenhouse gas emissions reductions, consistent with the objectives of the Paris Agreement, and applies a broad-based price signal on emissions to facilitate broad-based investment decisions at lowest cost to the economy.

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.
- Promote development of lower emissions technologies, such as carbon capture and storage and hydrogen.
- 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 60 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 about 140 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. APPEA also hosts conferences each year to exchange ideas and contribute to the development of the industry's policy positions.

Vision APPEA's vision is 'Energy for a Better Australia'.

Purpose To be the effective voice of the oil and gas industry on the issues that matter, working collaboratively with industry and the community.

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Endnotes

- 1 For more information and for a copy of the *Industry Action on Emissions Reduction* report, see www.appea.com.au.
- 2 UNFCCC (2016), The Paris Agreement (available at unfccc.int). Australian ratified the Paris Agreement in November 2016.
- 3 Article 4.1 of the Paris Agreement states 'In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognising that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.'
- 4 IPCC (2018), *Global Warming of 1.5°C, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*, IPCC, Geneva, Switzerland (available at www.ipcc.ch).
- 5 A number of APPEA members have set net zero emissions targets.
- 6 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).
- 7 See sdgs.un.org for more information on the United Nations Sustainable Development Goals (SDGs) and for more information on SDG7 (Ensure access to affordable, reliable, sustainable and modern energy for all).
- 8 Natural gas-fired generation also has the advantage of providing long-duration energy firming. As the electricity market evolves, a portfolio of energy storage and firming options will be required which will include natural gas-fired generation, hydropower and batteries.
- 9 See also *Natural Gas: Essential for Australian Manufacturing* at www.appea.com.au.
- 10 See for example, Dr Alan Finkel, Australia's Chief Scientist, National Press Club Address, 12 February 2020 (available at www.chiefscientist.gov.au).
- 11 These technologies are already being deployed in commercial buildings in Australia (see cogentenergy.com.au and www.qantas.com.au for examples).
- 12 Recently there have been significant advances in ceramic fuel cells that run on natural gas, with a range of commercially available products now on the market.
- 13 See www.energyinformationaustralia.com.au for more.
- 14 Commonwealth of Australia (2017), *Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future*, June, page 203 (available at www.energy.gov.au). Data from the report shows natural gas power generation technologies can reduce emissions by 68 per cent compared to current brown coal generation technologies and by 61 per cent compared to current black coal generation technologies.
- 15 For example, the International Energy Agency's *World Energy Outlook* has found the use of natural gas is expected to grow consistently over the outlook period (to 2040) under all scenarios. See www.iea.org for more information.
- 16 See CSIRO Energy (2019), *Whole of Life Greenhouse Gas Emissions Assessment of a Coal Seam Gas to Liquefied Natural Gas Project in the Surat Basin, Queensland, Australia* Final Report for GISERA Project G2 (report authors Heinz Schandl, Tim Baynes, Nawshad Haque, Damian Barrett and Arne Geschke), July (available at gisera.csiro.au).
- 17 See ERM (2020), *Comparative Life Cycle Assessment: Browse and Scarborough* (report authors Paul McConnell, Tim Grant) April (available at www.erm.com).
- 18 See APPEA (2020), *Industry Action on Emissions Reduction*, for more information. The report highlights through a series of case studies the range of the practical actions and initiatives undertaken by the oil and gas industry to reduce its greenhouse gas emissions. These actions encompass the entire oil and gas exploration and production lifecycle (see www.appea.com.au).
- 19 For further information, see www.globalccsinstitute.com.
- 20 Australia is already home to the largest commercial CCS project in the world, the Gorgon Carbon Dioxide Injection Project, located in northern Western Australia. The injection project is expected to capture between 3.4 and 4 million tonnes of CO₂-e per annum. It is expected to store more than 100 million tonnes over the life of the project. See australia.chevron.com for more information.
- 21 Alongside hydrogen production from renewable energy sources, where Australia also has significant opportunities.



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