



Independent Expert Scientific Committee
on Coal Seam Gas and Large Coal Mining Development

2018–2019 **Annual Review of Activities**

An overview of the activities of the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development from July 2018 to June 2019



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Images

Front cover: Wetlands near Noosa Heads, with Mount Tinbeerwah in the background.

Back cover: Reflections on the lake at the Hunter Wetlands Centre. Location: Shortland Wetland.

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1. From the Chair

I am pleased to present the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) Annual Review of Activities 2018–2019.

We provided advice on 11 project proposals during this period. Since the establishment of the interim committee in 2011 the IESC, at the time of writing, has provided 121 pieces of advice to regulators on the water-related impacts of coal seam gas and large coal mining developments.

We continue to meet with a wide range of stakeholders such as government agencies and environment, community and industry groups through meetings, workshops, roundtable sessions and site visits. These consultations provide further opportunities to improve stakeholders' understanding of the IESC's role and function and are also an important opportunity for the IESC to understand and gain feedback on organisation- or sector-specific issues, to improve information provided in requests for advice and Environmental Impact Assessments, and to continually improve the way we work.

I am pleased to report that three Explanatory Notes, on significant topics raised during requests for advice, have been developed and released this year. Explanatory Notes provide important guidance and information to assist proponents with specific components of Environmental Impact Assessments.

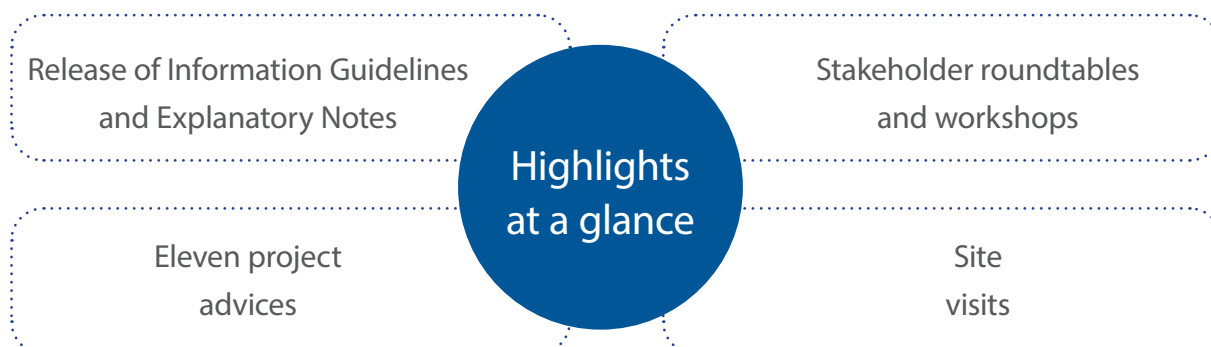
On behalf of the IESC, I thank the Australian Government Department of the Environment and Energy's Office of Water Science (OWS) for its continued support, scientific expertise and dedication in assisting our work.

We are eager to continue engaging with interested parties and look forward to providing valued independent scientific advice to the Australian and state government regulators in the year ahead.



Dr Chris Pigram AM, FTSE
IESC Chair

2. Executive summary



Advice to regulators

The primary role of the IESC is to provide expert scientific advice on the water-related impacts of coal seam gas and large coal mining development proposals to the Australian and state government regulators. In 2018–19 the IESC provided advice on one coal seam gas proposal in Queensland and 10 proposed coal development projects in New South Wales and Queensland.

IESC Industry Workshop

In June 2019 we held an industry roundtable discussion in Sydney to provide an opportunity for the coal resource industry to share their challenges and leading practices in developing Environmental Impact Statements.

Site visits

The IESC undertook several site visits to increase our understanding of site operations and of rehabilitation and environmental management activities. Sites visited were the Yallourn and Hazelwood mines in Victoria and the Woleebee Creek coal seam gas project near Roma and the Jeebropilly open cut coal mine near Ipswich, both in Queensland.

Engagement activities

The IESC continued to engage directly with regulators, industry, researchers and interest groups to explain our role and review how advice is adopted in regulatory decisions. Our engagement activities also included targeted consultation on Explanatory Notes.

Information Guidelines and Explanatory Notes

The IESC Information Guidelines describe the types of information proponents need to provide in assessment documentation to enable the IESC to understand, consider and provide advice on the potential impacts of development proposals on water resources.

A range of Explanatory Notes have been developed and released to support the Information Guidelines by providing guidance and up-to-date scientific methodologies and tools for specific components of Environmental Impact Assessments.

3. The IESC

The IESC consists of eight members, appointed on a part-time basis by the Australian Government Minister with responsibility for the environment. Each of them has extensive scientific qualifications and expertise in geology, hydrogeology, hydrology, ecology or ecotoxicology.



