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June 9, 2025

Via Electronic Filing

Adam J. Teitzman
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Docket No. 20250011-EI - Petition for Rate Increase by Florida Power & Light Company.

Dear Mr. Teitzman:

Attached for filing in the above-referenced docket on behalf of Florida Energy for Innovation Association, Inc. ("FEIA"), please find the Prefiled Direct Testimony of Fletcher Mangum and Exhibit FM-1 thereto. Service of the foregoing is being made on the parties in accordance with the attached Certificate of Service.

Should you have any questions regarding this submission, please do not hesitate to contact me. Thank you for your consideration.

Sincerely,

HOLLAND & KNIGHT LLP


D. Bruce May

DBM:kjg

Encls.

cc: Counsel for parties shown on the attached Certificate of Service

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by e-mail this 9th day of June 2025 the following:

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By: */s/D. Bruce May, Jr.* _____

D. Bruce May, Jr.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for rate increase by
Florida Power & Light Company.

Docket No.: 20250011-EI

Filed: June 9, 2025

DIRECT TESTIMONY

OF

FLETCHER MANGUM

on behalf of Intervenor,

Florida Energy for Innovation Association, Inc.

1 **Q. PLEASE STATE YOUR FULL NAME.**

2 A. Fletcher Mangum.

3 **Q. BY WHOM ARE YOU EMPLOYED?**

4 A. I am the Founder and CEO of Mangum Economics, an economic consulting
5 firm.

6 **Q. WHAT IS YOUR EDUCATIONAL AND EMPLOYMENT
7 BACKGROUND?**

8 A. I earned a Ph.D. in Economics from George Mason University in 1995, where
9 I studied under Nobel Prize-winning economist James Buchanan and
10 concentrated on the fields of industrial organization (studying how businesses
11 and industries develop) and public choice (relating to how incentives affect
12 government policies). I worked as a professional economist for 12 years for
13 both federal and state government organizations. I founded Mangum
14 Economics in 2003 in Richmond, Virginia and have spent the last 22 years
15 successfully growing the firm into a national economic consulting business.
16 My curriculum vitae is attached as Exhibit FM-1.

17 **Q. ON WHOSE BEHALF ARE YOU SUBMITTING TESTIMONY
18 TODAY?**

19 A. I am testifying on behalf of the Florida Energy for Innovation Association
20 (FEIA), a coalition of entities planning data center developments in FPL
21 territory and their affiliates advancing Florida's competitiveness in
22 technology infrastructure, clean energy investment, and digital innovation.

23 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

24 A. My testimony addresses the serious economic consequences if the Florida

1 Public Service Commission (“Commission”) approves the proposed LLCS
2 rate structure submitted by Florida Power & Light (“FPL”). This includes the
3 significant economic risk of failing to bring the emerging data center and AI
4 infrastructure industry to Florida at a time when multiple peer states are
5 actively cultivating the sector through supportive utility pricing. In particular,
6 I focus on the initial 3,000 MW tranche of potential power demand referenced
7 by FPL in this proceeding, which represents only the beginning of potential
8 long-term industry growth in Florida.

9 **Q. WHAT IS MANGUM ECONOMICS’ EXPERIENCE WITH DATA**
10 **CENTER RESEARCH?**

11 A. Our goal is to provide a respected, persuasive, defensible, third-party analysis.
12 Since 2015, Mangum Economics has produced several reports on the impact
13 of the data center industry at the state level in Arizona, Georgia, Illinois,
14 Maryland, Texas, Virginia, and Wisconsin. We have estimated the economic
15 and fiscal impact of potential data center projects in many localities across the
16 nation, from California to Maryland and Florida to Wisconsin, plus a project
17 in Mexico.

18 Our estimates of the investment by data centers are based on our proprietary
19 modeling developed through extensive research and experience with the
20 industry. Our model is updated annually to reflect the latest industry
21 developments and industry cost structures. We work to provide realistic
22 estimates of likely outcomes, and we choose to err on the side of making
23 lower estimates where there is uncertainty. Our model has been validated with
24 feedback from local government officials and industry experts. We have

1 worked for industry developers seeking approval for hyperscale and
2 colocation projects as well as for local governments looking to verify
3 industry-provided impact estimates. Our reports provide reliable and unbiased
4 estimates.

