

# CRAIN'S DETROIT BUSINESS

May 14, 2019 11:01 AM

## Energy-intensive cannabis industry to boost demand on electric grid in Michigan

### OTHER VOICES

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Michigan has decriminalized the use of cannabis for medicinal and recreational purposes, establishing statutory and regulatory regimes for its growth, processing and distribution. [Forbes estimates](#) that Michigan represents a \$1.4 billion to \$1.7 billion market, which is just at its beginning stages. Growing and processing cannabis are energy intensive activities — particularly indoor growing — and we are just about to find out how that new load will affect our electric grid.

A few facts highlight the potential explosion of load demand that Michigan can expect moving forward:

- Cannabis growing operations represent **3 percent of electricity consumption in California**, the equivalent of powering 1 million homes.
- Half of Colorado's load growth since 2012 is attributable to cannabis cultivation.
- Denver saw a rise of energy use of 1.2 percent between 2012 and 2013, half of which is driven by cannabis grows, totaling **almost 4 percent of overall electricity consumption** in that city.
- Estimates for indoor grows claim four to 10 times the energy of a similarly sized office building.
- Nationally, greenhouse gas emissions related to grow operations is presently at the equivalent of 3 million cars.

Of course, cannabis is a plant, which has thrived for millennia without the need for electricity. However, one unintended consequence of its illegality in this country is that those who grew in in the United States for illegal consumption were forced to do much of it indoors. Over the years, growers became ever more sophisticated, developing techniques and equipment (e.g., lights, heating, cooling, dehumidification, water pumps, carbon dioxide injection systems, fans, etc.) that not only increased yields, but added additional growing seasons (up to five)

and boosted THC content. In addition, indoor growing allowed the cultivation of cannabis in geographical areas that would normally not be very hospitable to these plants and, even where growing outside makes sense, statutes may prevent outdoor cultivation.

Sometimes, building and energy codes work at cross purposes to improve efficiency and reduce loads. For example, some codes require the use of air conditioning economizers. But, such equipment introduces outdoor air, which growers seek to restrict because most indoor grows are closed systems. Outdoor air wreaks havoc by the introduction of humidity and possible contaminants, like mold. On the plus side, while using more energy, indoor grows use less water than outdoor grows.

Economic considerations also prevent reductions in load. For example, less efficient ceramic metal halide lights cost approximately \$125 to \$150, while more efficient LEDs cost \$850 or more. The energy savings can be substantial, but with high startup costs, many growers seek to economize up front.

This briefly touches on the challenges of providing load to these new businesses. As Michigan regulators looked to other states to establish their regulations, looking at more mature cannabis markets may provide some ideas on how to proceed in controlling electricity use.

One problem with controlling these loads is that there is very little data. There are no requirements that growers keep track of energy use in a helpful way to regulators and utilities. And how would one measure efficiency, anyway – energy use by plant, by square foot of canopy, kWh saved annually from a baseline?

So, what has happened in other states?

- Colorado's State Department of Revenue established the [Retail Marijuana Code](#), which provides guidelines on electrical codes and requires notice to and approval by the state to material changes to the building.
- Oregon requires growers to forecast their energy needs before they are allowed to begin operations.
- Massachusetts legislation requires the establishment of [energy and environmental standards](#) for cannabis businesses.
- The city of Boulder requires growers to report energy use and offset 100 percent of their energy use, but also provides an [Energy Impact Offset Fund](#) to implement local projects to reduce greenhouse gas emissions.

- The Oregon Department of Energy provides a lighting calculator for growers and recommends environmental best practices.
- Puget Sound Energy in Washington state undertakes energy efficiency projects, up to 70 that have saved 35 million to 40 million kWh.
- Nongovernmental entities, like the Cannabis Conservancy, provide independent certification of sustainable practices for energy and water use and waste minimization, like a USGBC for cannabis operators.
- The Resource Innovation Institute provides resources, education and events at which the cannabis industry can improve its performance, including its [Cannabis Power Score](#), which is a free benchmarking tool.

However, more aggressive assistance on the federal level does not exist, as cannabis remains a Schedule I drug per the Controlled Substances Act. Access to capital is limited as banks presently do not lend to cannabis businesses. As a result, all startup costs are strictly cash based and there is little capital for energy reduction strategies.

None of the Michigan cannabis statutes require licensees to limit or even monitor energy use. Those businesses do need to meet building codes in order to obtain final approval, however. However, even though there are no statewide requirements, local approvals are also required for operation and those local governments may impose requirements so long as they are not inconsistent with the state regulatory regime.

Some municipalities require disclosure of energy usage as part of their application process. For example, [Bay City licensing requirements](#) for grows and processors include submission of electrical plans to Bay City Electric Power & Light for a primary/secondary load study. In addition, the applicant must prepay for all costs related to overbuilds required to meet the expected load before construction.

There may be state resources, the Michigan's Retired Engineer Technical Program (RETAP) that provides access to retired engineers to provide advice on energy efficiency, among other assessments. Perhaps, Property Assessed Clean Energy (PACE) can be used to fund efficiency, although finding willing bankers remains a problem. However, I am unaware of any cannabis business that has used either of these programs.

Moving forward, it is imperative to develop data upon which policy can be based. Anecdotal information or guesses at how things operate really will do little to improve energy use in the cannabis industry. Michigan stakeholders, like utilities, regulators, state government, local governments, cannabis businesses, and product suppliers, should collaborate to develop

affordable best practices and identify funding options and incentives so that this growing industry can operate efficiently and without risking the grid.

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Inline Play

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**Source URL:** <https://www.crainsdetroit.com/other-voices/energy-intensive-cannabis-industry-boost-demand-electric-grid-michigan>