

- **Lighting**
Upgrading to high-efficiency lighting systems (such as LEDs) reduces energy use while providing optimal light levels for plant growth and workspace needs.
- **Light Sensors**
Automated controls that adjust or turn off lights based on daylight levels or occupancy, preventing unnecessary energy use.
- **Unit Heaters**
Efficient space heating systems that maintain proper growing temperatures with improved fuel or electricity performance.
- **Water Heater / Boiler**
Systems that provide hot water or heat for space and process use. Efficiency improvements can include better insulation, controls, and high-efficiency equipment.
- **Block Timer Heater**
Controls that limit heater operation to set time intervals, reducing idle energy consumption when heating is not needed.

NOTE: Optimized for large operations which require the use of large vehicles year-round, values for smaller operations will be much lower than reality

- **IR Film**
Infrared (IR) films applied to greenhouse glazing reduce heat loss by reflecting radiant energy back into the space while allowing visible light to pass through.
- **Energy Curtains**
Retractable thermal screens that retain heat during cool periods and reduce solar gain during hot periods, helping stabilize greenhouse temperatures.

NOTE: Optimized for small/very small operations. Such ECMs are uncommon for larger operations, and so large implementation values will yield unrealistically high savings values

- **Ventilation**
Energy-efficient fans, louvers, and control systems that manage air exchange for temperature and humidity control with minimal energy loss.
- **Weatherization**
Improvements that reduce air leakage—such as sealing cracks, repairing doors and windows, or installing weatherstripping—to maintain stable indoor conditions.

- **Insulation**

Added materials that slow heat transfer through walls, roofs, and floors, reducing heating and cooling energy requirements.

- **Miscellaneous Operations**

Includes energy use from support systems like vending machines, freezers, pond pumps, and air conditioning. Efficiency upgrades or scheduling controls in these systems can provide additional savings.