5 **Q. HOW DID YOU DEVELOP THE ECONOMIC IMPACT ESTIMATES**
6 **REFERENCED IN YOUR TESTIMONY?**

7 A. The estimates are based on economic impact studies conducted for hyperscale
8 data center projects currently in the planning phase within FPL territory.
9 While the development teams provided general parameters such as location,
10 scale, and target MW capacity, they did not provide detailed construction
11 budgets or labor estimates. As such, the analysis was developed
12 independently using current research and Mangum Economics' prior
13 experience with similar hyperscale data center and large technology
14 infrastructure projects across the United States.

15 **Q. WHAT DATA SOURCES AND ASSUMPTIONS INFORMED THE**
16 **ANALYSIS?**

17 A. The model drew upon investment and labor benchmarks from previous data
18 center projects analyzed by Mangum Economics, combined with our current
19 research into established industry norms for hyperscale developments. These
20 inputs included capital expenditures per MW and per square foot, staffing
21 ratios, industry spending patterns, reinvestment cycles, and non-labor
22 operating expense ratios. The report also incorporated Florida-specific tax
23 structures, wage data, and regional economic multipliers from sources such
24 as IMPLAN, the U.S. Bureau of Economic Analysis, and the U.S. Census

1 Bureau. The method follows widely accepted standards for regional economic
2 impact modeling using input-output analysis and was carefully calibrated to
3 reflect Florida’s fiscal and labor conditions.

4 **Q. CAN YOU PROVIDE AN EXAMPLE OF A PROJECT INCLUDED IN**
5 **YOUR ANALYSIS?**

6 A. Yes. One of the projects modeled in the analysis is a 1,000 MW hyperscale
7 data center campus currently in the planning stage in St. Lucie County. This
8 project, as evaluated in a study conducted by Mangum Economics in 2025,
9 provides a concrete, Florida-specific illustration of the scale and economic
10 benefits of hyperscale data center development to Florida.

11 The study found that, once it is fully occupied and operational, this single
12 campus (comprised of 10 data centers totaling 3.4 million square feet) would
13 deliver:

- 14 ▪ \$13.5 billion in total private capital investment over course of
15 development
- 16 ▪ \$1.2 billion per year in sustained statewide economic output
- 17 ▪ 370 direct long-term jobs in St. Lucie County and 2,370 total
18 supported jobs across the state of Florida
- 19 ▪ \$20.0 million per year in new state gross receipts tax revenue on
20 electricity (assumes that the Data Center Sales Tax Exemption is
21 renewed)
- 22 ▪ \$113.9 million per year in St. Lucie County tax revenue
- 23 ▪ \$63.0 million per year in dedicated property tax revenue for St.
24 Lucie Public Schools

1 **Q. IS IT REASONABLE TO MODEL A PROJECT OF THIS SCALE FOR**
2 **ECONOMIC IMPACT PURPOSES?**

3 A. Yes. FPL itself has acknowledged in this proceeding that it has sufficient
4 capacity to support at least 3,000 MW of data center development. A 1,000
5 MW project is well within that range and represents a common size for data
6 center developments that are currently in the planning stage at locations
7 across the country.

8 **Q. WHY IS THIS APPROACH CREDIBLE FOR ESTIMATING**
9 **BROADER STATEWIDE IMPACT?**

10 A. This approach is credible because it is grounded in the past experience of
11 Mangum Economics analyzing similar developments across the United States
12 and Mexico. Our estimates have been vetted by state and local government
13 officials and independent academic researchers.

14 Our model reflects actual planning-stage proposals, and it uses standard
15 modeling practices validated across multiple jurisdictions. The projections are
16 not speculative—they are based on known investment patterns, adjusted for
17 Florida’s specific tax and labor environment. This method has been used by
18 states and localities across the country to inform tax policy decisions and
19 economic development initiatives related to technology infrastructure.

