# Growing the Bottom Line:

## Agricultural Growth through Energy Efficiency and Economic Development

For more information with fresh ideas, incentives, grants and financing for your growing facility, visit **ngrid.com/agriculture** or call **800-787-1706.**

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**Growing facilities in Upstate New York have overcome many economic challenges.** They have maintained existing equipment, invested in new technology and navigated the New York state legislative landscape.

With so many variables in the agricultural equation, it is important to focus on what growing facilities can really control to help grow the bottom line. **Two essential areas for creating a healthy bottom line are:**

controlling **ongoing costs** **and** increasing **productivity**

**National Grid can help New York growing facilities control energy costs through energy-efficiency and economic-development programs that help them invest in their future and increase productivity. National Grid's economic-development and energy-efficiency teams have**

**visited more than 500 agribusiness** sites across upstate New York.

**This support has resulted in providing**

**over $3 million**

in economic development grants and supporting over a thousand energy-efficiency measures through incentives since 2003.

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# Marijuana Laws and Agricultural Prospects

The Medical Marijuana Law and the Recreational Use Marijuana Law provide New York agriculture markets with opportunities for energy efficiency and economic development. **Some estimates of the marijuana market predict it could:**

**exceed**

**$5 billion**

**by 2025**

+

**create more than**

**75,000 jobs**

**by 2027 in New York state.**

**This is a significant opportunity for New York growers.**

**Many new or existing grow facilities will need to be built or renovated to capitalize on this new market.** Renovating and repurposing commercial buildings into growing facilities offers a unique opportunity to control costs by engineering energy-efficient equipment into the design from the start.

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# Working Hand-in-Hand:

## Energy-Efficiency and Economic-Development Programs

**Energy-efficiency and economic-development programs from National Grid work together to help agricultural businesses across New York state leverage available resources to become as productive and energy efficient as possible,** while generating new jobs and capital investment in the region. With a robust portfolio of economic-development grant programs and a variety of opportunities for energy-efficiency incentives, customers can look to National Grid as a trusted resource and partner in their efforts to expand. This was a contributing factor in one of the largest greenhouses in the United States being located in upstate New York, as well as some of the most technologically advanced robotic dairy operations.

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**When National Grid's economic-development incentives** are paired with the energy-efficiency assistance offered to eligible businesses, customers can save significant money, grow sustainably and generate more economic impact in their communities.

**Agricultural businesses could see significant results:**

- **Lower energy and operating costs**
- **Increased profit margins**
- **Reduced maintenance**
- **Improved crop production and vitality**

**National Grid offers a variety of custom electric and gas energy-efficiency incentives** tailored to each agricultural customer's specific energy needs, such as:


lighting


HVAC systems


steam traps

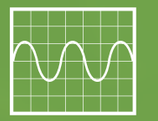

thermal curtains


fans


dehumidification


chillers


energy-management systems


variable-frequency drives


heat recovery

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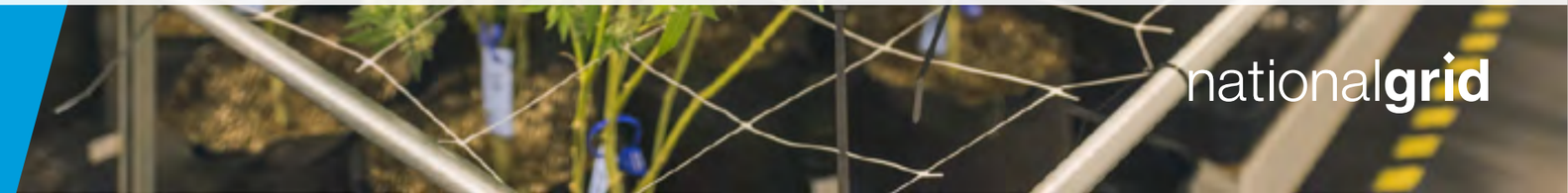
# LED Lighting and Controls

Lighting can be a significant operating expense in existing buildings such as greenhouses or warehouses. By upgrading lighting to LEDs, farms can maximize their workers' visual comfort, minimize upgrade costs with financial incentives from National Grid and **save hundreds of thousands of kWh per year.**

**Lighting controls** are also important for better energy efficiency and can range from simple occupancy sensors to complex dimming systems networked with other systems. In the warehouse, irrigation room and canteen areas of a facility, LED lights with lighting controls can be installed.



