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*Friday October 19, 2018*

Dear Jean-Marc,

**Re: IPART review of Recycled Water Prices for Public Utilities**

Thank you for the opportunity to respond to IPART's review of Recycled Water Prices for Public Utilities.

Open Cities is concerned the IPART pricing review will preempt the NSW Government's review into recycled water - the findings of which have yet to formally be presented to industry. We would hope any proposed changes to Sydney Water and Hunter Water pricing frameworks would be reconsidered in light of the review findings.

The INSW review is critical because it includes the views and perspectives of the water market beyond Sydney Water and Hunter Water's business models.

Open Cities believes current market settings for recycled water (Water Industry Competition Act (WIC Act)) are already creating significant barriers to investment because the retail-minus framework is increasing the cost of recycled water operations for Sydney Water and Hunter Water's competitors.

Given the timely and critical need for recycled water to deliver on NSW Government objectives spelt out in the Greater Sydney Commission Plans (GSC) and the resilience strategies of NSW cities – it is essential more local recycled water schemes are encouraged through market settings.

The Water Industry Competition Act (WIC Act) was clearly established to both encourage and promote more recycled water schemes and water innovation across NSW. It sets the framework for private sector investment in the sector across the entire State of NSW.

IPART suggests that it is difficult for recycled water to be cost effective due to its limited end uses and reduced scale compared to wastewater treatment (pp. 13-14). WIC Act utilities - enabled by innovation and Next-Gen Integrated Water Management (IWM) approaches have demonstrated the ability to deliver cost-effective recycled water schemes in new development - both land release and urban infill.

Despite multiple barriers in the pricing and regulatory settings that bias against IWM solutions they are still able to deliver wholistic water services to create more sustainable and affordable services that embrace 21st century innovation and 21<sup>st</sup> century consumer expectations.

Perceptions of issues of scale are a result of outdated planning and delivery practices. They occur as a result of forcing the establishment of recycled water markets to meet urgent supply constraints rather than investing in schemes as demand arises.

The efficiency benefits of flexible, agile investments, has been demonstrated at not just a single site scale, but also at a broader precinct and city level. A Melbourne study demonstrated significant opportunities for long term efficiencies (in the order of billions of dollars) through ongoing investment in demand management and IWC solutions when the opportunity arises, as opposed to demand-triggered investment in the next tranche of desalination (*Institute for Sustainable Futures 2011*). This demonstrates the value to the whole customer base of market-led demand driving recycled water investment rather than trying to retrofit solutions in times of urgent supply shortage.

The existing centralised service delivery method is outdated and inefficient. Continuing to maintain and expand ageing networks that put ongoing upward pressure on utility bills and negatively impact on the environment is financially, technically and logistically challenging. The cost of maintaining these outdated water management businesses will cost billions of dollars. IWM including recycled water schemes can reduce the need for and cost of infrastructure augmentation because they take large water using communities and reduce water demand by up to 70 percent through the reuse of wastewater resources. This can entirely remove interconnections with centralised drinking water and wastewater networks or result in skinny connections. The use of pressure sewer means developments do not need to wait for centralised water servicing and can push ahead with more sustainable resilient solutions that release land more sustainably and affordably.

While economies of scale of treatment do exist, Sydney Water<sup>1</sup> suggests schemes as small as 0.5 ML/day are promising and schemes from 0.1-0.5 ML/day are possible. It is only schemes that are less than 0.1ML/day that are unlikely to be viable. In Victoria, there are examples of recycled water schemes that have been delivered at orders of magnitude lower than potable water delivery.

Economies of scale of treatment are often counteracted by diseconomies of scale in transport. *Fane et al. (2002)* found economies of scale at around 10,000 connections and *Mitchell (2004)* found economies of scale for IUWM at around 1000-10,000 connections. The economic signals for diseconomies of scale in the transportation network are dampened in Sydney where assets life has been significantly extended by changing usage patterns, particularly with regulatory driven gains in water efficiency.

Overly conservative planning practices for recycled water exacerbate perceptions of cost. For example, the infrastructure Sydney Water included as part of the Hoxton Park recycled water developer charge<sup>2</sup> was built well ahead of demand, with the 4ML/day recycled water plant built 6-7 years before flow was estimated to reach 1ML/day.

