PUBLIC DOCUMENT
NOT PUBLIC DATA EXCISED

Rebuttal Testimony and Schedules
Philip Joseph "P.J." Martin

State of North Dakota
before the
North Dakota Public Service Commission

In the Matter of the Application of Northern States Power Company
for an Advance Determination of Prudence for the Acquisition of
the 375 MW Mankato Energy Center and the 345 MW Mankato Energy Center II

Case No. PU-18-403

Resource Planning
Exhibit___(PJM-2)

June 21, 2019

PUBLIC DOCUMENT
NOT PUBLIC DATA EXCISED

Table of Contents

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND TITLE.

A. My name is Philip Joseph "P.J." Martin. I am the Director, Resource Planning, for Northern States Power Company – Minnesota (NSP or Xcel Energy or the Company).

Q. ARE YOU THE SAME P.J. MARTIN WHO SUBMITTED PRE-FILED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my Rebuttal Testimony is to respond to the Direct Testimony of Commission Advocacy Staff witnesses Mr. Michael J. Majoros, Jr. and Mr. Paul J. Alvarez, with regard to the Company's proposed acquisition of the 375 MW Combined Cycle Mankato Energy Center (MEC I) and the 345 MW Combined Cycle expansion project (MEC II) (collectively, the MEC Facility). My testimony provides additional context and support for the transaction in response to arguments and opinions put forward by the Advocacy Staff witnesses. I ultimately conclude that the acquisition of the MEC Facility is cost effective for our customers and therefore the Commission should grant an advance determination of prudence (ADP) for the transaction.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. My Testimony is organized as follows:

- Section II discusses the Company's modeling of the MEC resource additions and responds to the arguments of the Advocacy Staff witnesses in this regard;
- Section III discusses the applicable discount rate for the MEC acquisition;
- Section IV discusses other issues raised by the Advocacy Staff witnesses; and
- Section V sets forth my conclusions and recommendations.

II. COMPANY MODELING OF THE MEC ACQUISITION

A. General Modeling Approach

Q. AT A HIGH LEVEL, HOW DOES THE COMPANY MODEL PROPOSED RESOURCE ADDITIONS?

A. The Company uses the Strategist resource planning model (Strategist) to evaluate the cost-effectiveness of resource additions such as the MEC Facility. I provided more background on our use of Strategist in my Direct Testimony, beginning on page 6.

Q. WHAT IS THE TYPICAL TIME HORIZON USED BY THE COMPANY TO MODEL RESOURCE ADDITIONS?

A. The Company's general practice is to use a 40-year Strategist model to consider the costs and benefits of a resource addition to the NSP System.

Q. WHY DOES THE COMPANY MODEL RESOURCE ADDITIONS ON A 40-YEAR TIME HORIZON?

A. The Strategist model extends 40 years into the future in order to capture the costs and benefits of all existing resources through the end of their book lives. The Company has some assets that have 40-year book lives or more, and we have a number of existing natural gas resources that are approaching 40 years of life. We feel it is appropriate for the model to extend out 40 years in order to capture the value of these resources. It is my understanding that assuming a 30- to 40-year book life for natural gas combined cycle assets is the standard across the industry as well.

Q. MR. MAJOROS ARGUES THAT THE COMPANY SHOULD HAVE MODELED SYSTEM COSTS THROUGH 2039, THE DATE WHEN THE MEC II PPA EXPIRES. WHAT IS YOUR RESPONSE TO THIS ARGUMENT?

A. As I noted, it is our general practice to model resource additions on a 40-year timeframe. Additionally, for this particular resource addition, the 40-year timeframe is reasonable because the expected operational lives of MEC I and MEC II extend well beyond the terms of the current PPAs. Specifically, the Company expects the operational life of MEC I to extend to 2046 and the operational life of MEC II to extend to 2054.

Q. DOES MR. MAJOROS'S SUGGESTED TIME HORIZON UNREASONABLY UNDERVALUE THE MEC FACILITY?

A. Yes. Limiting the modeling period to the PPA term artificially limits the value of the asset that the Company is seeking to acquire. Much of the value in owning an asset versus holding a PPA is that the benefits of ownership typically extend beyond the term of a PPA. Therefore, we do not feel it is appropriate to end the MEC analysis in 2039, as Mr. Majoros suggests. At that point in time, we will own a highly depreciated asset that is anticipated to be very cost competitive relative to other replacement options.

B. Load and Generation Forecasting

Q. HOW DO THE COMPANY'S STRATEGIST MODELS TAKE FUTURE LOAD GROWTH INTO ACCOUNT?

A. As discussed in my Direct Testimony at pages 14-15, the Company inputs assumptions into Strategist before running the models. For the MEC Facility analysis, we used load forecasts from the Company's most recent resource planning cycle, which was developed in the fall of 2018, as well as high and low load assumptions, which were developed by increasing and decreasing the forecasted load by one standard deviation from the median.

Q. WHAT IS YOUR RESPONSE TO MR. ALVAREZ'S CONTENTION THAT THE COMPANY ASSUMES HIGHER LOAD GROWTH THAN IS REASONABLE, GIVEN RECENT DEMAND TRENDS?

A. Mr. Alvarez spends a considerable portion of his testimony discussing broad demand trends in the electricity industry in support of his argument that the Company's load forecasts are too optimistic. While it is true that load forecasts have generally trended down in recent years, our load forecasting methodology has historically been accepted by our regulators as the basis for other recent forward-looking decisions in rate cases and resource procurements. To account for load forecast uncertainty, the Company has traditionally included low load forecast sensitivities in resource procurements to help address concerns related to this variable in the modeling. Ultimately, however, the Company's load growth forecasts are not the material driver for the evaluation of the MEC Facility acquisition.

Q. WHY ARE FUTURE LOAD GROWTH FORECASTS NOT DRIVING THE ANALYSIS OF THE MEC FACILITY ACQUISITION?

A. The Company is not acquiring the MEC Facility specifically as a response to forecasted load growth. Rather, the Company is acquiring MEC because our modeling demonstrates that it results in a suite of customer benefits. One of these benefits is that the MEC Facility provides capacity value when owned beyond the current PPA term, an attribute that does not depend on forecasted load growth. Absent any load growth, the Company would still have a resource need in the mid to late 2020s due to thousands of MWs of existing resource retirements and PPA expirations. Given the cost competitiveness and other valuable attributes of the MEC Facility, it is the optimal resource for the Company to help fill capacity shortfalls driven by resource retirements and PPA expirations.

Q. WHAT RETIREMENTS AND OTHER REDUCTIONS IN ENERGY RESOURCES ON THE NSP SYSTEM ARE CURRENTLY SCHEDULED FOR THE NEXT 15 YEARS?

A. The most important upcoming reductions in energy resources on the NSP System in the next 15 years are listed below:

- 2023: Blue Lake Units 1-4 (natural gas combustion turbines (CTs)) will cease operation (155 MW);
- 2023: Sherco Unit 2 will be retired (691 MW);
- 2025: Manitoba Hydro contracts will expire (827 MW);
- 2025: Invenergy Cannon Falls PPA will expire (311 MW);

- 2025: Wheaton Units 1-4 (natural gas CTs), 6 (Fuel Oil) will be retired (205 MW);
- 2026: Inver Hills Units 1-6 will be retired (256 MW);
- 2027: Cottage Grove Combined Cycle Energy Center contract will expire (233 MW);
- 2026: Sherco Unit 1 will be retired (681 MW);
- 2026: MEC I PPA (282 MW) will expire;
- 2028: Allen S. King Plant will be retired (495 MW Unforced Capacity (UCAP));
- 2030: Sherco Unit 3 will be retired (523 MW UCAP);
- 2031: Black Dog 5/2 Combined Cycle will be retired (254 MW);

Q. DOES THE ABOVE LIST DIFFER FROM PREVIOUS COMPANY PLANNING ASSUMPTIONS?

A. Yes. The Company informed the Commission in an informational filing on May 20, 2019 that it will seek approval in its upcoming Integrated Resource Plan (IRP) to retire the Allen S. King plant in 2028 or earlier and Sherco Unit 3 in 2030 or earlier. Previously, these resources were scheduled to be retired in 2037 and 2040, respectively. When taken together with the other resource reductions listed above, this represents a reduction of approximately 4,900 MW of generation capacity on the NSP System over the next 15 years. For this reason, the Company projects a capacity need beginning in 2025 and extending through at least 2039.

Q. HOW DO THE ALLEN S. KING AND SHERCO RETIREMENTS RELATE TO THE MEC FACILITY ACQUISITION?

A. Given that the Company will need capacity beginning in 2025, the MEC Facility is a highly efficient, cost-effective resource that is well positioned and well timed to meet this need. The MEC Facility acquisition only results in net additions of capacity beginning in 2027 and thereafter, due to the approximately 350 MW from MEC I that would have otherwise dropped off the System at the end of the PPA.

Q. YOUR LIST OF RETIRING RESOURCES ABOVE DOES NOT INCLUDE THE COMPANY'S THREE NUCLEAR UNITS. IN LIGHT OF THIS, WHAT IS YOUR RESPONSE TO MR. ALVAREZ'S ARGUMENT THAT IT IS UNREASONABLE TO ASSUME THAT ALL THREE OF THESE UNITS WILL BE DECOMMISSIONED WHEN THEIR FEDERAL LICENSES EXPIRE?

A. Mr. Alvarez argues that the Company's generation capacity forecasts in the ADP application are understated because we assume all three of NSP's nuclear units will retire when their federal licenses expire. It may be the case that Xcel Energy seeks to extend the licenses of one or both of its nuclear facilities, but it is certainly not guaranteed. To date, the Company has proposed to extend the life of the Monticello Nuclear Generating Station and to revisit the operational life and operating license decisions regarding Prairie Island in its next resource plan. However, even if the lives of all three of the Company's nuclear units are ultimately extended, the Company will still have a capacity need in the near future. The Company's nuclear portfolio represents approximately 1,600 MW of generation capacity. Even if the nuclear units are not retired, the Company is still expected to lose approximately 4,900 MW of capacity on the NSP System over the 15-year planning period. Thus, the Company's other retirements and resource losses more than offset the capacity of our nuclear units, which may or may not be extended.

C. Cost Effectiveness of the MEC Facility

Q. HOW CAN THE COMPANY BE SURE THAT FUTURE MEC CAPACITY WILL BE LESS COSTLY THAN MARKET OR PPA PRICES WHEN THE CURRENT PPAS EXPIRE?

A. Mr. Alvarez states that future market prices for capacity will not be significantly higher than the cost of the MEC capacity, due to market forces and other assumptions. In truth, it is impossible to say with 100 percent certainty that capacity prices will fall in the future due to falling demand.

