

Task Force for Cannabis Environmental Best Practice

Grower Panel

Cannabis Cultivation

Outdoor Cultivation



- Most energy efficient
- Least cost prohibitive
- Worst perceived quality
- Higher risks due to climate exposure

Greenhouse Cultivation



- Efficiency, cost and perceived quality range, sometimes drastically
- Still subject to crop risks depending on level of exposure

Indoor Cultivation



- Least energy efficient
- Most cost prohibitive
- Best perceived quality
- Less climate based crop risks

Desired Outcomes

1a) Quality (qualitative and quantitative)

1b) Quantity (lbs. or grams per light)

2) Limited Ops Costs (lower electricity/water bill and payroll)

3) Differentiation/Marketability- importance increasing rapidly with more competition

***** Energy and Water efficiency not only equal lower costs, but also increased marketability and market differentiation *****

Key Questions

- Can we link efficiency to better quantity and quality also? Can we prove it with research and information?
- How can we help link their efficiency to marketability and market differentiation?
 - Ex. Tax breaks or incentives for dispensaries who source a certain amount of their product from energy compliant or certified production facilities?

Energy and Water Efficiency Best Practices

Mind of the Machine



- Efficient equipment
- Lighting, fans, pumps
- Intelligent features an added benefit

Mind of the Grow Room



- PLC or “Smart relay”
- More sensors = More data
- System integration
- Maximize process control

Mind of the Designer and Operator



- Cultivation designers are key
- Process improvements
 - Rainwater collection
 - Drip irrigation
- Operators have the most interaction
- INCENTIVIZE!!!!

Barriers to Implementation

- Cost
 - Limited access to financing
 - Market instability
- Capability
 - Dependable information
 - Technical assistance
 - Changing technology
- Culture
 - Limited focus on efficiency historically
 - Indoor is perceived as superior and preferred by most buyers and consumers
 - Few incentives other than savings

Efficiency Recommendations

Areas of Improvement

Mind of the Machine



Mind of the Grow Room



Mind of the Designer, Owner, Operator



Barriers to improvement

Cost	<ul style="list-style-type: none"> Incentivize equipment purchases 	<ul style="list-style-type: none"> Incentivize efficiency studies/projects 	<ul style="list-style-type: none"> Feasibility studies Design assistance
Capability	<ul style="list-style-type: none"> Increase equipment info 	<ul style="list-style-type: none"> Innovation centers Increase tech assistance 	<ul style="list-style-type: none"> Design assistance Information sharing Design community
Culture	<ul style="list-style-type: none"> Independent local product comparisons 	<ul style="list-style-type: none"> Innovation centers Promote best practices 	<ul style="list-style-type: none"> Incentivize dispensaries and producers Utilize industry organizations

Questions