



**public interest**  
ADVOCACY CENTRE

**Kickstarting the productivity conversation**  
**NSW Productivity Commission**  
**Issues Paper**  
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## About the Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is an independent, non-profit legal centre based in Sydney.

Established in 1982, PIAC tackles barriers to justice and fairness experienced by people who are vulnerable or facing disadvantage. We ensure basic rights are enjoyed across the community through legal assistance and strategic litigation, public policy development, communication and training.

## Energy and Water Consumers' Advocacy Program

The Energy and Water Consumers' Advocacy Program (EWCAP) represents the interests of low-income and other residential consumers of electricity, gas and water in New South Wales. The program develops policy and advocates in the interests of low-income and other residential consumers in the NSW energy and water markets. PIAC receives input from a community-based reference group whose members include:

- NSW Council of Social Service;
- Combined Pensioners and Superannuants Association of NSW;
- Ethnic Communities Council NSW;
- Salvation Army;
- Physical Disability Council NSW;
- Anglicare;
- Good Shepherd Microfinance;
- Financial Rights Legal Centre;
- Affiliated Residential Park Residents Association NSW;
- Tenants Union;
- The Sydney Alliance; and
- Mission Australia.

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The Public Interest Advocacy Centre office is located on the land of the Gadigal of the Eora Nation.

# Contents

<b>Introduction</b> .....	<b>1</b>
<b>Water</b> .....	<b>1</b>
How could NSW improve governance and institutional arrangements for water management?.....	2
How could the State improve water planning and what are some of the possible ways to: .....	2
How could the efficiency of local water utilities be improved to increase water security and quality, and lower bills for regional communities? .....	3
What are the barriers to NSW achieving larger-scale cost-effective water recycling? How can these be addressed?.....	3
How can government achieve greater water efficiency by households and businesses, particularly in metropolitan NSW? .....	5
<b>Energy</b> .....	<b>6</b>
How can New South Wales work to reduce uncertainty in electricity generation and emission reduction requirements to improve the investment outlook?.....	6
What is the best framework for future evaluations of generation and network reliability?.....	6
What additional measures, if any, can we take to cost-effectively improve reliability?.....	6
What initiatives could we consider to remove barriers to gas exploration and production?.....	7
How could we improve the New South Wales energy regulatory framework? .....	8
<b>Infrastructure</b> .....	<b>9</b>
How can we further strengthen the governance and transparency of infrastructure investment? .....	9
What types of targeted service improvements and demand management solutions could be considered to maximise value from our infrastructure?.....	9
How could agencies use data and 'smart' infrastructure to improve asset management?.....	9
How can existing innovative service delivery models be further leveraged to improve productivity and customer outcomes? .....	9
What other innovative service delivery models should the NSW Government consider to improve productivity and customer outcomes? .....	9



## Introduction

The Public Interest Advocacy Centre welcomes the opportunity to respond to the New South Wales Productivity Commission's Issues Paper, *Kickstarting the productivity conversation*.

Economic productivity is an important factor in the quality of life and prosperity of NSW communities. Energy and water are essential services for households and businesses, and ensuring their affordable, reliable and sustainable supply is critical to the health of the economy and the people who rely on it.

We welcome the opportunity to discuss the role of energy and water in NSW's economic productivity and provide our thoughts on how the NSW government can improve the use of these resources for the benefit of the state.

## Water

The public and political discourse around water has often focussed on affordability and assumed it may be used without limitation. Sustainability has been viewed as a secondary environmental concern rather than a key determinant of water productivity. This inquiry is an opportunity to reset and reframe sustainability as a foundational element of productivity. A rigorous assessment of what is required to maintain and improve sustainable access to water resources is integral to determining how those resources can be used most productively for the community now and into the future.

Historically water has been treated as a right to be freely accessed without limitations. It is only recently that water entitlements have placed some limits on extraction, and the cost of water has been linked to the volume of its use. However, these changes have not been applied consistently with a transparent and rigorous assessment of the insecure and increasingly unpredictable nature of water resources and do not provide a transparent framework to consider the role of water resources in underpinning the sustainability of communities, agriculture and the environment.