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# Temperature and Humidity Controls

**All growing facility owners know different plants need different conditions, so greenhouses use fans and various temperature and humidity controls to maintain them.** Outside, plants grow in a variety of conditions, and different equipment is installed based on the needs of the plants and the environment.

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**There isn't one solution for all situations, but here are some examples of ways to save on costs, whether growing in a greenhouse or outside:**

## Natural Gas Boilers

Gas boilers produce steam for heating and can be a significant cost to replace or install. If you are building a new facility, National Grid offers incentives to help offset the cost of a new high-efficiency boiler. Incentives for boiler tune-ups or burner upgrades are also available. A boiler tune-up can reduce gas consumption by up to five percent, which means lower fuel costs and more room in your operating budget. These preventive measures also extend the life of your systems and prevent expensive repairs before a sudden breakdown occurs.

## Thermal Curtains

Installing thermal curtains in a natural gas–heated greenhouse can help retain heat in the winter despite the brutal weather outside and prevent overheating in the summer by reducing solar radiation. The thermal curtains will provide significant energy savings and, when combined with incentives from National Grid, make perfect financial sense in Upstate New York.

## Circulation and Ventilation Fans

Fans are necessary components of many growing facilities. National Grid offers incentives on high-quality variable-frequency drives that can help these fans maintain ideal conditions while saving energy.

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## Natural Gas Heat Recovery Systems

Natural gas heat recovery ventilation systems work by extracting moist and stale air from wet facilities and recovering the heat usually lost from the extracted air. They also supply clean, filtered fresh air that is warmed by the extracted heat.

## VFD Pumps and Circulators

Variable-frequency drives also benefit pumps and circulators by controlling their speed to provide the optimal flow, which not only increases the efficacy of your system but reduces energy use as well.

**National Grid incentives** can help offset the costs of installing more efficient versions of these different types of equipment, which are essential to running a productive growing facility.

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# Cold Storage and Processing Equipment

**National Grid can provide incentives** for different types of cold storage and processing equipment that can help agricultural businesses improve their bottom line. Some examples include:

### Chillers

A chiller can provide the ideal consistent temperature and pressure needed for storing harvested crops.

### Scroll Compressors

Scroll compressors are more efficient than standard compressors that use pistons. A scroll compressor for your HVAC system saves energy, lasts longer and is quieter.

### Processing Equipment

Processing equipment is designed to perform specific tasks such as storing, controlling flow, drying or processing crops.

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# Why does National Grid provide incentives for growing facilities?

**National Grid provides incentives** because it's good for business and better for everyone. We are committed to using less energy, and it is in our best interest for growing facilities and companies to invest in the best energy-efficient equipment available to them.

There are several reasons for utility providers to want to decrease a company's energy usage:

**Demand Response.** It can be costly to meet energy needs during times of high demand, such as hot summer months when businesses and residential homes have air conditioning on high, or on the coldest days of winter when customers are heating their homes and businesses.

**Infrastructure Constraints.** Furthermore, as the electricity network grows, the increased demand is trying on transmission substations, and the ongoing annual demand growth can be unsustainable. The same can be said about the thousands of miles of natural gas transmission pipelines.


**Reducing Carbon Emissions.** Most importantly, utilities often have initiatives to help businesses reduce their carbon footprint and decrease the amount of greenhouse gases released into the environment. By working through the community and with customers, utilities can provide solutions to increase energy efficiency and support a healthy environment for future generations.

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For growing operations, it is all about productivity and efficiency—the more a farm produces and the more it reduces operating expenses, the higher the earning potential and the healthier the bottom line. Smart energy upgrades combined with economic-development incentives can improve everything from harvest yield to cold storage and processing, as well as reduce fixed monthly costs.

Whether you're looking to tighten your operating costs, produce more profit or expand your operations, we can help with fresh ideas, incentives, discounts and financing for your growing facility.

Learn more by calling **800-787-1706** or at **ngrid.com/agriculture**.