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<sup>1</sup> [https://www.sydneywater.com.au/web/groups/publicwebcontent/documents/document/zgrf/mdu3/~edisp/dd\\_057020.pdf](https://www.sydneywater.com.au/web/groups/publicwebcontent/documents/document/zgrf/mdu3/~edisp/dd_057020.pdf)

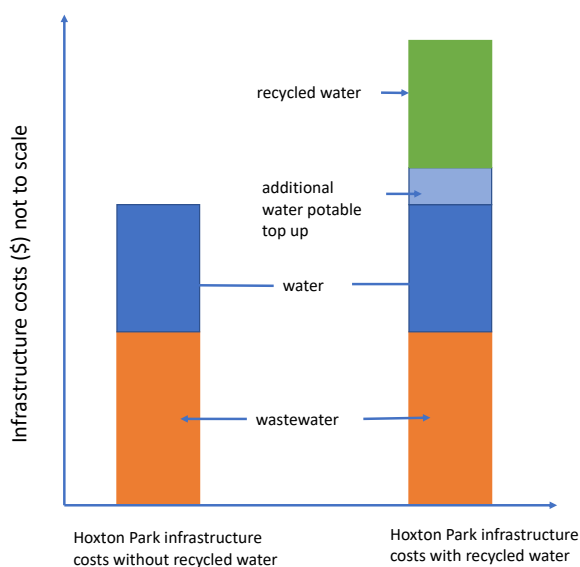
<sup>2</sup> [Sydney Water, \(2016\) Hoxton Park Recycled Water Development Servicing Plan p22](#)

This meant not only were capital repayments on the full amount required too early, but also a further \$5 million<sup>3</sup> was required over the next 6 years to mothball, re-plan, reconfigure and optimize the plant.

This is in contrast to delivery practices of WIC Act utilities that deliver modular plants to match with development and secure the water supply for the community, reduce demand by up to 70 percent on drinking water supplies, remove the cost of transporting and treating wastewater.

BAU design also requires significant additional infrastructure, including additional \$6 million<sup>4</sup> potable water infrastructure over and above a system without recycled water, to provide potable water top up to meet peak demand (see Figure 1).

Under these planning assumptions it is little wonder recycled water is perceived as expensive. In reality WIC Act schemes are created and work with their customers to balance peak demands in a more effective and efficient way.



WIC Act utilities modular, just-in-time investment has demonstrated the viability of alternative approaches to infrastructure delivery, and further highlights why an independent market operator is critical to the future efficiency of the NSW water sector.

Additionally, a key barrier to investment remains IPART’s own retail-minus tariff framework which penalises recycled water providers and fails to recognize the benefits of a 21st century IWM approach.

Sydney Water is unable to make recycled water cost-effective because it cannot embrace IWM due to ring-fencing principles, which create undue demand risk in relation to conventional water and wastewater infrastructure, and outdated planning assumptions.

<sup>3</sup> [Sydney Water, \(2016\) Hoxton Park Recycled Water Development Servicing Plan p22](#)

<sup>4</sup> [Sydney Water, \(2016\) Hoxton Park Recycled Water Development Servicing Plan p23](#)

IPART has a responsibility to customers to enable greater innovation in the NSW water sector including recycled water. Sydney Water's business model is last century. It does not value the reuse of resources - which is essential to greater livability and genuine downward pressure on utility bills.

Open Cities would like to see more competition in the water market, with pricing frameworks that encourage public utilities to transition to greater innovation including IWM and water recycling. New growth should be dedicated to Next-Gen water management, not BAU.

NSW needs a new utility model for water management that is integrated and local and embraces innovation. This Next-Gen water utility approach will put real downward pressure on utility bills allowing people to be water prosumers.

Please refer to Open Cities' submission to IPART Sydney Water's Operating Licence: *180827 Open Cities Response IPART Sydney Water Operating licence* in APPENDIX A below, for more details on the barriers and recommendations to enable more recycled water in NSW.

Open Cities would welcome the opportunity to discuss these recommendations in more detail.

Yours sincerely,



Lisa

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## APPENDIX A



Hugo Harmstorf  
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IPART  
VIA EMAIL: [Erin\\_Cini@ipart.nsw.gov.au](mailto:Erin_Cini@ipart.nsw.gov.au)  
Monday August 27, 2018

Dear Hugo,

**Re: IPART review of the Sydney Water Operating Licence**

Thank you for the opportunity to respond to IPART's review of Sydney Water's Operating Licence.