IESC members

IESC members' individual expertise

(Photo: left to right)

Associate Professor Rory Nathan—Hydrology

Dr Jenny Stauber—Ecotoxicology

Dr Andrew Boulton—Ecology

Professor Wendy Timms—Hydrogeology

Dr Chris Pigram (Chair)—Geology

Professor Joan Esterle—Geology

Professor Craig Simmons—Hydrogeology

Professor Jenny Davis—Ecology

Further information: <http://www.iesc.environment.gov.au/about-us/committee-members>

New members

On 1 July 2018 the former Assistant Minister for the Environment, the Hon Melissa Price MP, appointed two new members to the IESC.

Professor Jenny Davis brings over 30 years' experience of freshwater ecology to the IESC. Professor Davis has published more than 200 works, including books, peer-reviewed scientific papers and technical reports. She was the Interim Dean of the College of Engineering, IT and Environment at Charles Darwin University and is a member of the National Committee for Ecology, Evolution and Conservation.

Associate Professor Rory Nathan provides over 35 years' experience in engineering and environmental hydrology and is currently Associate Professor of Hydrology and Water Resources at the University of Melbourne. He has made a substantial contribution to industry best practice in a range of engineering and environmental fields, particularly in the characterisation of hydrologic risk, the assessment of hydrologic impacts, and hydrologic model development and application.



Jenny Davis



Rory Nathan

The appointment of new members included the reappointment of Dr Andrew Boulton and followed the conclusion of the terms of members Dr Ian Prosser and Dr Glen Walker.

4. IESC meetings

The IESC met nine times during 2018–19. The purpose of the meetings was to prepare scientific advice in response to requests from government regulators and to increase our collective scientific understanding of the water-related impacts of coal resource development.

The minutes from each meeting are available on the IESC website:

<http://www.iesc.environment.gov.au/committee/committee-meetings-and-workshops>

Meeting 54

25–26 July 2018

Canberra

The IESC provided advice on the Central Queensland Coal Pty Ltd and Fairway Coal Pty Ltd Central Queensland Project.

Ms Hayley Richards (Executive Director, Chief Minister's Department) presented, for information purposes only, on the Northern Territory Government's next steps following the release of the Scientific Inquiry into Hydraulic Fracturing final report.

Dr Damian Barrett (CSIRO) presented on the recent work of the Gas Industry Social and Environmental Research Alliance (GISERA).

Meeting 55

30–31 August 2018

Melbourne

The IESC provided advice on the MRA2C Project South Walker Creek Open Cut Mine.

The IESC discussed and agreed to the proposed IESC Stakeholder Engagement Action Plan for 2018–19.

The IESC undertook site visits to the Yallourn and Hazelwood mines during its time in Victoria.

Meeting 56

3–4 October 2018

Brisbane

The IESC provided advice on the Olive Downs Project.

Discussion took place on environmental tracers and faults in groundwater modelling.

A Queensland regulator workshop was held during the IESC's time in Brisbane.

Meeting 57

6–8 November 2018

Canberra

The IESC provided advice on the Maxwell Coal Mine Project, the Middlemount Coal Mine Western Extension Project and the Vickery Extension Project.

Mr Anthony Swirepik from the Department of the Environment and Energy provided an update on the Geological and Bioregional Assessment Program.

Meeting 58

30–31 January 2018

Canberra

The IESC provided advice on the Surat North Coal Seam Gas Project in Queensland.

The IESC discussed its research priorities to bridge knowledge gaps and meet emerging knowledge needs.

A Commonwealth regulator workshop was held during the IESC's time in Canberra.

Meeting 59

6–7 March 2019

Canberra

The IESC provided advice on the Tahmoor South Extension Project.

Ms Lee-Anne Shepherd from the Department of the Environment and Energy provided an update on the National Environmental Science Program.

Meeting 60

9–12 April 2019

Brisbane

The IESC provided advice on the Narrabri Underground Mine Stage 3 Extension Project.

The IESC also visited a coal seam gas site at Woleebee Creek and an open-cut coal mine at Jeebropilly.

Meeting 61

22–23 May 2019

Canberra

The IESC provided advice on the Jellinbah Central North Extension Project.

Members discussed various engagement activities and research priorities, noting the scope of the upcoming IESC Industry Workshop to be held in June in Sydney.

Meeting 62

18–20 June 2019

Sydney

The IESC provided advice on the Glendell Continued Operations Gateway Project.

Office of Groundwater Impact Assessment (OGIA) officers presented an overview of the draft Surat Underground Water Impact Report, and discussion took place on strategies for managing impacts.

The IESC Industry Workshop was held on 19 June for coal and coal seam gas industry members, to raise awareness of the IESC's role and functions and to encourage uptake of the Information Guidelines to assist with Environmental Impact Assessments.

