IPART

Competitive Neutrality - Monopoly Water Corporations and the Value of Water

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IPART has called for submissions on competitive neutrality for the businesses it regulates and we thank you for the opportunity to make a submission.

Value of Water Price Signals for Water Efficiency and New Infrastructure

Because water corporations are regulated monopolies, prices are determined from regulated asset values, and costs and market forces do not directly determine price. An important aspect of a price regulated monopoly are the price signals to the market.

There are many alternative ways to meet the demand for centralised utility water including water efficiency programs, alternative water supplies and even private water suppliers. An assumed marginal value of water services are used as a key indicator for water efficiency and cost benefit analysis of traditional and alternative water sources.

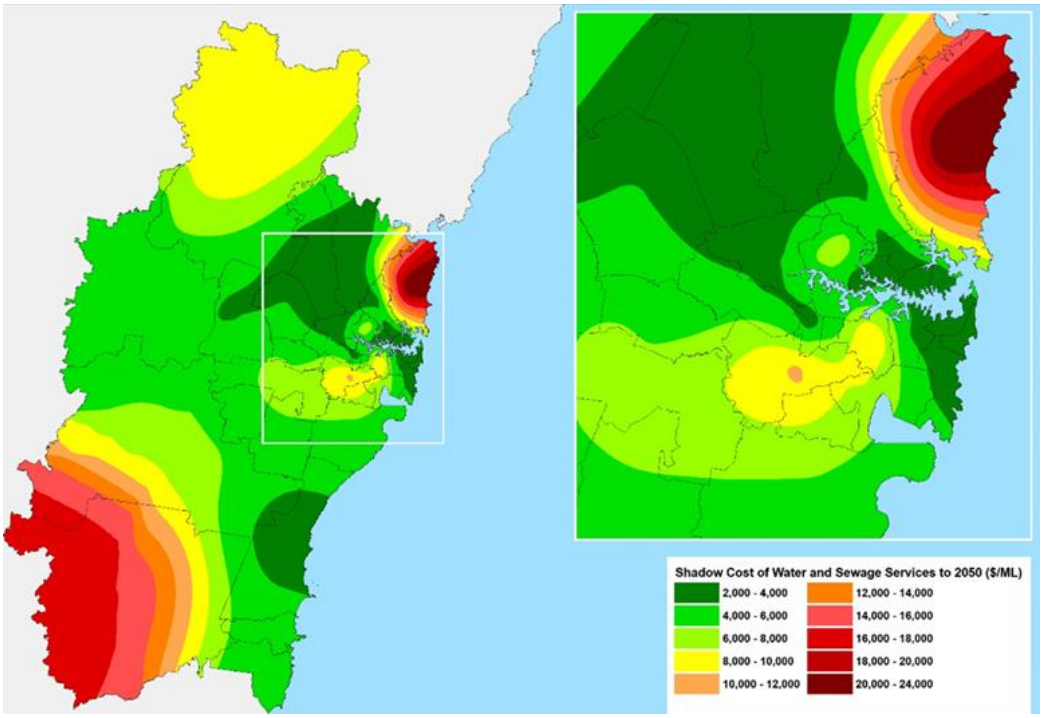
If the monopoly and the regulator understate the value of water this acts as a barrier for other stakeholders and technologies to compete with monopoly water services and creates a competitive advantage for monopoly water providers. This crowds out other opportunities in society.

Consider the following statements about the value of water which indicate that price signals about the value of water vary widely and appear to act against investing in water efficiency and alternative water sources.

