

MINUTES
ARKANSAS ALTERNATIVE ENERGY COMMISSION
[Established by ACT 1301 of 2009]
State Capitol, Room 151, Little Rock, Arkansas
Thursday, May 23, 2013

The Arkansas Alternative Energy Commission (AAEC) met Thursday, May 23, 2013, at 10:00 a.m. in Room 151 of the State Capitol in Little Rock, Arkansas.

Commission members in attendance: Stan Berry, Mike Callan, George Heintzen, Jr., Kim Hendren, Audrey House, Mikel Lolley and Rita Potts.

Also attending: Representative Warwick Sabin and Representative John Hutchison.

Mr. Lolley called the meeting to order, thanked last year's commissioners for their work, and acknowledged the leadership of Representatives Sabin and Hutchison during the legislative session.

REVIEW AND CONSIDERATION TO APPROVE DECEMBER 13, 2012, MINUTES [EXHIBIT C]

Ms. House made a motion to approve the December 13, 2012, meeting minutes. Ms. Potts seconded the motion, and the motion carried.

LEGISLATIVE REVIEW

Representative Warwick Sabin gave an overview of legislation introduced and/or passed during the 89th General Assembly affecting alternative energy generation, noting he and Representative Hutchison were the main sponsors of HB1390 "To Create the Arkansas Distributed Generation Act." He stated this was just a stepping stone in trying to promote more alternative energy generation in Arkansas by only mandating up to 5% in terms of purchasing energy generated by renewable energy facilities in Arkansas. It did not set a timetable as far as when that 5% would have to be achieved. There was intense opposition from the major utilities; and the bill was referred to the Joint Interim Committee on Energy for interim study. He stated that they plan to introduce this again in the 90th General Assembly.

Representative Sabin noted energy legislation enacted:

SB340 (Act 554) - TO AMEND THE GUARANTEED ENERGY COST SAVINGS ACT AND TO ALLOW STATE AGENCIES TO USE MAINTENANCE AND OPERATIONS APPROPRIATIONS FOR DEBT SERVICE RELATED TO A GUARANTEED ENERGY COST SAVINGS CONTRACT.

SB640 (Act 1074) - TO AUTHORIZE THE ESTABLISHMENT OF ENERGY IMPROVEMENT DISTRICTS TO FUND LOANS FOR ENERGY EFFICIENCY IMPROVEMENTS, RENEWABLE ENERGY PROJECTS, AND WATER CONSERVATION IMPROVEMENTS.

SB792 (Act 532) - TO CREATE THE ARKANSAS CLEAN-BURNING MOTOR FUEL DEVELOPMENT ACT; AND TO CREATE THE CLEAN-BURNING MOTOR FUEL DEVELOPMENT FUND;

and additional legislation which was introduced:

SB933 - TO AMEND THE ARKANSAS ALTERNATIVE FUELS DEVELOPMENT ACT; AND TO PROVIDE A TAX CREDIT FOR THE PRODUCTION OF ALTERNATIVE FUELS.

HB1769 - TO CREATE AN INCOME TAX CREDIT FOR SOLAR ENERGY SYSTEMS.

Representative Sabin stated he believes the legislation is moving Arkansas in the right direction.

Representative John Hutchison stated he is a farmer from northeast Arkansas and strongly believes in renewable energy and will continue to support alternative energy legislation.

HYDROPOWER

Mr. Gene Higginbotham, Executive Director, Arkansas Waterways Commission, noted the commission is the sole state agency responsible for developing, promoting and protecting waterborne transportation in Arkansas. It promotes

economic development for ports on the state's five commercially navigable rivers: Arkansas, Mississippi, Ouachita, Red, and White. Mr. Higginbotham stated he has a personal interest in alternative energy. He is currently working on a professional certificate in "energy efficiency and emerging technologies" from Stanford University.

Mr. Higginbotham's PowerPoint presentation, "Arkansas Waterways – The most efficient, economical, and environmentally friendly commercial transportation option", (Attachment 1) highlighted the following: [a copy of this handout is available at waterways.arkansas.gov.]

- Waterways are the most efficient, economical and environmentally friendly form of transportation.
- Arkansas has the 3rd largest inland waterway system in the country, but is 33rd in what is shipped using that waterway system. The gap should be reduced.
- Waterborne transportation requires significantly less fuel than rail or trucks. The cost per ton mile for a barge is only \$.97, compared to \$2.53 for rail, and \$5.35 for trucking. The number of ton-miles per gallon of fuel (one gallon of fuel moving one ton of cargo) by barge is 576 miles; by train, 413 miles; and by truck, 155 miles.
- Arkansas currently ships a lot of agricultural products on Arkansas' waterways. Barge transportation actually makes the other rates drop making products more affordable for consumers and putting more money back into farmers' pockets.
- The Environmental Protection Agency (EPA), Emission Control Laboratory determined that tow boats emit drastically lower amounts of hydrocarbon, carbon monoxide, and nitrous oxide.
- Arkansas is one of the few systems that actually has hydropower capacity on its navigation system.

Mr. Higginbotham stated the AAEC could assist the Waterways Commission by talking to their congressional representatives and senators and having them help the Corps of Engineers obtain more funding necessary to upgrade their 50-year-old system.