Q. WHY DO YOU SAY IT IS IMPOSSIBLE TO PREDICT FUTURE CAPACITY PRICES?

A. As an example, contrary to Mr. Alvarez's predictions with regard to negative demand growth, the Company views electrification of the transportation sector and other industries as ongoing opportunities to grow load. The Company itself is also pursuing economic development opportunities to improve load growth and reduce costs for customers. For example, the Commission is currently considering an ADP application for the Dakota Range III wind PPA, which the Company has signed in order to induce Google to build a large data center in our service territory.

Q. WHAT OTHER FACTORS WORK AGAINST MR. ALVAREZ'S ARGUMENT THAT CAPACITY PRICES WILL BE LOW AT THE END OF THE MEC I & II PPA TERMS?

A. NSP is not the only company retiring many baseload resources over the next two decades. A coming wave of baseload retirements across MISO could result in future capacity shortages and corresponding price spikes. At the same time, increased reliance on natural gas-fired generation could also result in higher gas prices in the future. Any or all of these eventualities support the Company's acquisition of the MEC Facility rather than allowing the PPAs to expire. In addition, the MISO interconnection queue is currently experiencing a significant backlog and recent studies have indicated staggering levels of upgrade costs associated with new greenfield projects. Assuming this continues, it will be very difficult and costly to develop new greenfield resources, which could further exacerbate the supply demand balance in the future.

Q. HOW DOES THE COST OF THE MEC FACILITY COMPARE TO NEW GREENFIELD COMBUSTION TURBINE RESOURCES?

A. Generally, the levelized capacity cost—which includes fixed operations and maintenance and capital revenue requirement—of owning the MEC Facility is slightly below **[PROTECTED DATA BEGINS PROTECTED DATA ENDS]**. This is generally equivalent to the Company's assumptions of the cost of a greenfield CT in our IRP, as well as MISO's calculation of the Cost of New Entry, which is based on the cost of a new CT. Thus, by owning the MEC Facility, the Company is able to own a combined cycle (CC) facility at generally the same cost as a CT. As the Commission is aware, CC resources have lower heat rates, better efficiency, and therefore lower marginal dispatch costs when compared to CTs. My calculations of the levelized cost of owning the MEC Facility are provided in Schedule 1 of my Rebuttal Testimony.

Q. WHY CAN'T THE COMPANY WAIT UNTIL THE RESOURCE PLANNING PROCESS OF THE LATE 2020S OR EARLY 2030S TO DECIDE WHETHER TO ACQUIRE MEC, AS MR. ALVAREZ SUGGESTS?

A. As noted above, the Company plans to retire thousands of MWs of generation capacity in the next 15 years. Based on our current assumptions, the Company will require the capacity of MEC beyond the life of the PPAs, and it is more cost effective to lock up this resource via an acquisition of the facility at this point in time. There is no guarantee that the Company will have the opportunity to acquire this asset again in the future, thus waiting to buy it until later is not necessarily an option. As discussed below, Southern Company and its subsidiary Southern Power Company's (together, Southern) broader strategy to raise capital as an alternative to issuing additional equity makes the current moment a unique opportunity to acquire this recently expanded, highly efficient facility.

Q. IN YOUR VIEW, IS THE MEC FACILITY ACQUISITION PRUDENT AT THIS POINT IN TIME?

A. Yes. Based on today's assumptions and what we know about resource retirements on the NSP System, the acquisition of the MEC Facility is the most cost effective option for our customers and will allow the Company to secure future capacity at highly competitive prices. As noted above, the fixed capacity costs of owning the MEC Facility will essentially be similar to the costs of a greenfield CT as assumed in the Company's IRP. Getting a CC resource with an intermediate heat rate, lower emissions rate and generally much better efficiency for the price of a CT is a good value for our customers.

Q. IS THERE ANYTHING ELSE THAT HAS OCCURRED SINCE YOUR DIRECT TESTIMONY IN THIS CASE THAT BEARS ON THE PRUDENCE OF THIS ACQUISITION?

A. Yes. On June 4, 2019, Southern announced that the MEC II combined cycle expansion project was completed on time and under budget. With this upgrade completed, the MEC Facility is now a highly efficient, state-of-the-art two-on-one CC facility with a total nameplate capacity of 762 MW. Therefore, any construction risk associated with the project has now been eliminated.

III. APPLICABLE DISCOUNT RATE

Q. WHAT DISCOUNT RATE DID THE COMPANY APPLY TO ITS MODELING OF THE MEC TRANSACTION?

A. As noted in my Direct Testimony, the Company used a 6.53 percent discount rate to calculate the present value of modeled costs. This discount rate is based on the Company's weighted average cost of capital across the NSP jurisdictions.

Q. WHY IS THIS AN APPROPRIATE DISCOUNT RATE TO USE?

A. Because the Company is the entity making the investment, it is appropriate for the Company's cost of capital to be used to discount the costs associated with the MEC Facility acquisition. This is consistent with prior practice in virtually all NSP regulatory proceedings as far as I am aware, and the Commission has approved numerous NSP resource decisions in which costs to ratepayers were discounted based on the Company's discount rate.

Q. WHAT DOES MR. MAJOROS SUGGEST AS AN ALTERNATIVE TO USING THE COMPANY'S DISCOUNT RATE?

A. Mr. Majoros suggests that, because customers are ultimately paying the costs of the MEC Facility acquisition in rates, the Company should use a "customer's discount rate" to discount the costs of the acquisition.

Q. HOW DID MR. MAJOROS CALCULATE THE "CUSTOMER DISCOUNT RATE"?

A. Mr. Majoros determined the customer discount rate based on the average interest rate on credit card debt for individual consumers, as reported in a recent CNBC article. Mr. Majoros then calculated a "weighted average discount rate" by applying this customer's discount rate to the Company's residential customers and using the Company's discount rate for demand customers.

Q. WHAT IS YOUR VIEW OF MR. MAJOROS'S PROPOSED DISCOUNT RATE?

A. Mr. Majoros's proposed "customer's discount rate" is a wholly arbitrary calculation and is contrary to all analysis the Company has put forward in nearly all regulatory proceedings. According to Mr. Majoros, he first proposed this concept in 1986, but I am not aware of any utility company or utility commission that uses such a calculation. Mr. Majoros himself acknowledged in his response to the Company's Data Request No. 1-2 that he is not aware of any regulatory bodies that have adopted this approach. This is because, as the Commission has recognized by approving many resource additions based on the utility's discount rate, the utility is the entity making the investment, thus their cost of capital should be used as the basis for discounting costs.

IV. OTHER ISSUES RAISED BY ADVOCACY STAFF WITNESSES

A. Cost of the MEC Facility

Q. MR. MAJOROS NOTED IN HIS TESTIMONY THAT THE COMPANY DID NOT INCLUDE ORIGINAL COST AMOUNTS FOR THE MEC FACILITY IN DIRECT TESTIMONY OR IN RESPONSE TO DATA REQUESTS. WHY IS THIS THE CASE?

A. Because the MEC Facility is an unregulated asset that sells wholesale power at market-based rates, Southern is not required to file Form 1 or Form 3 documents with FERC. Thus, the Company does not have nor is it entitled to account and subaccount level accounting for the MEC Facility.

Q. DOES THE COMPANY POSSESS OTHER INFORMATION THAT CAN SHED LIGHT ON THE PURCHASE PRICE OF THE MEC FACILITY?

A. Yes. The Company has calculated the Net Book Value (NBV) of the MEC Facility as $541 million.

Q. DOES THIS MEAN THAT AN ACQUISITION ADJUSTMENT IS REQUIRED FOR THE COMPANY'S PURCHASE OF THE MEC FACILITY?

A. Yes. The Company requires an acquisition adjustment of $96 million, which along with approximately $13 million in prepayments and plant materials and operating supplies is the difference between the purchase price of $650 million and the NBV of the MEC Facility. I have attached as Schedule 2 a proposed journal entry for the acquisition of the MEC Facility. It is important to note that the NBV reflects the original cost to construct a plant—not what a plant is valued at in today's market. The actual market value of a plant is a product of its generating characteristics, expected life, operating costs, and projected revenues, among other things. This value can shift based on changing to market conditions, fuel and energy prices, and tax and regulatory policies. As discussed in the Company's application and my Direct Testimony, when viewed in light of its system benefits as well as other recent CC transactions, the $650 million purchase price for the MEC Facility is reasonable and prudent.

B. Effect of the Tax Cuts and Jobs Act

Q. WHAT EFFECT DID THE TAX CUTS AND JOBS ACT (TCJA) HAVE ON POWER PLANTS GENERALLY?

A. Among other things, the TCJA reduced the federal tax rate from 35 percent to 21 percent. As noted in the Company's response to Data Request No. 2-13, this enhances the value of power plants with existing PPAs in place, including MEC I & II, by increasing the after-tax profits of the plant.

Q. DID THE COMPANY FACTOR THIS ENHANCED VALUE OF MEC I & II INTO THE PURCHASE PRICE?

A. Yes. The Company applied post-TCJA tax rates in its evaluations of MEC I & II for purchase. Thus these tax benefits were factored into the Company's valuation of the MEC Facility and the ultimate purchase price.

Q. MR. MAJOROS SUGGESTS THAT THE TCJA MAKES THE CAPACITY PAYMENTS FROM THE EXISTING MEC I & II PPAS EXCESSIVE. DO YOU AGREE?

A. No. The existing PPAs were agreed to well before this change to the tax rates and there is no way that the Company or Southern could have foreseen the changes resulting from the TCJA. Additionally, the MEC PPA capacity payments remain quite competitive when compared to generic new resource costs for CT and CC capacity. The capacity prices in the MEC PPAs are comparable to the Company's generic CT prices, but the MEC Facility is more efficient because it is a CC.

Q. DO YOU AGREE WITH MR. MAJOROS THE COMPANY CAN RESTRUCTURE ITS EXISTING PPAS TO ACCOUNT FOR THE EFFECTS OF THE TCJA?

A. No. There is no compelling reason for Southern to restructure these contracts, which were signed well before the TCJA. In signing the PPAs, both the Company and Southern took a risk that future tax or other regulatory changes could affect the value of the PPAs. As a profit-motivated entity, Southern has no incentive to unilaterally surrender one of the benefits of the bargain it struck, and I doubt that its shareholders would approve of such an action. Indeed, if the roles were reversed, I find it highly doubtful that the Company would agree to restructure these PPAs, nor would the Commission approve of us doing so.