5. Advice on coal seam gas and large coal mining development proposals

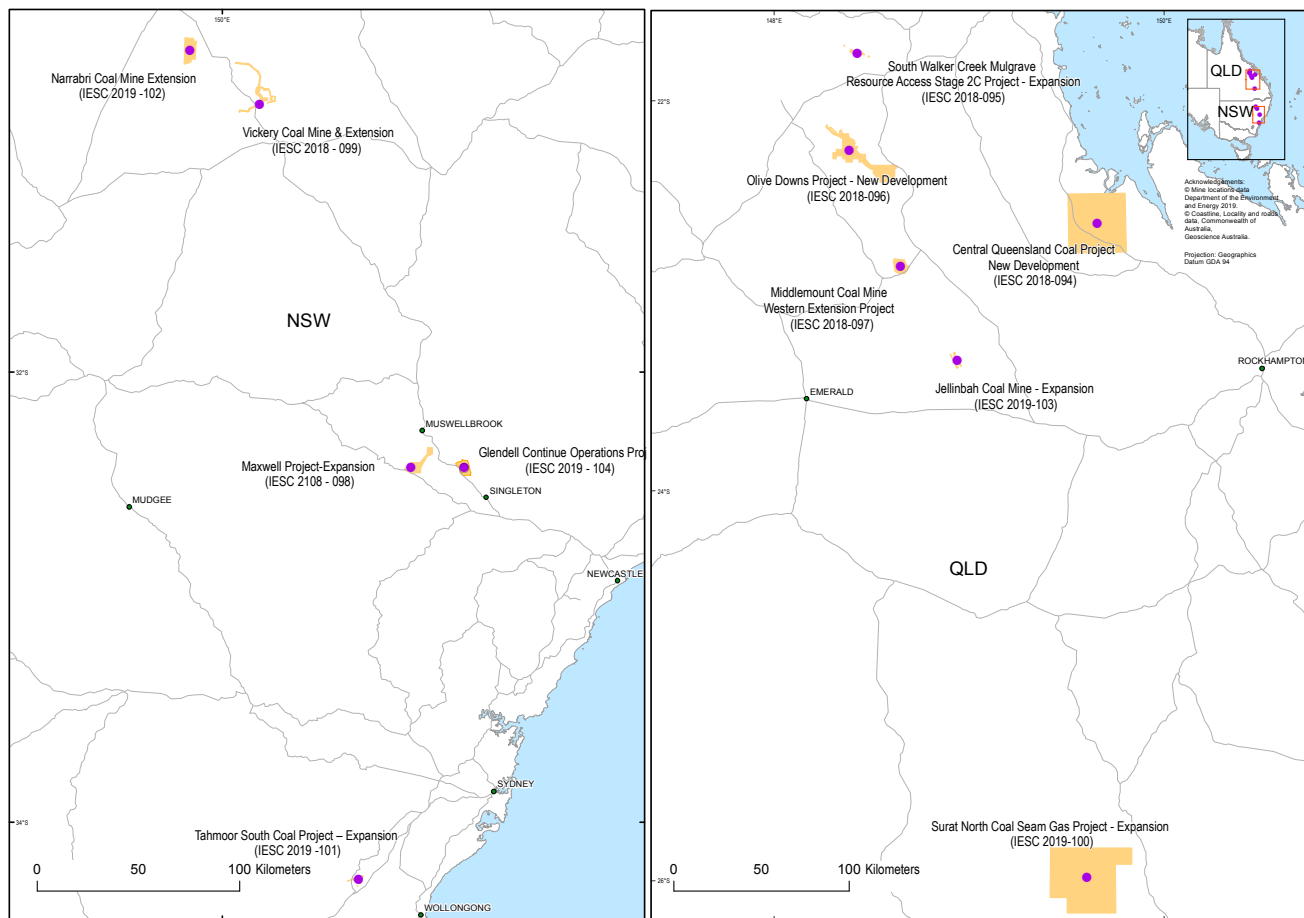
The IESC provided advice on one coal seam gas development proposal and 10 coal development proposals.

Advice from the IESC helps increase transparency and strengthens the scientific basis of regulatory decisions by identifying potential water-related impacts of coal or coal seam gas developments.

The IESC does not make decisions about whether to approve a development proposal. The Australian Government and relevant state government regulators have this responsibility.

