

# Breathitt County Schools Energy Plan (DRAFT)

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## Objective

Breathitt County Schools is committed to promote energy efficiency to our faculty, staff, students and community.

We shall strive to conserve energy and improve the energy efficiency of our buildings, vehicles, and equipment and the goods and services that we use. We shall use environmentally safe and sustainable energy sources as often as practical while achieving savings.

We shall implement these principles by demonstrating community leadership, collaborative planning and by adopting best energy management practices. We shall establish goals, objectives and indicators; conduct an annual self-evaluation of our progress; and communicate regularly with the District School community.

Our objective is to be good stewards of the resources (energy, water, dollars, etc.) given us. We will seek a reasonable working balance between personal comfort and resource consumption knowing that we must optimize student learning.

## Responsibility

Faculty, staff and students must use energy prudently. Everyone must turn off lights when rooms are not in use. Each person is responsible for turning off energy using devices such as office equipment when they are not being used. One should not assume that someone else will do it. Occupied space temperature set points shall be maintained at the temperatures set forth in this plan. Windows and exterior doors must be kept closed to prevent the loss of conditioned air. Faculty, staff and students should report inoperable equipment to Maintenance and wasteful practices to the District Energy Manager or Facilities so corrective action can be taken. The District Energy Manager shall monitor utility usage and strive to promote and implement the guidelines outlined in this plan.

## General Guidelines

**Temperature** — To maintain reasonable comfort and lower energy expenditures, the school district has established the following standards for comfort heating and cooling. Summer thermostat settings (air conditioning) during occupied periods are to be **72-74°F**. During unoccupied periods thermostats are to be set back to **80 °F**. Winter settings (heating) during occupied periods are to be **68-70°F**. During unoccupied periods, thermostats are to be set back to **60 °F**. Exceptions to these guidelines must be approved by the Facilities Director. To properly sense temperature in rooms, areas around thermostats must be clear of computers, televisions, and other electric appliances that give off heat. Additionally, supply air vents must be clear of obstructions such as flags, banners, signs, etc., that may interfere with the design airflow which in turn affects occupant comfort. Given the above temperature settings, school occupants should dress appropriately for their individual comfort.

Occupied temperature settings will be maintained for each school facility until 3:30 pm Monday through Friday to allow for after school club meetings, faculty meetings, etc. After this time and on weekends the HVAC system will be in the unoccupied mode. If an event is scheduled outside of the occupied time period, school personnel may use local temporary overrides or put in a request to the Plant Operator or Maintenance Director.

**Building Resource Management** — Windows and doors should be kept closed during the heating season and during the summer in those areas that have mechanical cooling. Gym exhaust fans are to be turned off when the air conditioning unit serving that area is operating. Every member of the school district should assume the responsibility of closing windows, turning off office equipment when not in use, and shutting off the lights when leaving a room. Computer monitors, smart boards and projectors should be turned off when not in use and printers should be turned off at the end of the day. All personal electronic devices should be turned off when school will be out for extended periods such as Fall Break, Christmas Break, Spring Break and Summer Break. Energy management devices and strategies will continue to be evaluated and added. Schedulers of classes, meetings, and other school activities should endeavor to minimize energy use. Evening activities should be concentrated in the fewest areas possible, and where appropriate, the areas used should be those that already have late night temperature setback.

**Lighting** — Interior lighting shall be fluorescent, whenever possible. New energy-saving fixtures, lamps and ballasts will be used to replace existing less efficient lighting whenever economically feasible and appropriate. Exterior lighting will be high-pressure sodium or metal halide (metal halide is preferred) whenever possible, and will meet minimum current safety requirements. Decorative lighting shall be kept to a minimum. Lighting levels recommended by the most recent edition of the IES (Illuminating Engineering Society) Lighting Handbook shall be used as guidelines. Where it makes economic sense, occupancy/motion sensors (ultrasonic or infrared) wired to area lighting will be installed to reduce and/or turn off lights in unoccupied, vacated areas. Day-lighting controls will be installed, if economically feasible, to automatically adjust lighting levels as appropriate. Task lighting, such as desk lamps, is recommended to reduce overall ambient lighting levels. Teachers are encouraged to use task lighting at the end of the day after the students have left instead of the overhead fluorescent lighting. Compact fluorescent bulbs should be used in desk lamps. These are now readily available at local stores.

