

Fact Sheet – IPART 2015 household survey – Energy and Water conservation



20 September 2016



WHAT

This fact sheet discusses our 2015 household survey's findings on energy and water conservation.

We asked households:

- ▼ whether they had actively tried to use less energy and water over the previous five years, and if so, why
- ▼ how acceptable they found various water saving measures during droughts, and
- ▼ whether they would use less water if the price went up.



WHY

Our household surveys include questions about energy and water conservation to help us understand how households are likely to respond to price changes, and to inform broader policy debates. The information discussed in this document could help to inform water pricing and demand management strategies.



HOW

We commissioned Roy Morgan Research to conduct the survey. It interviewed 4,404 households in five areas:

- ▼ Sydney Water Corporation's area of operation (Sydney)
- ▼ Hunter Water Corporation's area of operation (Hunter)
- ▼ Gosford City Council area (Gosford)
- ▼ Riverina region, mainly Wagga Wagga and Albury (Riverina), and
- ▼ Mid-North Coast and Northern Rivers (North Coast).



FINDINGS

- ▼ Most households said they had actively tried to use less electricity and water over the past five years. But only about 35% said they had tried to use less gas.
- ▼ Those with lower household incomes were more likely to have tried to use less energy and water.
- ▼ Most households that had tried to use less energy did so to save money (about 80%). For those that had tried to use less water, concern about the environment was the most important reason.
- ▼ Households indicated that in times of drought, voluntarily conserving water and water restrictions were the most acceptable conservation measures, and higher water prices were the least acceptable.
- ▼ Only a little over half of households said they would use less water even if the price went up by \$1/kL (an increase of about 45%).



WHAT ELSE

The information paper with this fact sheet provides more detail on our energy and water conservation findings. We have also published:

- ▼ Other fact sheets and information papers on the survey, and its findings on energy and water usage, solar PV panels, payment difficulties, and concession cards and rebates,
- ▼ reports on water and energy usage (which include technical appendices), and
- ▼ output tables of the survey responses (Excel files).

These documents are available on our [website](#).

1 What we asked about energy and water conservation

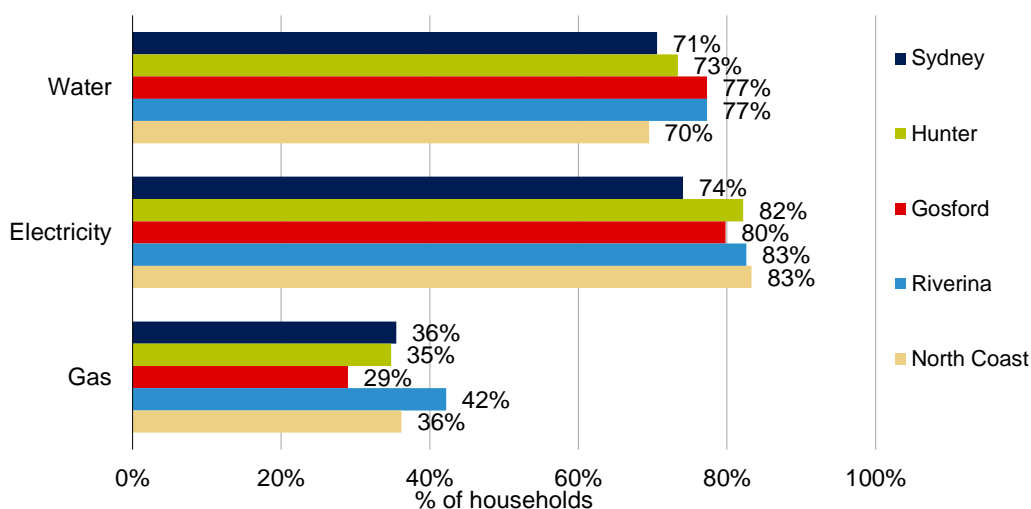
We asked households whether they had actively tried to use less energy and water over the previous five years and if so, why. We also explored households' attitudes to a range of measures to save water in times of drought, including paying a higher price for water. We asked how much prices would need to increase before they would use less water in response to the increase.