Mr. Lee Beverly, Project Manager, U.S. Army Corps of Engineers (USACE), presented a PowerPoint, "Arkansas Hydropower Briefing", (Attachment 2) which included the following information:

- Two things required for hydropower installation are water flow and elevation.
- Typical hydropower turbine designs are: Pelton, Francis and Kaplan, with Kaplan the most used in Arkansas.
- No Pelton units are used in Arkansas. They are usually found in locations such as Hoover Dam, Glen Canyon Dams and other very large high pressure and elevation dams.
- Kaplan Units are most useful in lower head or elevation plants. Most of the hydropower development in the state in recent years has been on low head installations such as the Dardanelle plant. All the plants operated by Arkansas Electric Cooperative Corporation (AECC) are horizontal shaft Kaplan units. The three plants that were recently completed on the lower White River are horizontal shaft Kaplan units.
- Hydrokinetic units are being developed, but none in Arkansas.
- Energy produced in most of the plants is "peaking capacity" or "base energy". The hydro plant's economic value is typically in peaking capacity. The USACE plants are mainly run only during the highest demand period of the year and during occupied hours for businesses and facilities. Base energy production is suited toward the big coal and gas plants, and combined cycle plants operated in the state.
- The two types of operation are Stored water and Run-of-River (they run when there is water, and they don't when there is not). Stored water operation is at the large impoundments such as Greers Ferry, Norfolk, Bull Shoals, Greeson, DeGray, and Ouachita. Entergy also runs their dam on Lake Hamilton as a stored water operation. Run-of-River plants are the AECC plants on the Arkansas River, the Dardanelle and Ozark plants operated by the USACE, and the three small plants Independence County runs on the lower White River.

- Hydropower plants currently operating in Arkansas are listed by capacity: Bull Shoals, Dardanelle, Beaver, Dam 2, Ozark, Greers Ferry, Norfork, Blakely Mountain, DeGray, Carpenter Dam, Murray, Ellis, Whillock, Narrows, Remmel Dam, Marcella, Batesville, Earnhardt and Lee Creek. Arkansas hydropower capacity is approximately 1400 mega watts (mw), which is a very significant energy contribution to Arkansas' energy production. Arkansas Nuclear One is approximately 1000 mw, so hydropower is about 1.4 times the output of one of the state's largest plants. A lot of this energy also goes out of state.
- The federal system was established by Congress in 1944. The USACE is required by law to market to only "preference customers", either a municipal body or a non-profit entity. One of the federal system's guiding criteria is that no one should make a profit on the power either produced or sold. The Corps of Engineers produces the power and Southwestern Power Administration is responsible for its marketing and distribution. Arkansas customers are the cities of Bentonville, Clarksville, Jonesboro, AECC, Paragould, Paris and Piggott. Southwestern Power also has customers outside of Arkansas.
- Tennessee Valley Authority (TVA) is not part of the southwestern power system. The country is divided into various administrations: Bonneville Power Administration (BPA) in the northwest; Western Area Power Administration (WAPA) in the western states; Southwestern Power Administration (SWPA), and Southeastern Power Administration (SEPA) in the southeast.

Mr. Beverly stated the USACE has a valuable role in Arkansas and is looking forward to some large and interesting projects in the near future which will add to local economies.

Mr. Mark Lassman, Director of Energy Trading, Free Flow Power Corporation, presented a PowerPoint, "Free Flow Power, Market-Leading US Hydropower Developer", (Attachment 3), and noted Free Flow Power is a clean renewable energy company focusing on hydropower, hydrokinetic and hydro pumped storage as reliable, cost-effective sources of electricity and grid stability.

Mr. Lassman noted one of the biggest misconceptions is that there is limited opportunity in hydropower simply because the sites are all taken. He stated that this is just a myth and there is tremendous opportunity. Hydro output is estimated to double by the year 2030. The majority of the dams in the United States have no hydro generation (77,000 out of 79,000 existing dams provide a retrofit opportunity). Some advantages of hydropower are tax benefits, greater focus on regulatory, recognition of hydro as a renewable energy, and a better market currently for hydropower. He indicated he is starting to see some of the hydro plants go for higher values. The largest pump storage facility in the world, Bath County located in Virginia, produces over 3000 mw.

Mr. Lassman stated even though Arkansas does not fall under the current Renewable Portfolio Standard (RPS) initiative, the development of hydropower makes sense. The biggest obstacle facing most of these renewable energies is the intermittent nature of the product. This is why hydrokinetics is a real advantage.

Ms. Potts stated when Independence County began its efforts to develop the three small hydro plants, the Federal Energy Regulatory Commission (FERC) was the main obstacle. It took approximately six years to obtain a license and approximately 15 years to find a purchaser for the power. To have someone like Mr. Lassman working on their behalf would have been very helpful. Mr. Lassman stated that Arkansas will soon be going into a pool type system similar to the northeast which is called PJM (Pennsylvania, Jersey and Maryland). This system will be customer friendly and easier to manage generation. This is called "spot market backed" meaning no need to find a buyer for your power; it is submitted into the pool.

Representative Hutchison suggested that irrigation wells be used to generate electricity since 85% of the wells are located near 3-phase power. He stated he is willing to do what is necessary to help Arkansas move forward.

Ms. House stated she would like to see Arkansas be number one in Renewable, Efficiency, Profitability and Sustainability (REPS) by 2036.

There being no further business, the meeting adjourned at 12:17 p.m.