

QUESTIONS & ANSWERS ABOUT PLANS FOR SMITH #1

ABOUT EKPC

What is East Kentucky Power Cooperative?

East Kentucky Power Cooperative (EKPC) is a not-for-profit, member-owned cooperative that is responsible for providing electricity to its 16 members cooperatives. Those cooperatives, in turn, serve more than 500,000 Kentucky homes, farms and businesses in 87 counties in Central and Eastern Kentucky.

Where does EKPC get the electricity it provides to its members?

EKPC owns and operates power plants fueled by coal and natural gas in Clark, Mason and Pulaski counties, as well as plants fueled by methane from landfills in Boone, Greenup, Hardin, Laurel, Mason and Pendleton counties. EKPC also purchases hydroelectric power generated at Wolf Creek Dam, Laurel Dam and Greenup Dam. If demand for electricity exceeds the capacity of these plants, EKPC must purchase power from the grid, typically at a cost that is significantly higher.

How does the electricity get to EKPC's 16 member cooperatives?

The electricity generated by these plants is delivered to member cooperatives over EKPC's network of more than 2,800 miles of high-voltage transmission lines. These power lines carry the electricity to substations where the voltage is reduced and transferred to lower-voltage distribution lines, which your local cooperative uses to deliver power to homes, farms and businesses.

Some critics claim that EKPC's financial condition is deteriorating. Is that true?

In 2004 and 2005, EKPC experienced some unforeseen circumstances that led to negative margins. Since then, EKPC's leaders have taken steps to increase revenue and reduce costs. For the past four years, EKPC has posted positive margins, totaling more than \$110 million. EKPC's leaders understand the cooperative must continue to build equity in order to qualify for the financing necessary for major capital projects like Smith #1. They understand that it is critical to protect the cooperative's financial integrity while ensuring that EKPC has the resources necessary to provide reliable, affordable power.

ABOUT SMITH STATION

Where is Smith Station?

J.K. Smith Station is a power plant located in the community of Trapp, Ky., which is in southern Clark County, Ky. EKPC owns about 3,200 acres at the site.

Are other generating units already located at Smith Station?

Yes. Smith Station is the location of nine existing generating units, which are fueled by natural gas. Altogether, these units have the capacity to generate about 1,000 megawatts of electricity.

How are these natural gas units different from the proposed Smith #1 unit?

Smith #1 will be fueled by coal. Historically, the cost of natural gas tends to be significantly higher and more volatile than the price of coal. As a result, the natural gas units typically are used only on days when demand for electricity is very high, such as very cold or very hot days when heating and air-conditioning systems are using a great deal of power. Coal units, on the other hand, tend to run 24 hours a day, seven days a week, with occasional outages for maintenance.

ABOUT SMITH #1

What is Smith #1?

Smith #1 is the name of a proposed coal-fueled electricity-generating unit to be located at EKPC's J.K. Smith Station.

How much electricity will Smith #1 be capable of generating?

About 278 megawatts, or enough power for about 150,000 Kentucky homes.

Why does EKPC need to build Smith #1?

EKPC needs additional power plant generating capacity in order to serve its member cooperatives as reliably and affordably as possible. Currently, EKPC's generating capacity lags about 200 megawatts behind its members' demand for electricity. And, in recent years, demand has been increasing about 60 megawatts each year. As a result, EKPC has had to purchase large amounts of power, typically at a much higher price than it would cost to generate it. EKPC believes Smith #1 is the most affordable, most reliable option for meeting its members growing demand for electricity. The Kentucky Public Service Commission, which is the state government agency that regulates utilities, has twice reviewed and approved EKPC's plans for Smith #1.

Is demand for electricity growing throughout Kentucky?

Although demand growth has flattened in the past couple of years due to very mild weather and the recession economy, state government officials have projected that Kentucky's demand for electricity will grow 40 percent by 2025, and Kentucky will need the equivalent of 10 new power plants to meet that growing demand.

What impact will constructing Smith #1 have on the local/regional economy?

Smith #1 represents an investment of more than \$800 million in the local and regional economy. Up to 700 jobs will be created during the three-year construction period, generating more than \$1 million in payroll tax revenue. Once the new unit is in operation, about 60 permanent jobs will be created.

When does EKPC plan to build and begin operating Smith #1?

Pending approval of the necessary permits, EKPC plans to begin constructing Smith #1 in spring 2011, and begin operating the new unit in 2014.

How is Smith #1 different from other coal-fueled power plants?

Smith #1 will incorporate cutting-edge technology, referred to as Circulating Fluidized Bed (CFB), to drastically reduce emissions. This CFB technology is much different from that of traditional pulverized-coal units that were built in the 1970s and 1980s. Limestone is mixed with the coal, and the mixture burns longer at much lower temperatures. As a result, emissions from CFB units are drastically lower than traditional coal units.

How do the emissions compare to older coal-fired units?

Compared to traditional coal-fired units, CFB units emit:

- 99% less sulfur dioxide;
- 95% less mercury;
- 80% less nitrogen oxide;

These units also are about 10 times cleaner in removing particulate matter.

What kinds of fuels will Smith #1 use?

