Global water tariffs continue upward trend

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Category: Market Profile
Region: Unspecified
Country: Australia, Canada, China, Czech Republic, Denmark, France, Germany, India, Italy, Japan, Korea (South), Mexico, Poland, Portugal, Russian Federation, Spain, Turkey, United Kingdom and United States
<table>
<thead>
<tr>
<th>Country</th>
<th>Combined tariff</th>
<th>Water tariff</th>
<th>Wastewater tariff</th>
<th>Change %</th>
<th>Domestic use l/head/day</th>
<th>No. of cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>$8.83</td>
<td>$4.32</td>
<td>$4.52</td>
<td>0.1%</td>
<td>114</td>
<td>2</td>
</tr>
<tr>
<td>Australia</td>
<td>$5.78</td>
<td>$3.14</td>
<td>$2.65</td>
<td>11.5%</td>
<td>605</td>
<td>5</td>
</tr>
<tr>
<td>Germany</td>
<td>$5.36</td>
<td>$3.33</td>
<td>$2.02</td>
<td>1.8%</td>
<td>151</td>
<td>10</td>
</tr>
<tr>
<td>France</td>
<td>$4.56</td>
<td>$3.24</td>
<td>$1.31</td>
<td>-0.6%</td>
<td>232</td>
<td>7</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>$4.27</td>
<td>$2.07</td>
<td>$2.19</td>
<td>3.9%</td>
<td>139</td>
<td>8</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>$3.63</td>
<td>$1.96</td>
<td>$1.78</td>
<td>5.7%</td>
<td>213</td>
<td>3</td>
</tr>
<tr>
<td>Canada</td>
<td>$3.14</td>
<td>$1.95</td>
<td>$1.19</td>
<td>7.5%</td>
<td>778</td>
<td>5</td>
</tr>
<tr>
<td>Poland</td>
<td>$3.12</td>
<td>$1.44</td>
<td>$1.68</td>
<td>17.6%</td>
<td>149</td>
<td>6</td>
</tr>
<tr>
<td>United States</td>
<td>$2.98</td>
<td>$1.29</td>
<td>$1.69</td>
<td>8.1%</td>
<td>616</td>
<td>27</td>
</tr>
<tr>
<td>Japan</td>
<td>$2.56</td>
<td>$1.48</td>
<td>$1.08</td>
<td>0.2%</td>
<td>373</td>
<td>13</td>
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<tr>
<td>Portugal</td>
<td>$2.27</td>
<td>$1.62</td>
<td>$0.65</td>
<td>0.6%</td>
<td>308</td>
<td>3</td>
</tr>
<tr>
<td>Spain</td>
<td>$2.13</td>
<td>$1.47</td>
<td>$0.66</td>
<td>1.9%</td>
<td>342</td>
<td>6</td>
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<tr>
<td>Turkey</td>
<td>$2.14</td>
<td>$1.38</td>
<td>$0.76</td>
<td>10.5%</td>
<td>238</td>
<td>8</td>
</tr>
<tr>
<td>Italy</td>
<td>$1.81</td>
<td>$0.94</td>
<td>$0.87</td>
<td>11.6%</td>
<td>483</td>
<td>6</td>
</tr>
<tr>
<td>Russia</td>
<td>$1.00</td>
<td>$0.61</td>
<td>$0.39</td>
<td>21.9%</td>
<td>368</td>
<td>13</td>
</tr>
<tr>
<td>South Korea</td>
<td>$0.76</td>
<td>$0.56</td>
<td>$0.20</td>
<td>0.2%</td>
<td>552</td>
<td>7</td>
</tr>
<tr>
<td>Mexico</td>
<td>$0.69</td>
<td>$0.65</td>
<td>$0.04</td>
<td>2.8%</td>
<td>200</td>
<td>11</td>
</tr>
<tr>
<td>China</td>
<td>$0.46</td>
<td>$0.34</td>
<td>$0.12</td>
<td>5.7%</td>
<td>95</td>
<td>25</td>
</tr>
<tr>
<td>India</td>
<td>$0.15</td>
<td>$0.14</td>
<td>$0.01</td>
<td>1.6%</td>
<td>139</td>
<td>17</td>
</tr>
</tbody>
</table>
What makes the average tariff?

Bottom 10 combined water and wastewater tariffs

1. Ashgabat (Turkmenistan) $0.00/m³
2. Belfast (UK) $0.00/m³
3. Cork (Ireland) $0.00/m³
4. Dublin (Ireland) $0.00/m³
5. Jeddah (Saudi Arabia) $0.03/m³
6. Riyadh (Saudi Arabia) $0.03/m³
7. Havana (Cuba) $0.04/m³
8. Karachi (Pakistan) $0.04/m³
9. Damascus (Syria) $0.05/m³
10. Cairo (Egypt) $0.05/m³

Chart key

Costs in US$ per cubic metre of water
- Water + wastewater fixed costs
- Water variable costs
- Wastewater variable costs*
- Total sales tax

* where charged separately
A 6.8% rise in global water tariffs masks significant changes in the way local authorities calculate their rates. David Zetland gets behind the numbers.

Global water tariffs rose by an average of 6.8% between July 2010 and July 2011 at constant exchange rates. The average combined water and wastewater tariff in the 308 major cities represented in GWI’s 2011 Water Tariff Survey is
$2.03/m³. This sum is calculated by taking the bill for a household using 15m³ a month, and then dividing the total by 15 to enable a comparison between different charging structures.

Among the 271 cities for which we have data for both 2010 and 2011, the city with the biggest increase in water prices is Memphis, USA (up 80% due to the costs of complying with clean water regulations).