Development proposals considered by the IESC in 2018–19

Referred by	Project name	State
Australian and Queensland governments	Central Queensland Coal Project—EPBC 2016/7851—New Development	QLD
Australian Government	South Walker Creek Mulgrave Resource Access Stage 2C Project—EPBC 2017/7957—Expansion	QLD
Australian Government	Olive Downs Project—EPBC 2017/7867–7870—New Development	QLD
New South Wales Government	Maxwell Project—Expansion	NSW
Australian Government	Middlemount Coal Mine Western Extension Project—EPBC 2017/8130—Expansion	QLD
Australian and New South Wales governments	Vickery Coal Extension Project—EPBC 2018/7649 and SSD 7480—Expansion	NSW
Australian Government	Surat North Coal Seam Gas Project—EPBC 2018/8276—Expansion	QLD
Australian and New South Wales governments	Tahmoor South Coal Project—EPBC 2017/8084—Expansion	NSW
New South Wales Government	Narrabri Coal Mine Extension—Expansion	NSW
Australian Government	Jellinbah Coal Mine—EPBC 2018/8139—Expansion	QLD
New South Wales Government	Glendell Continued Operations Project—EPBC 2019/8409—Expansion	NSW



Locations of proposed developments considered by the IESC in 2018–19

The IESC reviews information presented by the project proponent and responds to regulator questions. Its advice to regulators is informed and guided by the varied expertise of IESC members and draws on the best available scientific information, such as bioregional assessments.

The IESC considers all potential impacts on water resources in its advice. This includes the proposed project's effects on groundwater, surface water, water quality and quantity, ecosystems and ecological processes.

Advice is published on the IESC website within 10 business days of providing it to the requesting regulator.

A full list of development proposals for which the IESC has provided advice to regulators is on our website: www.iesc.environment.gov.au/advice/proposals.html

6. Engagement

The IESC continued to engage with key stakeholders to increase their understanding of how our work contributes to a stronger scientific framework for regulating coal seam gas and large coal mining developments, to obtain feedback on Explanatory Notes and to address community concerns about any potential impacts on Australia's water resources.

Chair meetings

The Chair met with over 20 individuals in five meetings across New South Wales, Queensland and the Australian Capital Territory to gain an understanding of how they use the IESC's advice, and to obtain feedback to ensure that it remains relevant and practical. Meetings were held with government, a peak industry body and environment non-government organisations.

Regulator workshops

Following feedback from regulator workshops held the previous year, the IESC implemented changes to its advice template to improve accessibility and understanding. A summary section at the beginning of each advice was also added for ease of reference.

As the IESC updated the Information Guidelines in May 2018 and developed three Explanatory Notes, it hosted workshops with Queensland and Commonwealth regulators to discuss the update, provide an overview of the Explanatory Notes and seek feedback on the update and adoption.

Feedback from these workshops was positive. In particular, regulators thought that the plain English summary and potential impacts sections improved the ability of regulators to interpret the advice and identify important potential impacts and recommendations.

IESC Industry Workshop

The first IESC Industry Workshop, with representatives from the coal and coal seam gas industries and industry peak bodies, took place on 19 June 2019. The purpose of the workshop was to increase awareness of the IESC's role and functions and encourage uptake of the Information Guidelines to improve the quality of information provided in Environmental Impact Assessments. The workshop also provided a unique opportunity for industry participants to discuss their experiences, challenges and successes in developing Environmental Impact Assessments, undertaking risk assessments and improving knowledge.

The workshop was highly successful, with both IESC members and industry representatives commending the frank, open discussions and the opportunity to exchange knowledge across the sectors. (See section 10 for more information about this event.)

Other workshops and conferences

Australian Petroleum Production and Exploration Association National Conference

The IESC released an Environmental Assessments fact sheet at the Australian Petroleum Production and Exploration Association (APPEA) conference on 28 May 2019. The fact sheet explains the commonalities and differences in function between the IESC and OGIA and also provides a shared understanding on matters where outputs from OGIA's assessment are referred to by proponents in their Environmental Impact Assessments.

IESC member Professor Joan Esterle and OGIA's Mr Sanjeev Pandey co-presented on the roles of the IESC and OGIA and on the synergies and differences between the functions and scope of their respective environmental assessments of coal seam gas and coal mining developments. APPEA attendees included representatives from the oil and gas industry, leading policymakers and senior government officials.

Further information is available on the IESC and OGIA websites:

<http://www.iesc.environment.gov.au/publications/environmental-assessments>

<https://www.business.qld.gov.au/industries/mining-energy-water/resources/environment-water/ogia>



Professor Joan Esterle presenting at the 2019 APPEA conference in Brisbane

CSIRO Cutting-Edge Science Symposium

Professor Wendy Timms represented the IESC at the CSIRO Cutting-Edge Science Symposium held in Willunga, South Australia, on 18–19 September 2018, where she presented information on the IESC's roles and functions in providing scientific advice, Information Guidelines, Explanatory Notes and research priorities.

Professor Timms also presented on 'Hydrological challenges in assessing coal and unconventional gas development—views from the ground', which covered topics including perceived versus real hydrological risks and concerns; cumulative impacts and time lags; and the potential of geological faults to act as barriers, seals or both. New developments in water tracers and specific storage measurements were discussed in the context of the need for improving conceptualisation of site processes, tracing connectivity and improving modelling approaches.