Open Cities Alliance is a new national peak association for Next-Gen infrastructure and services. We are working with our industry and council members to create policy and market setting to enable more sustainable, resilient and affordable utility and mobility services for communities and businesses. We are advocating for Integrated Water Management (IWM) and greater competition and transparency in water markets. This letter submission represents the views of our members.

The rapid convergence of utility and mobility solutions enabled by Next-Gen data and Internet of Things (IoT) is future-proofing economies around the world, delivering liveability, sustainability and resilience, and importantly putting downward pressure on utility bills and infrastructure costs.

Open Cities envisages a future for Australia characterised by abundance not scarcity.

Australians are missing out on the many benefits the digitisation of infrastructure and services are bringing people, families and businesses around the world – not just significantly reduced household bills but the ability to generate income from two-way energy and also water grids.

Localised sustainable infrastructure solutions and services are growing from within communities, creating a new class of consumer, *the prosumer*: where customers are more than consumers but also producers. In energy this represents the ability of businesses and people to generate free energy from the sun at the home or office and sell the excess. Similarly, with the development of recycled water networks such as the City of Sydney's and other precinct scale WIC Act networks, this represents the ability to recycle water and reap the financial benefit.

Large command and control centralised water infrastructure approaches are more than 75 years old and are not suited to the changing data-led economy. Transitioning to 21st century IWM businesses and services is now urgent and essential. Especially because the utility model itself is not only shifting to the precinct-scale but is also converging - as data enables the water/energy nexus, local connected microgrids and the integration of EV infrastructure.

Significant rethinking and modernising of government policy, legislation, regulation and market settings needs to occur. A vision for this future infrastructure state needs to be created and targets set to make the transition rapidly. It is essential innovation and decarbonisation are placed at the core of this transition plan. These new utilities require a seat at State planning tables and competitive markets need to be established for these new business models and solutions that can better meet peoples' needs.

In energy, AEMO is beginning the journey to new regulatory thinking around a two-way energy market which will prepare for a prosumer future. Open Cities would like to see similar leadership in the water markets. This includes ensuring traditional centralised utilities are operating in a way that embraces innovation and the changing needs of the community, are making more transparent servicing data to the market, and opening themselves to greater community and industry consultation for these reviews.

Adoption of the following recommendations will ensure the NSW people and businesses get a financial stake and benefit from utility and mobility infrastructure and services.

## TRANSITION TO NEXT-GEN INFRASTRUCTURE AND SERVICES

The rapid transformation of water management solutions enabled by technology is now outpacing current water market settings. Current planning, regulatory and institutional frameworks have been developed over a long period of time based on public monopoly supply of standard centralised services. Investment in a more diverse portfolio of solutions is limited in two ways, by:

- *siloes institutional arrangements that preference large, just in time, centralised solutions and do not clearly allocate responsibility for broader investment outcomes*
- *regulatory and institutional adversity to risk*

To deliver on innovative, efficient and integrated water supply our approach to planning, delivering, managing and pricing (funding) water services need to change.

Planning and funding frameworks that incentivise centralised approaches and are bias against Integrated Water Management (IWM) and recycled water and are locking out participants with alternative more innovative and sustainable business models and entrenching last century approaches. IWM must be enabled and funded through appropriate developer contributions.

By removing outdated laws restricting the use of recycled water in communities – for example as environmental flows or for water features – IWM can be used to green public amenities all year improving liveability and resilience.

The benefits to the economy and the environment of IWM must be reflected in water tariffs. The following changes need to be considered:

## CHANGE WATER MANAGEMENT FROM CENTRALISED TO LOCALISED IWM

1. Establish an independent NSW Water Market company to set frameworks to transition from existing centralised approaches to a new competitive IWM market, including:
  - 1.1. Defining IWM and how it applies to water management of new precincts
  - 1.2. Rules of engagement, information & guidance for councils, stakeholders & industry.

## INDEPENDENT MARKET OPERATOR (IMO)

Open Cities welcomes greater transparency of Sydney Water's operational activities. We do not think IPART's proposed amendments go far enough or tackle the institutional issues preventing a transition to Next-Gen IWM.

Open Cities believes an IMO, separate to IPART, can assist with a whole-of-Government solution to addressing lack of competition, transparency and level playing field in the water market. The aim of an IMO is to deliver new homes quicker, more affordably and with a safe and reliable water supply in a competitive and contestable environment.

The establishment of an IMO capable of setting the rules of engagement between centralised and precinct-scale solutions, delivering a level playing field, and ensuring innovative approaches to water management are implemented, is essential.

