# New York: All Survey Questions

This document previews all the questions, other than periodic open-ended questions about your facility's uniqueness. This survey can be found here:
https://powerscore.resourceinnovation.org/NY *or*
https://powerscore.resourceinnovation.org/ny *or*
https://powerscore.resourceinnovation.org/newyork

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## New York Energy and Water Reporting

Please enter details about your facility for the 12-month period of operation. Resource Innovation Institute will provide you with a confidential Performance Snapshot comparing your performance over time and to national aggregate benchmarks from cannabis cultivators like you.

- Which of your facility's growing spaces do you want to track? *required
  Describe each distinct growing space in your facility for which you want to enter separate data. Naming each space is optional, but it can also help you identify the correct space.
    - What is the type of each growing space?
        - Outdoor
        - Hoophouse
        - Greenhouse/Mixed Light
        - Indoor
- What is your production management class/tier? *required

Nursery
- Nursery Outdoor: Maximum area of 100,000 square feet
- Nursery Mixed-Light: Maximum area of 10,000 square feet
- Nursery Indoor: Maximum area of 10,000 square feet

Cultivator
- Tier 1: less than 5,000 square feet
- Tier 2: 5,000 - 12,500 square feet
- Tier 3: 12,500 - 25,000 square feet
- Tier 4: 25,000 - 50,000 square feet
- Tier 5: 50,000 - 100,000 square feet

Combination Cultivator
- Tier 1: Up to but not exceeding 5,000 square feet of outdoor; and up to but not exceeding 2,500 square feet of mixed light
- Tier 2: 5,000 - 12,500 square feet of outdoor; and 2,500 - 6,250 square feet of mixed light
- Tier 3: 12,500 - 25,000 square feet of outdoor; and 6,250 - 12,500 square feet of mixed light
- Tier 4: 25,000 - 50,000 square feet of outdoor; and 12,500 - 15,000 square feet of mixed light

    - Tier 5: 50,000 - 100,000 square feet, and 15,000 - 30,000 square feet of mixed light
- License Number
- Business name *required
- What postal code is this facility located in? *required
- E-mail address *required
- Last reporting month: The last full month you have complete energy, water, and production information you can report. For the most accurate and current results, answer the following questions for the most recent 12-month period. *required
- Please select your electric utility (Select from list)
- How would you like to enter your water measurements or estimates?
    - Gallons
    - Liters
    - CF (Cubic Feet)
    - CCF (100 Cubic Feet)
- Please explain any uniquenesses you think we should know about regarding anything on this page.

- What growing and processing activities do you do at your facility? (Select all that apply)
    - Tissue culture laboratory
    - Nursery
        - Seed starts
        - Mother plants
        - Clone plants
        - Vegetating plants
    - Flowering plants
    - Drying and curing
    - Conditioned storage
    - Extracting
        - Solvent based
        - Solventless
    - Post-extraction processing
    - Manufacturing of plant-based products
    - Manufacturing of packaging for plant-based products

## Describe your growing environments

Temporary seasonal greenhouse structures such as low tunnels are considered outdoor environments.

- **For Each Growing Space:**
    - What type of environment is Space #1?
        - Indoor, Greenhouse, or Hoophouse
            - ( New construction / Renovated space )
            - How many types of light fixtures are used for growing in Space #1? If lights have different wattages, then they are different types.
        - Greenhouse
            - ( Ventilated / Sealed )
            - Light Deprivation?

            - Supplemental Electric Light?
                - How many types of light fixtures are used for growing in Space #1? If lights have different wattages, then they are different types.
        - Hoophouse
            - Light Deprivation?
            - Supplemental Electric Light?
                - How many types of light fixtures are used for growing in Space #1? If lights have different wattages, then they are different types.
        - Outdoor
    - For each crop, what is the average square footage under production throughout the 12-month reporting period in Space #1?
    - Which stages of growth occur in Space #1?
        - Clone or Mother Plants
        - Vegetating Plants
        - Flowering Plants
- What type of building commissioning did/do you use for your facility, if any?
    - Commissioned newly constructed facility
    - Have retro-commissioned your facility's building systems after occupancy
    - Ongoing commissioning of your facility during operation
    - No commissioning yet