2 Efforts to use less energy and water

Most households had actively tried to use less energy and water

Around three-quarters of households in each survey area said they had actively tried to use less electricity (74% to 83%) and water (70% to 77%) over the previous five years. However, less than half of the households that use gas (either cylinder or mains gas¹) said they had tried to use less gas (29% to 42%). (See Figure 1.)

Figure 1 Households that had actively tried to use less energy and water, by survey area (% of households)



Note: Households that do not pay water usage charges are excluded from the analysis for water. The data are weighted by area weights (see IPART, *IPART 2015 Household Survey – About the survey*, September 2016).

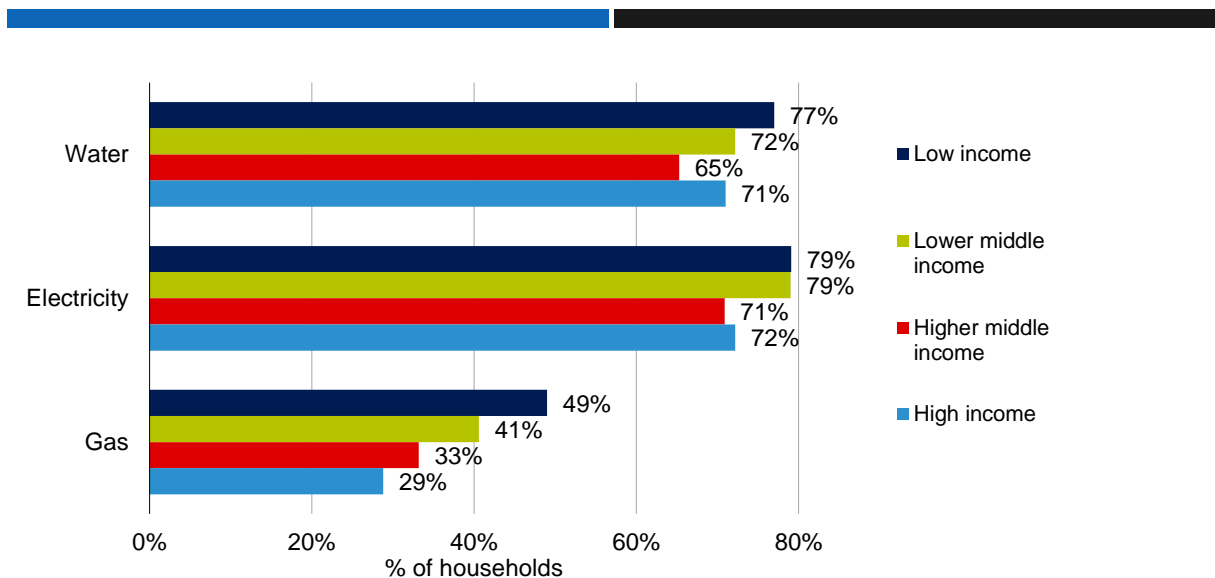
Source: 2015 Household Survey.

Households with lower incomes were somewhat more likely to have tried to use less electricity and gas than those with higher incomes. However, there does not appear to be a clear relationship between trying to use less water and income (Figure 2).

Box 1 explains how we defined income groups.

Figure 2 Households that had actively tried to use less energy and water, by income (% of NSW households)

¹ Mains gas means gas that is piped onto their property from gas mains on the street.



Note: The data are weighted to represent the NSW population. This means that respondents in Sydney receive a higher weight than respondents in the other survey areas, to reflect their higher proportion of the population (see IPART, *IPART 2015 Household Survey – About the survey*, September 2016).

Source: 2015 Household Survey.

