IPART
New South Wales

Independent Pricing and Regulatory Tribunal

Discharge factors for non-residential customers

Water — Final Report
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ISBN 978-1-925193-53-4

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1 Executive summary

IPART has completed a review of the discharge factors it uses in determining sewerage prices for non-residential customers. We have decided to maintain our current practice for pricing determinations where we adopt the values for discharge factors that are set by the regulated water utilities – unless we identify a strong case to do otherwise during the price review process. We will continue to ask for information from utilities on discharge factors as part of our price review process and ask that utilities adopt best practice by ensuring customers understand the impact that discharge factors have on their bills, and the process for seeking an assessment of their discharge factor.

In setting water utilities' sewerage usage prices ($/kL) for non-residential customers, we require a measure of the volume of sewerage discharged by a customer. As it is costly to directly measure the volume discharged, we estimate the volume by applying a discharge factor to the customer's water consumption. Discharge factors are also applied to non-residential sewerage service charges ($ per property, based on meter size).[1]

Discharge factors have an impact on quantity (volume) estimates, and hence price, and are currently set by the water utilities independent of IPART. This means that discharge factors vary across the water utilities and the water utilities can, in theory, change discharge factors at any time.

The objective of this review was to determine whether discharge factors should be regulated or prescribed by IPART, and whether discharge factors for the same type of customer should be uniform across the water utilities that we regulate.[2] That is, whether a bakery in Sydney should be subject to the same deemed discharge factor as a bakery in Hunter, Gosford and Wyong.

While there was some support from stakeholders for standardising discharge factors to mitigate any inequities, both Hunter Water Corporation (Hunter Water) and Sydney Water Corporation (Sydney Water) provided evidence that their existing processes for assessing and setting discharge factors are sufficient. Given these processes and the low level of stakeholder concern evident in submissions about the current arrangements,[3] we do not consider there is a strong case for regulation of discharge factors at this stage.

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1 In general terms, a water utility's prices are determined by dividing its notional revenue requirement (reflecting efficient costs) by forecast sales volumes or quantities (customer connections, volumes of water sold, and volumes of wastewater collected and treated).

2 Five of the water utilities that IPART regulates use discharge factors: Sydney Water, Hunter Water, Gosford City Council (Gosford Council), Wyong Shire Council (Wyong Council) and Essential Energy (located in Broken Hill).

3 We received three submissions to our Draft Report, all agree with our decision to maintain our current practice: Sydney Water submission to IPART, November 2014, p 1; Hunter Water submission to IPART, November 2014, p 1; Wyong Council submission to IPART, October 2014, p 1.

This report outlines the context for the review, stakeholders' views and our considerations for our final decision.

1.1 Key issues for the review and stakeholders' views

In this review, we were particularly interested in issues associated with similar businesses in different geographical areas having different discharge factors applied to them, as a result of each water utility calculating its own discharge factors.

The key issues that we sought comment on in our Discussion Paper were:

- Standardising discharge factors for small businesses across water utilities.
- A proposal we made to achieve this by a two-part process:
  - firstly, establishing a list of discharge factors for an extensive range of small business types, and
  - secondly, where the water utility or the individual customer disagrees with this discharge factor, a site-specific discharge factor would be calculated for that premise.
- A proposal we made to use the list of standard discharge factors published by the NSW Office of Water (NOW)[4] as a starting point.
- Our proposal to use a formula to address instances where a business has a sewerage service charge that is disproportionately high relative to its actual sewerage discharge volumes, due to a large metered water *capacity* demand (predominately for firefighting purposes) – and hence a large meter and a high discharge factor.

Whilst public submissions and Hunter Water (in principle) supported IPART's proposal for standardising discharge factors, Sydney Water reported members of its Business Customer Forum were concerned about the additional costs of regulation and that they do not appear to be justified. There were concerns from Hunter Water that NOW's list of discharge factors is overly prescriptive, and from Sydney Water that NOW's list of discharges is outdated and not suitable for application to their customers.

Regarding our proposal to use a formula for customers with fire-fighting meters, both Sydney Water and Hunter Water report the issue has been addressed through site specific discharge factors or other metering arrangements.

[4] The list is intended to help the large number of Local Water Utilities in NSW regulated by NOW, by giving guidance as to appropriate discharge factors for different types of businesses: Department of Water and Energy, *Liquid Trade Waste Regulation Guidelines*, April 2009, pp 306-307.

