

BEFORE THE
ARKANSAS PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE PETITION)
OF ENTERGY ARKANSAS, INC. FOR A)
DECLARATORY ORDER REGARDING A) DOCKET NO. 15-014-U
PURCHASE POWER AGREEMENT FOR)
A RENEWABLE RESOURCE)

DIRECT TESTIMONY
OF
KURTIS W. CASTLEBERRY
DIRECTOR, RESOURCE PLANNING AND MARKET OPERATIONS

ON BEHALF OF
ENTERGY ARKANSAS, INC.

APRIL 14, 2015

Entergy Arkansas, Inc.
Direct Testimony of Kurtis W. Castleberry
Docket No. 15-014-U

1 **I. INTRODUCTION AND BACKGROUND**

2 Q. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

3 A. My name is Kurtis W. Castleberry. I am employed by Entergy Arkansas,
4 Inc. ("EAI" or the "Company") as Director, Resource Planning and Market
5 Operations. My business address is 425 West Capitol Avenue, Little
6 Rock, Arkansas 72201.

7

8 Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

9 A. I am testifying on behalf of EAI.

10

11 Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
12 PROFESSIONAL EXPERIENCE.

13 A. In 1982, I was awarded a Bachelor of Science Degree in General
14 Engineering from Arkansas Tech University. I also earned a Master's
15 Degree in International Business from Webster University in 1995. I have
16 completed additional studies at Columbia University Business School, the
17 University of Michigan Business School, the University of Pennsylvania
18 Wharton School of Business, and the Southeastern Electric Exchange
19 Middle Management School.

20 I joined Arkansas Power & Light Company, now EAI, in 1983 as a
21 Customer Service Engineer, where I was responsible for dealing with
22 EAI's largest commercial and industrial customers in areas of tariff
23 application, special pricing, energy management and distribution service.

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1 Since that time, I have held a variety of positions in customer service,
2 major account management, substation management, distribution and
3 transmission performance management and wholesale power marketing.

4 In 1986, I was selected to be an Account Executive for EAI with
5 responsibilities for marketing capacity and energy to EAI's largest
6 industrial customers through the application of new electro-technologies
7 and incentive pricing to encourage production expansion. I also managed
8 EAI's response to cogeneration and self-generation projects.

9 From 1989 to 1991, I held the position of Manager, District
10 Customer Service in Magnolia, Arkansas, where I was responsible for
11 EAI's customer service activities in the Magnolia area. I was named in
12 1991 to be Manager, Major Accounts in Pine Bluff, Arkansas. In this
13 position, I managed the customer service and marketing functions related
14 to EAI's largest customers in South Arkansas.

15 From 1993 to 1994, I was Manager, Major Accounts for Entergy
16 Louisiana, Inc. (now Entergy Louisiana, LLC or "ELL") and Entergy New
17 Orleans, Inc. ("ENOI") and was based in New Orleans, Louisiana. The
18 responsibilities for this position included managing the customer service
19 and marketing functions for the largest industrial and commercial
20 customers located in the southern part of ELL's service territory and all of
21 ENOI's service territory.

22 From 1994 to 1995, I held the position of Manager, Substation
23 Maintenance for ELL and ENOI. I was responsible for managing the

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1 resources and activities associated with operating and maintaining
2 substations located in ELL's and ENOI's service territories. From 1995 to
3 1996, I was Manager, System Performance and Analysis for Entergy
4 Services, Inc. ("ESI")¹ in Little Rock, Arkansas. In this position, I was
5 responsible for the development of the Entergy Operating Companies'
6 distribution and transmission performance measures and for performance
7 reporting and analysis.

8 In 1996, I rejoined EAI and served from 1996 to 1997 as Director,
9 Custom Accounts. In this role, I was responsible for marketing and
10 customer satisfaction levels for EAI's 300 largest retail customers.

11 In 1997, I became part of Entergy Corporation's non-utility
12 wholesale group, where I held the position of Senior Regional Marketing
13 Director for Entergy Wholesale Operations ("EWO") located in The
14 Woodlands, Texas until 2001. I was responsible for EWO's marketing
15 activities to wholesale customers in the Southeast Region of the U.S.

16 I rejoined EAI again in 2001, serving as EAI's Director, Generation
17 Supply and Contracts. In that position, I was responsible for managing
18 EAI's generation related issues and its wholesale contracts. In 2003, I
19 was named Director, Wholesale Business for ESI, where I was

¹ ESI is a subsidiary of Entergy Corporation that provides technical and administrative services to all the Operating Companies. The Entergy Operating Companies include EAI; Entergy Gulf States Louisiana, L.L.C.; ELL; Entergy Mississippi, Inc. ("EMI"); ENOI; and Entergy Texas, Inc.

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1 responsible for managing the wholesale power contracting activities for
2 the Operating Companies.

3 From 2006 to July 2009, I served as Director, Operating Committee
4 Support - EAI. In this role, I was responsible for providing EAI's President
5 and Chief Executive Officer ("CEO"), Hugh T. McDonald, support with
6 respect to his decision-making as a member of the Operating Committee.
7 I provided input and analysis to Mr. McDonald to assist him in carrying out
8 his responsibilities as an Operating Committee member, including those
9 responsibilities related to decisions involving resource planning and
10 resource acquisition.

