JANUARY 2015

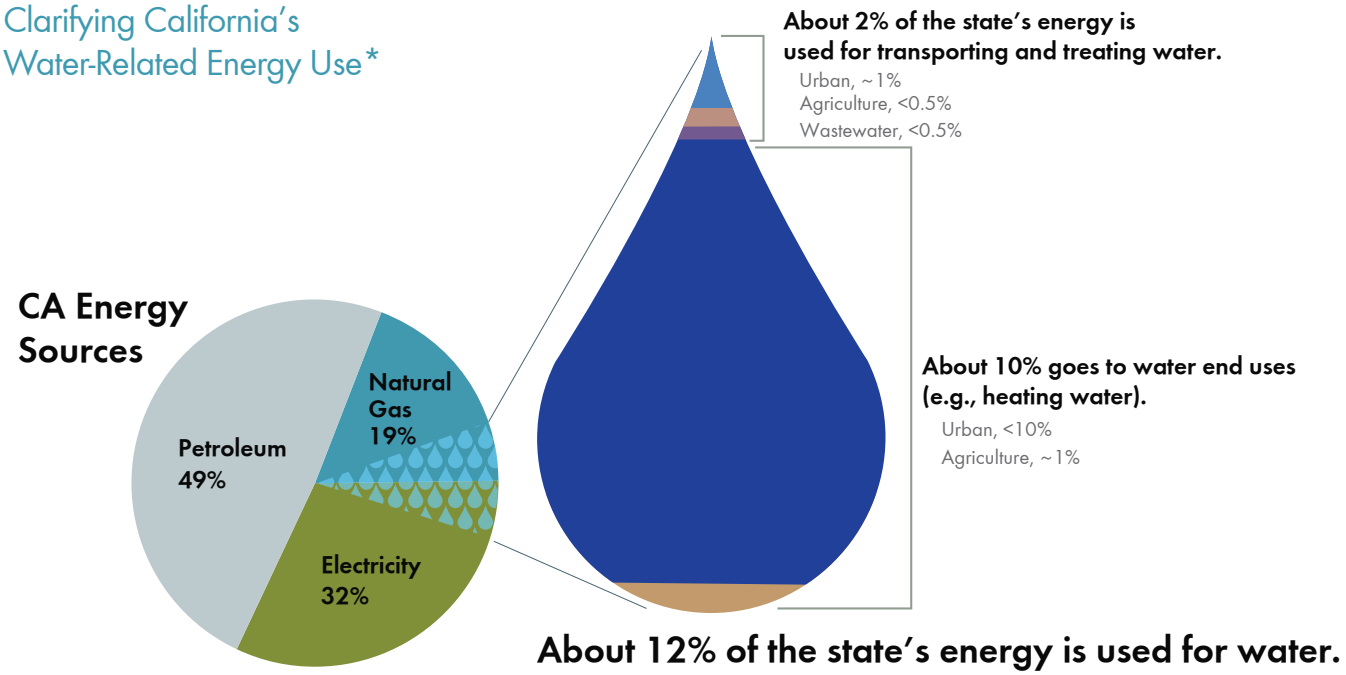
Ensuring a Sustainable Water and Energy Future for California

Each day in California, energy is needed to move, treat, and use water. Drought, climate change, water quality, and resource availability all affect when, where, and how much of this energy use occurs. While this issue can be complex, the graphic below helps to clarify the origin and purpose of the state's overall water-related energy use.

As shown in the figure below, about **12%** of the state's **total energy** is used for the distribution, treatment, and end uses of water. Of this12%, about **2%** is used **for transporting and treating** California's water supplies; the rest goes to water end uses (i.e., in-home, businesses, and farm uses).

California Municipal Utilities Association (CMUA) and California Urban Water Agencies (CUWA) together represent 55 municipal water agencies, serving more than 27 million people, or over two-thirds of the population of California

Clarifying California's Water-Related Energy Use*



*Based on the following:

1) Department of Water Resources, 2014. California Water Plan Update 2013-Highlights
http://www.waterplan.water.ca.gov/docs/cwpu2013/Final/00-CWP-Update2013_Highlights_FINAL_10-28-2014.pdf

2) California Energy Commission, 2005. California's Water-Energy Relationship Final Staff Report
http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF

A Diverse Water Portfolio is Needed to Reliably Meet California's Water Needs

The water sector is different in many ways from the energy sector. The water sector requires site-specific, geographically based solutions to address factors such as water quality, reliability, infrastructure, operations, and energy intensity. In addition, water supplies cannot be generated on a real-time basis unlike energy supplies.

Water agencies rely on a diverse portfolio of sustainable supplies to ensure reliability in meeting water demands. To be resilient to future uncertainties, a portfolio requires a mix of sources, which could include groundwater, water reuse, stormwater, and desalination, as well as more traditional sources like surface water, some of which can be imported. In addition, conservation savings are the foundation of a diverse water supply portfolio. A diverse supply portfolio is particularly important to water agencies in drought years.

Water Agencies Need Flexibility to Address Local and Regional Factors for their Supplies

Numerous factors are considered when securing water supplies, as shown in the figure below, and energy intensity is merely one of the factors. For example, demand reduction is typically the least energy-intensive option, taking the place of supplies that would otherwise be needed to meet growing demands– but it must also be augmented by other new supplies. Furthermore, a water source that takes less energy to deliver may be in limited supply during droughts, or may be cost-prohibitive due to greater treatment requirements.

As a result, it is not feasible for California water agencies to rely upon a system that requires a utility to sequentially secure additional water supplies or develop a new resource based on a single factor, such as energy intensity. This concept, which has been referred to as a "loading order," limits supply choices and could have serious unintended consequences for the communities we serve including water quality degradation, water infrastructure failures, and even interruption of service.

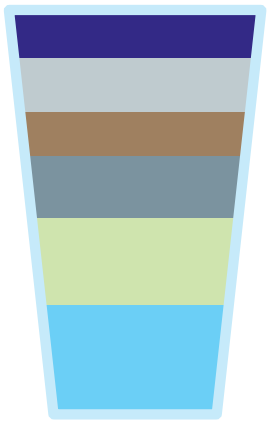
To avoid these consequences, future legislative and regulatory proposals should provide water agencies with flexibility to develop a water supply portfolio that is tailored to local and regional needs. A focused, local approach is the most effective way to not only save energy, but to also ensure a long-term, reliable, and efficient water supply for customers and the environment. Our agencies are committed to coordinating with state agencies, non-profit organizations, and other stakeholders to provide leadership in promoting water-energy efficiency.

Water supply portfolios vary locally and regionally based on a number of factors, including:

- Water rights
- Environmental regulations
- Economics
- Anticipated reliability
- Drought conditions
- Climate uncertainty
- Water treatment
- Energy intensity
- Distribution system
- Water pressure requirements
- Population
- Props 218 and 26 requirements

Considering these factors, water agencies assess various options to optimize their supply.

The resulting diverse portfolio of supplies helps to ensure reliability and is tailored to an individual water agency's needs.



Supply sources may include:

- Surface Water
- Groundwater
- Water Reuse
- Stormwater
- Desalination
- Conservation Savings

Contacts:
CMUA | Danielle Blacet, Director for Water
916.326.5800 | dblacet@cmua.org
CUWA | Jenny Gain, Staff Engineer
925.210.2225 | jgain@brwncald.com

CALIFORNIA URBAN WATER AGENCIES