Q. MR. ALVAREZ QUESTIONS WHY, IF THE PPAS BECAME MORE VALUABLE DUE TO TCJA, WOULD SOUTHERN PUT THE MEC FACILITY UP FOR SALE AT THIS TIME. WHAT IS YOUR RESPONSE TO THIS ARGUMENT?

A. Mr. Alvarez's contention that Southern is selling the MEC Facility because Southern must have come to the same conclusions that he did regarding falling electricity demand is pure speculation. I am not aware of the particular motives that Southern had in putting the MEC Facility up for sale. However, it appears that Southern placed the MEC Facility up for sale in late 2018 as part of its broader strategy to raise capital. I've attached in Schedule 3 several news and research articles which shed light on Southern's recent strategy of liquidating assets across the country to raise capital.

C. Lease vs. Buy Analysis

Q. MR. MAJOROS CONDUCTED A TRADITIONAL LEASE VS. BUY ANALYSIS FOR THE MEC FACILITY. HAVE YOU REVIEWED THIS ANALYSIS?

A. Yes. I reviewed the analysis as set forth in Mr. Majoros's Direct Testimony. Mr. Majoros also provided additional information regarding the inputs for his analysis in response to Data Request No. 1-1 by the Company.

Q. WHAT IS YOUR VIEW OF MR. MAJOROS'S CONCLUSION IN HIS FIRST TWO ANALYSES THAT THE BUY OPTION IS MORE EXPENSIVE THAN THE LEASE OPTION?

A. I disagree with Mr. Majoros's conclusion because his analysis is fatally flawed. In his analyses, Mr. Majoros calculates the net present value of leasing versus buying the MEC Facility by comparing the costs through 2039, respectively. As noted above, limiting the analysis period of the MEC Facility to the timeframe of the existing PPAs artificially undervalues the MEC Facility because the Company expects to be able to use MEC I through 2046 and MEC II through 2054. Thus Mr. Majoros's first two analyses do not consider the period under the Buy option when the Company will own a highly depreciated, cost-competitive asset beyond the 2039 PPA expiration dates. In addition, Mr. Majoros appears to assume that the MEC 1 PPA will be extended at a price upon current contract expiration in 2027 that mirrors the capacity payment price for the MEC II PPA and runs until 2038. We do not know exactly what price would be agreeable to the MEC owner in the event of a PPA renegotiation so it is difficult to say that this is a valid assumption.

Lastly, by just comparing the NPV of total fixed capacity revenue requirements between the two options, Mr. Majoros is comparing apples and oranges. If we own the MEC Facility, we benefit from being able to claim additional capacity/dispatch range and dispatch cost savings/efficiencies beyond what is currently afforded in the PPA. As a result, simply comparing the capacity costs is not appropriate because we are gaining access to additional benefits through ownership that are not captured in a simple comparison of the total capacity costs.

Q. MR. MAJOROS'S THIRD LEASE VS. BUY ANALYSIS EXTENDS THROUGH 2054. DOES THIS ADDRESS THE FATAL FLAW WITH HIS ANALYSIS?

A. No. Although Mr. Majoros's third analysis extends through 2054, it is flawed for a different reason. In his third analysis, Mr. Majoros calculates the full costs of buying MEC through 2054 but he does not count any costs for the leasing option after 2039, when the MEC II PPA expires. As I discussed earlier, the Company projects a capacity need beginning in 2025 and will have to replace the MEC I & II PPAs with additional capacity once these contracts expire. Thus it is inaccurate and misleading to compare the full costs of buying the MEC Facility through 2054 while only considering the costs of leasing the MEC Facility through the life of the existing PPAs.

Q. AS A RESULT OF HIS BUY VS. LEASE ANALYSIS, MR. MAJOROS CONCLUDES THAT A "COMPETITIVE" COMPANY WOULD NOT PURCHASE THE MEC FACILITY BECAUSE IT IS NOT ECONOMIC. WHAT IS YOUR RESPONSE TO THIS ARGUMENT?

A. I disagree with Mr. Majoros. Just as it is speculative to assume, as Mr. Alvarez does, that the plant must be uneconomic because a non-regulated utility is selling it, one cannot assume that it is uneconomic because a regulated utility is buying it. As demonstrated above, the MEC Facility is a highly competitive resource and provides the Company with critically needed capacity in the post-2027 period. Further, as the current holder of all of the offtake from the MEC Facility through the MEC I & II PPAs, NSP is the most natural buyer for the MEC Facility.

Q. DOES ANYTHING ABOUT SOUTHERN'S RECENT COURSE OF CONDUCT INDICATE THAT THE ASSET IS ECONOMIC?

Yes. Southern acquired the facility in 2016 and invested considerable capital in an expansion of the facility, which as I noted was just recently completed. As an IPP driven by profit motives, it is reasonable to assume that Southern concluded that the MEC Facility was economic when it chose to purchase and invest millions in upgrading the facility. Given this recent investment history, it is speculative, and in my view incorrect, to assume that Southern has suddenly concluded that the MEC Facility is uneconomic.

V. CONCLUSION

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

A. I conclude the Company's acquisition of the MEC Facility is prudent because it is a low-cost, efficient, and flexible resource that will provide critically needed capacity to help the Company address substantial resource losses on its system over the next 15 years.

Q. DOES THIS CONCLUDE YOUR PRE-FILED REBUTTAL TESTIMONY?

A. Yes, it does.

PUBLIC DOCUMENT
NOT PUBLIC DATA EXCISED

Northern States Power Company

Case No. PU-18-403
Exhibit___(PJM-2), Schedule 1
1 Page Total

Schedule 1 provided with the Not-Public version of the Rebuttal Testimony of Company witness Mr. Philip J. Martin provides the levelized cost of owning the MEC Facility.

Schedule 1 is marked as Not-Public in its entirety. The information therein is consistent with the type of information approved for protection in the Commission's ORDER GRANTING TRADE SECRET PROTECTION, issued March 19, 2019, in the above-noted case.

[PROTECTED DATA BEGINS

PROTECTED DATA ENDS]

Journal Entries

Account and Description	Debit	Credit
Record Acquisition of Mankato Assets – Total Company[1]		
Debit: FERC Account 102 – Electric Plant Purchased or Sold	$636,755,000	
Debit: FERC Account 154 – Plant Materials and Operating Supplies	$4,245,000	
Debit: FERC Account 165 – Prepayments[2]	$9,000,000	
Credit: FERC Account 131 - Cash		$650,000,000
Record Estimated Transaction Costs of Acquiring Mankato Assets – Total Company		
Debit: FERC Account 102 – Electric Plant Purchased or Sold	$450,000	
Credit: FERC Account 232 – Accounts Payable		$450,000
Record acquisition adjustment and place assets into service – Total Company[3]		
Debit: FERC Account 101 – Electric Plant in Service	$565,648,000	
Debit: FERC Account 114 – Electric Plant Acquisition Adjustment	$96,194,000	
Credit: FERC Account 108 – Accumulated Provision - For Depreciation of Electric Utility Plant		$24,637,000
Credit: FERC Account 102 – Electric Plant Purchased or Sold		$637,205,000

[1] Transaction is subject to a working capital adjustment to be reflected in final accounting entries upon consummation of transaction
[2] Includes a water supply agreement
[3] Entry represents current book value of MEC I and MEC II, forecasted to May 31, 2019

Southern Company
Conference Call

May 21, 2018

Southern Company

Cautionary Note Regarding Forward-Looking Statements

This presentation contains forward-looking statements which are made pursuant to safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include statements, among other things, concerning the expected benefits of the transactions described herein, expected financing plans and future earnings projections. These forward-looking statements are often characterized by the use of words such as “expect,” “anticipate,” “plan,” “believe,” “may,” “should,” “will,” “could,” “continue” and the negative or plural of these words and other comparable terminology. Although Southern Company believes that the expectations reflected in such forward-looking statements are reasonable, such statements involve risks and uncertainties and undue reliance should not be placed on such statements. Certain material factors or assumptions are applied in making forward-looking statements, including, but not limited to, factors and assumptions regarding the items outlined above. Actual results may differ materially from those expressed or implied in such statements. Important factors that could cause actual results to differ materially from these expectations include, among other things, the following: the failure to receive, on a timely basis or otherwise, the required approvals by government or regulatory agencies (including the terms of such approvals); the inability to achieve the expected financial benefits of the proceeds of the transactions; the risk that a condition to closing of one or more of the transactions may not be satisfied; the ability to reach agreements for the sale of minority interests in Southern Power’s solar and wind portfolios; the impact of recent and future federal and state regulatory changes, including environmental laws and regulations governing air, water, land, and protection of other natural resources, and also changes in tax and other laws and regulations to which Southern Company and its subsidiaries are subject, as well as changes in application of existing laws and regulations; the uncertainty surrounding the federal tax reform legislation, including implementing regulations and Internal Revenue Service interpretations, actions that may be taken in response by regulatory authorities, and its impact, if any, on the credit ratings of Southern Company and its subsidiaries; current and future litigation or regulatory investigations, proceedings, or inquiries; the effects, extent, and timing of the entry of additional competition in the markets in which Southern Company's subsidiaries operate; variations in demand for electricity and natural gas, including those relating to weather, the general economy, population and business growth (and declines), the effects of energy conservation and efficiency measures, including from the development and deployment of alternative energy sources such as self-generation and distributed generation technologies, and any potential economic impacts resulting from federal fiscal decisions; available sources and costs of natural gas and other fuels; limits on pipeline capacity; transmission constraints; effects of inflation; the ability to control costs and avoid cost overruns during the development, construction, and operation of facilities, which include the development and construction of generating facilities with designs that have not been previously constructed, including changes in labor costs and productivity, adverse weather conditions, shortages, increased costs or inconsistent quality of equipment, materials, and labor, including any changes related to imposition of import tariffs, contractor or supplier delay, non-performance under construction, operating, or other agreements, operational readiness, including specialized operator training and required site safety programs, unforeseen engineering or design problems, start-up activities (including major equipment failure and system integration), and/or operational performance; the ability to construct facilities in accordance with the requirements of permits and licenses (including satisfaction of U.S. Nuclear Regulatory Commission (“NRC”) requirements), to satisfy any environmental performance standards and the requirements of tax credits and other incentives, and to integrate facilities into the Southern Company system upon completion of construction; investment performance of the Southern Company system's employee and retiree benefit plans and nuclear decommissioning trust funds; advances in technology; ongoing renewable energy partnerships and development agreements; state and federal rate regulations and the impact of pending and future rate cases and negotiations, including rate actions relating to fuel and other cost recovery mechanisms; the ability to successfully operate the electric utilities' generating, transmission, and distribution facilities and Southern Company Gas' natural gas distribution and storage facilities and the successful performance of necessary corporate functions; legal proceedings and regulatory approvals and actions related to Plant Vogtle Units 3 and 4, including Georgia Public Service Commission approvals and NRC actions; if certain adverse events were to occur, a decision by more than 10% of the owners of Plant Vogtle Units 3 and 4 not to proceed with construction upon the occurrence of certain adverse events; litigation related to the Kemper County energy facility; the inherent risks involved in operating and constructing nuclear generating facilities, including environmental, health, regulatory, natural disaster, terrorism, and financial risks; the inherent risks involved in transporting and storing natural gas; the performance of projects undertaken by the non-utility businesses and the success of efforts to invest in and develop new opportunities; internal restructuring or other restructuring options that may be pursued; potential business strategies, including these dispositions and other acquisitions or dispositions of assets or businesses, which cannot be assured to be completed or beneficial to Southern Company or its subsidiaries; the possibility that the anticipated benefits from the acquisition of Southern Company Gas cannot be fully realized or may take longer to realize than expected and the possibility that costs related to the integration of Southern Company and Southern Company Gas will be greater than expected; the ability of counterparties of Southern Company and its subsidiaries to make payments as and when due and to perform as required; the ability to obtain new short- and long-term contracts with wholesale customers; the direct or indirect effect on the Southern Company system's business resulting from cyber intrusion or physical attack and the threat of physical attacks; interest rate fluctuations and financial market conditions and the results of financing efforts; changes in Southern Company's and any of its subsidiaries' credit ratings, including impacts on interest rates, access to capital markets, and collateral requirements; the impacts of any sovereign financial issues, including impacts on interest rates, access to capital markets, impacts on foreign currency exchange rates, counterparty performance, and the economy in general, as well as potential impacts on the benefits of the U.S. Department of Energy loan guarantees; the ability of Southern Company's electric utilities to obtain additional generating capacity (or sell excess generating capacity) at competitive prices; catastrophic events such as fires, earthquakes, explosions, floods, tornadoes, hurricanes and other storms, droughts, pandemic health events such as influenzas, or other similar occurrences; the direct or indirect effects on the Southern Company system's business resulting from incidents affecting the U.S. electric grid, natural gas pipeline infrastructure, or operation of generating or storage resources; impairments of goodwill or long-lived assets; and the effect of accounting pronouncements issued periodically by standard-setting bodies. There can be no assurance that any of the transactions will in fact be consummated.