To improve the productivity of water resources in NSW, a framework for assessing and setting the determinants of sustainability of water resources is required. PIAC considers the 'accounting for nature' framework<sup>1</sup> developed by the Wentworth Group of Concerned Scientists, and piloted successfully in regions across Australia, an exemplar. This framework provides a standardised, transparent and objective accounting mechanism that can set baselines for water resources, identify what is required to ensure their ongoing sustainability, and track and update their status in relation to their management over time. This accounting system provides the consistent and transparent missing link between the natural resources and the planning and market mechanisms which impact upon and utilise them. This framework is able to fit within and help address flaws in the implementation and operation of the Murray-Darling Basin plan. It can operate in conjunction with water markets and effective pricing to ensure that water resources are utilised in the way that maximises their productive value to communities and the economy over the long term. Importantly, this framework can be applied in rural and urban settings.

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<sup>1</sup> [Accounting for Nature 2016](https://wentworthgroup.org/2016/12/accounting-for-nature-2016/2016/), Wentworth Group of Concerned Scientists, 2016  
<<https://wentworthgroup.org/2016/12/accounting-for-nature-2016/2016/>>

We answer Issues Paper questions relating to water below.

## **How could NSW improve governance and institutional arrangements for water management?**

A number of reviews of the governance and institutional arrangements for water management have been undertaken in recent years and have been considered and implemented to varying degrees. We recommend, where relevant to NSW, the full suite of recommendations be implemented from:

- The Mathews independent review
- The Murray Darling Basing Compliance review
- The Royal Commission into the Murray Darling Basin Commission.

We recommend the NSW government support the application at a national level of the recommendations from the Royal Commission into the Murray Darling Basin Commission.

Additionally, to restore faith in water management, particularly in the face of the impacts of climate change and drought and the reforms that are needed to adapt to it, PIAC contends that transparency of process and governance is crucial. The community must have confidence in the government's reform program and water governance in order to participate productively and in good faith in water markets and catchment-based decisions making.

## **How could the State improve water planning and what are some of the possible ways to:**

### **i. Clarify the roles and responsibilities of the SOCs, government, and regulators**

The reform of the structure and responsibilities of SOCs and other water service providers remains incomplete. While Hunter Water has integrated responsibility and control of their water assets and treatment, distribution and retail operations, Sydney Water must purchase bulk water from WaterNSW.

The distribution of responsibilities, and the governing structures, are different again in other areas of the state, with local councils and other entities such as Essential Energy Water and WaterNSW sharing responsibility for management of storage resources, treatment, distribution and retail services.

Many of the local councils in regional NSW have the responsibility, but not the expertise, financial resources or capability to undertake the assessments, planning, investment and management that is required to facilitate sustainable and secure access to water. Often their area of responsibility exceeds the available water resources, setting up conflicts in times of low availability.

Catchment level responsibility for water planning, management, investment, land-use and service provision would be more consistent with the nature of water resources. It would provide a consistent platform for greater economies of scale, and enable more efficient resource sharing and investment. It would also integrate more effectively with national resource management programs and the Murray Darling basin plan.

The roles and responsibilities of SOCs, Government and regulators could be improved by:

- A review to determine where whole-of-chain responsibility can be devolved to SOCs. This is particularly relevant in the case of Sydney Water.
- Catchment-based management of water resources and services in areas outside of the responsibility of the SOCs. This may involve the resumption of responsibility from local councils, in conjunction with the devolution of some responsibilities and functions from WaterNSW, to reformed catchment management organisations. Any reformed body providing water services in regional NSW should then be brought under a regulatory framework consistent with that governing the SOCs.
- Consistent application of 'accounting for nature' framework at catchment level as the basis for setting baseline sustainability indicators from which catchment level decisions on resource use, planning and regulated pricing can be made.

## **ii. Increase integrated water cycle management approaches where they are cost effective?**

This is addressed in relation to the barriers and constraints impacting the implementation of recycling.

### **How could the efficiency of local water utilities be improved to increase water security and quality, and lower bills for regional communities?**

This question is addressed in relation to the clarification of roles and responsibilities, and the implementation of catchment-based water service provision and planning, and resource management based upon the 'accounting for nature' framework.

### **What are the barriers to NSW achieving larger-scale cost-effective water recycling? How can these be addressed?**

As a matter of priority, the Government should commence an evidence based, transparent public dialogue about the important role that recycling can play in securing affordable and sustainable access to water.

This must include potable re-use, particularly in rural and regional areas where desalination is impossible and not cost-effective. National and international experience should be followed to explain recycling to the community and address fears and misconceptions. This is vital to ensuring that all options for secure, efficient access to water are available.