Information relating to water infrastructure servicing and investment should not sit exclusively with Sydney Water. This information should be available to the market and kept with an IMO advised by Planning NSW. An IMO would also be able to oversee and review inter-utility agreements which currently support centralised water management practices and therefore incumbent utilities.

In a competitive WIC Act market landscape an IMO can help to plan for new water infrastructure in an open and transparent way. It can facilitate greater competition by establishing frameworks for the WIC Act sector to contest for water services in new growth areas. It can also play a key role in ensuring new communities leap frog in management/technologies driving the most innovative and sustainable outcomes for customers.

The solution is in the policy approach Governments Australia-wide have taken to the energy, finance and telecommunications markets. For example, by establishing the Australian Stock Exchange or the Gas Market Company – Government has ensured a transparent and arms-length level playing field to enable the private sector to compete without fear or favour and according to agreed terms and conditions.

The establishment of a wholesale water market is a policy response to the following blockages:

- Expensive and unsustainable (no recycled water) servicing water strategies by Sydney Water
- Exclusive Gateway processes that entrench BAU
- Urgent need to transition to Integrated Water Management to tackle heat island, liveability and resilience issues.
- Slow delivery of water infrastructure for new homes
- Increasing cost of land and housing products
- A slowing down of land and housing release by as much as 12 month

### *Gas Market Model*

In the same way Government moved to establish an independent gas market to break AGL's monopoly over the gas market and deliver diverse services to consumers in 2000 - Government now needs to establish an independent operator for the water market.

A Gas Market Company equivalent, such as a 'Water Market Company', will remove decision making from public water utilities and Government and put it rightly with an independent body capable of protecting consumers and encouraging a level playing field, fostering innovation and self-sufficiency to deliver sustained downward pressure on utilities.

An Independent Market Operator would:

- Ensure industry wide membership and contribution;
- Create a logistics framework for the operation of a new market;
- Determine the rules on how private companies can enter the market, operate in the market, connect to existing infrastructure, and deliver services;
- Enable private sector competition to drive faster housing release and lower cost housing;
- Set water service strategies and manage procurement processes for those strategies from both the public and private water utilities;
- Create a transparent framework through which the market can develop to ensure incumbent monopolies cannot distort the market.

Control of decision-making surrounding 'access to market' issues must be independent and cannot sit with Sydney Water only. Government and Sydney Water need to open up all water data to provide transparency for from third parties to provide solutions. Agencies like Transport for NSW have done this successfully and there are strong benefits to the people and businesses.

It is very difficult for WIC Act utilities to compete when public utilities control key decision making around access to market. As part of its role to establish a transparent framework through which the new private water market can develop, the IMO would take responsibility for decision-making over access to the market.



WIC Act utilities need access to this strategic data before they are able to submit a truly competitive tender. At the moment this data can only be obtained second or third hand from developers or consultants. Its accuracy is not always guaranteed and the regional water plan may not form part of the solutions offered.

An IMO can hold and control the release of all data relating to water infrastructure service delivery, including regional water plans and water servicing strategies. At the moment there is no independent decision-making process which would be able to enable private sector participation in the delivery of services. Without these changes it will be near impossible to achieve a competitive market place.

## FAIR PRICING FOR IWM

2. Establish a new framework under which wholesale prices are based on the efficient cost of delivering the services actually supplied
3. Consider a pricing framework that incorporates the external benefits delivered by IWM, including increased water security, avoided pollution from sewage discharge, and any avoided augmentation of centralised infrastructure

Open Cities maintains the single biggest barrier to innovation is the retail minus tariff approach introduced in January 1, 2018. We support our members who have provided many submissions over the past four years rejecting the retail-minus approach which has increased the cost of recycled water scheme operations by 400 to 1200 percent in urban regeneration developments.

## INCREASING THE MINIMUM STANDARD FOR RECYCLED WATER

4. Recycled water and IWM as minimum standards for new growth & compel houses to connect.
5. Allowing for next generation providers to bid for water management and servicing solutions and services in new growth areas in the competitive open market, by changing the premise that Sydney Water and Hunter Water have an exclusive 'obligation to serve' but customers that customers can be served also by Water Industry Competition Act (WIC Act) licensed operators.

## ZERO OCEAN OUTFALL

Cities with ocean outfall need to transition to zero. For example, over 80 percent of Sydney's wastewater is discharge to ocean, with minimal treatment. NSW must strengthen its commitment to moving towards zero discharge to water.