Our draft decision, which took account of stakeholders' views, was to maintain our current practice for pricing determinations where we adopt the values for discharge factors that are set by the regulated water utilities – unless we identify a strong case to do otherwise during the price review process. Our draft report also noted that utilities should enhance the transparency around discharge factors by providing information on their websites on the range of discharge factors, the impact of the discharge factors on customers' bills, and the cost and process to assess a customer's discharge factor.

Those utilities that made submissions in response to our draft report support our draft decision to not prescribe or regulate discharge factors, and will look for ways to improve how they currently communicate with customers on the discharge factor assessment process.

1.2 Our final decision

Our final decision is to maintain our current approach of using the discharge factors as set by the water utilities - unless we identify a strong case to do otherwise during the price review process.

In this review, we took account of concerns raised by stakeholders that the costs of a standardised approach would outweigh the benefits. We also took account of evidence reported by utilities that their existing processes have been effective in reviewing and updating discharge factors as needed.

However, to improve the transparency of the process, we consider it good practice that utilities should communicate with customers on their websites (eg, on fact sheets):

- how the discharge factor affects customers' bills
- a list of discharge factors used for different businesses, industries or customer types
- the process, cost and information required for customers to seek assessment.

We will continue to seek discharge factor information from utilities in their pricing submissions and annual information returns. We will also include some of this information in our reports and fact sheets on our price determinations.

We consider that improving transparency around discharge factors and the assessment process is a cost effective way for customers to address any concerns about the application of discharge factors. Customers who have large meters for fire-fighting purposes, and a high discharge factor, can approach water utilities for an individual assessment of their applicable discharge factor if their actual discharge volume is disproportionately low.

We consider that customers should pay for the cost of individual assessments. However, we consider that Sydney Water's practice of refunding customers who can show that their discharge factors were set too high is good practice.

2 Context for the review

In 2013, IPART began a review of the discharge factors that regulated water utilities use to calculate non-residential sewerage bills (see Table 2.1 below for the timetable of this review). Discharge factors have been developed because of the difficulty in metering and thus measuring sewage flows and are currently calculated by the water utilities. Consequently, discharge factors vary from one utility to another. When we determine prices, we adopt those values as part of our pricing process.

This chapter provides background information on how discharge factors affect customers' bills, recent price reforms, and summarises our Discussion Paper and Draft Report.

Table 2.1 Timetable for the review

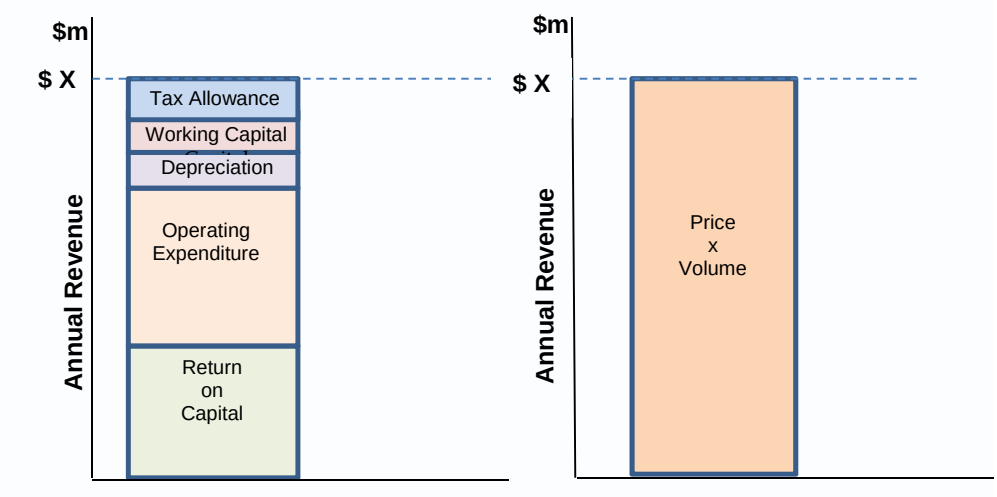
Date	Milestone
23 August 2013	Release Discussion Paper
4 October 2013	Submissions to Discussion Paper close
26 September 2014	Release Draft Report
7 November 2014	Submissions to Draft Report close
11 December 2014	Release Final Report

2.1 How IPART sets prices and the use of discharge factors

IPART is responsible for regulating the water and sewerage prices of a number of metropolitan water utilities in NSW.[5] We do this by first using the building block approach to estimate the revenue a water utility needs to efficiently and sustainably run its business (Figure 2.1).

