

# Sustainable Cannabis Cultivation: Boosting Efficiency and Profit

## Legacy Practices and Transition

For decades, cannabis cultivators operated in secret, focusing on avoiding detection rather than optimizing for energy efficiency. As states transitioned to regulated markets, these legacy practices persisted.

## Modernizing Cultivation Facilities

Newly licensed growers often used less expensive lighting and HVAC systems to start quickly, leading to long-term financial and environmental costs. With increased state regulation, growers are now adopting more sustainable practices.

## Energy Use in Cannabis Cultivation

Indoor cannabis cultivation is energy-intensive, with each kilogram of product contributing 4,600 kilograms of carbon dioxide emissions. Applied science and optimized grow environments are now as crucial as plant genetics.

## Upgrades for Efficiency

Efficient upgrades in lighting and HVAC systems are essential. LED lights are more energy-efficient than high-pressure sodium (HPS) lights, reducing energy consumption by up to 90%. HVAC systems, especially chilled-water systems, are recommended for better energy management.

## Regulatory Compliance

Stringent regulations like the California Environmental Quality Act (CEQA) have pushed growers to adopt more sustainable practices. Compliance can be expensive, but rebates are available for energy-efficient upgrades.

## Environmental Impact

Modern cultivation techniques include using mixed-light greenhouses and advanced environmental sensors to monitor and optimize growing conditions. These efforts aim to reduce the environmental footprint of cannabis cultivation while ensuring compliance with regulations.