

To qualify for the Section 179D tax deduction, certain energy-efficient improvements must be made to the building. These improvements must meet specific performance standards and guidelines outlined by the IRS and the Department of Energy (DOE). Below are the types of improvements that can qualify for the deduction:

1. Building Envelope (Insulation, Windows, and Roof)

- **Insulation:** Improvements to insulation in the building's walls, roof, and floors that reduce heat loss or gain.
- **Windows and Doors:** Upgrading to high-performance windows, skylights, and doors that improve energy efficiency by reducing heat transfer.
- **Roofing:** Installing energy-efficient roofing systems that reflect heat (e.g., cool roofs) or have insulation properties that reduce energy consumption.
- **Air Barriers:** Adding air barriers that reduce drafts and heat loss.

These improvements focus on making the building better insulated, which helps control heating and cooling costs.

2. Heating, Ventilation, and Air Conditioning (HVAC) Systems

- **Efficient HVAC Systems:** Installing energy-efficient heating and cooling systems that use less energy while providing better comfort and climate control.
- **Upgraded Equipment:** Replacing outdated or inefficient HVAC equipment with energy-efficient models, including variable refrigerant flow (VRF) systems, high-efficiency boilers, or chillers.
- **Improved Air Distribution:** Enhancing air distribution systems to ensure proper air circulation and energy efficiency, including upgrades to ducts or fans.

The goal is to lower energy consumption in climate control systems, which are often the biggest energy users in commercial buildings.

3. Lighting Systems

- **Energy-Efficient Lighting:** Replacing older lighting systems with LED or other energy-efficient lighting technologies.
- **Automated Lighting Controls:** Installing occupancy sensors, daylight sensors, or dimming controls that automatically adjust the lighting based on occupancy or natural light availability.

- **Upgraded Fixtures:** Installing energy-efficient fixtures or bulbs, such as LEDs, that use less electricity and have a longer lifespan.

Lighting systems are a primary target for energy efficiency improvements due to their widespread use and potential for energy savings.

4. Building Energy Management Systems (BEMS)

- **Smart Controls:** Installing energy management systems that monitor and optimize energy use within the building, adjusting heating, cooling, lighting, and other systems based on real-time data and user behavior.
- **Automated Building Controls:** Integrating automated systems that adjust the operation of HVAC, lighting, and other equipment to ensure maximum efficiency.

These systems help in managing energy use more efficiently and can contribute to meeting energy reduction thresholds.

5. Renewable Energy Systems (Optional but Potentially Qualifying)

- While Section 179D does not directly incentivize renewable energy installations, some energy efficiency improvements may overlap with renewable energy technologies. In some cases, renewable energy systems (such as solar panels) might be eligible for other tax credits or deductions.

Performance Requirements:

- **Energy Savings:** To qualify for the full Section 179D deduction, the building must demonstrate an overall energy savings of at least 50% relative to a baseline building (usually based on ASHRAE 90.1 standards).
- **Partial Deductions:** If the full 50% energy savings requirement is not met, partial deductions are available for each individual system:
 - Up to **\$0.60 per square foot** for energy-efficient lighting systems.
 - Up to **\$0.60 per square foot** for HVAC systems.
 - Up to **\$0.60 per square foot** for building envelope improvements.

Certification Process:

- **Energy Modeling:** A qualified third-party energy modeler must assess the building before and after improvements are made to verify the energy savings.

- **Certification:** Once the improvements are made and verified, a certified report must be submitted to claim the Section 179D deduction.

Summary of Improvements that Qualify:

- **Energy-efficient windows, insulation, and roofing (building envelope improvements).**
- **Upgraded HVAC systems with energy-efficient technology.**
- **Installation of energy-efficient lighting and lighting controls.**
- **Smart energy management systems.**

These improvements are designed to reduce energy consumption, lower operating costs, and improve the environmental performance of the building. If you're considering making these upgrades, it's best to work with professionals who are familiar with Section 179D requirements to ensure the changes are eligible for the tax deduction.

Would you like more details on any of these improvements or help with how to qualify for the deduction?