[5] This includes Sydney Water, Hunter Water, Gosford Council, Wyong Council and Essential Energy (Essential Water) in Broken Hill. IPART also regulates the prices of bulk water providers, including the Sydney Catchment Authority, Sydney Desalination Plant, State Water's coastal operations and the NSW Office of Water (or Water Administration Ministerial Corporation).

Figure 2.1 The building block approach



Note: This chart is indicative only. Actual building block ratios vary significantly between utilities and depend on their capital structure, operating environment and actual costs.

Sewage quantities (volumes) are expensive to measure directly and such measurement is not cost effective for the majority of customers. Therefore, for a given customer, the volume of sewage discharged is calculated by estimating the percentage of their water usage that is discharged to the sewerage system. This is called a **discharge factor**.

IPART sets **service** (fixed, $ per meter or dwelling) charges for residential sewerage customers and a combination of **service** ($ per meter, per meter size) and **usage** (variable, $ per kL) charges for non-residential sewerage customers.

Whilst residential water usage can vary significantly, residential sewage discharges have a much smaller variation.[6] This small variation, and the difficulty in metering sewage flows, has lead IPART to set a common sewerage service charge for residential customers of each water utility, but no sewerage usage charge.[7]

In the case of non-residential customers, IPART generally sets a sewerage service charge per connection (based on water meter size multiplied by the discharge factor) and a sewerage usage charge per kL of estimated sewage discharged above the discharge allowance (estimated by applying the discharge factor to metered water consumption).

6 This is because large water users tend to have high outdoor consumption that is not discharged to the sewer system.

7 This fixed charge incorporates a usage charge for a deemed 150 kL discharge.

2.2 Recent reforms in price structures

Prior to 2012, there were differences between each regulated water utility's application of discharge factors to non-residential sewerage charges (Table 2.2), for example:[8]

- Discharge factors ranged from an average of 74% to 90%.
- Sydney Water allowed a discharge of 500 kilolitres (kL) before levying sewerage usage charges but other water utilities did not.

8 Residential customers are levied a common service charge only, and no sewerage usage charge.

Table 2.2 Comparison of non-residential sewerage charges across water utilities prior to 2012

	Sydney Water	Hunter Water	Gosford Council	Wyong Council	Essential Energy
Discharge allowance[a]	500 kL	0 kL	0 kL	0 kL	0 kL
Usage charge[b]	Per kL charge for all customers. Most small businesses had a default discharge factor of 78% applied.	Per kL charge for all customers. Discharge factors were between 10% and 85% with an average of 74%.	Per kL charge for all customers. The average and default discharge factor was 90%. A minimum sewerage bill value applied.	Per kL charge for all customers. The average and default discharge factor was 90%. A minimum sewerage bill value applied.	Per kL charge for all customers. Discharge factors were based on the standard NOW list.[f]
Service charge	Based on meter size[c] Adjusted by discharge factor.[d] Most small businesses had a default discharge factor of 78% applied.	Based on meter size. Adjusted by discharge factor. Discharge factors were between 10% and 85% with an average of 74%.[e]	Based on meter size. No discharge factors applied. A minimum sewerage bill value applied.	Based on meter size. Adjusted by discharge factor. The average and default discharge factor was 90%. A minimum sewerage bill value applied.	Based on meter size. Adjusted by discharge factor. Discharge factors were based on the standard NOW list.

a A discharge allowance is the amount of sewerage discharge a customer is allowed before usage charges are levied. Billable Sewerage Usage = (Water Consumption x Discharge Factor) – Discharge Allowance.

b An example of how sewerage bills are calculated generally can be shown by the following example for a Sydney Water customer. If a small non-residential Sydney Water customer had metered water consumption of 1,000kL pa, the base service charge was $1,000, the usage charge was $1.00/kL, the discharge allowance was 500kL and the discharge factor was 78%, their sewerage bill is calculated thus: Sewerage Service = $1,000 x .78 = $780 and the Sewerage Usage Charge = [(1,000kL x .78)-500kL]*$1.00 = $230 for a total sewerage bill of $1010.