Additional information about these factors and about the material factors or assumptions underlying such forward-looking statements may be found under Item 1A. in Southern Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2017. Southern Company cautions that the foregoing list of important factors that may affect future results is not exhaustive. When relying on forward-looking statements to make decisions with respect to Southern Company, investors and others should carefully consider the foregoing factors and other uncertainties and potential events. All subsequent written and oral forward-looking statements concerning the transactions or other matters attributable to Southern Company or any other person acting on its behalf are expressly qualified in their entirety by the cautionary statements referenced above. The forward-looking statements contained herein speak only as of the date of this presentation. Southern Company undertakes no obligation to update or revise any forward-looking statement, except as may be required by law.

Transaction Overview

Florida Assets

- **Gulf Power Company**
  - $5.75 billion in pre-tax proceeds
  - Approximately 460,000 customers
    (less than 5% of Southern's customer base)

- **Florida City Gas**
  - $530 million in pre-tax proceeds
  - Approximately 109,000 customers
    (1% of Southern's customer base)

Southern Power Assets

- $195 million in pre-tax proceeds
- Stanton Energy Center (65% ownership)
  - 659 MW jointly owned natural gas combined cycle
  - Near Orlando, Florida
- Plant Oleander
  - 791 MW capacity from five combustion turbine units
  - Cocoa, Florida

Value Accretive Drivers

- Proceeds: $6.475 billion pre-tax ($5.075 billion equity value net of debt)
- Prices paid are at the top end of recent M&A transactions and provide for appreciable value over SO's current share price
- Proceeds will be used to significantly reduce debt across Southern Company
- Accelerates utilization of tax carryforward positions
- Avoids approximately $3 billion in new share issuances
- Eliminates remarketing risk for two unregulated natural gas-fired plants
- Improved credit profile
- Stronger projected EPS within our 4% - 6% EPS guidance trajectory

Investor-friendly transactions expected to significantly reduce debt across Southern Company

Modest remaining $3 billion equity need is expected to be met over several years using SO equity plans[3]

5-year $7B Equity Need[1]

~$1B

Potential tax equity on existing Southern Power wind portfolio

~$3B Florida Assets

These equity amounts are net of over $2B in additional debt reductions to help ensure that these transactions are credit accretive.

Our current 5-year plan does not anticipate the need for a block or discrete equity offering[2]

~$3B Remaining Equity Need 2018-2022

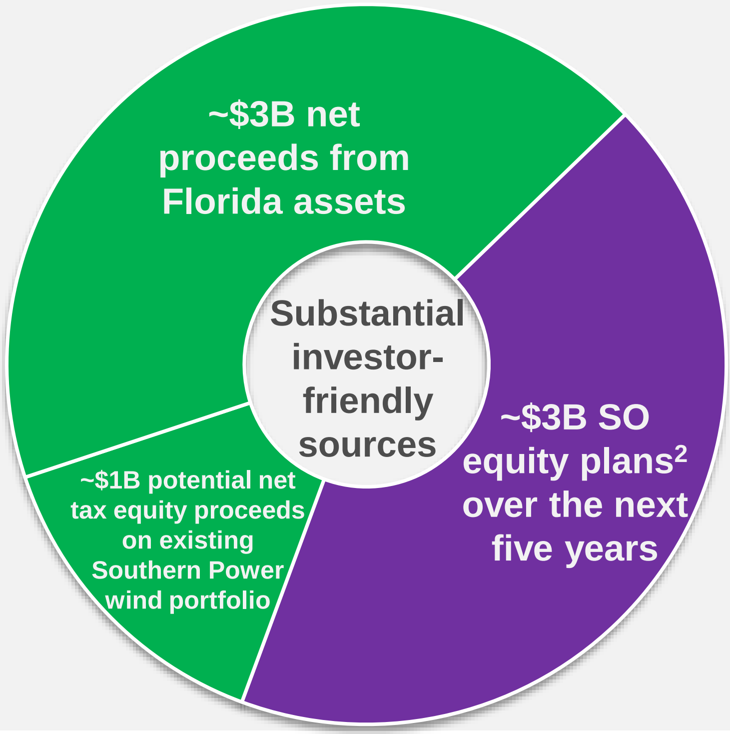
Our existing internal plans alone (excluding an ATM), can provide approximately $500M per year[3]

1. Net of anticipated proceeds from the sales of Elizabethtown Gas, Elkton Gas, Pivotal Home Solutions and a 33% equity interest in Southern Power's solar portfolio
2. Future financing activities are subject to market conditions and other factors.
3. Historically, equity plans have included Southern Investment Plan, Employee Savings Plan, employee stock option exercises and at-the-market (ATM) programs

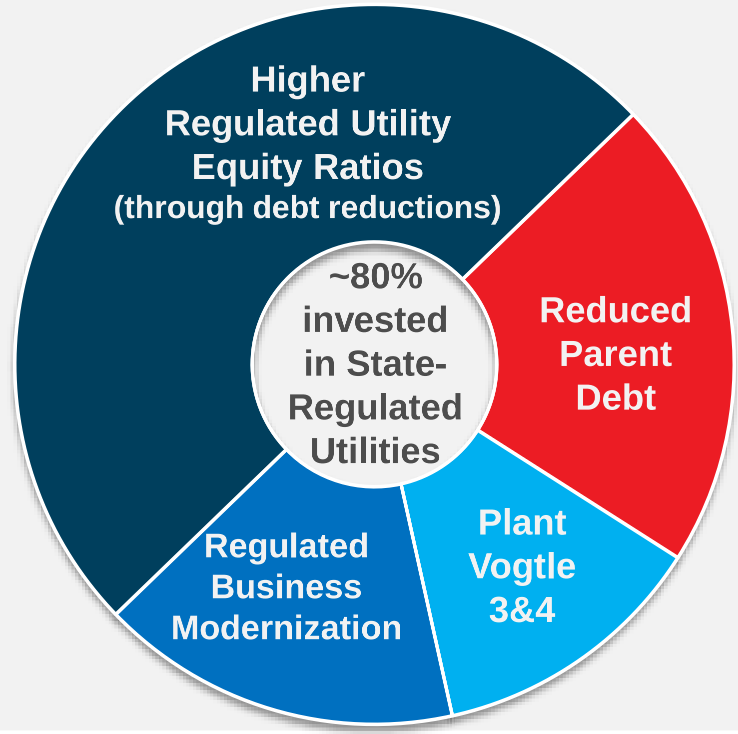
Sources and value accretive uses of equity

Executing on our plans to reduce debt and fund growth at our state-regulated utilities

Expected $7 billion in equity sources[1]



Credit and value accretive uses



1. Net of anticipated proceeds from the sales of Elizabethtown Gas, Elkton Gas, Pivotal Home Solutions and a 33% equity interest in Southern Power's solar portfolio.
2. Historically, SO equity plans have included Southern Investment Plan, Employee Savings Plan, employee stock option exercises and at-the-market (ATM) programs.