- Sydney Water has documented the current economic level of water conservation as low as $0.31/kl. That is, if a kilolitre of water costs more than 31 cents to save, a water efficiency opportunity is not economic and not supported. (15/8/2022 https://www.sydneywater.com.au/about-us/our-organisation/what-we-do/operating-licence.html)
- IPART has determined the variable charge for water services is $2.35/kL (while dam levels are above 65%), and the fixed charge is not volumetric and often not considered in cost benefit assessment. (IPART (final) 2020)
- IPART documented in 2020 that the combined variable and fixed charges for water and sewage in Greater Sydney was about $5/kL for a residential property using 200kL/annum. (IPART (draft) 2020, p138). Water Corporations prefer to distinguish water and sewage services but from a customer point of view they are simply part of the bill for water services and customers have very little control over the charges for sewage services. From a water efficiency point of view a kilolitre of indoor water usage saved is a saving in both water treatment and transport, and sewage treatment and transport.
- A landmark report by the Queensland Auditor General found that the actual costs, including capital infrastructure costs, of the SEQ desalination plant and sewage treatment plants were between $26/kL and $35/kL respectively. The assessment was based on lower volume operation of the plants in 2010/11 however history has shown that these plants do not operate at full capacity all the time and the cost of additional supply from these sources

appears to be quite different to the commonly used “water costs $2/kL” understanding (or less than $0.31/kL in assessing water efficient options). (Queensland Audit Office 2013)

- The real costs of water and sewage supply are spatially variable with distance and elevation from central treatment plants. This means that postage stamp pricing of $2.35/kL for water is an inaccurate price signal for water and sewage services to the urban periphery.



Artificially low prices distort price signals to market and act as barriers to legitimate competition and efficiency measures. If additional supply infrastructure costs are in the order of $30/kL and the same metric was used to value the benefits of water efficiency and alternate water sources than those alternatives would have a stronger economic justification. (Coombes 2019)

RECOMMENDATION AND CONCLUSION

In order to ensure a level playing field we recommend IPART seek independent advice on the spatial and temporal value of water for the purposes of water efficiency programs and alternative water sources and having arrived at a metric, apply the same figure to proposals for both water efficiency programs, alternative water sources and new infrastructure services. There is good economic evidence that accurate and consistent price signals will result in a level playing field, better allocation of resources, more accurate cost benefit assessment and better incentives for the optimum use of scarce resources.

Finally, the competitive neutrality requires that the barriers to entry must be removed and there is equality of access to information for everyone.

We add that this would be an interesting exercise and it would be nice to include the authors in the process.

Kind regards

Bibliography

IPART (draft). (2020). *Review of Prices for Sydney Water from 1 July 2020- Draft Report.* Independent Pricing and Regulatory Tribunal New South Wales.

IPART (final). (2020). *Review of Prices for Sydney Water from 1 July 2020 - Final Report.* Independent Pricing and Regulatory Tribunal New South Wales.

PJ Coombes, M. Smit, M. E. Barry. (2019). Bottom up systems analysis of market mechanisms for pricing water and sewage services. *OzWater 2019.* Australian Water Association.

Queensland Audit Office. (2013). *Maintenance of water infrastructure assets, Report to Parliament 14: 2012-2013.* Brisbane: Queensland Audit Office.

Bottom up systems analysis of market mechanisms for pricing water and sewage services

Peter J Coombes, Michael Barry and Michael Smit

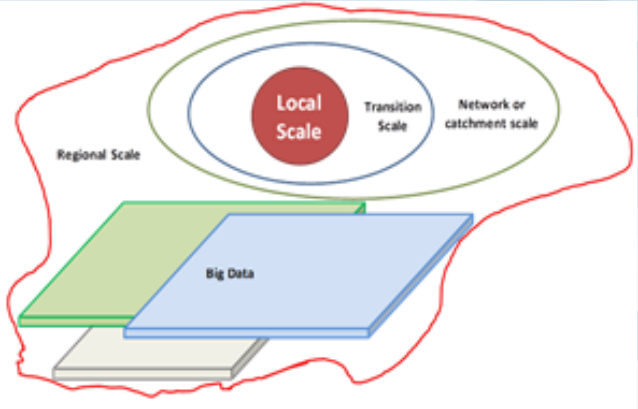
Urban WaterCycle Solutions
Independent research and consulting

BMT

Kingspan

Bottom Up Systems Analysis of Big Data

- Local spatial and temporal detail in systems analysis
- Evaluation of cumulative cost & price effects
- No fixed tariffs?
- Spatial costs?