There are also a number of structural barriers preventing a co-ordinated approach to large-scale implementation of recycling and re-use, including:

- A regulatory framework that preferences investment at the point of demonstrated need (that is no sooner than necessary). For example, insecurity or scarcity of water resources is not fully reflected in the cost of water until the point of actual scarcity. This creates a potential bias towards supply solutions, such as desalination, rather than investment in conservation or recycling and re-use.

It may be necessary to adjust the calculation of the long-run cost of water, and introduce an investment test in order to ensure that recycling and re-use related investments are appropriately considered. The RIT process in the electricity framework, and the necessity to consider demand reduction measures, or hybrid solutions including demand response, are useful examples.

- Restrictions (or outright prohibitions) on the use or discharge of wastewater and storm water, and the reuse of 'black' and greywater in some circumstances. A comprehensive review of state laws and regulations should be undertaken to identify and address barriers to different types of water use, discharge and reuse. Findings from this should be used to identify regulatory and legislative instruments needed to encourage and enable recycling and re-use at a system-wide and point source level.
- The lack of an overarching framework to incentivise and guide the implementation of water efficiency measures through recycling and re-use. Reviews such as that by Frontier Economics advise against mandates and targets, incorrectly supporting their removal. While it is true that mandates should not require a particular solution, there is a role for setting a framework of targets, and mandating recycling in principle.

For instance, per household usage targets (including per-household recovered discharge) could be implemented in support of systemwide water efficiency targets and mandates. Such targets set the upper bounds for the 'extraction of value' from units of water resources, with mandates ensuring that water recycling is given due consideration. Where and how recycling is implemented would be informed by consistent application of cost-benefit assessment. This would consider the efficiency of water use delivered by each method, weighed against its cost.

It is likely that in brownfield areas, large-scale recycling at point of waste-water treatment, in combination with minor efficiency upgrades at the household level, are likely to be the most efficient solution. In greenfield developments a wider range of options will likely be able to be considered.

- Interventions often undermine the current framework's ability to deliver efficient water recycling outcomes. For instance, Sydney and Hunter Water have their developer charges for new connections set to zero, except where recycling schemes are implemented. This creates a perverse incentive against the implementation of recycling, by biasing cost-benefit assessments for developers. Removing such interventions and allowing transparent, objective assessments to be made will facilitate greater implementation of recycled water schemes in new developments.
- The current pricing regime, in both its structure and its undervaluing of water resources, is an impediment to the wider use of water recycling across the state. Flat pricing of water, with a bias towards fixed charges, help make recycled water solutions almost unviable. Overall prices that represent a long-run marginal cost that does not account for climate related resource scarcity and insecurity compounds this issue.



In urban water pricing, the long run marginal cost assumes the fixed availability of existing water resources, while potentially undervaluing the cost of sourcing 'new' water in the future. This undervalues water, not only by giving water no intrinsic value, but also by failing to recognise that future water will need to be sourced (or produced) from more expensive means such as desalination. In order to address these issues, pricing structures should be reformed to:

- Be balanced in favour of support usage-based charges in both water and 'wastewater'. Even without metered wastewater, wastewater usage charges can be based upon proportional discharge factors for water.
- Be structured as 'inclining blocks' where usage up to a 'sustainable' level is priced at the lower end of the long run marginal cost, and all usage above that level is priced at the upper end of long run marginal cost, on the basis that this usage will necessitate new water sources and place unsustainable pressure on existing sources.

These changes better reflect the true cost (and value) of water that makes recycled solutions more viable. By providing a mechanism to value discharged water, it provides further incentives for that value to be recovered.

### **How can government achieve greater water efficiency by households and businesses, particularly in metropolitan NSW?**

An integrated approach to maximising the efficiency of water use is required. It cannot be left to pricing structures, or community messages, investments or legislative measures individually. Such a co-ordinated and integrated approach must include:

- A comprehensive review of the legislative and regulatory framework to identify where structural impediments to efficiency of water use exist. This should also identify opportunities to facilitate greater efficiency in water use. This review should examine measures such as building standards, minimum rental standards, tenancy laws, environmental standards, local development controls, planning legislation and controls, water utility regulation, product standards regulation, land-use planning, and enforcement and penalty structures.
- Legislation of an efficiency related targets for water use at catchment and system-wide level. These targets should be expressed as per-person usage, per-household usage, per-day usage, and per-unit usage of production (such as per unit of production of a particular agricultural product). These targets should relate to and integrate with updated information regarding the sustainable use of water at catchment level, facilitated through the 'accounting for nature' framework.
- Implementation of water pricing structures that better reflect the value of water. Prices should transparently signal value to consumers and investors, in a way that encourages and benefits conservation and efficiency. It should provide opportunities for recovery of the full value of water through facilitating waste water and stormwater reuse, and enable government and private investment in use-reduction measures. For instance pricing structures heavily biased towards usage charges recovered through inclining block tariffs on both usage and wastewater discharge.