Southern Company's strategy and objectives remain the same

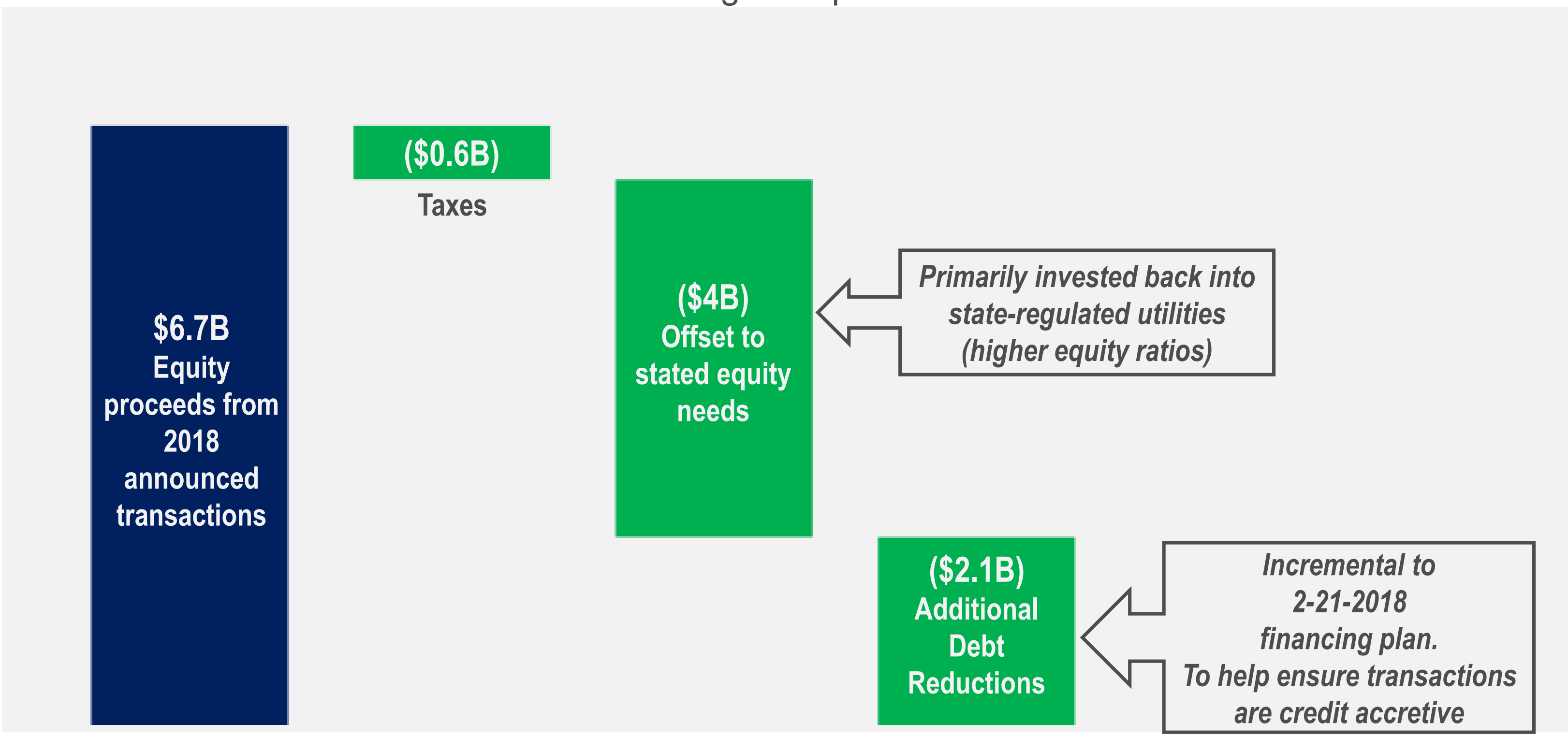
- High-quality state-regulated utilities
- A customer, community and relationship-focused business model
- Complementary investments in infrastructure under long-term contracts
- A strong commitment to credit quality and financial integrity
- Clean, safe, reliable, affordable energy

Transaction Value Drivers	Top of the 4% - 6% EPS Guidance Range Assumptions
• Prices paid provide for appreciable value over SO's current share price • Significant debt reduction • Stronger credit metrics • Accelerated equity proceeds improve credit profile • Stronger projected EPS within our 4% - 6% EPS guidance trajectory	• Incremental state-regulated utility investment opportunities • Optimized, investor-friendly sources of equity funding • More aggressive management of O&M inflation relative to the costs attributable to incremental capital investments • Better-than-expected growth from unregulated businesses

Additional Information

Expected Uses of Equity Proceeds 2018-2022

Includes equity proceeds from the pending sales of Pivotal Home Solutions, Gulf Power Company, Florida City Gas and Southern Power's ownership interests in Plants Stanton and Oleander. Also includes estimated proceeds from potential 3rd party tax equity on Southern Power's existing wind portfolio.



4% to 6% Earnings Per Share Growth Objective

Base Assumptions

- Continued constructive regulatory treatment, including Tax Reform mitigation plans
- $33 billion of state-regulated capital investments over 5 years
- Consolidated FFO to Debt: 16% to 16.5% *(excluding Vogtle 3&4 impact of minus ~1%)*
- Over 90% of earnings growth from state-regulated utilities and existing unregulated assets

Top of the Guidance Range Assumptions

- Incremental state-regulated utility investment opportunities
- Optimized, investor-friendly sources of equity funding
- More aggressive management of O&M inflation relative to the costs attributable to incremental capital investments
- Better-than-expected growth from unregulated businesses

Long-term EPS projected growth is 4% to 6% with or without Vogtle 3 & 4

During construction, the year-over-year earnings contribution of the project is expected to vary based on the ROEs approved in VCM 17

Southern Company Projected Long-term Debt Financings[1]

as of 5/21/18

Long-term Debt *(in millions)*	YTD 2018	Remaining 2018	2019	2020	2018-2020
Alabama Power	$ -	$400	$ -	$350	$750
Georgia Power[2]	-	725	1,800	1,850	4,375
Gulf Power	-	-	----------------Subject to closing----------------		
Mississippi Power	600	-	-	-	600
State-regulated Electrics	**$600**	**$1,125**	**$1,800**	**$2,200**	**$5,725**
Southern Power	-	-	-	-	-
Southern Company Gas Capital	-	-	-	300	300
Nicor	-	250	225	100	575
Holding Company[3]	-	-	500	500	1,000
Total Long-term Debt Issuance	**$600**	**$1,375**	**$2,525**	**$3,100**	**$7,600**

1. Amounts and timing are subject to change based upon numerous factors, including market conditions, regulatory approvals, the Southern Company system's capital requirements, available investment opportunities, and the completion of announced divestitures
2. May consist of senior notes, DOE draws, or a combination thereof
3. Does not include temporary funding expected to be repaid with proceeds from potential SPC wind tax-equity and/or pending Florida asset sales

WOLFE RESEARCH

UTILITIES & POWER

Regulateds – Market Underweight
Integrateds – Market Weight
IPPs – Market Overweight
Gas/Power Infrastructure – Market Overweight

August 8, 2018

SOUTHERN COMPANY

(SO US Equity – $46.88 – Underperform)

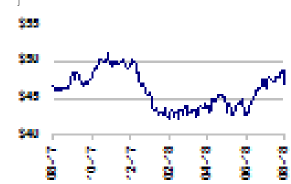
And I ran, I overran SO far away

- **Q2 beats, guidance raised but latest Vogtle overrun dominated.** SO's 2Q18 EPS of $0.80 beat consensus of $0.68, partly due to less dilution than anticipated given the FL asset sale and to a lesser degree weather and cost controls. SO raised its FY18 guidance to $2.95-3.05 from $2.80-2.95, but SO affirmed its 4-6% LT EPS growth target off its original guidance. SO disclosed a $1.1B pretax charge related to an incremental increase in the Vogtle cost estimate, which is now $8.4B (SO's share). SO commensurately raised its equity needs by $800M. The disclosure is less than a year after the GaPSC approved a $7.3B cost estimate and a timeline of Nov 2021/2022 for Units 3 and 4. SO stock lagged the UTY by nearly 400bp today and trails it by 275bp YTD. We continue to be cautious SO going into the peak construction period.
- **Not seeking recovery of $700M; co-owners vote key.** SO does not plan to seek recovery of $700M of the $1.1B; it may seek recovery of the remaining contingency in future. The disclosure triggers a vote possibly in Sept with SO's co-owners on whether to proceed; at least 90% of the owners must vote affirmatively. SO owns 45.7%, Oglethorpe Power 30%, MEAG Power 22.7%, Dalton Utilities 1.6%. Oglethorpe said it had a "conservative contingency" in its budget, suggesting it could absorb the higher cost. There still appears to be support from GA leaders and regulators. A GaPSC election for two seats is set for the fall, with Georgia Power planning to file a rate case in mid-July.
- **$800M more equity needed; slightly lower 2019-21E.** After the FL sale, SO said equity needs over 5 years would be $3B. Due to today's Vogtle write-down, SO now needs $3.8B. We project SO needs a little more to not degrade its credit metrics. SO is considering "investor-friendly" moves to limit equity issuances; its NJ and FL sales fetched solid valuations. Our 2018E rises $0.06, but our 2019-21E slightly lower on the incremental equity. See table.
- **Discount warranted on Vogtle overhang.** Our $45 PT reflects a two-turn discount to the avg utility P/E of 16x due to Vogtle execution risk.

Estimates / Valuation				
(US$)	**2018E**	**2019E**	**2020E**	**2021E**
EPS	$3.02	$2.99	$3.18	$3.25
Consensus	$2.92	$3.02	$3.13	$3.25
P/E	15.5x	15.7x	14.7x	14.4x
Dividend Yield	5.1%	5.3%	5.5%	5.6%

Trading and Fundamental Data	
Target Price	**$ 45**
Current Price	$ 46.88
52 Week Range	$ 42 - $ 54
Market Cap. ($MM)	$ 47,468
Enterprise Value ($MM)	$ 95,956
Share Out. (MM)	1,012.5
Dividend Yield	4.99%
Dividend Payout Ratio	79%
ROE	13.2%
Debt to Cap	66.3%
Avg Daily Vol (ooo)	4,709

Price Performance	YTD	LTM
SO US Equity	-3%	-5%
Utility Index	0%	-1%
S&P 500	7%	15%



Source: FactSet/Wolfe Research

Key Changes		
(US$)	**Current**	**Previous**
2018 EPS	$3.02	$2.96
2019 EPS	$2.99	$3.00
2020 EPS	$3.18	$3.21
2021 EPS	$3.25	$3.28

Steve Fleishman
(646) 582-9241
SFleishman@WolfeResearch.com

David Paz
(646) 582-9242
DPaz@WolfeResearch.com

WOLFE RESEARCH

Southern Company

August 8, 2018

Southern Company Snapshot

Exhibit 1: Financial Summary

Financial Summary	2018E	2019E	2020E	2021E
EPS	$3.02	$2.99	$3.18	$3.25
Diluted Shares Outstanding	1,015	1,045	1,064	1,078
Dividends Per Share	$2.40	$2.48	$2.56	$2.64
Dividend Yield	5.1%	5.3%	5.5%	5.6%
Dividend Payout Ratio	79%	83%	80%	81%
Equity Ratio	33%	37%	37%	37%
FFO/Net Debt (unadjusted)	15%	13%	13%	13%
Valuation Metrics				
P/E	15.5x	15.7x	14.7x	14.4x
Price/Book	1.9x	1.7x	1.6x	1.6x
Segment EPS				
Alabama Power	$0.90	$0.97	$1.06	$1.11
Georgia Power	1.46	1.58	1.64	1.64
Gulf Power	0.17			
Mississippi Power	0.12	0.13	0.13	0.13
Southern Power	0.32	0.22	0.24	0.24
Southern Company Gas	0.42	0.40	0.41	0.42
Parent/Other	(0.37)	(0.31)	(0.29)	(0.29)
Total EPS	**$3.02**	**$2.99**	**$3.18**	**$3.25**
Average Rate Base ($M)	$54,197	$54,226	$57,365	$60,616
Earned Return	10.9%	11.7%	11.7%	11.4%

Source: Wolfe Research Utilities & Power Research

Exhibit 2: Modeling Assumptions

Model Assumptions	2018E	2019E	2020E	2021E
Total Capital Spending ($M)				
Alabama Power	$2,200	$1,700	$1,700	$1,800
Georgia Power	3,500	3,767	3,367	3,067
Gulf Power	300			
Mississippi Power	200	200	200	200
Southern Company Gas	1,700	1,500	1,300	1,100
Other	300	300	100	0
Southern Power	400	100	100	100
Total Capex	**$8,600**	**$7,567**	**$6,767**	**$6,267**
Financings ($M)				
Total Equity Issued/(Repurchased)	$1,300	$950	$900	$500
Total Debt Issued/(Repurchased)	1,549	(2,750)	1,849	1,856

Source: Wolfe Research Utilities & Power Research

Company description

Atlanta-based SO has three electric utility subsidiaries: AL Power, GA Power, and MS Power. SO's Southern Co Gas segment includes gas LDCs and pipeline investments. The electric and gas utilities will make up much of LT earnings and have about 9M customers. The largely renewable-focused nonutility Southern Power business and midstream pipeline investments make up the rest of LT EPS growth. SoPower owns and operates over 9,000MWs of gas-fired plants and around 3,000MW of solar and wind plants, mostly under LT contracts.

