

## VIRGINIA

To meet both energy and water needs in Virginia, especially in light of recent droughts and changing climate conditions, public officials should recognize and carefully manage the relationships between energy and water.

### WATER FOR ENERGY

- 3 out of every 4 gallons of freshwater withdrawals in Virginia go to thermoelectric power plants to meet cooling water needs (Figure 1) – consuming about 1 gallon for every 3 kWh produced.
- Nuclear, coal, and other thermoelectric power generation can require large amounts of freshwater depending on the technology used (see back).

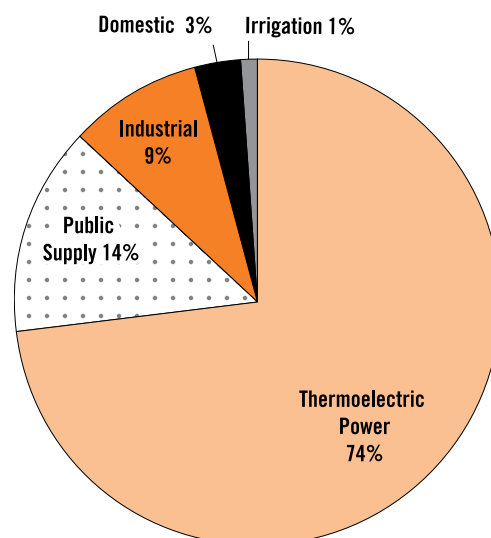
### ENERGY FOR WATER

- Water heating can account for about 25% of a home's energy bill and water and wastewater treatment can account for about 30% of municipal energy costs.
- If one out of ten homes in Virginia upgraded to WaterSense® labeled high efficiency toilets and faucets it would save \$19 million in water bills and \$8 million in energy bills.
- Solar water heating systems can save homeowners \$150 or more each year on their energy bills.

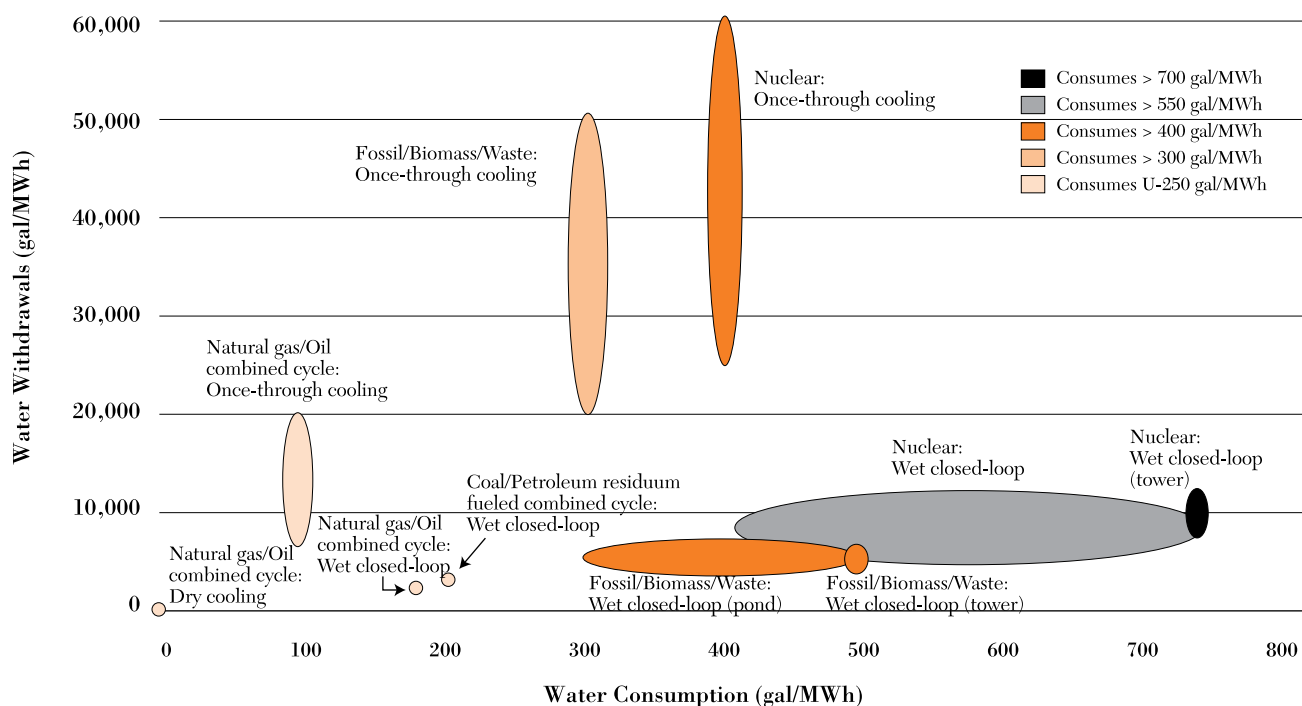
### POLICY PRIORITIES

- Evaluate water resource requirements and impacts of electric power supplies. Create standard regulatory review and approval processes that prioritize energy investments in technologies with minimal or no impacts on water availability.
- Implement procurement plans for energy efficient and water efficient products, such as those that earn ENERGY STAR® and WaterSense® labels.
- Develop water recycling strategies for public facilities, such as rainwater harvesting and water reuse applications for plumbing and landscaping. Create programs that expand such practices to residential, commercial, and industrial facilities.
- Offer financial incentives, such as rebates or tax credits, to build markets for high-efficiency buildings, equipment, and products (e.g., those with ENERGY STAR or WaterSense labels).
- Provide financial incentives to homeowners and businesses for installation of solar water heating systems to save energy at homes and commercial and industrial facilities.
- Develop educational programs with utilities, businesses, and local environmental and consumer organizations to build awareness of connections between water and energy use.
- Support programs to audit and upgrade water and wastewater treatment facilities.

FIGURE 1. FRESHWATER WITHDRAWALS, BY USE CATEGORY



Source: U.S. Geological Survey's "Estimated Use of Water in the United States in 2000" ([water.usgs.gov/watuse/](http://water.usgs.gov/watuse/)).

**FIGURE 2** Typical Range of Water Withdrawals and Consumption for Thermoelectric Power Plants


Source: Electric Power Research Institute's "Water & Sustainability (Volume 3): U.S. Water Consumption for Power Production-The Next Half Century."

For full discussion see WRI/SEEA/Southface April 2009 issue brief "Water and Watts" ([www.wri.org/publication/southeast-energy-policy](http://www.wri.org/publication/southeast-energy-policy)).