20 **Q. WHAT IS THE 3,000 MW FIGURE REFERENCED IN THIS**
21 **PROCEEDING?**

22 A. The 3,000 MW identified in FPL's filings is not a single project or a hard limit
23 on load demand. Rather, it is the initial tranche of load demand associated
24 with data center developers actively pursuing Florida for hyperscale

1 infrastructure. These users represent a sector where long-term expansion is
2 driven by clustering effects, co-location of AI and cloud services, and follow-
3 on network investment. This 3,000 MW is the gateway to a new industry and
4 is vital for market formation.

5 **Q. IS 3,000 MW OF NEW DATA CENTER DEVELOPMENT**
6 **CONSISTENT WITH OTHER MARKETS?**

7 A. Yes. Virginia's data center economy began with several hundred megawatts
8 of anchor tenants, and now supports thousands of MW, more than any other
9 state. Texas, Georgia, Arizona, and Ohio are currently adding multiple
10 gigawatts each over the next few years, backed by coordinated policy, utility
11 alignment, and competitive pricing.

12 According to the data center research company, datacenterHawk,
13 <https://datacenterhawk.com/>, nationally, there are multiple hyperscale
14 campuses at or above this size that are currently under development,
15 including:

- 16 ■ Amazon's 1,400 MWc campus south of Atlanta, Georgia
- 17 ■ Amazon's 1,000 MWc campus east of Atlanta, Georgia
- 18 ■ Amazon's 2,500 MWc of development north of Jackson, Mississippi
- 19 ■ Google's 1,400 MWc campus in Arkansas, west of Memphis,
20 Tennessee
- 21 ■ Google's 1,400 MWc expansion of its existing footprint northeast
22 of Charleston, South Carolina
- 23 ■ Meta's 1,500 MWc campus in northeast Louisiana

1 ▪ Microsoft’s 3,300 MWc expansion of its existing campus in
2 southern Virginia

3 ▪ Microsoft’s 1,700 MWc campus in northern North Carolina

4 Additionally, there are multiple colocation campuses at or above this size that
5 are currently under development, including:

6 ▪ PowerHouse Data Centers’ 1,200 MWc campus southwest of
7 Dallas, Texas

8 ▪ STACK Infrastructure’s 1,100 MWc campus north of
9 Fredericksburg, Virginia

10 ▪ Tract’s 2,400 MWc campus north of Richmond, Virginia

11 To be clear, I use MW throughout my testimony to refer to the total amount
12 of power load delivered by a utility to operate a data center development.

13 Note that the foregoing references to these data center developments use
14 MWc (megawatts of critical capacity) – the amount of power available for
15 use by the computer equipment. It is the common metric used to describe the
16 size of a data center development. It does not include the power needed to run
17 the cooling and other infrastructure that supports the computer equipment. So,
18 as I have used the terms here, MW is always higher than MWc, usually by a
19 factor of 1.3 to 1.5.

20 **Q. YOU PREVIOUSLY STATED THAT YOU MODELED A 1,000 MW**
21 **HYPERSCALE DATA CENTER CAMPUS IN FLORIDA. IS THAT**
22 **SPECULATIVE?**

23 A. No. Modeling a 1,000 MW campus in Florida is not speculative; it reflects
24 actual planning-stage proposals already underway in FPL territory and aligns

1 with standard development scales used by global operators. Total
2 development in the range of 3,000 MW is entirely reasonable. These projects
3 serve as the economic backbone for digital infrastructure ecosystems and are
4 entirely realistic in Florida if utility rates are competitive.

5 **Q. HOW DID YOU EXTRAPOLATE THE RESULTS OF YOUR**
6 **RESEARCH TO THE FULL 3,000 MW REFERENCED BY FPL?**

7 A. After completing the two project-level studies, we scaled the results
8 proportionally to align with the 3,000 MW tranche of demand identified in
9 FPL's filings. This was done using a per-MW extrapolation method that
10 preserved the structure of the original modeling, while reflecting a diversified
11 buildout across multiple sites and operators. The result is a reasonable and
12 conservative projection of what Florida could expect if the initial 3,000 MW
13 of hyperscale load is realized over time.