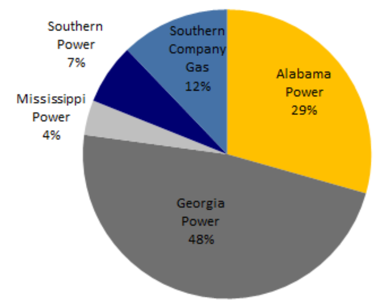
Investment Thesis

SO sees 4-6% EPS growth through 2022, driven mostly by investments in its electric utility and gas LDC segment. SO was negatively impacted from tax reform given its holdco debt, but the company secured higher allowed equity ratios in most of its utility segment and sold its FL assets for solid valuations to mitigate equity needs. But its large nuclear project at Vogtle is under construction and has continually suffered from overruns/delays. SO's yield is above the regulated average, and the dividend is expected grow at $0.08/yr.

Valuation

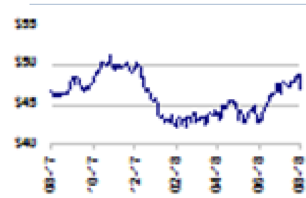
Our PT is based on a 2-turn discount P/E multiple to our regulated average of 16x our 2020E, due to uncertainty over large projects. Upsides / downsides to our outlook are 1) higher/lower sales growth; 2) delays in large projects; 3) more/less investments than in capital plan; and 4) more/less growth in gas pipelines.

Exhibit 3: 2019E EPS by Segment



Source:Wolfe Research Utilities & Power Research

Exhibit 4: Performance Chart



Source: Bloomberg

WOLFE RESEARCH

Southern Company

August 8, 2018

Regulated comps table

Exhibit 5: Regulated comps

Company Name	Ticker	Current Price	Current Shares	Mkt Cap ($M)	P/E 2018E	2019E	2020E	2021E	Div Yield	Div Growth (E)	Payout Ratio	Price/ Book	Equity Ratio
Alliant Energy	LNT	$42.47	234	$9,928	19.8x	18.8x	17.8x	16.7x	3.2%	6.0%	62%	2.3x	46%
Ameren	AEE	62.60	243	15,187	19.3x	19.1x	17.7x	16.5x	2.9%	3.5%	56%	2.1x	47%
American Electric	AEP	70.93	493	34,964	18.4x	17.4x	16.4x	15.4x	3.5%	5.0%	64%	1.9x	45%
Avangrid	AGR	50.18	309	15,506	21.7x	19.9x	17.7x	16.5x	3.4%	2.5%	75%	1.0x	73%
CMS Energy	CMS	48.21	283	13,656	20.6x	19.3x	18.0x	16.9x	3.0%	7.0%	61%	2.9x	30%
Con Edison	ED	78.51	311	24,425	18.4x	17.6x	17.0x	16.5x	3.6%	3.6%	67%	1.6x	48%
DTE Energy	DTE	110.16	181	19,992	18.3x	17.9x	16.9x	15.8x	3.2%	7.0%	59%	2.0x	44%
Duke Energy	DUK	80.43	712	57,295	17.0x	16.0x	15.1x	14.4x	4.6%	4.0%	78%	1.3x	43%
Edison International	EIX	67.29	326	21,924	16.2x	14.9x	14.1x	13.2x	3.6%	11.0%	58%	1.9x	49%
Evergy	EVRG	56.37	271	15,293	21.0x	18.9x	17.3x	16.6x	2.8%	7.0%	60%	NA	NA
Eversource Energy	ES	60.95	317	19,314	18.9x	17.3x	16.5x	15.6x	3.3%	5.8%	63%	1.7x	46%
FirstEnergy	FE	36.00	57	2,039	16.2x	15.6x	14.8x	13.9x	4.8%	0.0%	78%	1.5x	43%
NiSource	NI	26.47	317	8,391	20.7x	19.5x	18.2x	17.0x	2.9%	6.0%	61%	1.9x	40%
PG&E	PCG	44.09	517	22,801	11.6x	10.8x	10.5x	9.8x	0.0%	0.0%	0%	1.2x	50%
Pinnacle West	PNW	80.88	112	9,056	18.1x	17.3x	16.5x	15.7x	3.4%	6.0%	62%	1.8x	51%
Portland General	POR	45.84	89	4,091	19.7x	19.1x	17.8x	16.9x	3.2%	7.0%	62%	1.7x	50%
PPL Corp.	PPL	28.57	700	19,987	12.2x	11.7x	11.2x	10.7x	5.7%	4.0%	70%	1.8x	34%
Southern Company	**SO**	**46.88**	**1,013**	**47,468**	**15.5x**	**15.7x**	**14.7x**	**14.4x**	**5.1%**	**3.5%**	**79%**	**1.9x**	**34%**
WEC Energy Group	WEC	66.59	316	21,011	20.1x	19.2x	18.0x	17.0x	3.3%	6.0%	67%	2.2x	46%
Xcel Energy	XEL	47.32	509	24,090	19.3x	18.1x	17.2x	16.2x	3.2%	6.0%	62%	2.1x	42%
Average					**18.1x**	**17.2x**	**16.2x**	**15.3x**	**3.4%**	**5.6%**	**62%**	**1.8x**	**45%**

Source: Wolfe Research

WOLFE RESEARCH

Southern Company

August 8, 2018

DISCLOSURE SECTION

Analyst Certification:

The analyst of Wolfe Research, LLC primarily responsible for this research report whose name appears first on the front page of this research report hereby certifies that (i) the recommendations and opinions expressed in this research report accurately reflect the research analysts' personal views about the subject securities or issuers and (ii) no part of the research analysts' compensation was, is or will be directly or indirectly related to the specific recommendations or views contained in this report.

Important Disclosures:

Price Chart with Ratings and Target Price History

Note: OP = Outperform; PP = Peer Perform; UP = Underperform

Wolfe Research, LLC Fundamental Valuation Methodology:

Company:	Fundamental Valuation Methodology:
SO US Equity	P/E

Wolfe Research, LLC Fundamental Recommendation, Rating and Target Price Risks:

Company:	Risks That May Impede Achievement of the Recommendation, Rating or Target Price:
SO US Equity	unfavorable regulatory outcomes and execution risk on Vogtle nuclear plant

Wolfe Research, LLC Research Disclosures:

Company:	Research Disclosures:
SO US Equity	None

Other Disclosures:

Wolfe Research, LLC Fundamental Stock Ratings Key:

Outperform (OP):	The security is projected to outperform analyst's industry coverage universe over the next 12 months.
Peer Perform (PP):	The security is projected to perform approximately in line with analyst's industry coverage universe over the next 12 months.
Underperform (UP):	The security is projected to underperform analyst's industry coverage universe over the next 12 months.

Wolfe Research, LLC uses a relative rating system using terms such as Outperform, Peer Perform and Underperform (see definitions above). Please carefully read the definitions of all ratings used in Wolfe Research, LLC research. In addition, since Wolfe Research, LLC research contains more complete information concerning the analyst's views, please carefully read Wolfe Research, LLC research in its entirety and not infer the contents from the ratings alone. In all cases, ratings (or research) should not be used or relied upon as investment advice and any investment decisions should be based upon individual circumstances and other considerations.

Wolfe Research, LLC Sector Weighting System:

Market Overweight (MO):	Expect the industry to outperform the primary market index for the region (S&P 500 in the U.S.) by at least 10% over the next 12 months.
Market Weight (MW):	Expect the industry to perform approximately in line with the primary market index for the region (S&P 500 in the U.S.) over the next 12 months.
Market Underweight (MU):	Expect the industry to underperform the primary market index for the region (S&P 500 in the U.S.) by at least 10% over the next 12 months.

Wolfe Research, LLC Distribution of Fundamental Stock Ratings (As of June 30, 2018):

Outperform:	43%	2% Investment Banking Clients
Peer Perform:	49%	3% Investment Banking Clients
Underperform:	8%	5% Investment Banking Clients

Wolfe Research, LLC does not assign ratings of Buy, Hold or Sell to the stocks it covers. Outperform, Peer Perform and Underperform are not the respective equivalents of Buy, Hold and Sell but represent relative weightings as defined above. To satisfy regulatory requirements, Outperform has been designated to correspond with Buy, Peer Perform has been designated to correspond with Hold and Underperform has been designated to correspond with Sell.

Wolfe Research Securities and Wolfe Research, LLC have adopted the use of Wolfe Research as brand names. Wolfe Research Securities, a member of FINRA (www.finra.org) is the broker-dealer affiliate of Wolfe Research, LLC and is responsible for the contents of this material. Any analysts publishing these reports are dually employed by Wolfe Research, LLC and Wolfe Research Securities.

The content of this report is to be used solely for informational purposes and should not be regarded as an offer, or a solicitation of an offer, to buy or sell a security, financial instrument or service discussed herein. Opinions in this communication constitute the current judgment of the author as of the date and time of this report and are subject to change without notice. Information herein is believed to be reliable but Wolfe Research and its affiliates, including but not limited to Wolfe Research Securities, makes no representation that it is complete or accurate. The information provided in this communication is not designed to replace a recipient's own decision-making processes for assessing a proposed transaction or investment involving a financial instrument discussed herein. Recipients are encouraged to seek financial advice from their financial advisor regarding the appropriateness of investing in a security or financial instrument referred to in this report and should understand that statements regarding the future performance of the financial instruments or the securities referenced herein may not be realized. Past performance is not indicative of future results. This report is not intended for distribution to, or use by, any person or entity in any location where such distribution or use would be contrary to applicable law, or which would subject Wolfe Research, LLC or any affiliate to any registration requirement within such location. For additional important disclosures, please see www.WolfeResearch.com/Disclosures.