IESC workshop on the characteristics of geological fault zones

In Sydney on 14–15 February 2019 the IESC hosted a workshop on the characterisation of geological fault zones. Specifically the workshop discussed the hydrogeology and structural geology of geological fault zones, as part of scoping a future Explanatory Note.

The workshop also included discussion of how faults could fit into a risk framework as part of Environmental Impact Assessments. Data requirements for the exploration/assessment, operational and recovery phases of projects were discussed (especially in relation to implications for the coal seam gas industry), including how faults are and could be incorporated into groundwater models.

Over 50 representatives from government agencies, groundwater consultancies, academia and industry attended. The IESC would like to thank the following people for their presentations:

- Dr Victor Bense (Wageningen University and Research), The Netherlands
- Dr Ken Lawrie (Geoscience Australia)
- Professor Phil Hayes (University of Queensland)
- Dr Sebastien Lamontagne (CSIRO)
- Dr Martin Krogh (NSW Office of Environment and Heritage)
- Dr Yousef Beiraghdar (CSIRO)
- Dr Andrew Feitz (Geoscience Australia)
- Professor Jim Underschultz (University of Queensland)
- Rikito Gresswell and James Dowdeswell (GHD)
- Gerhard Schöning (OGIA)
- Titus Murray (Southern Highlands Structural Geology and FaultSeal Finance Pty Ltd).

On 28 March 2019 an additional meeting was held in Wollongong, New South Wales, for the underground coal mining industry to ensure that feedback from their perspective was considered in the development of the Explanatory Note. The meeting was led by IESC member Professor Joan Esterle. A total of 14 representatives from eight organisations attended.

A summary of the discussion from the Sydney workshop was provided to participants as an initial discussion point. The meeting then expanded on topics raised at the Sydney workshop, including existing regulatory requirements for mining which have ensured that faults are being considered in assessments, and issues associated with mapping faults.



OWS staff and attendees at the geological fault workshop



Roundtable discussions at the geological fault workshop

7. Information Guidelines Explanatory Notes

In 2018 the IESC introduced a series of Explanatory Notes to the Information Guidelines, to provide further guidance for proponents on specific components of Environmental Impact Assessments.

Topics chosen for Explanatory Notes are based on the main themes of advice provided on over 100 development proposals, with case studies and practical examples of how to present certain information where appropriate.

Each Explanatory Note focuses on a particular subject, providing a greater level of detail than the Information Guidelines. With tailored guidance, up-to-date robust scientific methods and tools for specific components of Environmental Impact Assessments included in all Explanatory Notes, they are also suitable to be applied by other resource industries.

The IESC recognises that approaches, methods, tools and software will continue to develop. The Information Guidelines and Explanatory Notes will be reviewed and updated as necessary to reflect these advances.

Summary guides have been published to provide a short, simplified version of each Explanatory Note for ease of reference.

Three Information Guidelines Explanatory Notes have been published to date.

Uncertainty analysis—Guidance for groundwater modelling within a risk management framework (published 17 December 2018)

This note complements the Australian Groundwater Modelling Guidelines. It facilitates systematic assessment of all potential groundwater impacts and provides information on the value of, and need for, uncertainty analysis. It notes some potential methods for quantifying uncertainty and establishes some guiding principles to follow when carrying out an uncertainty analysis.

Assessing groundwater-dependent ecosystems (published 8 March 2019)

This note describes the process for undertaking comprehensive modelling and assessment of potential impacts on groundwater-dependent ecosystems from coal and coal seam gas resource development. It reviews available tools and methods and gives proponents some guidance on the advantages and disadvantages of each method.

It was important to develop this note to help proponents better understand how the water trigger applies to all groundwater-dependent ecosystems, including groundwater-dependent vegetation, springs, aquifers and surface waters.

Deriving site-specific guideline values for physico-chemical parameters and toxicants (published 7 June 2019)

This note introduces the use of a water and sediment quality management framework to assist with the design of appropriate monitoring programs and site-specific guideline values consistent with the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018). It explains how to design a monitoring program and then derive site-specific guideline values for water and sediment in the context of the coal resource industry.