c Service charges were proportionate to the residential charge, which was based on a 20mm meter. For example, if the 20mm charge was $500 and a non-residential customer had a 40mm meter, then the 40mm service charge was calculated by multiplying $500 by 40^2 and dividing by 20^2. (40^2 and 20^2 being the respective ratios of the cross sectional areas of the connections). The resultant 40mm base charge would be $500 x 1600/400 = $2000.

d The actual service charge paid would be adjusted by the discharge factor. Eg, $2,000 x .78 = $1,560.

e Prior to the 2013 Determination, Hunter Water's non-residential sewerage service charge was 200% of the equivalent residential service charge. Low discharge factors went some way to addressing the imbalance in the ratio of residential to non-residential base (20mm) service charges prior to 1 July 2013.

f Correspondence from Essential Energy, 15 September 2014.

Our review into price structures in 2012 brought about changes[9] that mean that water utilities are transitioning to more standardised price structures, as part of our last price determinations:[10]

- Discharge Factors - no change to discharge factors set by water utilities.
- Discharge allowances - regulated water utilities headed towards a 150 kL discharge allowance for non-residential customers, in line with the deemed allowance for residential customers. Sydney Water's discharge allowance for non-residential customers is reducing from 500 kL pa to 300 kL pa over the current determination period. Hunter Water's discharge allowance for non-residential customers is rising from 0 kL to 75 kL pa over the current determination period. Gosford and Wyong Councils' 2013 determinations incorporated a 150 kL pa discharge allowance for non-residential customers.
- Non-residential sewerage usage charges - water utilities transitioned to levels that are more reflective of the marginal (incremental) cost of transporting, treating and disposing of domestic strength effluent.
- Non-residential sewerage service charges - discharge factors now apply to the non-residential sewerage service charge of all water utilities.

2.3 Our Discussion Paper

We published a Discussion Paper[11] in September 2013, which set out the range of discharge factors charged by the different water utilities and sought stakeholders' views on whether a more standardised approach was needed.

In our Discussion Paper, we proposed a two-part approach for discharge factors, comprising:

- Part 1: A standard list of discharge factors for an extensive range of business types, which IPART would likely include in future price determinations.
- Part 2: Where the water utility or the individual customer disagrees with this discharge factor, then a site-specific discharge factor can be calculated for that premises.

9 IPART, *Review of metropolitan water utility price structures – Final Report,* March 2012.

10 In our last determination for Essential Energy, we decided to concentrate reforms on the price of water supply rather than other potential price structure reforms. Therefore, Essential Energy's determination did not change its discharge factor process which remains the same as summarised in Table 2.2.

11 IPART, *Discharge factors for non-residential customers – Discussion Paper*, September 2013.

We proposed that, if a standard list of discharge factors is to be adopted, a good starting point may be the standard discharge factors published by the NOW. This list was first compiled in 2002 by the then Department of Land and Water Conservation. It was intended to help the large number of Local Water Utilities in NSW, by avoiding duplication in the research and assessment necessary to formulate the table. The table was expanded and updated in 2006 and 2009.[12]

We also sought stakeholders views in our Discussion Paper on the application of sewerage discharge factors for customers who have large water meters (due to their need for large water capacity, predominately for fire-fighting purposes) and high discharge factors, but only low levels of actual sewerage discharge.

For example, if the non-residential customer has a small kitchen, shower and toilet, their wastewater discharged to the sewerage system may represent a high proportion of their actual water consumption (hence the high discharge factor). When the high discharge factor is applied to the large meter, which is in place to allow for high water consumption capacity for firefighting purposes, their sewerage service charge would be disproportionately high relative to the volumes of wastewater they discharge to the sewerage system.

2.4 Our Draft Report

In September 2014, we published a Draft Report[13] stating our draft decision to continue with our current process, where we adopt the discharge factors calculated by water utilities as inputs to our price determination process (rather than us prescribing or regulating discharge factors), unless there is a strong case to do otherwise.