Smith #1 will be fueled mainly by coal. Because of the emissions-reducing CFB technology, EKPC will be able to burn a much wider spectrum of coals and, as a result, fuel prices should be much more affordable.

Will Smith #1 be able to use alternative fuels?

Yes. The CFB technology is able to handle a much wider spectrum of fuels than EKPC's other coal units. For example, CFB units are able to use biomass such as a switchgrass, which is a warm-season grass that is native to Kentucky. EKPC has partnered with the University of Kentucky's College of Agriculture on a multi-year pilot project to test switchgrass as a power plant fuel. A group of Kentucky farmers is growing 100 acres of switchgrass, which has been used as fuel in one of EKPC's CFB generating unit in Mason County. That CFB technology is identical to that planned for Smith #1.

I've heard Smith #1 will burn waste coal, which has higher emissions than regular coal.

Because of the low emissions associated with the CFB technology, Smith #1 will be capable of using grades of coal that other coal-fired units cannot, including some grades that are considered "waste" coal. But, for the most part, Smith #1 will be fueled by non-"waste" coal. Regardless of the fuel used in Smith #1, stack emissions from the unit must meet strict limits set by the Kentucky Division of Air Quality and the federal Environmental Protection Agency. And the permitted limits for Smith #1 will be much lower than the limits for older coal-fueled power plants.

Does EKPC need any permits to build and operate Smith #1?

Yes. Power plants are highly regulated by a number of agencies in the state and federal governments, including the Kentucky Division of Air Quality, the Kentucky Division of Water, the Kentucky Public Service Commission, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers. Before beginning construction, EKPC must obtain several permits, including permits related to air quality and potential impacts on water resources and other aspects of the environment.

Besides Smith #1, does EKPC plan to build another coal-fired generating unit at Smith Station?

EKPC's air permit application has provisions for two coal-fueled units at Smith Station. At this time, EKPC has no specific plans to build a second coal-fueled unit at Smith Station. But EKPC has begun this permitting process for a second unit in anticipation of the need for it at some point in the future.

Will Smith #1 withdraw water from the Kentucky River?

Yes. Once Smith #1 is operating, EKPC plans to withdraw an average of about 3.5 million gallons of water per day, and a portion of that would be returned to the river. To put that in context, the average flow of the Kentucky River past Smith Station is 3.4 billion gallons per day. As a precaution for low-flow conditions, such as droughts, EKPC plans to construct a 139-acre reservoir to be located on the cooperative's property. The reservoir will provide an emergency backup source of water for Smith #1.

Will Smith #1 produce ash? If so, what will EKPC do with it?

Yes. The coal/limestone mixture that burns in CFB boilers produces ash that is somewhat different from the ash produced by traditional pulverized coal units. It tends to set up like a low-grade concrete. As a result, EKPC plans to use the ash produced by the new unit in the first few years as structural fill in several areas at Smith Station. Once these areas have been filled, EKPC plans to

store the ash in a permitted landfill, which also will be located on-site at Smith Station. The fill areas and the landfill will be lined with clay in order to protect groundwater. EKPC also will establish ground-water monitoring around these areas.

Will the landfill be anything like the ash pond in Tennessee that failed in 2008?

No. The ash will be placed in dry storage in the landfill and fill areas. This is different from an ash pond where ash and water are contained together in a pond. The landfill and fill areas will be located more than a mile from the Kentucky River.

ABOUT EFFICIENCY & RENEWABLE ENERGY

Does EKPC generate any renewable power?

Yes. In fact, EKPC was the first utility in Kentucky to generate its own renewable power. And, today, our cooperative generates more renewable power than any other utility in Kentucky. EKPC has six plants throughout Kentucky that are fueled by landfill methane, which is produced as organic waste breaks down in landfills. The methane is piped from the landfills to generators, which use the gas as fuel to generate electricity. EKPC also has tested Kentucky-grown switchgrass as a supplemental fuel for its coal-fueled power plants.

Why doesn't EKPC use renewables like wind and solar to meet growing demand?

EKPC is exploring a wide range of renewable power resources, including wind and solar. Our top priority is to ensure that we are providing electricity as reliably and affordably as we can for our member cooperatives and the 500,000 Kentucky homes and businesses they serve. Renewable resources, particularly solar and wind, tend to be more expensive and very intermittent in Kentucky. We will continue to study the potential for renewables, and implement resources that are reliable, affordable and make sense for Kentucky.

Can't EKPC and its members just use efficiency and conservation programs to reduce demand rather than building a new power plant?

Efficiency and conservation programs are critical in helping to meet members' needs and to slow the growth in demand for electricity. That is why EKPC and its member cooperatives offer a number of efficiency and conservation programs. Through these programs, we offer incentives to homeowners and businesses to improve the energy efficiency of insulation and heating/air-conditioning systems, and to incorporate efficiency into new-home construction. Most of our cooperatives offer energy audits to help homeowners identify and repair energy leaks. Altogether, these programs save about 185 megawatts. (That savings is like a small power plant that EKPC and its members have avoided constructing.) And we plan to expand our portfolio of efficiency programs in coming years. But, while these programs are helping to slow demand growth, our members' demand for electricity is expected to continue to grow as new homes, apartments, factories, offices and stores are built.