Explanatory Notes and summaries are available on the IESC's website at:

<http://www.iesc.environment.gov.au/publications>

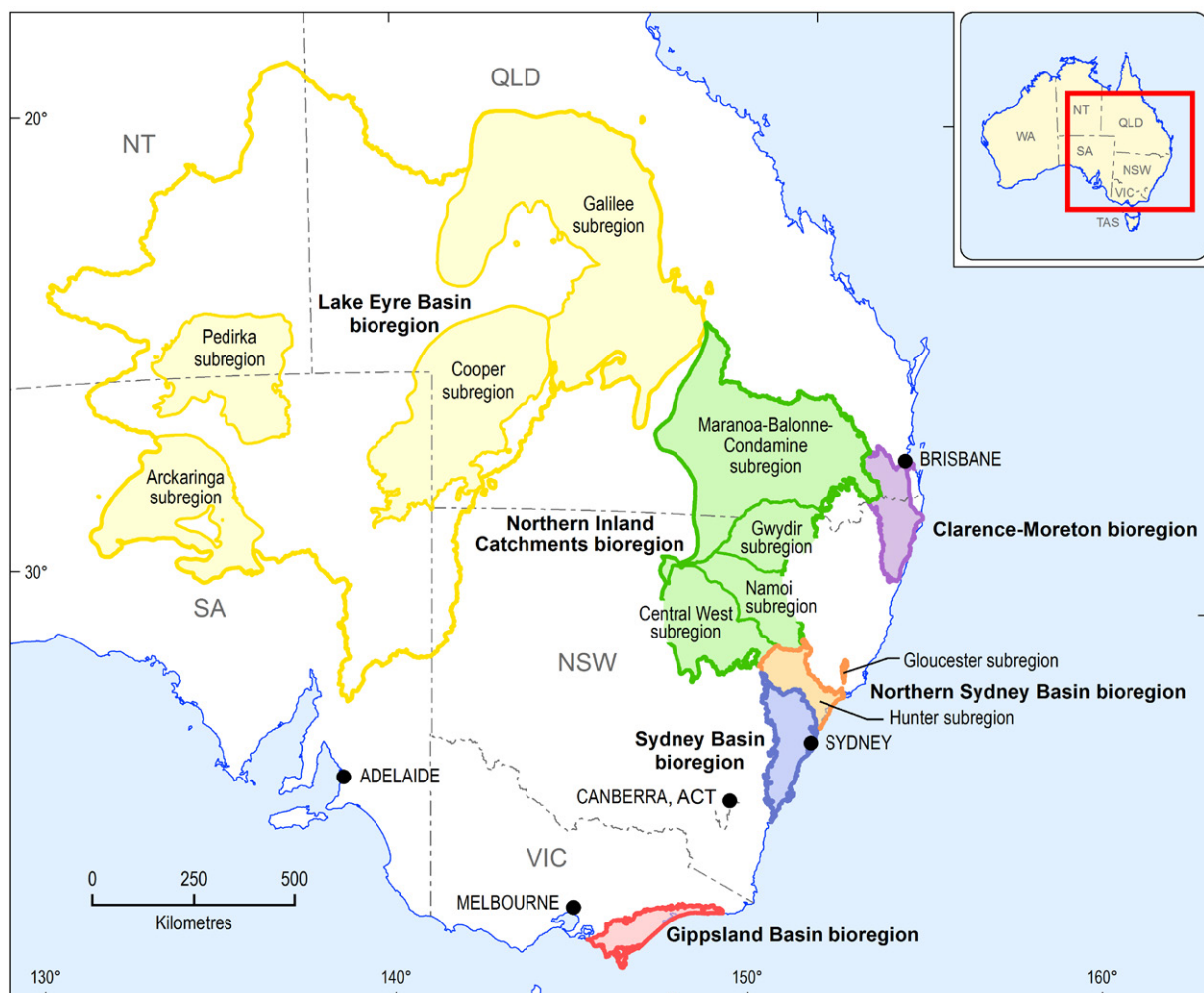
8. Bioregional assessments

Bioregional assessments provide the IESC with scientific information and independent expert knowledge on potential cumulative impacts of coal seam gas and coal mining development on water-dependent assets. The assessments are a collaboration between the Australian Government Department of the Environment and Energy, the Bureau of Meteorology, CSIRO and Geoscience Australia.

In 2018 the final bioregional assessments and related tools and information were released for the Galilee and Namoi subregions.

The Bioregional Assessment Explorer mapping tool displays results of the bioregional assessments for the Galilee, Gloucester, Hunter, Maranoa–Balonne–Condamine and Namoi subregions:

<https://www.bioregionalassessments.gov.au/ba-explorer>



Areas where bioregional assessments were conducted

Gippsland Basin Bioregion

The Gippsland Basin Bioregion is in south-eastern Victoria and includes the area between the foothills of the Great Dividing Range to the north, and the Bass Strait coast to the south. The offshore part of the Gippsland Basin is not included in the bioregion.

The assessment investigated potential changes in groundwater from the proposed expansion of the Yallourn, Loy Yang (now redundant) and Hazelwood mines. Models project changes to groundwater for an area of 1677 square kilometres, peaking in around 2072, with reduction in the annual baseflow of 78 megalitres predicted in the Latrobe River. This is approximately 0.02% of the mean annual flow. The maximum potential changes within this area are expected to be localised near the mines.

