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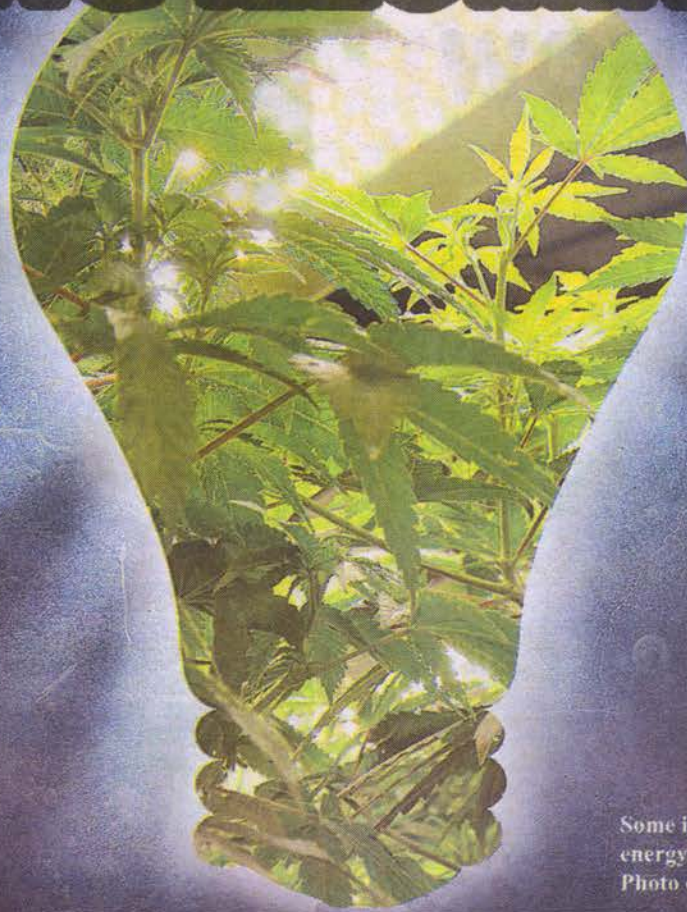
BRIGHT GROWING IDEAS

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# SEEKING ILLUMINATION

## GROWERS EXPLORING WAYS TO USE LESS POWER



Some indoor growers are switching to more energy-efficient lighting to reduce power usage. Photo courtesy Forever Green Indoors

By RENEE SANDE  
Spoknabist Correspondent

While the business of growing pot legally has provided a nice boost to Washington's economy, utility companies are feeling less energized.

Large indoor grow operations — often high-intensity energy profiles similar to data centers — are putting a large demand on the West's energy grids.

According to EQ Research, a clean energy policy research institute, marijuana cultivation accounts for as much as 1 percent of total energy use in Washington and Colorado.

This is equivalent to power used by 2 million average U.S. homes, a collective energy bill of \$6 billion annually. Related carbon dioxide production is equal to 3 million average cars.

"A standard grow is 1,000 watts over 16 square feet," said Kathleen Sullivan, president of Forever Green Indoors, a local energy-efficient lighting consulting company and distributor. "In a marijuana grow you might have 10 1,000-watt bulbs running 365 days a year."

She said 80 percent of that 1,000 watts simply generates heat, not light, so growers need to cool things down with air conditioning, which uses even more energy.

With California, Maine, Nevada and Massachusetts joining states that have approved legislation for recreational use of marijuana, those figures likely will jump.

Sullivan said some growers are looking into alternatives to traditional or High Intensity bulbs, including a newer generation of LEDs that not only are designed to save energy, but optimize plant photosynthesis.

"An LED can replace 1,000 watts with between 500-600 watts," she said. "Growers are saving energy and getting a 10-20 percent increase in yield, with thicker stalks, longer roots and flowering buds all the way down the shaft."

While the initial cost of fully switching to LEDs can be prohibitive, utility company rebate programs can help bring the price down.

Catherine Bryan, Energy Solutions Manager at Avista Utilities, says the utility works with marijuana grow operations.

"As people permit and figure out where they're going to sit and go through all the other processes, we help them figure out what infrastructure is needed to serve their [energy] load, which varies," she said. "Those savings have typically been around lighting."

The Lighting Science Group, a maker of LED bulbs for the marijuana industry, projects that if Washington doubles its initial square footage of cultivated marijuana using standard high intensity bulbs, it will use 1,505.6 GWh of electricity a year, or 1.63 percent of the state's energy usage. If growers switch entirely to LEDs, it

would use only 597.9 GWh, or 0.65 percent of the state's total.

Stephen Jensen, president of Green Barn Farms, a pot cooperative in Addy, prefers "sun-powered" greenhouses, and sees average power costs between \$1,250-\$1,500 a month, compared with \$25,000 to \$40,000 for equivalent indoor growing operations in Washington.

While this set-up works for Jensen, he says many growers have been hesitant to transition from working off the grid to operating legally.

Some indoor growing will most likely always be common, says Jensen, who also uses one building for mother plants and cloning.

Sullivan recognizes these different energy phases of the grower's operation and offers three types of lights for each growth stage, which are all manufactured in Spokane Valley.

"We took spectrometer readings at our customers' grow operations, then presented our readings to our engineer and said, 'Here's the output and spectrum we need; we need you to design a light that does that,'" said Sullivan. "Our customers are not only saving energy with a light tailored to their needs, but making more money with a higher quality product."