VENTILATION AND CIRCULATION

Farm animals require ventilation and air movement for comfort and productivity year-round. Rebates are available for high efficiency systems that could help save energy costs of up to 30% a year.

Ventilation and Circulation Fans
The operating costs of a ventilation system will depend on the efficiency of the equipment, configuration of the fans, proper installation and control over the amount of airflow.

- Ventilation Fans $3/inch (fan blade diameter)
- Ventilation Thermostat $25 each
  Controller with Humidistat
- Circulation Fans $1/inch (fan blade diameter)

Ventilation Fan Efficiency Requirements
(must be BESS Labs rated at 0.10 in. static pressure)
- 14-23 inch - min. 10.5 CFM/Watt
- 24-35 inch - min. 13.0 CFM/Watt
- 36-47 inch - min. 16.5 CFM/Watt
- ≥ 48 inch - min. 19.5 CFM/Watt

Circulation Fan Efficiency Requirements
(must be BESS Labs rated at thrust/kW requirements)
- 12-23 inch - min. 11.0 lbs. thrust/kW
- 24-35 inch - min. 15.0 lbs. thrust/kW
- 36-47 inch - min. 18.5 lbs. thrust/kW
- ≥ 48 inch - min. 23.0 lbs. thrust/kW

Rebates are limited to $5,000 per account for all ventilation and circulation equipment.

A 24-foot HVLS fan will move as much air as six standard industrial high-speed fans and consume only one-sixth the energy. In a typical dairy-free stall barn, HVLS fans are placed over the feed alley every 35-60 feet, depending on the fan size.

– ProgressiveDairy.com
**FARM OPERATIONS**

ENERGY STAR and the DesignLights Consortium have developed product lists to identify quality LED lighting products that meet certain performance criteria. ENERGY STAR and DesignLights qualified products have been tested to verify that they perform as advertised and that required safety certifications have been obtained.

**Why ENERGY STAR or DesignLights?**

Energy-efficient equipment and technologies can go a long way in helping to reduce energy expenses and improve productivity.

### DAIRY OPERATIONS

- **Dairy Heat reclaimers**
  - $5 per milking cow
  - Heat reclaimers can reduce water-heating energy usage by 60% to 80% by recovering the heat discharged from dairy refrigeration equipment.

- **Dairy Milk Pre-Coolers**
  - $4 per milking cow
  - Reducing the temperature of milk with "pre-coolers" helps reduce refrigeration system energy costs by 20% to 30%.

- **Variable Speed Dairy Vacuum Pumps**
  - $40/horsepower
  - Variable speed drives (VSDs) used with dairy vacuum systems can reduce electricity use by as much as 60%.

- **Dairy Scroll Compressor**
  - Refrigeration systems with scroll compressors are 15% to 20% more efficient than traditional reciprocating compressor systems.
  - $250 each
  - (must replace reciprocating compressor)

### LIVESTOCK EQUIPMENT

- **Livestock Waterers**
  - Rebates are available for efficient waterers with tanks constructed of plastic, a minimum of 2 inches of insulation and lid covers.
  - Electric Heated Livestock Waterers
    - $50 each
    - (≤ 175W per trough opening)

- **Farrowing Equipment**
  - Efficient heating lamps, pads and controllers help reduce energy use and improve animal health.
  - Single Crate Heating Pads
    - $25/pad
    - (≤ 85W)
  - Double Crate Heating Pads
    - $50/pad
    - (≤ 170W)
  - Heat Lamp or Pad Controller
    - $50/controller

### LIGHTING

Energy-efficient lighting technologies can reduce operating costs and provide lower fixed costs through fewer replacements. Note: All lamp and fixtures must be ENERGY STAR® or DesignLights Consortium™ qualified.

#### All buildings
- **Occupancy Sensors**
  - $8 each

#### Outdoor Security LED Lighting
- **20-34W**
  - $10/fixture
- **35-74W**
  - $20/fixture
- **75-124W**
  - $50/fixture
- **≥ 125W**
  - $60/fixture

Maximum incentive is 50% of installed costs. Custom rebates may be available; contact your cooperative for further details.

#### Existing Buildings
- **LED Tubes – Replacing T12 or T8**
  - $2/lamp
- **LED High Bay / Troffer Fixtures**
  - Contact Your Co-op

### Indoor LED Fixture Replacements (non-troffer type)

<table>
<thead>
<tr>
<th>Watts</th>
<th>$/fixture</th>
</tr>
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<tbody>
<tr>
<td>8-14</td>
<td>$10</td>
</tr>
<tr>
<td>15-49</td>
<td>$15</td>
</tr>
<tr>
<td>50-99</td>
<td>$25</td>
</tr>
<tr>
<td>≥ 100</td>
<td>$40</td>
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</tbody>
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Contact Pella Cooperative Electric for the complete list of rebates and qualifications.