Galilee subregion

This Bioregional Assessment considered potential cumulative impacts on water and water-dependent assets due to future coal resource development in the Galilee subregion of the Lake Eyre Basin bioregion in central Queensland. Seven of the 17 additional coal resource developments had sufficient available information to be modelled.

The assessment found cumulative hydrological changes in the Belyando river basin are very likely (greater than 95% chance), and extend farther than previously predicted from impact assessments of individual mines.

Potential impacts to groundwater, surface water and water-dependent assets are mostly restricted to the Belyando and Suttor river basins, near the seven modelled coal mines. Of the 241 ecological assets potentially impacted due to modelled additional coal resource development, 148 are considered 'more at risk of hydrological changes' relative to other assets. These include potential habitat of 12 threatened species and two threatened ecological communities listed under the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Namoi subregion

Located in the Murray-Darling Basin in north central New South Wales, the subregion lies in the Namoi river basin, which includes the Namoi, Peel and Manilla rivers. Its largest towns are Gunnedah, Narrabri and Walgett. The subregion covers 29,300 square kilometres however the total area investigated was 35,660 square kilometres.

This assessment considered a coal seam gas project in the area and the baseline future which comprises six existing coal mines: five open-cut and one longwall. The ten additional coal resource developments comprise three expansions to coal mines, six new coal mines and one coal seam gas development. Eight of these ten coal resource developments had sufficient information for hydrological modelling.

Regional-scale hydrological modelling indicates that an area of 2299 square kilometres could experience groundwater drawdown due to modelled potential new coal resource developments. The modelling suggests that Back Creek, Merrygowen Creek and Bollol Creek are very likely (more than 95% chance) to experience changes in their flow regime. Changes in the streamflow of the Namoi River are predicted to be minimal.

About 5521 kilometres of streams and 1415 square kilometres of water-dependent ecosystems are in the area potentially affected by changes in groundwater or surface water. Further analysis is needed to determine the level of risk to these ecosystems. Potential hydrological change could not be quantified in 3629 kilometres of streams in the area potentially affected by changes in groundwater or surface water.

Further information is available at: <https://www.bioregionalassessments.gov.au/ba-explorer>

9. Research

While the specific Australian Government funded research program has finished, the IESC shared previous updated research priorities more widely as a resource to help organisations develop future research plans and priorities. We continue to look for opportunities for collaborative partnerships to achieve these goals.

10. IESC Industry Workshop

The IESC held its first Industry Workshop, with over 20 representatives from the coal and coal seam gas industries and industry peak bodies, on 19 June 2019. The purpose of the workshop was to increase awareness of the IESC's role and functions and encourage uptake of the Information Guidelines to improve the quality of information provided in Environmental Impact Assessments.

Presentations and plenary and table discussions on particular themes provided a unique opportunity for industry to discuss their experiences, challenges and successes in developing Environmental Impact Assessments, undertaking risk assessments and improving knowledge in a participatory process with open, respectful and constructive dialogue.

The workshop provided a valuable opportunity for the IESC members to listen to industry and increase their understanding of industry perspectives and priorities.

Key discussion topics included:

- how to address risk in the context of the protection and management of water resources and water-dependent ecosystems
- opportunities for enhancing data collection
- primary knowledge gaps when considering Environmental Impact Assessments and risk analysis processes
- opportunities for better alignment and integration with other research.

Participants provided positive feedback on the facilitation of open engagement, useful knowledge exchange and networking at the workshop. Many appreciated the opportunity for candid discussion with the IESC and encouraged their continuing engagement.

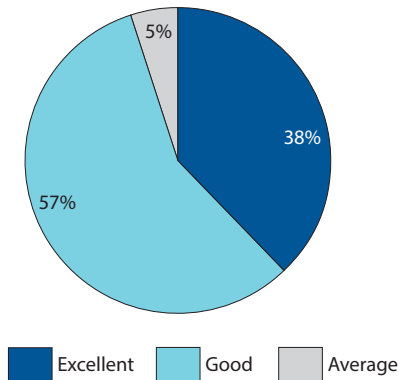


Dr Chris Pigram, Chair of the IESC, welcomes the participants and introduces the role of the IESC

Ratings for the workshop

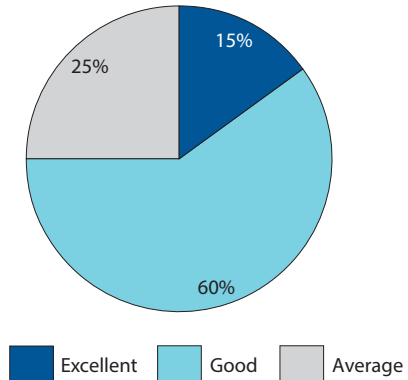
Participants indicated that their understanding of the Information Guidelines increased from an average rating of 6 out of 10 before the workshop to an average of 7.5 out of 10 after the workshop.