## Describe your lighting fixtures

- **Details for Each Light Type within Each Space:**
    - Make
    - Model
    - Lighting fixture wattage
    - Lighting fixture photosynthetic photon efficacy (PPE) *required
    - Number of these fixtures
    - While in operation, how many hours a day are the lights in this space turned on? (hours)
    - How many days a year are the lights in this space in operation? (days)

## Describe the heating, ventilation, air conditioning, and dehumidification (HVAC) systems you use

There are many variables in your cultivation facility that impact HVAC equipment selection, unit size and cost of operation. These system types simplify the complex variety of options in grow operations today.

Due to the limited data and unique aspects of greenhouses, we will not yet be able to estimate an HVAC score for systems F and G.

- Describe the HVAC system you use for your cultivation and processing spaces. (Select system, then associate with Spaces)

    - System 0: No Heating or Cooling with Supplemental Standalone Ventilation and Dehumidification Equipment
      Heating, Ventilation, and Air Conditioning (HVAC) systems are not used, and supplemental, standalone ventilation or dehumidification equipment are the only components controlling your grow environments. Outside air may or may not be used for ventilation.

    - System A: Conventional Heating, Ventilation, and Air Conditioning (HVAC) with Supplemental Standalone Dehumidification Equipment
      Conventional factory-built or packaged HVAC equipment with cooling components sized to handle the entire sensible cooling load of the room are used to control your grow environments. Standalone dehumidification equipment in your cultivation spaces and/or HVAC equipment using an internal hot gas reheat coil is used to control your grow environments when lights are off, or to supplement the dehumidification capacity of the cooling components.

    - System B: Conventional Heating, Ventilation, and Air Conditioning (HVAC) and Enhanced Dehumidification
      Conventional factory-built or packaged HVAC equipment with cooling components sized to handle the entire sensible cooling load of the room are used to control your grow environments. Permanently installed dehumidifier equipment containing heat exchanger plates or heat pipes is used to improve the moisture removal capacity effectiveness of your system.

    - System C: Conventional Heating, Ventilation, and Air Conditioning (HVAC) with Split Dehumidification System
      Conventional factory-built or packaged HVAC equipment with cooling components sized to handle the entire sensible cooling load of the room are used to control your grow environments. Split dehumidifiers with remote air-cooled condensers to provide dehumidification and supplemental cooling with improved effectiveness over portable dehumidification equipment installed in cultivation spaces using internal hot gas reheat.

    - System D: Conventional Heating, Ventilation, and Air Conditioning (HVAC) with Desiccant System for Dehumidification and Sensible Cooling
      HVAC equipment with cooling components sized to handle the entire sensible cooling load of the room are used to control your grow environments. Additional desiccant dehumidification equipment with gas or electric heat is used when lights are off or to supplement the dehumidification capacity of cooling components. Your system can be integrated units that provide both sensible cooling and dehumidification for your cultivation spaces.

    - System E: Fully Integrated Heating, Ventilation, and Air Conditioning (HVAC) and Dehumidification System
      Completely integrated equipment is used to control your grow environments using control systems that adjust sensible heat ratios to perform heating,

ventilation, cooling, and dehumidification for your cultivation spaces.(Due to the limited data, we will not yet be able to estimate an HVAC score.)

- System F: Hydronic Chilled Water and Boiler System
  A central chilled water system can allow for heating and cooling for an unlimited number of independent growing zones within your facility. Hydronic fan coil units or air handlers exchange heat between the building and the outdoors, served by air- or water-cooled equipment located outside the building. Air-cooled chiller systems can reject their heat directly to outside air, while water-cooled chiller systems are often located indoors in a mechanical room and are connected to evaporative cooling towers located outdoors via separate condenser water loops in order to reject heat to the outside air.
    - Some portions of the chiller and/or boiler system can recover heat to recycle energy for dehumidification reheat and/or primary building heat
    - Chiller can be heat recovery type, otherwise a secondary source of hot water is required from a site-generated source (like a boiler)
    - Dry coolers can be utilized for free cooling in winter without introducing outside air into the space

- System G: Year-round Greenhouse HVAC Systems
  HVAC equipment addresses the ventilation, cooling and heating loads of your grow environments throughout the year. These systems may be a factory-built central system or may be composed of packaged, standalone components that maintain greenhouse indoor environmental conditions within acceptable ranges.

