



**Friends of
the Earth
Australia**

Reply to: [REDACTED]

Friends of the Earth
312 Smith St
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To whom it may concern:

Thank you for this opportunity to lodge a submission into the independent review of the EPBC act's water trigger.

Friends of the Earth Australia is a federation of autonomous local groups across Australia who are working towards an environmentally sustainable and socially equitable future.

We campaign on today's most urgent environmental and social issues, with our diverse member-constituency and alongside communities that include farming and rural people, traditional owners and city-dwellers. This includes current campaigns on water allocation in the Murray-Darling basin, and mining projects across the country including proposed coal and unconventional gas mining developments.

Please find our response to the review's Terms of Reference below.

The appropriateness of the regulation including whether it is necessary and well targeted.

1. Community concern regarding the impact of new mining projects on water systems.

Friends of the Earth Australia believe that the water trigger has been a crucial addition to the EPBC act. Its addition came as a result of high levels of community concern about the potential impact of new coal and unconventional gas projects, and it has the potential to play an important role in safeguarding our vital water systems.

Unconventional gas mining has a growing reputation for impacting water systems above and below ground. Coal Seam Gas, currently addressed under the water trigger, requires the removal of significant amounts of underground water for extraction. Already in Coal Seam Gas fields in the United States and Queensland extraction has been found to deplete and even dry bores used in regions for domestic, stock and industrial use, and deplete water available for the replenishment of natural environmental systems.

This water removal can also upset the hydrology of a region, causing movement of water underground that can result in reduction in water quality and availability.

Coal Seam Gas projects are also recognised to have significant potential to adversely affect water quality, be it through contamination of water systems with methane, hydraulic fracturing chemicals, naturally occurring toxic contaminants or cross-aquifer contamination.

Shale and Tight Gas mining, not currently addressed under the water trigger, have also increasingly been found to impact local water systems. In the United States of America, the state of Pennsylvania has reported over 243 cases of water contamination as a result of unconventional gas extraction processes.

While not as much water is extracted via dewatering, water contamination has been found to be a significant problem for people living in areas of shale and tight gas extraction, and experts believe this contamination risks will increase as well casings deteriorate over time.

Wastewater treatment processes associated with unconventional gas projects have also been found to impact the integrity of local water systems. Already here in Australia we have had incidents where wastewater holding ponds have failed, leaching contaminants into aquifers or into above ground water systems, such as SANTOS' Coal Seam Gas project in the Pillaga State Forests, New South Wales.

Coalmines, too, have potentially devastating impacts on water systems.

Huge areas of New South Wales and Queensland have been earmarked for coalmine developments that could see significant aquifer depletion, contamination and interruption of water catchments.

Coalmine developments in the Sydney region, for example threaten catchments that provide water for drinking and other uses to hundreds of thousands of people.

Coalmine proposals, in Victoria, New South Wales and Queensland sit adjacent to or within our most valuable farmlands, jeopardising water availability and quality in those regions. Not only could these leave agricultural producers without water for food production, questions around water quality could impair the market reputation of local good growers, leaving local economies vulnerable.

On a continent as dry as Australia, caretaking of our water systems is essential to the safeguarding of our social and economic future. Our water systems are of integral importance not only to our environmental systems, but also to our industries, communities, human and animal health. Increasing threats of climate change, including predicted drops in average rainfall and more frequent drought events will put our water systems under even more stress, and it is in this light that we see coal and unconventional gas mining projects to be competing two fold with our water systems.

It is essential that the maintenance of the health of our water systems is core to decision making of any approval of development. Ensuring a robust water trigger within a federal approvals process such as the EPBC act creates another safeguard by which the integrity of our water systems can be ensured, and prioritised over short term and limited economic benefits of unconventional gas and coal mining projects.

2. The importance of the water trigger within the EPBC act

Friends of the Earth believe that the EPBC act is an important place for a safeguard like the water trigger.

The EPBC act offers us particular perspective in the approvals process. The act has always offered important oversight of state-based projects on environmental grounds. It offers comprehensive assessment of environmental impact above and beyond state-based environmental impact statements, and offers ministerial review of the larger social and cultural impacts of environmental degradation.

It also offers us the significant resources of the IESC committee to help us understand the broader impact of a project on integrated water and geological systems. The soon to be completed bio-regional assessments, for instance, will offer us unique insight into the potential impact of projects region-wide.

3. The importance of federal oversight

We believe that federal oversight over the impact on water systems is important for a number of reasons.

Firstly, we believe that state governments are not currently well placed to assess the broader implications for water systems of large-scale unconventional gas and coalmine developments. Water systems do not respect state boundaries, and the impacts of coal and gas mining on water systems can be cumulative and region-wide.

Already, we recognise that water management must be considered within a national context, and we do so in the management of many of our large water resources such as the Murray Darling, Lake Eyre or Great Artesian basins.

Coal or unconventional gas developments have the potential to impact the hydrology of a region significantly. The cumulative effects of a number of these

projects could be significant, and perhaps affect water systems interstate, outside a state's jurisdictions. Underground water travels huge distances over decades, with interconnections and through processes we simply do not currently understand. We have significant concerns that the scope and intensity of proposed coal and unconventional gas projects could threaten water systems of national significance. A federal body has the power and scope to consider these impacts.

We also believe the water trigger allows for approvals to be tested for the 'national interest'. While state's may be blind-sighted by promises of mining royalties, a federal government body can see the impact of water degradation on entities of national significance, be they rural, agricultural or tourism industries, or landscapes and environmental treasures.