The views expressed in Wolfe Research, LLC research reports with regards to sectors and/or specific companies may from time to time be inconsistent with the views implied by inclusion of those sectors and companies in other Wolfe Research, LLC analysts' research reports and modeling screens. Wolfe Research communicates with clients across a variety of mediums of the clients' choosing including emails, voice blasts and electronic publication to our proprietary website.

This report is limited for the sole use of clients of Wolfe Research. Authorized users have received an encryption decoder which legislates and monitors the access to Wolfe Research, LLC content. Any distribution of the content produced by Wolfe Research, LLC will violate the understanding of the terms of our relationship.

WOLFE RESEARCH

UTILITIES & POWER

Regulateds – Market Underweight
Integrateds – Market Weight
IPPs – Market Overweight
Gas/Power Infrastructure – Market Overweight

November 7, 2018

SOUTHERN COMPANY

(SO US Equity – $47.01 – Underperform)

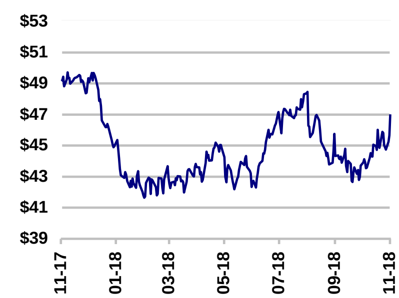
Mama, just killed a Man-kato

- **Q3 beats, guidance higher, equity needs after Mankato sale reduced.** SO's 3Q18 EPS of $1.14 beat consensus of $1.08, due to regulatory outcomes and weather. SO pointed to the top end of its $2.95-3.05 FY18 guidance and affirmed its 4-6% LT EPS growth target off original guidance of $2.80-2.95. SO announced the sale of its unregulated Mankato CC for $650M, implying $0.01 of accretion and an $855/kW valuation using the plant's capacity expansion. As it has done with other asset sales over the last year, SO will use the proceeds to reduce equity needs. The GA PSC election results appear constructive. Mankato and the elections, coupled with no new surprises in Vogtle, sent SO stock 200bp higher today vs the UTY, but SO trails it by 600bp YTD. We continue to be cautious on the stock going into Vogtle peak construction period.
- **Vogtle productivity improving, eyeing internal targets.** SO pointed to metrics that show productivity improvement, and it's on track to meet the commitment dates of Nov 2021/22 for the two units. But to meet its internal accelerated targets of Apr 2021/22, SO needs to attract more skilled labor and increase weekly earned hours. On 11/30, the GaPSC Staff and independent monitor will file testimony on SO's progress and outlook; they have tended to be less optimistic but more accurate on SO's ability to meet past schedules.
- **GA PSC election results constructive.** One PSC incumbent (R) was reelected, defeating a challenger who criticized SO and Vogtle. Another incumbent (R) is headed for a runoff. Still, investors were concerned of the two Dem challengers, given comments on Vogtle as Georgia Power files a rate case in July. Even if the Dem wins, we see stability at the PSC.
- **$2.4B equity needs through 2022.** With all the asset sales (Gulf Power, Mankato, etc.), use of tax equity and the minority sale of Southern Power's book, SO sees remaining equity needs of $2.4B (vs $7.0B originally). SO's internal equity programs have $500-600M/yr capacity.
- **Raise PT by $1; discount for Vogtle.** Our $46 PT reflects a two-turn discount to the avg utility P/E of 16.5x (previously 16.0x) due to Vogtle execution risk.

Estimates / Valuation				
(US$)	2018E	2019E	2020E	2021E
EPS	$3.05	$2.99	$3.18	$3.25
Consensus	$3.01	$3.01	$3.10	$3.23
P/E	15.4x	15.7x	14.8x	14.4x
Dividend Yield	5.1%	5.3%	5.4%	5.6%

Trading and Fundamental Data	
Target Price	**$ 46**
Current Price	$ 47.01
52 Week Range	$ 42 - $ 53
Market Cap. ($MM)	$ 47,675
Enterprise Value ($MM)	$ 97,365
Share Out. (MM)	1,014.1
Dividend Yield	5.02%
Dividend Payout Ratio	79%
ROE	14.4%
Debt to Cap	66.3%
Avg Daily Vol (ooo)	5,993

Price Performance	YTD	LTM
SO US Equity	-2%	-9%
Utility Index	4%	-1%
S&P 500	5%	8%



Source: FactSet/Wolfe Research

Key Changes		
(US$)	Current	Previous
Price target	$46	$45
2018 EPS	$3.05	$3.02

Steve Fleishman
(646) 582-9241
SFleishman@WolfeResearch.com

David Paz
(646) 582-9242
DPaz@WolfeResearch.com

WOLFE RESEARCH

Southern Company

November 7, 2018

Southern Company Snapshot

Exhibit 1: Financial Summary

Financial Summary	2018E	2019E	2020E	2021E
EPS	$3.05	$2.99	$3.18	$3.25
Diluted Shares Outstanding	1,014	1,041	1,054	1,066
Dividends Per Share	$2.40	$2.48	$2.56	$2.64
Dividend Yield	5.1%	5.3%	5.4%	5.6%
Dividend Payout Ratio	79%	83%	81%	81%
Equity Ratio	33%	37%	37%	37%
FFO/Net Debt (unadjusted)	15%	13%	13%	13%
Valuation Metrics				
P/E	15.4x	15.7x	14.8x	14.4x
Price/Book	1.9x	1.7x	1.7x	1.6x
Segment EPS				
Alabama Power	$0.92	$0.98	$1.06	$1.11
Georgia Power	1.48	1.58	1.66	1.66
Gulf Power	0.17			
Mississippi Power	0.12	0.13	0.13	0.13
Southern Power	0.32	0.22	0.23	0.23
Southern Company Gas	0.40	0.42	0.41	0.42
Parent/Other	(0.36)	(0.33)	(0.31)	(0.31)
Total EPS	**$3.05**	**$2.99**	**$3.18**	**$3.25**
Average Rate Base ($M)	$54,197	$54,226	$57,365	$60,616
Earned Return	11.1%	11.7%	11.7%	11.4%

Source: Wolfe Research Utilities & Power Research

Exhibit 2: Modeling Assumptions

Model Assumptions	2018E	2019E	2020E	2021E
Total Capital Spending ($M)				
Alabama Power	$2,200	$1,700	$1,700	$1,800
Georgia Power	3,500	3,767	3,367	3,067
Gulf Power	300			
Mississippi Power	200	200	200	200
Southern Company Gas	1,700	1,500	1,300	1,100
Other	300	300	100	0
Southern Power	400	100	100	100
Total Capex	**$8,600**	**$7,567**	**$6,767**	**$6,267**
Financings ($M)				
Total Equity Issued/(Repurchased)	$1,200	$600	$600	$600
Total Debt Issued/(Repurchased)	1,649	(2,850)	2,149	1,656

Source: Wolfe Research Utilities & Power Research

Company description

Atlanta-based SO has three electric utility subsidiaries: AL Power, GA Power, and MS Power. SO's Southern Co Gas segment includes gas LDCs and pipeline investments. The electric and gas utilities will make up much of LT earnings and have about 9M customers. The largely renewable-focused nonutility Southern Power business and midstream pipeline investments make up the rest of LT EPS growth. SoPower owns and operates over 9,000MWs of gas-fired plants and around 3,000MW of solar and wind plants, mostly under LT contracts.

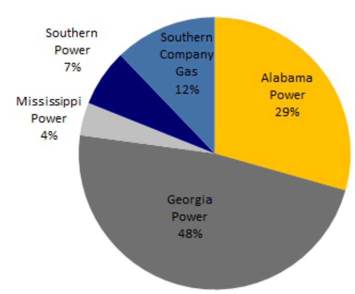
Investment Thesis

SO sees 4-6% EPS growth through 2022, driven mostly by investments in its electric utility and gas LDC segment. SO was negatively impacted from tax reform given its holdco debt, but the company secured higher allowed equity ratios in most of its utility segment and sold its FL assets for solid valuations to mitigate equity needs. But its large nuclear project at Vogtle is under construction and has continually suffered from overruns/delays. SO's yield is above the regulated average, and the dividend is expected grow at $0.08/yr.

Valuation

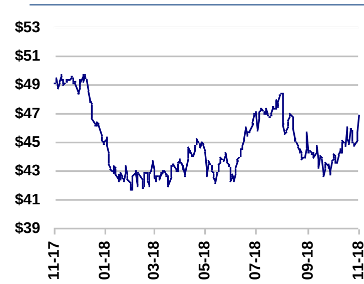
Our PT is based on a 2-turn discount P/E multiple to our regulated average of 16.5x our 2020E, due to uncertainty over large projects. Upsides / downsides to our outlook are 1) higher/lower sales growth; 2) delays in large projects; 3) more/less investments than in capital plan; and 4) more/less growth in gas pipelines.