We answer Issues Paper questions relating to energy below.

## Energy

### **How can New South Wales work to reduce uncertainty in electricity generation and emission reduction requirements to improve the investment outlook?**

One way the NSW government can reduce uncertainty in electricity generation is by setting clear targets and a pathway and timeline for reducing energy related emissions. The government has put forward a target for zero net emissions by 2050, however, it is not accompanied by mechanisms for reaching the target or a trajectory for the intervening years. Various documents suggest an 'action plan' is to be developed to outline how the target will be reached. The government should develop this action plan as a matter of priority to ensure business and community have certainty over the opportunities and requirements to reach zero net emissions.

In developing the action plan to reach net zero emissions by 2050, government should outline how the measures set out in the Electricity Strategy, including the Energy Security Safeguard, Energy Security Target, new generation investment frameworks and support for Renewable Energy Zones, will be coordinated to meet the target.

The state should outline how its net zero emissions target and the action plan to meet it aligns with federal and other state policies, and highlight areas where state policies will take precedence and areas where federal policy will.

### **What is the best framework for future evaluations of generation and network reliability?**

Reliability comes at a cost and, should always be set and evaluated based on consumers' preferences, particularly their expressed willingness to pay. Recent estimations of the value consumers place on reliability have shown current levels of reliability are largely satisfactory and many consumers would be unwilling to pay more for increases. The NSW government should ensure its reliability settings and investment decisions reflect consumer preferences, and if there is a desire to go beyond these preferences for broader social objectives, the cost of doing so should be recovered from budget revenue, rather than consumers.

### **What additional measures, if any, can we take to cost-effectively improve reliability?**

Reliability can be improved through a number of measures, including network augmentation, increased generation, distributed energy resources (DER) such as batteries and rooftop solar, energy efficiency, and demand response (DR). The NSW government should look to employ a mix of these measures to ensure increased reliability is achieved at lowest cost to consumers. In particular, government should seek to increase access to DER and demand response and improve energy efficiency as a low cost means of increasing reliability while lowering emissions.

It can do this by supporting the introduction of a wholesale demand response mechanism that allows for third party intermediaries within the wholesale energy market and is accessible to all consumers, including households. A broad DR mechanism has the benefits of putting downwards pressure on wholesale electricity costs by reducing overall demand on the system, lowering

emissions and household power bills, and increasing reliability. Once implemented it will permanently re-balance the energy system so that it is more two-sided and flexible. To ensure all consumers can participate in DR, the government should engage in processes to open up the DR market to providers other than retailers, and ensure households have DR-capable appliances.

Similarly, increasing access to DER lowers demand, emissions and bills and gives individual consumers more control over their energy supply. NSW already has considerable rooftop solar penetration, however, penetration is much lower for low income households, particularly renters. The government should aim to increase access to DER for this group by expanding programs such as the *Solar for low income households* scheme and introducing new programs to increase battery uptake. As the cost of batteries falls, rooftop solar and battery systems will become increasingly cost effective ways of maintaining reliability and capacity as they have lower distribution and transmission requirements.

Government should continue to focus on improving the energy efficiency of homes and businesses. As well as its commitment to improving energy efficiency through the Energy Security Safeguard, it should pursue minimum energy efficiency standards for rental properties and upgrade its own housing stock. It should also amend tenancy laws to allow renters to make energy efficiency improvements to their homes without landlord approval, and abolish no-grounds evictions so tenants can more securely request upgrades to properties.

While pursuing measures to improve reliability, the government should engage with NSW energy consumers to ensure their preferences are reflected and reliability levels are at a level they are willing to pay for.

