

2020-2022

# Boulder County Carbon Conscious Progress Report



The  
Cannabis  
Conservancy



Sustainability,  
Climate Action  
& Resilience

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# **INTRODUCTION**

The purpose of the Carbon Conscious certification is to educate and recognize cultivators who have exhibited a commitment to reducing their carbon footprint. The Carbon Conscious certification is a voluntary program open to all cannabis cultivators enrolled in Boulder County's Energy Impact Offset Fund program. This certification aims to encourage and reward organizations throughout their energy optimization journey.

The overarching goal of this certification is for participating organizations to demonstrate meaningful reductions in their energy consumption and carbon emissions over a multi-year period. Each year the certification criteria become more stringent and focused on measurable energy-efficient achievements.

The certification is designed to help cultivators, by providing a step-by-step framework for strategic energy management, adequate and precise guidance for implementation, and meticulous compliance support.

The Carbon Conscious seal, located on product packaging, lets the consumer and businesses in the supply chain know they are supporting a cultivator who is actively working towards carbon-neutral cannabis production.

Benefits of the certification include increased consumer and public awareness and profile-boosting industry recognition.

# IMPACT

Since 2020, the Carbon Conscious certification has worked with 29% of the cannabis cultivators located in the incorporated areas of Boulder County and one cultivator in the City of Boulder.

During this time we supported Boulder Cultivators by providing the following services:

- Energy-efficiency Workshops
- Annual Energy Audits
- Equipment and Operational Recommendations
- Policy, Energy Management, and Data Collection Templates
- Budtender Training, including Educational Posters and Videos
- Social Media Campaigns to Increase Consumer Awareness
- Marketing Assets, including Window Decals, Stickers, and Sustainable Giveaways



# **PROGRAM GOALS**

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The Carbon Conscious certification aims to provide a framework for carbon-neutral cannabis cultivation through verifiable actions and practices. Success towards this goal is then celebrated and communicated to the cultivator, consumers, and community.

Each year the certification standards widen in scope to include more cultivation aspects along with the implementation of recommendations based on annual inspections.

## **01**

### **Year One**

The focus is on energy metrics and benchmarking along with low-carbon policies and facility optimization commitments.

## **02**

### **Year Two**

The focus turns to continual improvement and implementing an energy management system and energy-efficient recommendations.

## **03**

### **Year Three**

The focus expands to carbon emissions accounting and carbon offsetting with demonstrated reductions in annual energy consumption and improvements in energy efficiency.

# MEASURING PROGRESS

Key Indicator	Activity	Outcome
Energy Use Reduction	LED Retrofits Climate Control Sensors HVAC Efficiency Upgrades Building Envelope Insulation Preventative Maintenance	All Cultivators using 100% modern LED lights.
Total Energy Efficiency (g/kWh)	Increasing production while reducing energy consumption with new equipment and processes	100% of growers increased energy productivity
Carbon Accounting	Renewable Energy Greenhouse Cultivation Outdoor Cultivation Green Procurement Employee Training	All certified grows producing cannabis with less carbon emissions compared to estimated baseline
Sustainability Initiatives	Landfill Diversion Composting Local Material Sourcing Delivery Optimization Sustainable Packaging	100% composting 60% collecting post-consumer plastic waste 99% reduction in input transportation miles



# RESULTS

The following figures are based on energy usage and production data collected during annual certification compliance assessments using energy meters, utility bills, and METRC reporting. A CSU study<sup>1</sup> analyzing carbon emissions from cannabis facilities was used as the county-level baseline comparison. To protect participant's data and confidentiality only percentages are reported publically.



**70%**

Reduction in Carbon Emissions

**25%**

Increase in Energy Productivity



**7%**

Reduction in Carbon Emissions

**12%**

Increase in Energy Productivity

THE Republic\*

**8%**

Reduction in Carbon Emissions

**15%**

Increase in Energy Productivity



**6%**

Increase in Energy Productivity

**N/A**

Cultivation ended in 2021

**100%**

Participating cultivators showed an increase in total energy efficiency - each cultivator reduced the energy required to produce a gram of dried flower.