Climate, environment, dwelling types, land uses, historical behaviour, costs

LOCAL SIMULATIONS

Basis of all modelling. Determines underpinning local water balances, environmental impacts and financial transactions

PRICE

Population, dwelling numbers, antecentent dry days, season, rainfall, temperature, behaviour, infrastructure, planning zones

TRANSITION PROCESS

Translation of historical data and local simulation results for inputs to nodes in the stochastic system model

Water, wastewater and stormwater networks, rivers, urban waterways, infrastructure, policy, regulations, operating rules.

CATCHMENT BEHAVIOURS

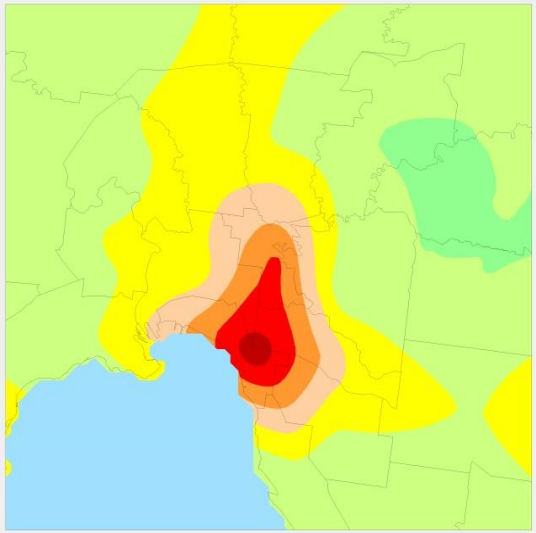
Simulates multiple replicates of system behaviours using results from earlier analysis in statistically significant manner

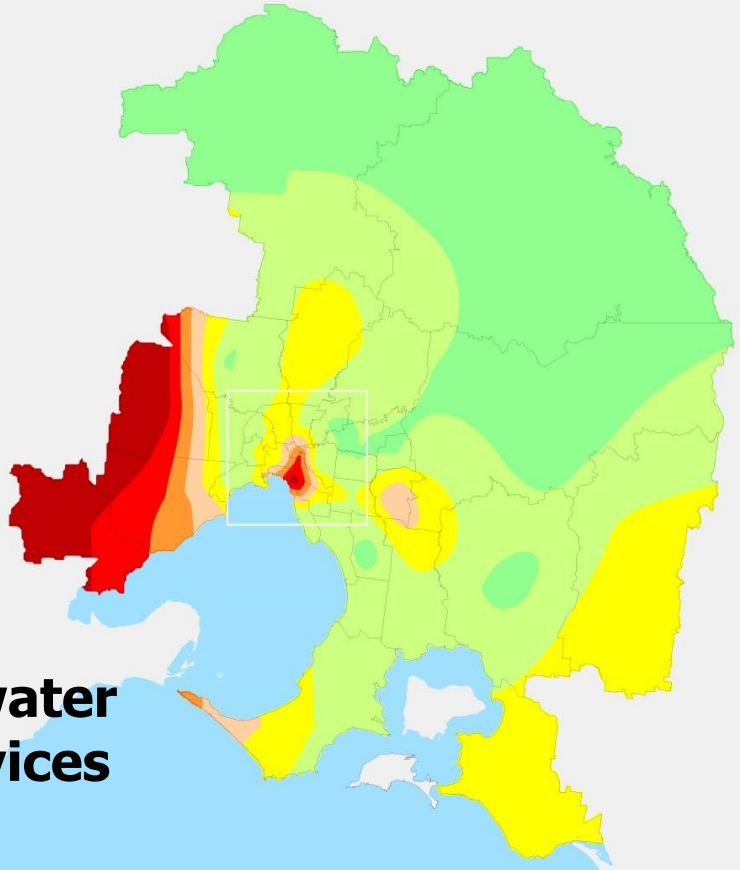
SYSTEM FRAMEWORK WITH FEEDBACK LOOPS

Water, wastewater and stormwater flows, water security, flood risks, waterways health, economics, greenhouse gas emissions