14 **Q. WHAT WOULD BE THE ESTIMATED ECONOMIC IMPACT OF**
15 **3,000 MW OF DATA CENTER CAPACITY IN FLORIDA?**

16 A. Taking our 1,000 MW report and linearly extrapolating it to 3,000 MW of
17 data center development would yield:

- 18 ▪ \$40.5 billion in total private capital investment over course of
19 development
- 20 ▪ \$3.6 billion per year in sustained statewide economic output
- 21 ▪ 1,110 direct long-term jobs and 7,110 total supported long-term jobs
22 across the state of Florida

- 1 ▪ \$60.0 million per year in new state gross receipts tax revenue on
2 electricity (assuming that the Data Center Sales Tax Exemption is
3 renewed)
- 4 ▪ \$341.7 million per year in county tax revenue (assuming that St.
5 Lucie County is representative of Florida counties where data center
6 development would occur)
- 7 ▪ \$189.0 million per year in dedicated property tax revenue for Florida
8 public schools (assuming that St. Lucie County School taxes are
9 representative of Florida school taxes where data center
10 development would occur)

11 **Q. HOW DOES DATA CENTER DEVELOPMENT AFFECT FLORIDA**
12 **BUSINESSES BEYOND THE TECH SECTOR?**

13 A. Beyond the direct impacts of the data centers themselves on the Florida
14 economy, there are direct impacts for construction companies during the
15 construction phase of development. The report estimated that construction of
16 just one 100 MW data center would create \$94.6 million of business for
17 construction companies in St. Lucie County over a two-year period.

18 There are also indirect and induced effects on the Florida economy during
19 both the construction phase and the operations phase.

20 During construction, the indirect effects are for local building materials
21 companies that are suppliers to the construction companies. Other
22 beneficiaries include the trucking companies needed to move equipment and
23 materials to and around the job sites. Fuel companies and mechanics in the
24 local area would be called on to keep the vehicles and equipment running.

1 Equipment rental companies, electrical contractors, pipefitters, and metal-
2 working companies are often beneficiaries of development. The induced
3 effects come from the money spent by the workers. During the construction
4 phase, some workers may travel for the job. These visitors spend money in
5 local hotels and apartments, restaurants, grocery stores, and gas stations.
6 Additionally, there would be induced impacts as the local workers spend their
7 additional earnings on housing, food, transportation, utilities, education, and
8 recreation.

9 During the operations phase, the indirect effects would be primarily on
10 business services companies that are locally located or that would be attracted
11 to the local area to serve the new development. For all developments, the
12 range of business services includes attorneys, banking, insurance,
13 maintenance, accounting, and office supplies. The induced effects come from
14 the money spent by the workers. During the operation phase, there may be
15 some workers who travel to the local area on temporary assignment. These
16 visitors would spend money in local hotels and apartments, restaurants,
17 grocery stores, and gas stations. Also, there would be induced impacts as the
18 local workers spend their additional earnings on housing, food, transportation,
19 utilities, education, and recreation.

20 **Q. WHY IS THERE AN URGENCY TO ATTRACT DATA CENTER**
21 **INVESTMENT NOW?**

22 A. Florida enacted a data center tax incentive in 2017 and extended the program
23 in 2021 in an attempt to attract data center development to the state, Ch. 2017-
24 036, Laws of Fla. §26; HB 7109 (2017). To date, Florida has not been

1 successful at attracting any major data center development. The next few
2 years will be the best time for Florida and competitor states to try to attract
3 this important industry.

4 Right now and over the next few years, hyperscale data center operators are
5 investing heavily in the development of large data center campuses. Much of
6 this investment is driven by investments in AI-specific infrastructure and
7 cloud computing infrastructure that will be needed to support the software
8 development that will take advantage of AI advances. AI and technology
9 analysts liken the phenomenon to a gold rush or an arms race. Now is a critical
10 moment to take advantage of available capital for hyperscale data center
11 campuses as the industry experiences a robust AI-driven investment surge.
12 Later, as the industry enters a consolidation phase, where a greater emphasis
13 is placed on efficiency and return on investment, there will be less capital
14 available for such large investments and the pace of data center development
15 will slow. The slowdown in new investment will be most pronounced in those
16 places that have not secured hyperscale data center development by that time.