Box 1 How we defined the household income groups

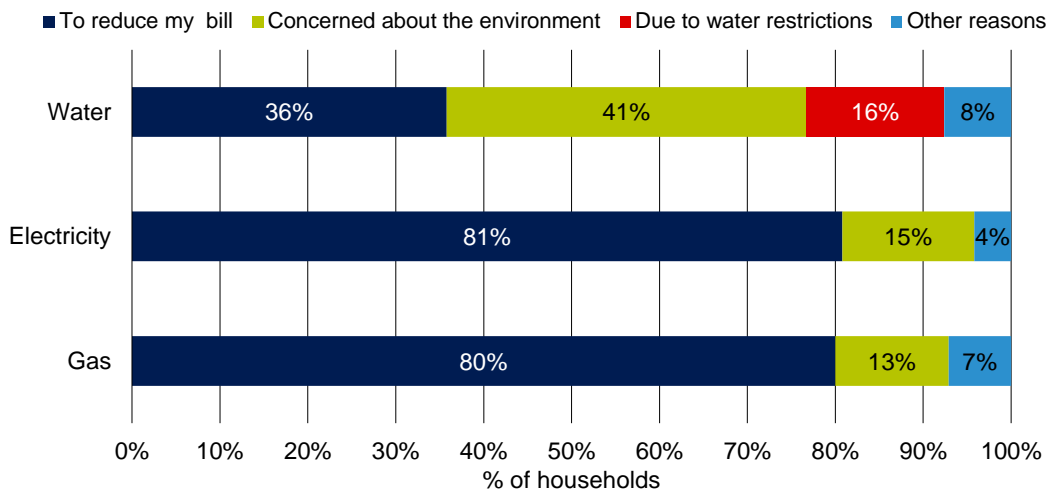
We asked survey respondents to provide their total household income from all sources (before tax) in one of nine categories. To simplify our analysis, we consolidated these categories into four groups:

- ▼ Low income (up to \$41,600 pa)
- ▼ Lower middle income (more than \$41,600 up to \$78,000 pa)
- ▼ Higher middle income (more than \$78,000 up to \$156,000 pa)
- ▼ High income (more than \$156,000 pa).

The most common reasons for trying to use less were to save money or to care for the environment

Around 80% of households said their main reason for trying to use less energy (electricity and gas) was to reduce their bills (ie, to save money). However, for those trying to use less water, most said their main reason was either concern for the environment or water restrictions. Only around a third said their main reason was to save money (Figure 3).

Figure 3 Main reason for taking active steps to reduce usage (% of NSW households)

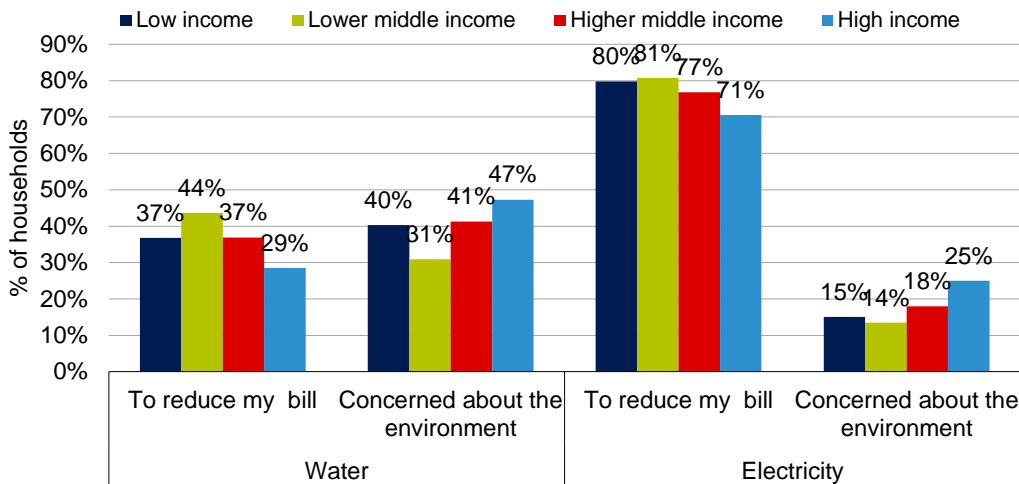


Note: The data are weighted to represent the NSW population. This means that respondents in Sydney receive a higher weight than respondents in the other survey areas, to reflect their higher proportion of the population (see IPART, *IPART 2015 Household Survey – About the survey*, September 2016).

Source: 2015 Household Survey.