How did you rate this workshop



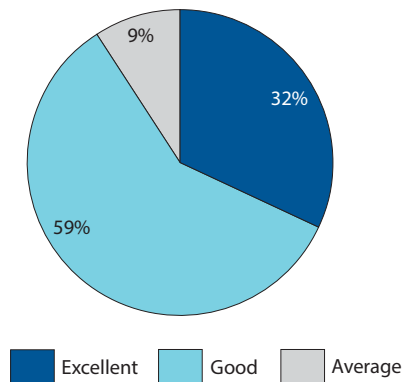
95% of respondents rated the workshop excellent or good

The workshop was relevant to my work on research and knowledge improvement



75% of respondents rated the workshop excellent or good

The workshop was relevant to my work on Environmental Impact Statement and risk assessment processes



91% of respondents rated the workshop excellent or good

The IESC will follow up some of the suggestions from participants on future workshop opportunities and topics. We would like to thank all those who attended the workshop, particularly the presenters:

- Mr Richard Walsh (South32)
- Mr Mark Garrahy (BHP)
- Mr Peter Corbett (Centennial Coal)
- Mr Tor McCaul (Comet Ridge Limited).

11. Site visits

The IESC participated in a number of site visits, focusing on water resource and rehabilitation activities enabling members to gain a firsthand understanding of these issues.

The IESC would like to thank staff at all sites for taking time out of their busy days to show members around the various facilities and to answer their questions.

Latrobe Valley

In August 2018, IESC members visited the Yallourn and Hazelwood mines in the Latrobe Valley, which are part of the Gippsland Basin bioregion. The Gippsland Basin has the largest brown coal resources in Australia, with the onshore margins of the basin containing an estimated 100 billion tonnes of brown coal.

The Latrobe Valley Mine Rehabilitation Commissioner joined the site visit and briefed the IESC on the Latrobe Valley Regional Rehabilitation Strategy and the work of the Latrobe Valley Mine Rehabilitation Advisory Committee.

Yallourn mine

The Yallourn mine site visit in August 2018 focused on environmental management activities related to the protection of water resources and the mine rehabilitation program, which has been progressing towards a final rehabilitation plan. This will involve a pit lake with interconnection to the local rivers and will incorporate grasslands, woodlands and wetlands.

The IESC found the site visit very informative, in particular the tour of the site and discussions with the mine rehabilitation and project managers.

Hazelwood mine

The site visit and tour of the Hazelwood mine in August 2018 focused on environmental management activities related to the protection of water resources and the mine rehabilitation program following the closure of Hazelwood power station in March 2017.

Now referred to as the Hazelwood Rehabilitation Project, the activities on site focus on decommissioning and rehabilitating the power station block and mine. Planning for final rehabilitation of the mine is underway, with significant earthworks and bucket-wheel excavation activities focused on safe, stable and sustainable outcomes for the site. Work is also underway to remove mining infrastructure and decommission the former power station.

The IESC learned about management of the site and options for rehabilitation. A presentation outlining the process for evaluation of rehabilitation options was informative.

Woleebee Creek coal seam gas site

In April 2019 the IESC visited the QGC Northern Operations coal seam gas site at Woleebee Creek, near Roma in Queensland, to learn more about coal seam gas impacts on water resources.

Presentations were given on the Northern Operations site and on gas and water production in the Surat Basin, with detailed information on well site layouts, gas processing and integrated water management processes.

The site visit included operations and project areas such as water and gas processing plants, water treatment ponds, coal seam gas well sites and the drone launching area.



IESC members visiting Woleebee Creek coal seam gas operations with QGC and OWS staff © Joshua Millroy, QGC Shell



View of water treatment ponds, QGC Woleebee Creek site, Queensland

Jeebropilly open-cut coal mine

The day after the site visit to Woleebee Creek, IESC members visited the Jeebropilly coal mine in the Clarence–Moreton area of Queensland. Coal is obtained from the Walloon Coal Measures seams (multi-thin-seaming) in an open-cut process.

Staff at the mine provided very informative presentations on the history of mining in the area and the rehabilitation work already undertaken at previous sites. As the Jeebropilly mine is due to close at the end of 2019, progressive rehabilitation and infrastructure removal is being undertaken. The IESC was advised that working with the community is an important part of the mine's transition and much is being done to assist workers and their families in the area.

The visit included viewing work undertaken on the final open-cut mine site at Jeebropilly, water management processes, and rehabilitation work at the closed New Oakleigh mine site to gain a firsthand understanding of the scope of work in progress and the effect on water resources.

The IESC found the visit interesting and informative and very much appreciated the efforts of the mine site staff who spent time on the presentations and tours.



The closed New Oakleigh mine site near Rosewood, Queensland, following rehabilitation work



Australian Government

This initiative is funded by the Australian Government

www.iesc.environment.gov.au