In reaching our draft decision, we took account of views expressed by stakeholders:

- Water utilities report low levels of complaints about discharge factors.
- Water utilities have an assessment process for discharge factors, and Sydney Water maintains that it has a strong incentive to set discharge factors correctly as it provides refunds to customers if an assessment shows the discharge factor should be lower.
- A prescriptive approach would be costly.
- Sydney Water maintains that there may be a case for different discharge factors across water utilities (eg, due to factors such as higher density development, more varied and complex property types, and the large number of commercial developments that accommodate multiple business tenants).

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12 Department of Water and Energy, *Liquid Trade Waste Regulation Guidelines*, April 2009, pp 306-307.

13 IPART, *Discharge factors for non-residential customers – Draft Report*, September 2014.

- Both Sydney Water and Hunter Water raised concerns about using the discharge factors published by NOW as the basis for a standardised list of discharge factors. Sydney Water is concerned that the NOW publication is outdated for its purposes.

We also consider the transparency of the discharge factor assessment process could be improved by utilities communicating with customers on their websites:

- how the discharge factor affects customers' bills
- a list of discharge factors used for different businesses, industries or customer types
- the process, cost and information required for customers to seek assessment.

The utilities' discharge factor assessment process would also deal with businesses with fire-fighting capacity. Customers who have large meters for fire-fighting purposes, and a high discharge factor, can approach water utilities for an individual assessment of their applicable discharge factor if their actual discharge volume is disproportionately low.

We consider that customers should pay for the cost of individual assessments. However, we also consider that Sydney Water's practice of refunding customers who can show that their discharge factors were set too high is good practice.

3 Stakeholders' views on our draft decision

We received three submissions in response to our Draft Report, from Sydney Water, Hunter Water and Wyong Shire Council (Wyong Council).

All three utilities support our draft decision to maintain our current practice where we adopt the discharge factors calculated by water utilities as inputs to our price determination process, unless there is a strong case to do otherwise.[14]

Both Sydney Water and Hunter Water also endorse our view that the transparency of the discharge factor assessment process could be improved. It is good practice for utilities to ensure customers understand the impact that discharge factors have on their bills and the process for seeking an assessment of their discharge factor. To this end, both utilities are currently exploring the best channels of communication with their customers, taking into account the suggestions raised in our draft decision.

[14] Sydney Water submission to IPART, November 2014, p 1; Hunter Water submission to IPART, November 2014, p 1; Wyong Council submission to IPART, October 2014, p 1.

Wyong Council uses the list of discharge factors recommended by NOW, which it has found to be reasonable, reflective and fair. Wyong Council notes that in instances where discharge factors are questioned by customers, it undertakes, at no cost to the customer, a review of the discharge factor and implements changes when and where required and justified. Wyong Council notes that these instances are relatively uncommon, typically only about two or three enquiries per annum.

4 Our final decision

Taking into account stakeholders' submissions to our Draft Report, our final decision is to adopt the values for discharge factors that are set by the regulated water utilities – unless we identify a strong case to do otherwise during the price review process.

Non-residential customers currently have the ability to ask their utility to conduct an individual assessment of the discharge factors used to determine their bills and obtain an individual discharge factor. Utilities are well placed to review and update discharge factors as they respond to customer queries and carry out assessments. We therefore consider that there is no need to regulate discharge factors at this time. We are also influenced by the low level of complaints received about the current level of discharge factors and the assessment process.

While some information is listed on water utilities' websites, the process for seeking an assessment of discharge factors is not always clear. We consider that improving transparency around discharge factors and the assessment process is a cost effective way for customers to address any concerns about inequitable charges. To improve the transparency of the process, utilities should communicate with customers on their websites (eg, on fact sheets):

- how the discharge factor affects customers' bills
- a list of discharge factors used for different industries and businesses
- the process, cost and information required for customers to seek an assessment of their deemed discharge factor.

We will continue to seek discharge factor information from utilities in their pricing submissions and annual information returns. We will also include some of this information in our reports and fact sheets accompanying price determinations.

Customers who have large meters for fire-fighting purposes, and a high discharge factor, can approach water utilities for an individual assessment of their applicable discharge factor if their actual discharge volume is disproportionately low.

Utilities' current discharge factors have been developed over time based on different assessments. It is not cost effective for water utilities to individually assess every customer's discharge factor. Therefore, we consider that customers who consider their discharge factor has been set too high should pay for the cost of an individual assessment. However, we also consider that Sydney Water's practice of refunding the customer, where a customer's discharge factor is shown to have been set too high, is good practice.