The water trigger is a therefore crucial piece of legislation uniquely placed to consider State and Territory assessments and determination processes for coal mining and unconventional gas.

2: Effectiveness of the regulation in protecting water resources from the impacts of coal seam gas and large coal mining projects, including the role and scope of work given to the IESC

While we believe that the water trigger is well-placed to protect water resources from inappropriate project approvals, we do note that to date in many cases its application has not provided what we believe to be adequate protection to water systems.

As the issues statement states, 23 projects have been granted ministerial approval despite them being deemed to have significant impact on water systems. In some of these cases, we would consider these risks not only significant, but wholly unacceptable.

There appears to be a lack of clarity around what defines unacceptable impact on water systems, and a lack of clarity around standards for risk management to be imposed in order to secure approval.

The IESC

Several instances have been brought to our attention where it appears that the advice of IESC has been ignored. One particularly disturbing example was brought to our attention by Freedom of Information requests from the Lock the Gate Alliance into the approval of an Arrow Energy project.

On the 26th of August 2013 Arrow Energy were found to have written to the federal environment department, saying their 6,500 well Coal Seam Gas project was "unlikely to have a significant impact on the water quality of water resources in the Surat Basin." This, despite evidence the project would involve the disposal of 2.3million tonnes of salt and the discharge of an unknown amount of coal seam gas 'produced' water into local river and creek systems.

The IESC criticised the project, suggesting that water quality testing was required of the produced water, as well as assessment of its impacts on catchments of the watercourses where the produced water was to be discharged. They were also highly critical of Arrow's salt and brine management plan.

Documents reveal that Arrow energy rejected IESC recommendations, ruling out reassessment of their salt disposal plan; they did not undergo ecotoxicology testing, cumulative impact assessment of discharges of coal seam gas produced water into the region's rivers, or risk assessment of potential well failure. Regardless of this, the project received federal approval.

By ignoring these IESC recommendations, Arrow energy put water systems and the community at significant risk.

We believe that for the water trigger to serve its purpose, it must be bound by clear thresholds and standards, rather than advice to be open to unbounded ministerial discretion. Recommendations of the IESC need to be transparent and enforceable.

There should be clear boundaries and thresholds, such as exclusion zones for important water resources like the Great Artesian Basin and drinking water catchments, as well as mandatory standards for matters like monitoring, water quality, flooding infrastructure etc.

3: Identify any opportunities to improve the effectiveness of the regulation

1. Inclusion all forms of unconventional gas, and all forms of unconventional oil and gas extraction.

Huge swathes of Victoria, South Australia, Western Australia, and the Northern Territory, as well as areas of Queensland and New South Wales, are covered in licenses for the exploration of Shale Gas and Tight Gas. While water impacts for Shale and Tight Gas are different to CSG, they are also potentially disastrous and of key concern to the community.

We recommend that the water trigger be amended to extend to all unconventional gas exploration or mining proposals, including Shale and Tight Gas, not just Coal Seam Gas.

Also of increasing concern are shale oil and underground gasification projects. Such projects also have potential significant impact on water systems and should trigger federal approval.

2. Inclusion of other associated infrastructure

As the issues paper states, other infrastructure associated with unconventional gas and coal developments are not subject to the water trigger and EPBC act approval.

We recommend that the water trigger be applied to developments related to coal mining and unconventional gas projects. Borefields, dams, water pipelines or water treatment facilities all have potential to impact water systems as part of unconventional gas and coal projects, and thus if they are expected to have significant impact should trigger federal approval.

3. Thresholds and boundaries for ministerial discretion

Already 23 projects have been approved after review under the water trigger, despite what we would consider unacceptable risk to water systems, and despite concern, criticism and recommendations from the IESC.

There should be clear standards, boundaries and thresholds, such as exclusion zones for important water resources like the Great Artesian Basin and drinking water catchments, as well as mandatory standards for matters like monitoring, water quality, flooding infrastructure etc.

4. Halt on water trigger approvals until the Bio-Regional Assessment process is complete

Bio-regional assessments were undertaken by the federal government with the specific purpose of better understanding the potential impact of coal and unconventional gas projects on water resources and water-related assets.

Their assessment of the ecology, hydrology, geology and hydrogeology of regions is important information by which risks to water from these projects can be understood, both by regulators and the community. While some components of the Bio-Regional Assessment process have been completed and made available to regulators and the community, stage 2 data analysis and modelling, the stage 3 impact assessment, the stage 4 risk analysis are all vital pieces of information for understanding and assessment of risks to water systems. Despite these aspects of the bio-regional assessments being incomplete to date, projects are still being brought through the approvals process including assessment under the water trigger.

We recommend that a moratorium be put in place on approvals of projects under the water trigger until bio-regional assessments are completed and tabled. We believe they will become an important tool for analysis and assessment of the broader implications of these projects on regional hydrological and hydrogeological systems.

In Summary

Friends of the Earth Australia believes that the EPBC act water trigger is an important regulatory safeguard for water systems threatened by coal and unconventional gas developments, however as yet we do not think it has been fulfilling this role effectively to date.

In order to improve the protection of water assets by application of the water trigger, we recommend that the Federal Water Trigger:

- Include all unconventional gas including shale and tight gas. And, include other high-risk unconventional fossil fuel extraction projects including shale oil and underground coal gasification.
- Include other associated infrastructure such as borefields, dams, water pipelines or water treatment facilities.
- Be bound by thresholds, guidelines, standards and boundaries for ministerial discretion.
- Halt approvals until the completion of bioregional assessments.