**Space Heaters** — **Space Heaters are NOT to be used.**

**Computers / Monitors/Projectors** – Because of the sheer number of computers and monitors, they contribute greatly to the plug load of the schools and district facilities. Only Energy Star rated computers and monitors should be purchased. At the end of every day, all computers and monitors should be shut down unless an upgrade is planned during off hours. Over time, more elaborate computer controlling devices will be evaluated and installed. When not in use, computers should be in sleep mode. Media Centers should closely monitor computer equipment including power strips to ensure they are turned off during unoccupied periods.

Projectors not only contribute to the plug load, but create an additional cost for the district due to the cost of replacement bulbs. Projectors should be shut down when not in use to reduce energy costs and extend bulb life.

**Switchover from Heating to Cooling** — Where manual changeover is necessary, maintenance personnel perform required changeover from heating to air-conditioning in the spring. Maintenance performs the changeover on the basis of priorities established to (1) provide comfort to students, (2) maintain required temperatures to protect equipment, and (3) serve the greatest number of individuals and activities. Air conditioning may not begin until outside temperature has reached 75 °F for three consecutive days. Temperature projections are also considered. The wide swings in temperature during the spring of the year and the difficulty in switching between heating and cooling

make this policy necessary. Special problems or hardships with this policy should be addressed to the Maintenance Director.

**Switchover from Cooling to Heating** — Where manual changeover is necessary, maintenance personnel perform required changeover from air-conditioning to heating in the fall. Maintenance performs the changeover on the basis of priorities established to (1) provide comfort to students, (2) maintain required temperatures to protect equipment, and (3) serve the greatest number of individuals and activities. Heating may not begin until the high outside air temperature has dropped below at least 55 °F for three consecutive days. Temperature projections are also considered. The wide swings in temperature during the Fall of the year have made this policy necessary. Special problems or hardships with this policy should be addressed to the Maintenance Director.

**Holiday Periods** — a period of closure for the school district offers a great opportunity to save money on utilities that can be spent in other areas. Past history has shown that very few people occupy the buildings for any substantial time during the holidays. With this in mind, buildings shall be only minimally heated/cooled during holiday periods. The exception to the policy will be buildings or areas that contain special collections or sensitive equipment, or buildings that are officially open during the holidays. Requests for exceptions to this policy with justification should be addressed to the Maintenance Director.

**New Construction** — the school district shall seek to reduce future energy costs in new facility construction and renovation whenever feasible. Current standards outlined in ASHRAE Standard No. 90.1 Energy Efficient Design of New Buildings except Low Rise Residential Buildings shall be followed as closely as possible. Additionally, all city and state regulations shall be followed. All planning for major construction and equipment purchase/installation must include energy life cycle costing. New equipment purchased must carry the ENERGY STAR label as often as practical. As resources become available, District Schools shall develop and implement design standards for new construction to include energy efficiency. **Any /all new HVAC installations will be included in the district facilities plan.**

**Water Conservation** — District Schools is committed to promoting the conservation of water in addition to energy. Faculty, staff, and students should report malfunctioning water faucets, toilets and urinals to Maintenance so corrective action can be taken. The school district shall seek to implement methods of capturing rainwater for use in non-potable applications and shall use native plantings where possible to reduce the amount of watering needed.

Additionally, only energy efficient water usage appliances shall be purchased.

### **Suggestions**

The Energy Team encourages suggestions for additions or modifications to this Energy Plan as well as other energy or water conservation suggestions.