Spatial costs for Greater Melbourne

- Full spatial costs of services
  - $4/kL - $11/kL
- Spatial long run marginal costs
  - All costs variable
- Shadow cost comparison for alternative strategies
- Opportunity maps

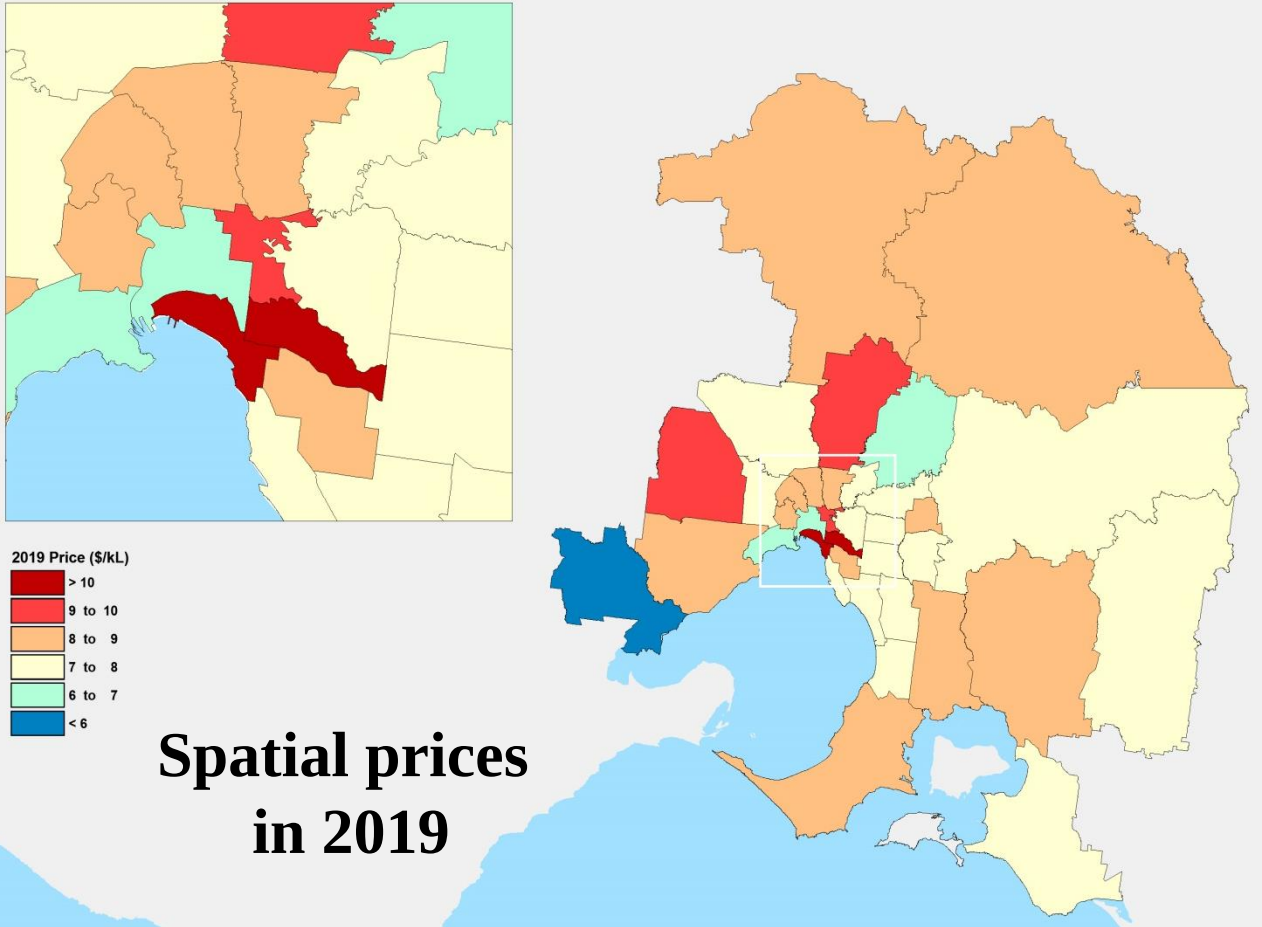




BAU costs of water & sewage services to 2050

Spatial prices

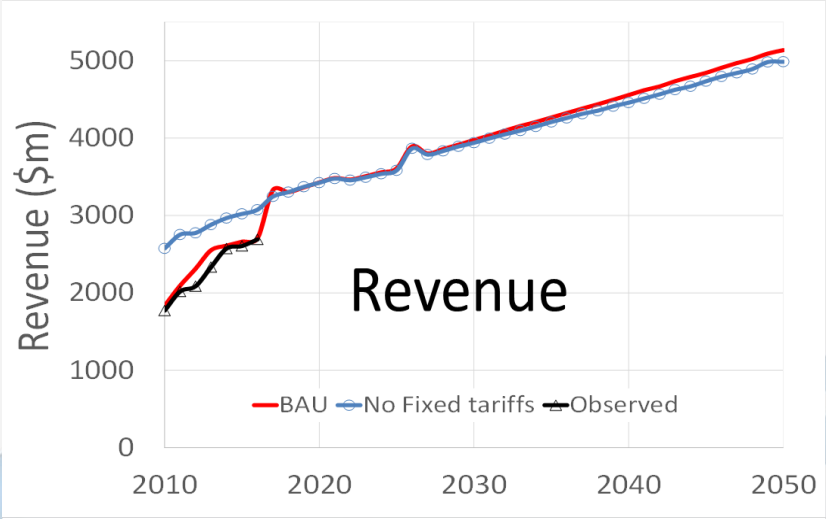
- Full usage tariff set to provide spatial revenue requirements
- Revised every year
- Average tariffs
  - 2010: $7.30/kL
  - 2050: $9.90/kL
- Variability
  - $5.04/kL to $15.60/kL