Exhibit 3: 2019E EPS by Segment



Source:Wolfe Research Utilities & Power Research

Exhibit 4: Performance Chart



Source: Bloomberg

WOLFE RESEARCH

Southern Company

November 7, 2018

Regulated comps table

Exhibit 5: Regulated comps

Company Name	Ticker	Current Price	Current Shares	Mkt Cap ($M)	P/E 2018E	P/E 2019E	P/E 2020E	P/E 2021E	Div Yield	Div Growth (E)	Payout Ratio	Price/ Book	Equity Ratio
Alliant Energy	LNT	$43.83	236	$10,341	20.4x	19.4x	18.3x	17.3x	3.1%	6.0%	62%	2.3x	46%
Ameren	AEE	66.04	244	16,116	19.5x	20.2x	18.7x	17.4x	2.9%	3.5%	56%	2.1x	47%
American Electric	AEP	75.13	493	37,047	19.1x	18.3x	17.3x	16.2x	3.6%	6.0%	68%	1.9x	45%
Avangrid	AGR	48.85	309	15,095	21.3x	19.4x	17.3x	16.0x	3.6%	2.5%	77%	1.0x	71%
CMS Energy	CMS	49.63	283	14,062	21.2x	19.9x	18.6x	17.4x	2.9%	7.0%	61%	3.0x	30%
Con Edison	ED	78.26	311	24,372	18.2x	17.6x	17.2x	16.5x	3.7%	3.6%	67%	1.5x	48%
DTE Energy	DTE	116.14	182	21,129	18.7x	18.9x	17.8x	16.7x	3.0%	7.0%	57%	2.1x	44%
Duke Energy	DUK	84.70	713	60,391	17.8x	16.9x	15.9x	15.2x	4.4%	4.0%	78%	1.4x	43%
Edison International	EIX	69.70	326	22,709	16.7x	15.4x	14.6x	13.7x	3.5%	11.0%	58%	1.9x	49%
Evergy	EVRG	57.18	272	15,535	21.3x	19.1x	17.6x	16.8x	3.2%	7.0%	68%	1.4x	49%
Eversource Energy	ES	64.38	317	20,401	19.8x	18.3x	17.4x	16.4x	3.1%	5.8%	62%	1.8x	46%
FirstEnergy	FE	37.75	57	2,138	16.4x	16.3x	15.5x	14.6x	4.6%	0.0%	75%	1.5x	43%
NiSource	NI	26.16	363	9,504	20.4x	19.3x	18.0x	16.8x	3.0%	6.0%	61%	1.9x	40%
PG&E	PCG	48.80	519	25,311	12.8x	11.9x	11.1x	10.4x	0.0%	0.0%	0%	1.3x	50%
Pinnacle West	PNW	85.39	112	9,561	19.1x	17.8x	17.0x	16.1x	3.5%	6.0%	66%	1.9x	51%
Portland General	POR	46.36	89	4,137	20.0x	19.1x	18.0x	17.3x	3.1%	7.0%	62%	1.7x	50%
PPL Corp.	PPL	31.36	720	22,570	13.3x	12.9x	12.2x	11.7x	5.2%	4.0%	70%	1.9x	34%
SCANA	SCG	40.65	143	5,797	17.7x	17.8x	16.8x	16.3x	1.2%	0.0%	22%	1.1x	43%
Southern Company	**SO**	**47.01**	**1,014**	**47,675**	**15.4x**	**15.7x**	**14.8x**	**14.5x**	**5.1%**	**3.5%**	**79%**	**2.0x**	**34%**
WEC Energy Group	WEC	68.78	316	21,702	20.7x	19.8x	18.6x	17.5x	3.2%	6.0%	67%	2.2x	46%
Xcel Energy	XEL	49.50	514	25,436	20.1x	19.0x	17.8x	16.9x	3.1%	6.0%	62%	2.1x	42%
Average					**18.6x**	**17.8x**	**16.7x**	**15.8x**	**3.3%**	**5.6%**	**61%**	**1.8x**	**45%**

Source: Wolfe Research

WOLFE RESEARCH

Southern Company

November 7, 2018

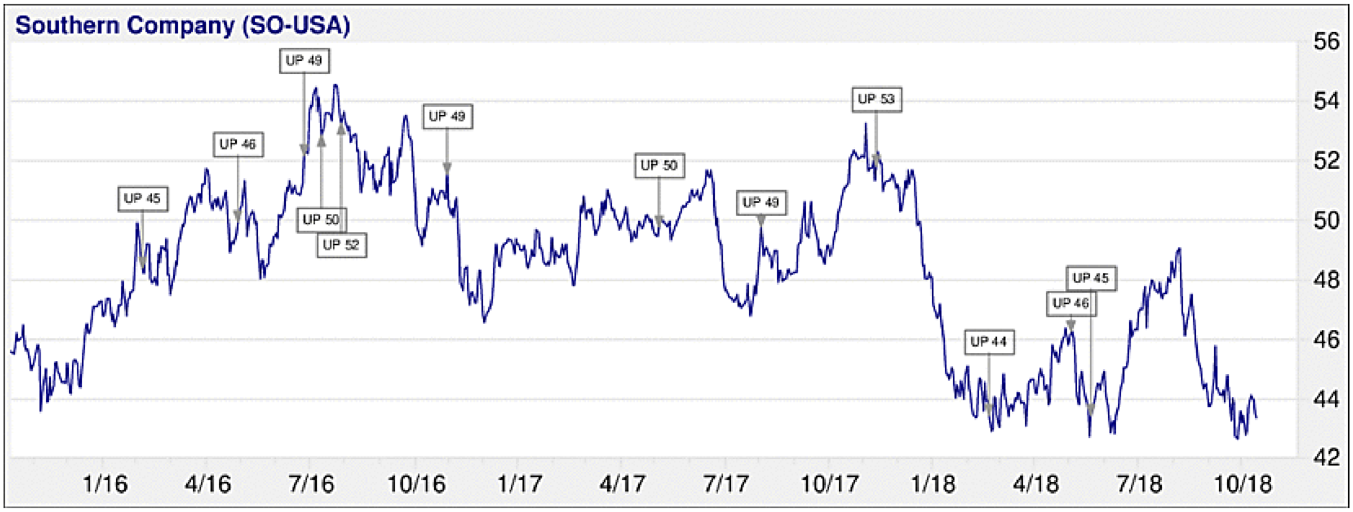
DISCLOSURE SECTION

Analyst Certification:

The analyst of Wolfe Research, LLC primarily responsible for this research report whose name appears first on the front page of this research report hereby certifies that (i) the recommendations and opinions expressed in this research report accurately reflect the research analysts' personal views about the subject securities or issuers and (ii) no part of the research analysts' compensation was, is or will be directly or indirectly related to the specific recommendations or views contained in this report.

Important Disclosures:

Price Chart with Ratings and Target Price History



Note: OP = Outperform; PP = Peer Perform; UP = Underperform

Wolfe Research, LLC Fundamental Valuation Methodology:

Company:	Fundamental Valuation Methodology:
SO US Equity	P/E

Wolfe Research, LLC Fundamental Recommendation, Rating and Target Price Risks:

Company:	Risks That May Impede Achievement of the Recommendation, Rating or Target Price:
SO US Equity	unfavorable regulatory outcomes and execution risk on Vogtle nuclear plant

Wolfe Research, LLC Research Disclosures:

Company:	Research Disclosures:
SO US Equity	None

Other Disclosures:

Wolfe Research, LLC Fundamental Stock Ratings Key:

Outperform (OP):	The security is projected to outperform analyst's industry coverage universe over the next 12 months.
Peer Perform (PP):	The security is projected to perform approximately in line with analyst's industry coverage universe over the next 12 months.
Underperform (UP):	The security is projected to underperform analyst's industry coverage universe over the next 12 months.

Wolfe Research, LLC uses a relative rating system using terms such as Outperform, Peer Perform and Underperform (see definitions above). Please carefully read the definitions of all ratings used in Wolfe Research, LLC research. In addition, since Wolfe Research, LLC research contains more complete information concerning the analyst's views, please carefully read Wolfe Research, LLC research in its entirety and not infer the contents from the ratings alone. In all cases, ratings (or research) should not be used or relied upon as investment advice and any investment decisions should be based upon individual circumstances and other considerations.

Wolfe Research, LLC Sector Weighting System:

Market Overweight (MO):	Expect the industry to outperform the primary market index for the region (S&P 500 in the U.S.) by at least 10% over the next 12 months.
Market Weight (MW):	Expect the industry to perform approximately in line with the primary market index for the region (S&P 500 in the U.S.) over the next 12 months.
Market Underweight (MU):	Expect the industry to underperform the primary market index for the region (S&P 500 in the U.S.) by at least 10% over the next 12 months.

Wolfe Research, LLC Distribution of Fundamental Stock Ratings (As of September 30, 2018):

Outperform:	44%	3% Investment Banking Clients
Peer Perform:	44%	3% Investment Banking Clients
Underperform:	12%	3% Investment Banking Clients

Southern Company

Southern Power Reaches Agreement to Sell the Nacogdoches Generating Facility

April 22, 2019

Southern Power, a leading U.S. wholesale energy provider and subsidiary of Southern

Company, today announced that it has entered into an agreement to sell the Nacogdoches Generating Facility to Austin Energy for $460 million.

Southern Power began commercial operation of the Nacogdoches Generating Facility in Sacul, Texas, in 2012. The 115-megawatt (MW) plant serves electricity needs in Austin, Texas under a long-term power purchase agreement with Austin Energy.

“The Nacogdoches Generating Facility is one of the largest wood-fired biomass plants in the United States and has been a part of Southern Power’s generation fleet since 2012, demonstrating strong operating performance,” said Southern Power President and CEO, Mark Lantrip. “This transaction provides benefits to Southern Power and offers Austin Energy the opportunity to own a significant regional energy resource. Southern Power will continue providing clean, safe, reliable and affordable wholesale energy to customers with a diverse group of assets that includes one of the largest carbon-free renewable energy portfolios in the United States.”

The $460 million purchase price is subject to customary closing adjustments. The transaction is expected to close in mid-2019, subject to customary closing conditions. Proceeds will be used to strengthen the balance sheet of Southern Company, help meet projected equity needs and further de-risk financing plans.

Barclays is serving as the financial advisor and Baker Botts is serving as primary legal counsel to Southern Power.

About Southern Power

Southern Power, a subsidiary of Southern Company, is a leading U.S. wholesale energy provider meeting the electricity needs of municipalities, electric cooperatives, investor-owned utilities, and commercial and industrial customers. Southern Power and its subsidiaries own 48 facilities operating or under construction in 11 states with more than 11,300 MW of generating capacity in Alabama, California, Georgia, Kansas, Maine, Minnesota, Nevada, New Mexico, North Carolina, Oklahoma and Texas.

More...

Newsroom

Stay up to date with our latest projects and insights.

News Releases

Find news for the media about Southern Company and its subsidiaries.

Connect With Us

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NORTH DAKOTA

NORTHERN STATES POWER COMPANY
ADVANCE PRUDENCE – ACQUISITION OF
THE 375 MW MANKATO ENERGY
CENTER AND THE 345 MW MANKATO
ENERGY CENTER II

CASE NO. PU-18-403

VERIFICATION

STATE OF MINNESOTA)
)SS.
COUNTY OF HENNEPIN

Philip Joseph Martin, being first duly sworn on oath, deposes and says that she is the Director of Regulatory and Strategic Analysis for Applicant Northern States Power Company, a Minnesota corporation, in the above-captioned matter, that the testimony submitted in the above-captioned matter under her name was prepared under her direction, that she knows the contents thereof, and that the same is true and correct to the best of her knowledge and belief.

Philip Joseph Martin

Subscribed and sworn to before me on this 20th day of June, 2019

James G. Erickson
Notary Public
Minnesota
My Commission Expires January 31, 2024

Notary Public
My Commission expires: January 31, 2024