



Kelley Energy Management, LLC

March 18, 2024

*Re: In the Matter of New Jersey's Clean Energy Program: New Construction Program,
Docket No. QO22050327*

Dear Secretary Golden,

The indoor cannabis cultivation industry is set to grow at a rapid rate in New Jersey. Indoor grow facilities have precisely controlled plant canopy areas with unusually high energy intensity akin to data centers. These facilities collectively represent a significant new load on the grid, with every 25,000 ft² of mature plant canopy consuming the energy equivalent of 3-4 large grocery stores annually.

With the inclusion of the High-Performance Pathway, the New Construction Program draft provides an avenue for energy modeling as a means of accurately quantifying energy savings in this high-intensity industry. The tiered and stackable rates and bonuses are a step in the right direction, theoretically creating a higher-incentive-value pathway for indoor cultivation equipment based on rigorous study and reliable calculation methods. We applaud the considerable amount of time, effort, research, and creativity that has resulted in the latest NCP draft.

As with any endeavor of this magnitude, it is important to consider potential impacts through a wide variety of specific lenses. Upon careful review through the Controlled Environment Horticulture (CEH) lens, we have some concern that while the accuracy of savings calculations is sure to improve via this pathway, actual incentive values for indoor grow facility projects are set to be negatively impacted based on the rates and \$/ft² mechanism currently populating Tables 6 and 7 in the NCP draft.

Observation #1: Incentive values for CEH projects will decrease significantly under NCP, jeopardizing indoor grow facility operators' ability to afford high-cost, high-efficiency cultivation equipment.

The legacy NJCEP C&I New Construction horticultural lighting rebate value ranges from \$150-250 per DLC-listed LED fixture. This legacy structure incentivizes indoor grow facility operators to select fixtures that are highly-efficacious in converting input wattage into output photosynthetically-useful light. Lower-cost, lower-efficacy options are available to indoor grow facility operators, and the legacy rebate values play a critical role in influencing operators to prioritize efficiency over other production-oriented motivations.

Based on the NCP draft, the incentive value tied to designing around DLC-listed LED horticultural lighting and other energy-efficient mechanical cultivation equipment will drop precipitously.

As an example, consider a large, state-of-the-art new construction indoor grow facility optimized for efficiency. By typical size standards, such a facility may reasonably be around 40,000 ft² and utilize around 1,000 highly-efficacious LED grow lights with input wattage of 500W+.

Assuming the facility operator applies for NCP incentives via the most lucrative pathway—"High-Performance Non-Proxy" (\$1.00/ ft²), with a maximum "GHG Reduction Bonus" (\$1.50/ ft²) and a maximum "Industrial/High Energy Intensity" additional incentive rate (\$1.00/ ft²)— at 40,000 ft², the following maximum incentive value would be achieved:

NCP Incentive	40,000 ft ² * \$3.50/ft ² = \$140,000
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Contrast this with the legacy program valuation of the same scenario:

Legacy Incentive	1,000 DLC-listed 500W+ fixtures * \$250/fixture = \$250,000
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The concern here is twofold:

1. As long as a facility design exceeds the minimum savings thresholds required to unlock the various NCP High-Performance rates and bonuses, there is no incentive upside to striving for a facility design of even greater efficiency. Demonstrable kWh and GHG savings above and beyond the rate and bonus thresholds do not result in a path to increased incentive value, even as all stakeholders share a clear preference for the highest-efficiency design.
2. The NCP structure significantly deflates the incentive value tied to efficient CEH design when compared to the existing horticultural lighting rebate value structure. In an indoor grow community that is collectively and necessarily cost-conscious, lowering incentive values—and consequently making higher-cost and higher-efficiency equipment less attainable—threatens to unintentionally result in lower prioritization of energy efficiency.