This pattern of responses was broadly similar across survey areas and income groups. However, high income households were somewhat more likely to say environmental concerns were the main reason for trying to use less electricity and water compared to lower income households, and less likely to say saving money was the main reason (Figure 4).²

Figure 4 Households that have taken active steps to reduce usage, by income (% of NSW households)



Note: The data are weighted to represent the NSW population. This means that respondents in Sydney receive a higher weight than respondents in the other survey areas, to reflect their higher proportion of the population (see IPART, *IPART 2015 Household Survey – About the survey*, September 2016).

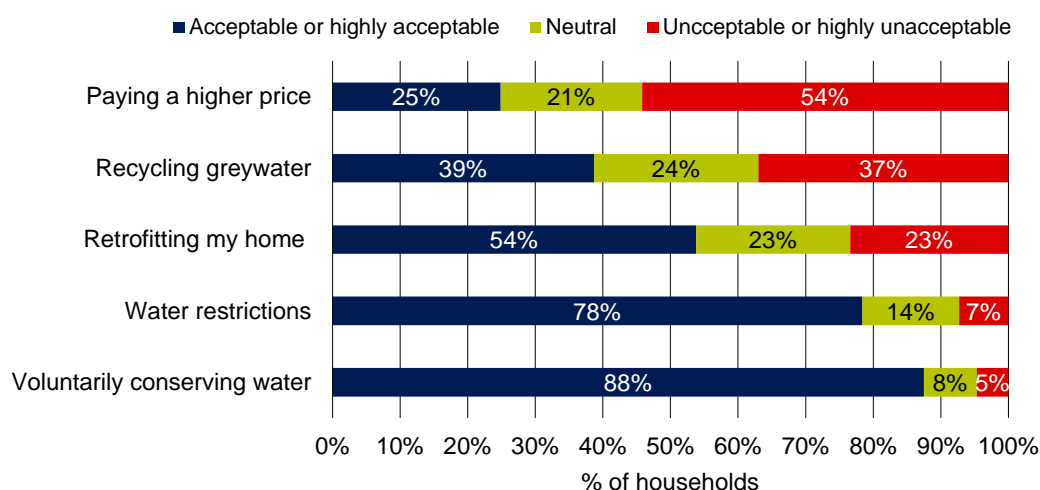
² Also see IPART, *IPART 2015 Household Survey – Output tables - All areas*, 2016.

3 Attitudes to water savings measures and responsiveness to price increases

Households find some water savings measures more acceptable than others

We listed of five measures designed to reduce water usage in times of drought. We asked households to rate how acceptable they found each measure, on a scale of 1 to 5. We found that the most acceptable measure was voluntarily conserving water in the home (88% of households rated it as 'acceptable' or 'highly acceptable'). The second most acceptable measure was water restrictions (78% of households rated it as 'acceptable' or 'highly acceptable'). The least acceptable measure was paying a higher price for water – only 25% of households rates this measure as 'acceptable' or 'highly acceptable' (see Figure 5).

Figure 5 Acceptability of water conservation measures (% of NSW households)



Note: The data are weighted to represent the NSW population. This means that respondents in Sydney receive a higher weight than respondents in the other survey areas, to reflect their higher proportion of the population (see IPART, *IPART 2015 Household Survey – About the survey*, September 2016).

Households may not be very responsive to water price increases

We also asked households how they would change their water usage in response to increases in the price of water. Specifically, we asked if they would use less water if the price increased by 20c/kL, 50c/kL or \$1/kL. For a household that uses 200kL of water a year, these price increases translate into an annual increase in its water usage bill³ of about \$40, \$100 and \$200 respectively. The actual price in the metropolitan areas at the time of our survey was around \$2.20 per kL, and the total usage bill for 200kL per year was about \$440.⁴