<sup>1</sup> Summers, H.M., Sproul, E. & Quinn, J.C. The greenhouse gas emissions of indoor cannabis production in the United States. *Nat Sustain* 4, 644–650 (2021).

# CULTIVATOR HIGHLIGHTS

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**IN THE FLOW**  
BOUTIQUE CANNABIS  
· InTheFlowCo.com ·

**IN THE FLOW SUCCESSFULLY IMPLEMENTED THE FOLLOWING PRACTICES AS THEY WORK TOWARDS THEIR GOAL OF BECOMING A CARBON-NEUTRAL CULTIVATOR**

## Energy Supply

- 66% is sourced from Renewable Energy
  - Jack's Solar Farm and Xcel's Renewable Connect Program

## Energy Usage

- Converted to 100% LED lights
- Installed sensors on HVAC system

## Carbon Reduction

- Carbon savings equivalent to 11 households
- Optimized purchasing and delivery systems to reduce transportation emissions
- Sourcing Green CO2

## Water Usage

- Installed a high-efficiency irrigation system

## Packaging

- 100% post-consumer recycled paper
- 56% post-recycled glass jars
- 100% ocean plastic lids

## Waste Reduction Efforts

- Transitioned to 100% compostable materials
- Composting 3,000 lbs of green waste annually

**"It's important to our company that we do everything we can to address the issue of energy-intensive cannabis cultivation."**

**Bonnie Bahlmann,  
In The Flow**



# CULTIVATOR HIGHLIGHTS

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**VERA SUCCESSFULLY IMPLEMENTED THE FOLLOWING PRACTICES AS THEY WORK TOWARDS THEIR GOAL OF BECOMING A CARBON-NEUTRAL CULTIVATOR**

## Energy Use Reduction

- 100% LED Lights in Veg & Flower Rooms
- Using variable chilled water supply
- Enhanced building automation to reduce HVAC use
- Utilize aggressive VPD set points

## Carbon Reduction

- Carbon savings equivalent to 5 households
- Consolidated delivery schedules to mitigate courier carbon footprint

## Water Conservation

- Eliminated 100% water discharge
- Installed precision irrigation system



**"The certification validates all of the efforts we've undertaken from the efficient design of the facility, to how we operate day to day. We set out to build a facility that could compete with 'high-end indoor' from a quality standpoint, but sought to produce that product sustainably. The certification aligns with that core value proposition."**

**Alex Park, Vera**

# CULTIVATOR HIGHLIGHTS

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THE  
Republic\*

**THE REPUBLIC SUCCESSFULLY IMPLEMENTED THE FOLLOWING PRACTICES AS THEY WORK TOWARDS THEIR GOAL OF BECOMING A CARBON-NEUTRAL CULTIVATOR**

## Energy Use Reduction

- 100% LED Lights in Indoor Grow
- Preventative HVAC Maintenance
- Climate Control Sensors

## Carbon Reduction

- Carbon savings equivalent to 3 cars
- Sourcing only CO inputs
- Post-consumer Packaging Reuse Collection System
- Practices Covercropping



**"We consider ourselves a partner with the Earth and take pride in cultivating outdoors and working with nature. It is rewarding to grow healthier plants with less waste."**

**Shawn Williams,  
The Republic**



# NEXT STEPS

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**01**

## Scope 3 Carbon Emissions

Data collection through surveys and record reviews will expand to cover indirect emissions of operations to further enhance carbon footprinting metrics.

**02**

## Grower Testimonials

Social Media highlighting the success of the program and the cultivators will expand and include retail worker education.



# ACKNOWLEDGEMENTS

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- Boulder County's EIOF Committee
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- Bonnie Bahlmann, In the Flow
- Alex Park, Vera Cultivation
- Dylan Donaldson, Karing Kind
- Shawn Williams, The Republic
- Katie Burrell, PufCreativ
- Corey Shaw, The Cannabis Conservancy



**We thank you for your continued support of Boulder County's Carbon Conscious Certification.**

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