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Water-guzzling power plants targeted

Bills would shift part of energy load

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As lawns across the state have withered in the drought, some big water guzzlers - power plants - have used all they wanted.

Now, backers of alternative energy sources say it's time to factor the plants' use of water into the legislative debate.

A handful of bills before the legislature would shift from traditional water-intensive power production to the use of bone-dry wind power and other renewable sources.

"Power plants are just water hogs," said Matt Baker, executive director of Environment Colorado, a chief proponent of renewable energy.

Power plants produce energy by heating water into steam that turns giant turbines and cranks out electricity.

In the eight-state interior West, power plants pull 650 million gallons of water a day from rivers, reservoirs or aquifers, according to statistics from 2000 published in "The Last Straw," a 2003 study by Western Resource Advocates. The group is a Boulder-based policy and law center that favors alternative energy use.

In 2000, Colorado power plants drew more than 21 billion gallons from rivers and aquifers, according to "The Last Straw."

Since then, at least four new facilities have been added, bringing the state total to 21 plants, some with several generators.

Producing a kilowatt-hour of electricity - the amount needed to burn a 100-watt light bulb for 10 hours - takes about three-fifths of a gallon of water.

Most of that is lost to steam and pollution, according to "The Last Straw," which is widely cited in the statehouse debate over shifting more of the state's energy load to wind power and other renewable energy.

Last week, House Speaker Lola Spradley, R-Beulah, introduced legislation to boost the amount of electricity investor-owned utilities get from renewable energy by at least one-half percent each year from 2005 through 2020.

That would provide enough power each year for more than 300,000 Colorado households, Spradley said. Rural cooperatives and municipal utilities would be exempt from the requirement.

Currently, less than 1 percent of the state's annual power supply comes from renewable resources such as wind and sun.

Xcel Energy, the state's largest electricity provider, supported a similar Spradley bill last year. That measure was approved by the House and died in the Senate.

Xcel spokesman Steve Roalstad said the company agrees: Water is a costly resource for power production, and minimizing that cost is important from both business and conservation standpoints.

"We manage every drop of water to its maximum advantage," he said.

This spring, Xcel will become the biggest customer of Denver Water's new re-use plant, running more than 1.7 billion gallons of recycled water annually. The move will save that amount of fresh, raw water from the South Platte River, enough to provide water for 10,400 households.

While power plants' water use is big, it provides big benefits to customers, said Stan Lewandowski, general manager of Intermountain REA, an electric cooperative serving 118,000 rural customers in Colorado.

"Compared to watering lawns, taking baths and all the other things water is used for, power is a bargain, a fraction" of other uses, he said.

John Nielson, Western Resource Advocates' Energy Project director, said Xcel "could do more. They could switch to energy sources that don't use any water."

But Lewandowski said electricity prices would double for some customers if legislators force power companies to invest more than they can afford on renewable energy systems.

Voluntarily developing renewable energy as technology improves is more practical and feasible, he said.

Environmentalists strongly disagree.

"Nothing is cheaper than wind," said Environment Colorado's Baker. "Coal is not cheaper than wind. Gas, certainly, is not cheaper than wind.

"No one is going to win the argument that water is cheaper than wind, either, not in Colorado in this drought."

XCEL'S WATER USE

The state's largest electricity provider uses more than 10.5 billion gallons of water a year, based on numbers provided by the company:

PLANT: Arapahoe in Denver

Capacity: 156 megawatts

Percent of Xcel's Colorado generation: 4 percent

Annual water consumption: 586 million gallons

Primary water source: South Platte River

PLANT: Cherokee, Denver

Capacity: 717 megawatts

Percent of generation: 21 percent

Annual water consumption: 2.4 billion gallons

Primary water source: South Platte River and Clear Creek

PLANT: Comanche, Pueblo

Capacity: 660 megawatts

Percent of generation: 20 percent

Annual water consumption: 2.4 billion gallons

Primary water source: Arkansas River

PLANT: Fort St. Vrain, Platteville

Capacity: 720 megawatts

Percent of generation: 18 percent

Annual water consumption: 880 million gallons

Primary water source: St. Vrain and South Platte rivers

PLANT: Hayden, Hayden

Capacity: 446 megawatts

Percent of generation: 7 percent

Annual water consumption: 1.4 billion gallons

Primary water source: Yampa River

PLANT: Pawnee, Brush

Capacity: 505 megawatts

Percent of generation: 16 percent

Annual water consumption: 1.96 billion gallons

Primary water source: South Platte River

PLANT: Valmont, Boulder

Capacity: 249 megawatts

Percent of generation: 6 percent

Annual water consumption: 652 million gallons

Primary water source: Boulder and South Boulder creeks

PLANT: Zuni, Denver

Capacity: 109 megawatts

Percent of generation: Less than 1 percent

Annual water consumption: 98 million gallons

Primary water source: South Platte River

PLANT: Cameo, Grand Junction

Capacity: 77 megawatts

Percent of generation: 2 percent

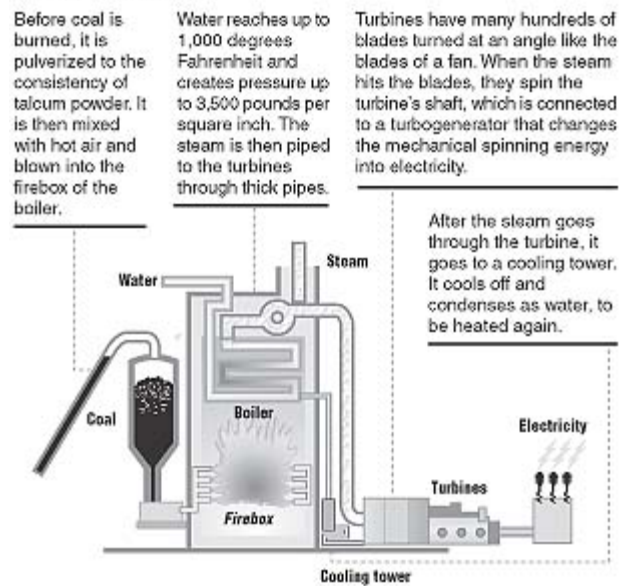
Annual water consumption: 0 gallons. (Cameo uses water for cooling but not power production.)

Primary water source: Colorado River

Source: Xcel Energy

Water and power

Environmentalists, conservationists and some state legislators say that unregulated water use among Colorado power plants is a leading reason to legislate efficiency and shift to wind, solar and other renewable energy sources that use little or no water.



Source: Energy Quest

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