17 **Q. WHAT HAPPENS IF FLORIDA FAILS TO LAND THE INITIAL 3,000**
18 **MW?**

19 A. The economic impact is not limited to the immediate loss of construction or
20 power sales. Without a viable foundation, the industry is unlikely to cluster in
21 Florida, and follow-on growth will migrate to states offering lower power
22 rates. This would chase away:

- 23 ▪ Tens of billions in long-term tax base expansion;
- 24 ▪ Thousands of durable, high-wage jobs; and

- 1 ▪ Florida's ability to compete in national security-related AI, cloud
2 services, and digital infrastructure.

3 More generally, it means that Florida would cede the economic backbone of
4 the 21st century to competitor states, fail to attract a rapidly expanding
5 industry that provides substantial tax revenue (while placing negligible
6 burdens on public services), and capture less funding for public schools,
7 investment in public infrastructure, and other necessary public services than
8 otherwise would have been the case.

9 **Q. WHY IS ELECTRICITY COST A PRIMARY DRIVER IN DATA**
10 **CENTER SITE SELECTION?**

11 A. Electricity represents about 60% of any data center's total non-labor operating
12 costs. For a large hyperscale data center development, that translates into
13 hundreds of millions of dollars annually. According to CBRE, major data
14 center markets in competitor states such as Georgia, North Carolina, and
15 Virginia offer total effective rates of 5.5 to 7.5 cents/kWh, Market Profiles,
16 CBRE, [https://www.cbre.com/insights/local-response/north-america-data-](https://www.cbre.com/insights/local-response/north-america-data-center-trends-h2-2024-market-profiles)
17 [center-trends-h2-2024-market-profiles](https://www.cbre.com/insights/local-response/north-america-data-center-trends-h2-2024-market-profiles). FPL's proposed LLCS rate of over 10
18 cents/kWh places Florida at a major cost disadvantage. A difference of 2.5
19 cents/kWh in the utility rate means a cost increase of \$394.2 million per year
20 to operate 3,000 MW of typical data center development – resulting in a
21 disadvantage of locating in Florida of almost \$7.9 billion over 20 years
22 [\$394.2 million per year = 3,000MW * 1,000kWh per MW * 24 hours of
23 operation per day * 365 days of operation per year * 60% data center
24 utilization operation factor * \$0.025/kWh difference in price.]

1 **Q. WHAT QUESTIONS SHOULD THE COMMISSION ASK AS IT**
2 **REVIEWS FPL'S PROPOSAL?**

3 A. When reviewing FPL's rate proposal, the Commission should consider the
4 following:

- 5 ▪ What is the opportunity cost of rejecting 3,000 MW of data center
6 development? That is, what benefits will Florida miss out on if the
7 3,000 MW of data center development that could have happened in
8 Florida instead happens in Texas, Georgia, South Carolina,
9 Louisiana, Mississippi, or Alabama?
- 10 ▪ How many school districts, counties, local taxpayers, and general
11 ratepayers stand to benefit from an expanded property tax base?
- 12 ▪ How are utility providers in neighboring states structuring their rates
13 to support this industry?
- 14 ▪ Will this rate enable data center development, or discourage it at the
15 very time that Florida is most likely to be able to attract it?

16 **Q. WHAT IS YOUR RECOMMENDATION TO THE COMMISSION?**

17 A. The Commission should set a rate for data centers that is competitive with
18 surrounding states.
19 The 3,000 MW currently in view is not a limit—it is an inflection point. What
20 follows depends on the signal this Commission sends. Either Florida shares
21 in the development of this trillion-dollar industry —or lets it go elsewhere.