At the other end of the scale, prices fell by the most in Tbilisi, Georgia (down 76% due to a move to volumetric metering that lowered prices for average users).

Tbilisi is the latest in a series of Eastern European cities to move from a system where no one has a meter to universal metering. The new metered rate for our benchmark 15m³/month household is significantly below the old non-metered rate, although the nonmetered rate had been subject to a large hike to incentivise people to sign up for a meter.

On the wastewater side, the price of collection and treatment increased by 115% per cubic metre in Memphis (see above). Meanwhile in Houston, USA, wastewater tariffs fell by 42% for our “average user”. Although most blocks went up slightly in the latter city, the one applicable to our “average user” has fallen considerably owing to the differing data capture parameters.

Auckland, New Zealand, is the city with the biggest decrease in water tariffs (down 36.3%) that is not due to a change in the tariff structure affecting our “average user”. The change reflects the fact that Watercare Services took over the region’s water and wastewater services on 1st November 2010, and subsequently introduced a standardised metropolitan water tariff with effect from 1st July 2011. A new schedule of wastewater charges will take much longer to implement, Watercare has warned.

There are also signs that sub-Saharan Africa is taking tariff reform seriously: Addis Ababa implemented its first rate hike since May 2007. Although it was a relatively major rise (24%), the city still has one of the lowest water prices in the survey in US dollar terms.

Residential water is free in Cork, Dublin, Belfast, and Ashgabat. The fact that water is free in Cork and Dublin increases pressure on government finances, and the ongoing financial crisis in Ireland may have the effect of forcing those prices to rise above zero sooner rather than later.

Dollarised wastewater collection and treatment tariffs in the 248 cities for which we have data range from a high of $5.68/m³ in Aarhus (Denmark) to zero.

An examination of combined tariffs reveals that the most expensive city for turning on the tap or flushing the toilet is Aarhus, at just over $10.00/m³. Of the 29 cities with a combined tariff of more than $5.00/m³, two are in the Caribbean, three are in the US, four are in Australia, and 25 are in northern and western Europe.

Several cities have split out wastewater charges more explicitly than before this year (e.g. Oslo, Nantes, Aarhus and Nice). This gives the appearance of a big fall in water tariffs (which dropped by 39% in Oslo, for example), although the overall combined tariff remains comparable.

The countries with the most cities in the survey (USA with 27, China with 25 and India with 17) show significant domestic variation. The minimum, median and maximum prices per cubic metre of water are $0.53, $1.13 and $3.14 in the US, $0.17, $0.35 and $0.59 in China, and $0.05, $0.11 and $0.28 in India, respectively. There may be many reasons why prices vary within one country, but the lesson is clear: no country has “average” water prices.

We have water tariff data for 308 cities and wastewater tariffs for 248 cities. The most common rate structure in the survey is increasing block rates (151 cities), followed by linear rates (141 cities), decreasing block rates (9 cities) and fixed charges (7 cities). The correlation within water-wastewater price pairs is 67% (a 100% correlation would mean that water and wastewater prices moved in the same direction and at the same rate).

Correlation is more likely to be low when water and wastewater services are provided by different organisations, when one system or the other is subject to costly expansion or renovation, or when tariffs are fixed for one system but volumetric in the other. It’s not uncommon to see wastewater costs recovered through water tariffs, but that structure is excluded from the 248 tariff pairs we have used to calculate this correlation.

In addition, tariff structure methodologies often reflect unique local conditions. While many Latin American cities set tariffs based on household income, for example, prices in Israel depend on the water provider and block limits on the
number of people in each household. In the French cities of Toulouse and Nice, meanwhile, the tariffs are calculated on the basis of postcodes.

The Turkish cities of Istanbul and Adana have a system whereby the tariff changes every month in line with inflation. This methodology was implemented in the last year; previous rate adjustments had been less frequent. Additionally, Istanbul restructured its block limits in January 2011, leading to an above-inflation year-on-year rise for our benchmark household.

Tariffs vary for three main reasons. First, the cost of supplying water services varies with local labour rates, the age and condition of infrastructure, the rate of infrastructure maintenance and replacement, local policies on water pricing, and water scarcity. Labour costs generally rise with GDP, but they are also affected by over- or under-staffing, public versus private operation, union or civil servant status, and other factors. Infrastructure conditions vary with system age and size, service mandates, management changes, and the ebb and flow of financing.

Local policies often keep water prices below the cost of service; the resulting financing gap is sometimes made up by cash transfers or increasing debt, but they can also result in future reductions in operation and maintenance expenditures.

Water scarcity can affect prices by forcing a utility to spend more money on expensive marginal sources of drinking water (including desalination and wastewater reuse) or by reducing the volume of water available to customers, which means that the price per unit of water sold has to rise so that total revenues cover (mostly fixed) total costs. It is difficult to know if or how these factors affect water and wastewater prices, but their variety suggests that policies create a range of effects.

Socially speaking
We have continued our reporting of social tariffs this year, although these do not represent the only way to help poorer people buy water: some governments give direct income support that is used to pay for water that is sold at its normal price. The social tariff data thus represent our best shot at a complex topic.

The full survey spreadsheet, complete with details of tariff structures and social tariffs, will be available to download from the GWI website at www.globalwaterintel.com within the next month. GWI subscribers will receive an email advising them when the spreadsheet has been uploaded; they will then be able to access the data via their usual GWI login.

David Zetland is a senior water economist at Wageningen University in the Netherlands. His personal blog is regularly updated at www.aguanomics.com