Again, incentives play a critical role in cultivation equipment selection. Indoor grow facility operators have a strong preference for the highest-efficiency options, but the incremental cost of such options is a significant deterrent. The proposed changes in the NCP draft, which reduce incentive values in relation to the legacy structure, will further discourage growers from prioritizing energy efficiency over other considerations such as crop quality and equipment familiarity. Such changes seem antithetical to the program's purpose.

Observation #2: Basing incentives on building square footage is problematic in an industry that often efficiently designs high energy intensity equipment into vertical, rather than horizontal, space.

Indoor grow facilities come in all shapes and sizes.

Some facilities devote substantial square footage to support functions (processing areas, offices, etc). A new construction project with an abundance of support area stands to benefit from the \$/ft² incentive mechanism based on sheer facility footprint.

At the same time, other facilities employ space-saving tiered cultivation techniques and feature minimal support function square footage. Tiered cultivation, in which 2-3+ levels of plants are growing on stacked racks in a single room, is not compatible with the \$/ft² mechanism.

Consider the following examples:

1. A 2,500 ft² cultivation room has a **single-tier** LED-lit canopy equal to 80% of the room square footage (**2,000 ft² of lit canopy**). The LED fixture in this room is 645W and **the fixture count is 100**.
2. A 2,500 ft² cultivation room has a **two-tier** LED-lit canopy, with each tier equal to 80% of the room square footage (**4,000 ft² of lit canopy**). The LED fixture in this room is 645W and **the fixture count is 200**.
3. A 2,500 ft² cultivation room has a **three-tier** LED-lit canopy, with each tier equal to 80% of the room square footage (**6,000 ft² of lit canopy**). The LED fixture in this room is 645W and **the fixture count is 300**.

The NCP draft treats all three of these rooms as 2,500 ft² spaces and consequently incentivizes them equally based on the \$/ft² mechanism. This is highly detrimental to the facility operator who is using both space and energy efficiently, and who has made double or triple the investment in equipment across the same two-dimensional room square footage without double or triple the incentive value.

As a contrast at scale, consider once more the large facility example introduced earlier. At 40,000 ft² of total facility footprint, with all single-tier lighting, the 1,000 LED fixtures used for cultivation may cover a canopy area of around 20,000 ft² and an actual room area square footage of 25,000 ft². In simpler terms, think of this as ten cultivation rooms totaling 25,000 ft².

Meanwhile, a multi-tier LED-lit canopy may be able to achieve the same fixture counts and productivity in half or a third of the actual grow room square footage. A two-tier facility can achieve the same output as the single-tier facility using only five cultivation rooms totaling 12,500 ft², and a three-tier facility can achieve the same across 8,333 ft².

The problem should, of course, be clear: by opting for a prudent multi-tier operation, a facility operator stands to be eligible for a fraction of the incentive value even though the facility itself is essentially equivalent to a more sprawling single-tier facility in terms of energy input and product output. This issue is only further compounded when a multi-tier operation is also light on support area square footage. In the end, it's conceivable that a 40,000 ft² single-tier operation with significant support area

square footage and a 15,000 ft² multi-tier operation with minimal support area square footage will use the same overall set of cultivation equipment, consume similar amounts of electricity at the meter, and yet be subject to vastly different incentive values.

Conclusion

As discussed in the observations above, the NCP draft creates certain barriers to needle-moving incentive values via the proposed rate and bonus valuations, as well as the \$/ft² incentive mechanism. At a time when substantial new electric loads will soon be coming online in the form of indoor grow facilities, it is imperative that cost barriers be defrayed such that facility operators can both *prioritize* and *afford* energy efficient cultivation technologies.

Because these high energy intensity spaces can achieve gigawatt hours of savings on a per-project basis when energy efficiency is made the top focus, a significant rate increase in Table 7 (Additional Incentive Rate, Industrial/High Energy Intensity) and/or a reimagining of the \$/ft² mechanism for indoor grow facility projects are recommended in anticipation of the rapid emergence of this new market.