The emerging recycled water market can provide affordable alternatives to treating this waste at source for the generation of high-quality recycled water to meet up to 70 percent of the community's daily needs along with complementary waste to energy from the organic by-products of wastewater.

## CASE STUDY: FLORIDA

Australia can learn from Florida, which in 2008 legislated zero discharge to ocean by 2025, with a transitional ban on expansion of ocean outfall, mandating of reuse:

- a. *The construction of new ocean outfalls for domestic wastewater discharge and the expansion of existing ocean outfalls for this purpose, along with associated pumping and piping systems, are prohibited. Each domestic wastewater ocean outfall shall be limited to the discharge capacity specified in 50 the department permit authorizing the outfall in effect on July 51 1, 2008, which discharge capacity shall not be increased.*
- c. *1. Each utility that had a permit for a domestic wastewater facility that discharged discharges through an ocean outfall on July 1, 2008, must shall install a functioning reuse system by no later than December 31, 2025.*
- d. *The discharge of domestic wastewater through ocean outfalls is prohibited after December 31, 2025, except as a backup discharge that is part of a functioning reuse system or other wastewater management system authorized by the department as provided for in paragraph (c). Except as otherwise provided in this subsection, a backup discharge may occur only during periods of reduced demand for reclaimed water in the reuse system, such as periods of wet weather, or as the result of peak flows from other wastewater management systems, and must shall comply with the advanced wastewater treatment and management requirements of b.*

Florida Senate (2011). Domestic wastewater discharge. 578-04255-11. Committees on Community Affairs; and Environmental Preservation and Conservation; and Senators Diaz de la Portilla and Sobel. Florida.

6. Commit to and enforce existing targets including Clause 27 of the Sydney Water Act, to deliver zero sewerage ocean outfall.
7. Enable licensed recycled water businesses to access surplus wastewater to treat and reuse.

## **EXPAND USES OF RECYCLED WATER & STORMWATER (NON-DRINKING)**

8. Require Sydney Water to both provide and facilitate through WIC Act third parties, water for liveability including increased greening and canopy cover, to mitigate urban heat island effect, and for environmental flows.
9. Remove outdated planning, environmental and building policy, regulatory and legislative barriers restricting the use of recycled water and stormwater by:
  - 9.1. Defining IWM as low impact not high impact.
  - 9.2. Recognising that high quality recycled water can and should be allowed to form part of responsible IWM without unnecessary red-tape from out-of-date legislation.
  - 9.3. Enabling recycled water utilities to manage parkland and amenity as part of the water balance.
  - 9.4. Modernising outdated water definitions, methodologies and assumptions relied on for water and sewer investment decision-making.
  - 9.5. Utilities require the legislative power to enforce reasonable requirements relating to recycled water connection and supply in all homes and developments built in approved areas of operation, particularly where these are required to increase the uptake of recycled water and deliver the licensed water balances.

## SYDNEY WATER FACILITATE BETTER CONSULTATION

10. Require Sydney Water to provide a resource to represent industry and the community so they are able to respond to reviews of Sydney Water. More meaningful engagement would lead to better outcomes for all.

## CONCLUSION

Open Cities believes IPART has an opportunity through this review of Sydney Water's operating licence to begin the transition to next century IWM approaches that drive new more sustainable and affordable approaches to water management and real and lasting downward pressure on bills.

The release of the Greater Sydney Commission (GSC) plans confirm the need for localised water innovation capable of underpinning the principles and objectives of a productive, resilient and liveable Sydney by 2056.

Technology and business models that enable the reuse of water at source are commercially viable and available today. Central Park, Barangaroo, Green Square are exemplar water innovation projects enabled by the WIC Act over the past ten years. These schemes should not be exclusive to the city, but best practice for all new growth areas driving the benefits of cost reduction, self-sufficiency and liveability.

IPART has an opportunity to expand the benefits of IWM across the State through its review of the Sydney Water Operating licence, including recognising the need to open up the market to third party providers and make information and data more transparent and accessible.

The recommendations in this submission will ensure a robust and competitive water innovation market and the delivery of better cheaper sustainable services to customers.

Open Cities welcomes the opportunity to meet with IPART to discuss this submission.

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Open Cities Alliance is helping Australian cities open up their planning, regulations, and programs to deliver next generation data, energy, mobility, waste, and water, that is innovative, sustainable, local and lower cost to businesses and the community.