

## Measuring the real cost of water

**Kimberly Henderson, Ken Somers, and Martin Stuchtey**

Big savings are available to companies that look beyond their utility bills and understand the broader economic costs of their water consumption.

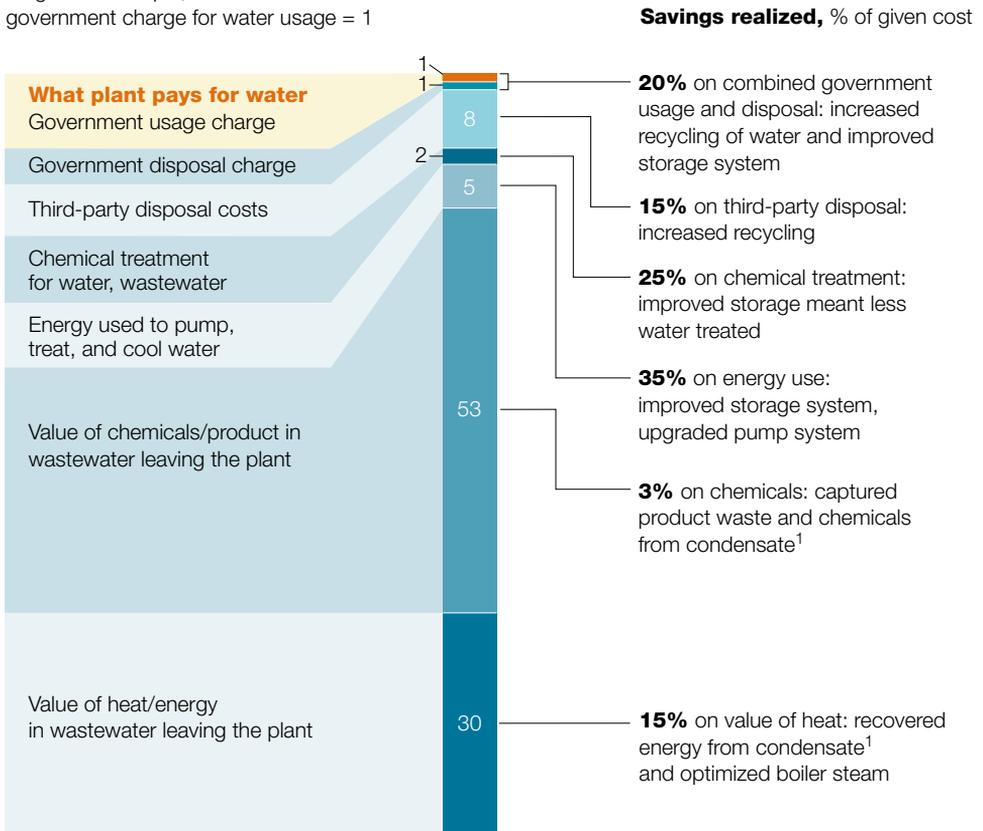
The low nominal cost of water in many regions means that a lot of investments aimed at cutting its use don't seem to offer satisfactory returns. The picture may change when organizations take a broader view of water: as a "carrier" of production inputs and outputs to which a variety of costs and recoverable values can be assigned. Since these elements may total as much as 100 times the nominal cost of water, optimizing its use can yield significant financial returns.

One pulp-and-paper company analyzed its water-use costs as a carrier, including tariffs, charges to dispose of effluents, and water-pumping and -heating expenses. It also examined the value of recoverable chemicals and raw materials "carried" by water from its factories and the potential heat energy lost in cooling processes. By closely surveying these operations, the company identified opportunities for better water storage and for reducing chemical

use in paper bleaching. Additionally, the company recaptured heat from condensation processes and reduced the amount of steam consumed by boilers. These moves saved nearly 10 percent of measured carrier costs, reducing total operating expenses by 2.5 percent and improving sustainability by cutting water use nearly in half. Industries such as steel, packaged goods, chemicals, and pharmaceuticals have similar carrier cost-value profiles. Companies may be able to identify substantial savings by focusing on the broader economic costs of water. ○

**A pulp-and-paper company analyzed the ‘carrier’ elements in its water, revealing costs and value far above basic water fees.**

Disguised example; index:  
government charge for water usage = 1



**Overall, the company saved approximately 10% on total carrier costs and consumed 45% less water.**

<sup>1</sup>Condensed steam, which carries value in the form of heat and chemicals (the latter are consumed in the water-treatment process required to upgrade water for use in boilers and turbines).

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