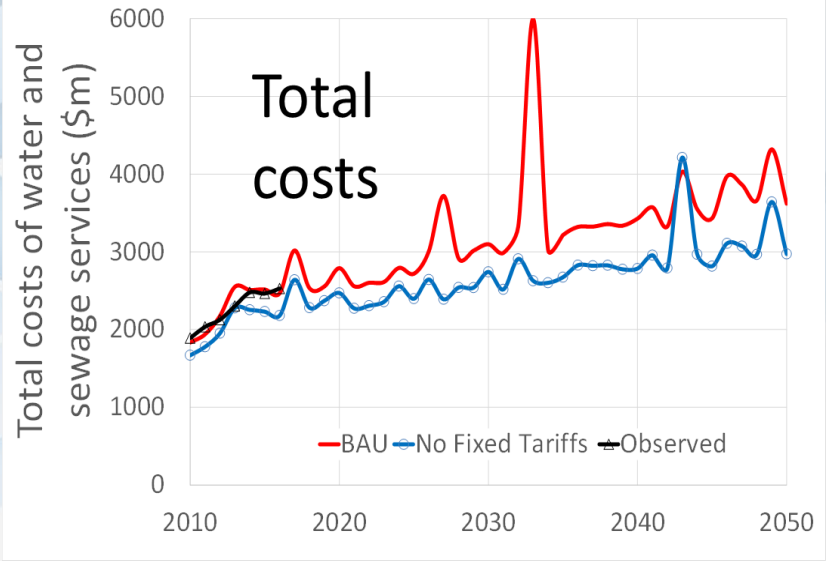


Spatial prices in 2019

Summary

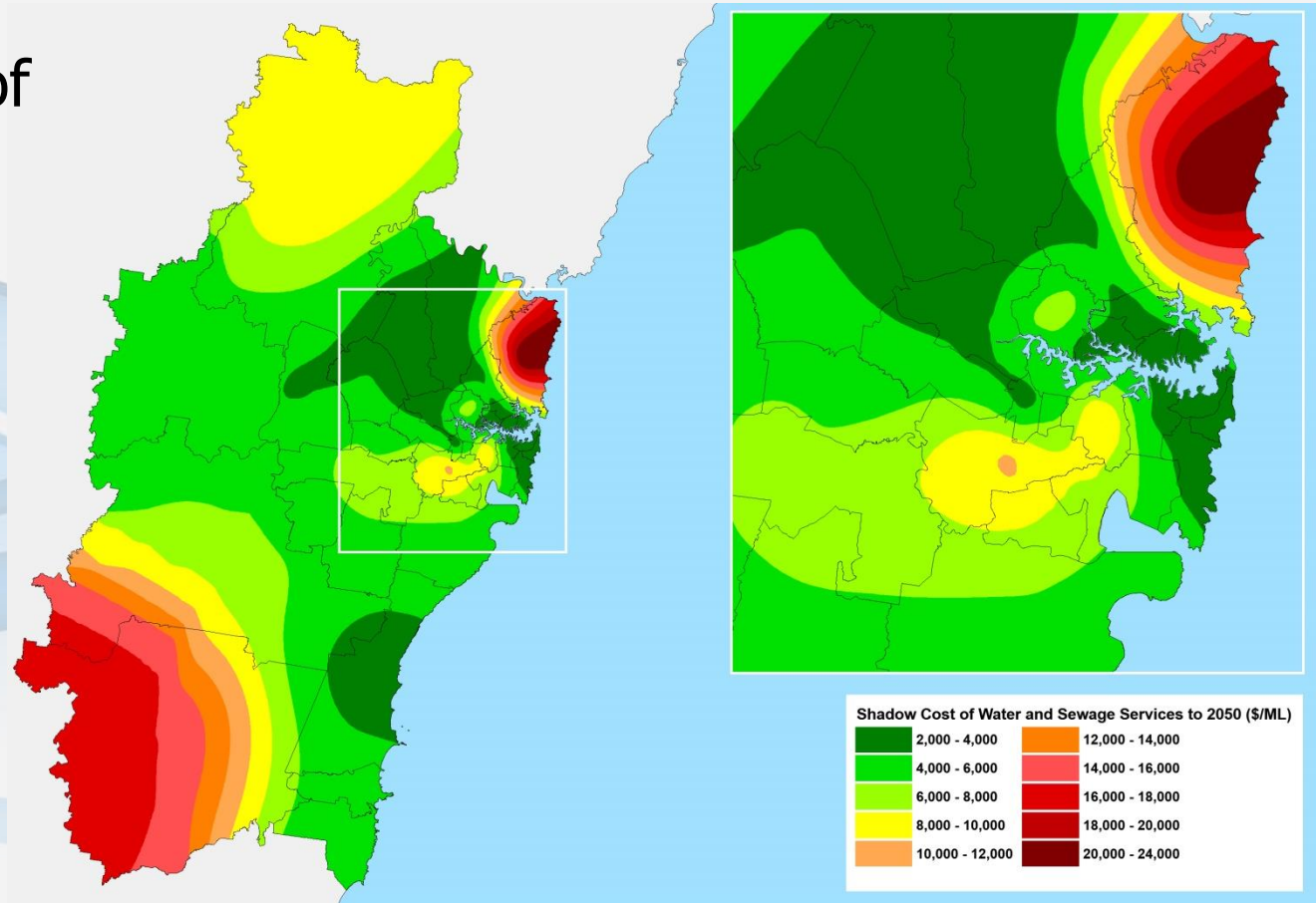
- Full usage tariffs:
  - Reduce demand & increase security
  - Improves economic efficiency & equity
  - Provides strong economic benefits: NPV $8.6 billion to 2050
- Spatial costs = shadow cost maps for assessment of alternatives
- Ongoing research into full spectrum of impacts on households and utilities
- Exploring spatial price elasticity





Spatial costs for Greater Sydney

- Full spatial costs of services
  - $2/kL - $24/kL
- Spatial long run marginal costs
- Shadow cost comparison for alternative strategies
- Opportunity maps



Further documents were attached:

- Queensland Audit Office, Maintenance of water infrastructure assets Report to Parliament 14: 2012–13, June 2013

- IPART, Review of prices for Sydney Water from 1 July 2020, Draft Report, March 2020