22 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

23 A. Yes. Thank you.

24

A. FLETCHER MANGUM

Founder & CEO

Mangum Economics

AREAS OF EXPERTISE

- Data Centers
- Economic and fiscal impact analysis
- Economic development
- Education policy
- Energy
- Regulatory and policy analysis
- Revenue forecasting
- Workforce development
- Expert witness testimony

PROFESSIONAL SUMMARY

Accomplished economist with decades of experience in economic analysis and expert testimony. Proven track record advising corporations, government agencies, trade associations, and public-private partnerships on data center development, economic development, economic and fiscal impact, education policy, energy, manufacturing, regulatory issues, revenue forecasting, and workforce development with numerous publications and policy reports.

EDUCATION

Ph.D., Economics

George Mason University, 1995

B.A., Economics

George Mason University, 1990

B.A., Economics

College of William and Mary, 1978

PROFESSIONAL EXPERIENCE

Founder & CEO

Mangum Economics

Adjunct Professor

Virginia Commonwealth University

Associate Director for Governance and Accountability & Chief Economist

State Council of Higher Education for Virginia

Senior Economic Analyst

Department of Planning and Budget, Commonwealth of Virginia

Senior Economist

Federal Judicial Center, U.S. Courts

Director

Billcast

PUBLICATIONS

Authored or contributed to over 300 reports, including:

- Virginia Economic Impacts of the Port of Virginia (Jan 2022)
- Mandatory Unitary Combined Reporting (June 2021)
- Potential Impact of Development of the Offshore Wind Energy Industry on Hampton Roads and Virginia (Sept 2020)
- The Economic and Fiscal Contribution that Data Centers Make to Virginia (Dec 2015, Jan 2018, Jan 2020)
- Potential Impact of Large Data Center Development in Maryland (March 2020)
- Potential Impact of a Data Center Incentive in Illinois (Nov 2018)
- Impact of Offshore Oil and Gas Drilling on Virginia (April 2018)
- Economic and Fiscal Contribution of Volvo Group North America to Multiple States (April 2018)
- Impact of School Start Dates on Tourism and Virginia's Economy (Jan 2018)
- Economic Development Potential of the Virginia Beach Cable Landings (Jan 2017)
- Economic and Fiscal Impact of Proposed Walmart Stores (Various reports: 2009–2014) Member, Industrial Organization Society

EXPERT TESTIMONY HIGHLIGHTS

Provided testimony in 7 U.S. states, including:

- Economic Impact of Frontier Solar – Kentucky State Board on Electric Generation and Transmission Siting (April 2024)
- Economic Impact of Blue Moon Solar – Kentucky State Board on Electric Generation and Transmission Siting (June 2022)
- Economic Impact of Data Centers in Georgia – GA House Appropriations Committee (Feb 2022)
- Economic Impact of Morgnec Road Solar – Maryland PSC (Nov 2021)

- Economic Impact of Black Rock Wind – West Virginia PSC (Sept 2019)
- Economic Impact of Dan’s Mountain Wind Project – Maryland PSC (Sept 2016)
- Economic Impact of Mills Branch Solar – Maryland PSC (June 2016)
- Economic Contribution of Data Centers in Virginia – Senate Finance Committee, VA (Jan 2016)
- Telecom Service Quality Regulations – Virginia SCC (April 2009, Sept 2008)
- Mandated Coverage for Prosthetic Devices – VA Senate Commerce & Labor Committee (Jan 2009)
- Single Sales Factor Apportionment in Virginia – VA General Assembly (Oct 2008)
- Access to Financial Aid for Career College Students – VA House Committee (Jan 2005)
- Virginia Higher Education Master Plan – House and Senate Retreat (Oct 2000)
- Higher Ed Enrollment Forecasting Evaluation – VA General Assembly (Oct 1996)

BOARD MEMBERSHIPS & APPOINTMENTS

- Chair & Board Member, Virginia Council on Economic Education (2016–present)
- Board Member, VA Joint Advisory Board of Economists (2010–present)
- President, Virginia Association of Economists (2010–2011)
- Member, Governor-Elect McDonnell's Transition Team (2009–2010)
- Member, Governor-Elect Gilmore's Transition Team (1997–1998)