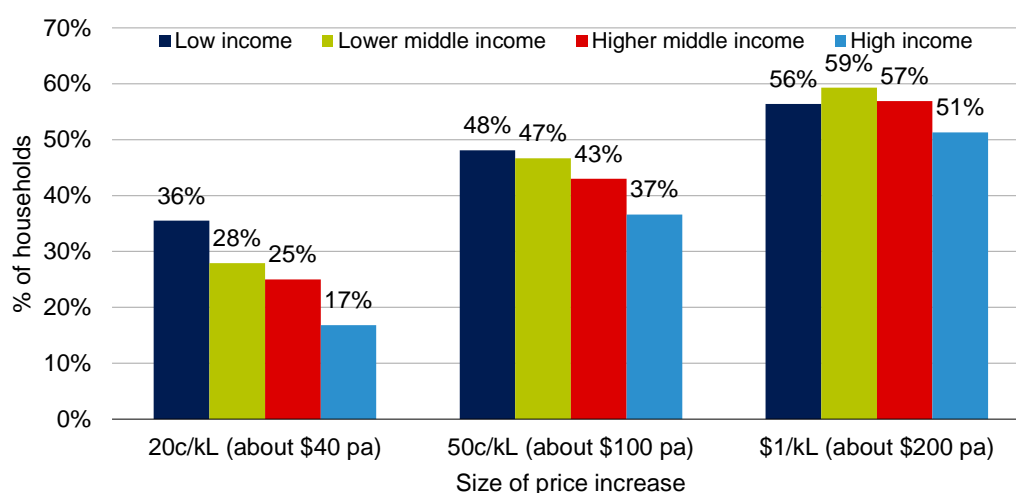
³ The total bill for water includes a fixed component as well as a usage component. The total bill from the water utility may also include a sewerage charge and, for some households, a stormwater charge.

⁴ Actual prices were \$2.23/kL in Sydney and Gosford and \$2.19 in Hunter. Prices in the regional areas varied from 1.18/kL for usage up to 225L pa in Albury (Riverina) to \$5.10 per kL for use in excess of 270kL pa in Hastings (North Coast).

Overall, our findings suggest households are not very responsive to small increases in the water price. Fewer than 30% of households said they would use less water if the price increased by 20c/kL (ie, if water cost about 10% more than \$2.20 /kL). They may be more responsive to very large increases: just over a half said they would use less water if the price increased by \$1/kL (ie, if water cost about 45% more than \$2.20 /kL). (See Figure 5.) This pattern of responses was similar across the survey regions.⁵

Lower income households appear to be somewhat more responsive to small price increases than higher income households. For example, 36% of low income households said they would reduce the amount of water they use if the price increased by 20c/kL, compared with only 17% of high income households (Figure 6).

Figure 6 Proportion of households that would use less water if the price was higher, by income group (% of NSW households)



Note: Households that do not pay water usage charges are excluded. The data are weighted to represent the NSW population. This means that respondents in Sydney receive a higher weight than respondents in the other survey areas, to reflect their higher proportion of the population (see IPART, *IPART 2015 Household Survey – About the survey*, September 2016).

Source: 2015 Household Survey.

⁵ See IPART, *IPART 2015 Household Survey – Output tables - All areas*, 2016.

Box 2 Further information on our household survey

We have published the results of the 2015 household survey in a series of fact sheets and information papers together with two reports that investigate our findings on water and energy usage. We have also published a set of output tables (Excel files) that report the detailed responses to each survey question.

Fact sheets and information papers:

- ▼ About the survey
- ▼ Water usage (fact sheet only)
- ▼ Energy usage (fact sheet only)
- ▼ Energy and water conservation (this one)
- ▼ Solar PV panels
- ▼ Payment difficulties
- ▼ Concession cards and rebates

Reports:

- ▼ Residential energy usage (electricity and gas)
- ▼ Residential water usage

Output tables:

- ▼ Each survey area and NSW as a whole (the latter weighted to represent the regional distribution of the population)
- ▼ Sydney, by income group and as a whole
- ▼ Hunter, by income group and as a whole

We cannot report on the other survey areas by income group because the sample sizes for some of the income categories are too small.

We engaged Frontier Economics (Frontier) to conduct statistical analysis of the survey data for our reports. Frontier analysed the energy usage data and produced a separate report on its findings. It also analysed the water usage data, and we have included its findings in our report on water usage. The reports include detailed technical appendices to allow other parties to conduct further research into residential energy and water usage.

You will find the documents on our [website](#).