- Other HVAC Systems: Your system is not described in A thru G above

- Does your facility use any of these thermal technologies? Please describe anything interesting at the end of this page.
  - Air source heat pump
  - Geothermal heat pump
  - Direct use geothermal (not a heat pump system)
  - Energy recovery ventilation system (ERV)
    or heat recovery ventilation system (HRV)
  - Other [Text box to describe technology]

## Describe your water sources and recirculation

- Which, if any, sources do you reclaim water from? (Select all that apply)
  - Irrigation
  - Rainwater
  - Condensate / HVAC
  - Grey Water
- Approximately much of your water use comes from these reclaimed sources annually?
  - 0-20%
  - 20-40%
  - 40-60%
  - 60-80%

    - 80-100%
- How do you use water in your facility? (Select all that apply)
    - Irrigation
    - Evaporative pad cooling
    - HVAC Chillers
    - Fogging
    - Sanitation (washdown)
    - Pest management
    - Post harvest activities
- When and how much water do you use during the year? (For each month)

## Describe your electricity sources and usage

- Do you purchase renewable energy through community programs such as community solar?
    - Yes/No
    - Name of community renewable program/project [Text box]
- Does your facility produce renewable electricity onsite?
    - What types of renewable electricity does your facility produce onsite?
        - Solar PV
        - Wind
        - Other
    - **For each month of the reporting year:**
        - Renewable Electricity Generated (kWh)
- Over the 12-month period, how many total annual kilowatt hours (kWh) did your facility use? Enter 0 for any months that you did not use any electricity from the grid.

  **For each month of the reporting year:**
    - Electricity Usage (kWh)
    - Peak Electric Demand ( kW / kVA )

## Describe your other energy sources

- Did your facility use natural gas in the last 12 months?
    - What is the name of your natural gas utility?
- Does your operation use other delivered fuels?
    - What delivered fuels does your operation use?
        - Diesel
        - Gasoline
        - Propane
        - Fuel oil
        - Biofuels (cord wood, wood pellets, other)

## Describe your other energy usage

For the most accurate and current results, answer the following questions for the most recent 12-month period.

- **For each month's consumption of the reporting year:**
    - Natural Gas ( Therms / CCF )
    - Diesel Generator (Gallons / Liters)
    - Gasoline Generator (Gallons / Liters)
    - Biofuels ( Tons / Cords )
    - Propane ( Gallons )
    - Fuel Oil ( Gallons )
- Do you supplement with $CO_2$ in your facility?
    - Yes
        - How do you source your $CO_2$?
            - Purchased canisters
            - Onsite generation
                - Burners or Boilers
                - Other
            - Co-location from off-site process
            - Direct Air Capture (DAC)
    - No

## Describe your annual production

- For each crop, what is the total production throughout the same 12-month reporting period? This includes trim but not waste (stems, stalks and leaves). *required
    - Measure Method
        - Dry weight
    - Units
        - Kilograms
        - Pounds
        - Hundredweight (cwt)
        - Units
    - Annual total production

## Describe your annual waste production

- How are you disposing of green waste?
    - Landfill
    - Compost
    - Anaerobic Digestion
    - Incineration/Combustion
    - Biochar Production
- Over the same 12-month period, how much waste did your facility dispose of?**:**
    - Total Waste (Pounds)
        - Compost

    - Recycled
    - Landfill

## How would you like to move forward?

- Are you considering a lighting, HVAC and/or dehumidification upgrade over the next 12 months? ( Y / N )
- Have you used incentives from a utility program? ( Y / N )
- Have you had a FlexTech evaluation of your facility performed? ( Y / N )
- Yes, I would like to occasionally receive email updates from the Resource Innovation Institute

## Confirm Submission?

- Yes, I confirm that, to the best of my knowledge, the information in this survey is truthful and accurate. I am authorizing this record to be sent to the New York State Office of Cannabis Management.
- This is just a test record, not for official reporting.