



Florida Municipal Power Agency

POSITION PAPER

Electricity to Serve Florida's Growth

Census figures released in April 2005 show that Florida's current population of 17.5 million will approach 20 million by 2010, top 21 million five years later, and within the next 25 years, Florida's population will leapfrog over the state of New York, trailing only California and Texas.

The census population estimates also show Florida as the third fastest growing state during the first three decades of this century, behind Nevada and Arizona. Florida's growth rate of 79.5% is nearly three times higher than that of the nation as a whole.

When people move to Florida, they bring with them their worldly belongings and their dreams for the future. What they don't bring with them are roads, schools and other infrastructure—including electric power plants—to serve their needs in their new home state. Electricity is part of that essential infrastructure. Without adequate electricity, much of what we take for granted in our everyday lives would come to an abrupt halt.

Joint Planning for Economies of Scale

There are 32 municipal electric systems in Florida, ranging in size from the largest in Jacksonville (368,000 customer accounts) to the smallest in Bushnell (1,000 customer accounts). Several municipal utilities generate their own electricity, while some buy power at wholesale from investor-owned utilities, governmental agencies or other municipals.

Each system is locally owned and operated, but Florida's municipal electric utilities share common concerns that can best be solved by working together. Building new power plants is one example of a major decision that can be solved more efficiently through joint action. In most cases, it is cost effective for municipals to build one joint power plant rather than smaller individual units. A larger plant is generally more efficient, and other economies of scale help lower the cost of power.

Fifteen municipal electric utilities have joined together to jointly operate their electric systems and plan for their future power supply needs through the Florida Municipal Power Agency (FMPA). The agency provides wholesale power to the cities through a diverse combination of power plant ownership interests as well as power purchase contracts.

FMPA's forecast of electric usage for the 15 cities shows consistent growth in electric usage through a 20-year planning period from 2005 through 2024. More urgently, the analysis shows that beginning in the summer of 2008, FMPA will not have adequate electric generation to meet its mission of supplying reliable, low-cost power.

Analyzing Alternatives

Addressing future power supply needs in the most cost-effective, dependable fashion is the basis for a multi-stage evaluation process that FMPA began more than a year ago.

The first step involved developing detailed cost and performance estimates for the addition of the most likely new generating unit. FMPA assumed for a base case that it would build a 300 Megawatt combined cycle unit fueled by natural gas. Combined cycle technology is highly efficient, and natural gas is a clean-burning fuel.

The second step involved development of cost and performance estimates for numerous electricity supply-side generation alternatives that could possibly be lower than the base case. Supply-side alternatives were developed in the following categories: renewable technologies, conventional technologies, advanced technologies, energy storage technologies, multi-fuel generation technologies such as distributed generation, and nuclear.

The evaluation of supply-side alternatives was extensive. Eighteen renewable technologies were evaluated in detail, including the areas of solid biomass, biogas, waste-to-energy, wind, solar, geothermal, hydroelectric and ocean.

The conventional alternatives evaluated included simple cycle generation, combined cycle generation and pulverized coal. Although integrated gasification combined cycle generation was considered an advanced alternative, it was evaluated to the same extent as the conventional alternatives.

All supply-side alternatives were screened for economics, feasibility and reliability for use in FMPA's system. Details of the evaluation of supply-side alternatives are contained in a Need for Power Application filed with the Florida Public Service Commission.

The third step for determining the most cost-effective expansion plan involved the issuance of a request for proposal (RFP) seeking to purchase power in lieu of installing the base case generating unit. FMPA issued the RFP on Sept. 22, 2004. FMPA received bids from three entities. Each proposal was evaluated with a detailed system evaluation in the same manner as the self-build base case alternative. A summary of the bids and evaluations are included in the Need for Power Application.

The fourth step in FMPA's evaluation was to conduct a detailed system evaluation of the self-build and purchase power alternatives. The base case self-build option was determined to be the least expensive on a cumulative present worth basis, lower than the next lowest supply-side alternative and lower than the lowest cost purchase power bid. Details of the system evaluation are included in the Need for Power Application.

FMPA also conducted a detailed review of demand-side management measure—commonly known as conservation programs to reduce consumer electric usage—to determine if there are cost-effective alternatives that could mitigate the need to construct new generation.

Approximately 140 demand-side measures were evaluated. None were found to be cost effective using the Rate Impact test.

Strategic considerations also favor FMPA's base-case option of placing a natural gas unit near the city of Fort Pierce for two reasons. First, the southern location for the unit would help the high-voltage transmission flow in the state. Second, the high efficiency combined cycle technology would displace less efficient oil- and gas-fired generation in the state.

An analysis of the consequences of delaying the proposed unit is included in the Need for Power Application. It showed a one-year delay would result in an estimated \$15.7 million increase on a cumulative present worth basis.

Public Review

Florida's Power Plant Siting Act prescribes a multi-step process directing a number of state, federal and local government agencies to review a proposed new electrical power plant. Key aspects of the approval process include a need determination proceeding, a local land use hearing and a site certification hearing before final approval by the Florida Governor and Cabinet as the Siting Board.

The need for a new power plant is reviewed and approved by the Florida Public Service Commission based on the need for electric system reliability, the need for adequate electricity, and whether the proposed plant is the most cost-effective alternative. The Commission also considers conservation measures reasonably available that might mitigate the need.

The site certification process involves a number of agencies, including the Department of Environmental Protection, the local water management district, local government and other state regulatory agencies. The ultimate test for certification involves meeting various agency standards, minimizing impacts using reasonably available methods, balancing the need for power with environmental and other impacts, and serving the public interest.

The permitting review process usually takes more than a year and enables community leaders and interested parties to participate in the review process. FMPA desires an open and ongoing dialogue, particularly with stakeholders in the local community who are interested in the project.

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