### **What initiatives could we consider to remove barriers to gas exploration and production?**

The current restrictions on further gas extraction in NSW are often cited as a factor in sustained high domestic gas prices, and the flow-on high energy prices that we currently experience. It is true that gas prices have risen sharply over the past decade, and that high input costs often result in gas generators, as the marginal price setting generators, driving up wholesale electricity costs. However, this sustained gas price increase has occurred during a period of a massive increase in the gross supply of gas produced in Australia that has seen Australia become the world's largest producer. In analysing the current and forecast trends for gas extraction for export and thermal energy generation it is important to note:

- Current Australian gas production substantially exceeds the long-term export contracts of the main suppliers.
- The international market for uncontracted gas consistently sees prices that are 30% less than those in the domestic market, where gas is predominantly used by heavy industry and as input for peaking gas generators bidding into the wholesale market.

- The main gas producers continue to sell into the international market, sustaining high domestic prices that impact industry and households.<sup>2</sup>
- New domestic gas production is often cited as a ‘supply solution’, even though ACCC investigations demonstrate that these potential sources are uneconomic and would only lock in higher prices for domestic gas, even if an economic case could be made for their commencement.<sup>3</sup>
- Current prospective gas resources in NSW are extremely likely to have dangerous impacts on local water resources, and do not present a strong economic case.

Accordingly, PIAC considers gas has a limited role in NSW’s future productivity and efforts to remove barriers to or expand gas production in the state should be directed to establishing more sustainable and productive energy sources.

Further, PIAC highlights the need to recognise the impact of energy and resource extraction operations on the long-term security of community access to water resources, as well as the impacts upon community health, and the sustainability of the environment and industries which depend on it.

Gas extraction, both conventional and ‘fracked’, is in direct competition with agriculture, the environment and the community for water resources. The impacts of this competition are being felt now. For instance, in many regional NSW communities bushfire- fighters are having to make decisions regarding whether and how to fight fires based on access to water resources. These decisions are increasingly critical for the ongoing viability of communities.

PIAC considers it vital that a strategic and sustainable approach to energy into the future must recognise and account for the interaction of energy-related industry with water resources, the long-term security of those resources and the relative productivity of water in different industries.

### **How could we improve the New South Wales energy regulatory framework?**

The state’s energy regulatory framework could be improved to encourage new generation investment. As the energy system transitions, new planning and investment frameworks are needed to deliver optimal whole-of-system outcomes and share costs fairly between regions. The government recognised this need in its Electricity Strategy, which sets out a plan to develop a regulatory framework to promote new, low cost electricity generation in the state before existing power stations close. This framework should consider how best to share costs and risks between consumers, tax payers and private capital to encourage a timely transition while not unfairly burdening any party.

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<sup>2</sup> Guardian Australia, ‘The high price of Australian gas: is low supply really to blame?’  
<<https://www.theguardian.com/australia-news/2017/sep/29/the-high-price-of-australian-gas-is-low-supply-really-to-blame>>

<sup>3</sup> [Ibid.](#)

We answer Issues Paper questions relating to infrastructure below.

## **Infrastructure**

### **How can we further strengthen the governance and transparency of infrastructure investment?**

The government should ensure there is a transparent public process for the selection and evaluation of infrastructure projects. This process should allow for community engagement and feedback and be open to challenge.

### **What types of targeted service improvements and demand management solutions could be considered to maximise value from our infrastructure?**

PIAC recommends government implements distributed energy resources (DER) such as batteries and rooftop solar across its properties, in particular its social housing stock. It should also, where possible, ensure its properties engage in demand response. As a significant owner of residential and commercial properties, the government has the ability to facilitate demand response at a scale that would have significant positive impacts on the energy system.

### **How could agencies use data and ‘smart’ infrastructure to improve asset management?**

Data and smart infrastructure can play a significant role in improving the energy efficiency of households and businesses and give them greater demand management and response capabilities. Agencies should assess opportunities to better use smart technologies in its existing infrastructure including through the installation of smart meters and appliances, and DER.

### **How can existing innovative service delivery models be further leveraged to improve productivity and customer outcomes?**

The NSW government should look to models such as the Australian Renewable Energy Agency (ARENA) demand response trial which partnered with industry to manage electricity supply to extreme peaks. Similar programs could be employed to trial emerging opportunities in DER and energy efficiency measures.

### **What other innovative service delivery models should the NSW Government consider to improve productivity and customer outcomes?**

The government should look at options for using large-scale DER to increase reliability and security of the energy system. For example, it could develop a scheme to distribute batteries at a discount to households in order to have access to them to do demand response or other demand management.