11 I was named to my current position as EAI's Director, Resource
12 Planning in August 2009, which title changed in 2013 to include Market
13 Operations.

14

15 Q. PLEASE DESCRIBE YOUR CURRENT RESPONSIBILITIES.

16 A. I lead EAI's Resource Planning and Market Operations team, which is
17 responsible for the management and administration of EAI's resource
18 planning and operations activities as a member of the Midcontinent
19 Independent System Operation, Inc. ("MISO") regional transmission
20 organization ("RTO"). My team's duties include conducting resource
21 planning activities for EAI, including developing and implementing EAI's
22 integrated resource plan ("IRP") for meeting the load and energy
23 requirements of EAI's customers. As part of this role, I was the lead on

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1 the project that successfully implemented EAI's transition plans for
2 operations after EAI's participation in the Entergy System Agreement²
3 terminated, testifying before the Arkansas Public Service Commission
4 ("APSC" or the "Commission") in a number of proceedings regarding EAI's
5 resource needs for operating in a post-System Agreement environment.
6 In my position, I also serve as the Chairman of EAI's Resource Planning
7 and Operations Committee ("RPOC"), a committee that reviews and
8 provides advisory input and recommendations on a number of planning
9 and operational issues for EAI to the EAI President and CEO.

10

11 Q. IN WHAT PROCEEDINGS HAVE YOU PREVIOUSLY TESTIFIED
12 BEFORE A REGULATORY COMMISSION?

13 A. I have provided testimony before the Commission on resource planning
14 and operational issues in Docket Nos. 06-152-U, 06-101-U, 07-085-TF,
15 09-024-U, 09-084-U, 10-011-U, 11-069-U, 12-038-U, 12-069-U, 13-028-U,
16 and 14-118-U. I also have presented testimony before the Federal Energy
17 Regulatory Commission ("FERC") in Docket Nos. EL05-15-000 and EL04-
18 134-000.

19

20 Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

² EAI exited the Entergy System Agreement on December 19, 2013.

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1 A. The Company executed a proposed 20-year power purchase agreement
2 (the solar “PPA” or “Agreement”) with Stuttgart Solar, LLC (“Stuttgart
3 Solar”)³ on April 3, 2015, for a renewable energy resource. The Stuttgart
4 Solar Project (“Project”), which will be located near Stuttgart, Arkansas, is
5 planned to be an 81 MW solar photovoltaic project interconnecting to the
6 existing 115kV Ricuskey-Almyra transmission line.

7 My direct testimony supports the Company’s request for a finding
8 that the long-term⁴ 81 MW solar PPA is unique and in the public interest
9 and that the Company’s Application should be approved by the
10 Commission. The Company contends, pursuant to Act 1088 of 2015 (“Act
11 1088”), that 1) the cost of the PPA is reasonable and prudent; 2) the PPA
12 will provide savings for retail customers as compared to other generation
13 and power supply options over the term of the PPA; 3) the PPA is required
14 by public convenience and necessity; 4) the PPA is necessary to
15 supplement or replace the utility’s existing generation sources; and 5)
16 approval of the PPA is in the public interest.⁵ In addition, my testimony
17 supports the Company’s proposal that the costs incurred under the solar
18 PPA, together with an additional sum to be determined in this proceeding
19 pursuant to Act 1088 would be properly recovered through EAI’s Rate

³ Stuttgart Solar, LLC is an indirect wholly-owned subsidiary of NextEra Energy Capital Holdings, Inc., a subsidiary of NextEra Energy, Inc.

⁴ The Company considers a PPA greater than 5 years to be long-term.

⁵ Act 1088, new Ark. Code Ann. §23-18-108(c) (1)-(5).

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1 Schedule No. 38, Energy Cost Recovery Rider (“Rider ECR”). In my direct
2 testimony, I:

- 3 • provide an overview of EAI’s planning processes, including the
4 role of EAI’s RPOC and its President and CEO in that process;
- 5 • describe the need for renewable resources within EAI’s portfolio
6 of generating resources and some of the benefits of the Project
7 including the basis for the determination that this solar PPA
8 provides an attractive renewable energy resource to meet those
9 needs;
- 10 • explain various risks associated with this solar PPA and EAI’s
11 efforts to mitigate those risks; and
- 12 • explain that, pursuant to Act 1088, EAI is eligible to recover an
13 additional sum as determined in this proceeding and calculated
14 as an equitable sharing of savings between EAI and its retail
15 customers.

16

17 Q. WHAT OTHER WITNESSES ARE FILING TESTIMONY IN SUPPORT OF
18 EAI’S APPLICATION?

19 A. The following individuals are providing testimony on these topics:

20 1. H. Matt Wolf, Manager, Resource Planning, who describes the
21 following issues:

- 22 • the 2014 EAI Request for Proposals for Long-Term, Supply-
23 Side and Renewable Generation Resources (“2014 EAI RFP”),

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1 including the role of the Independent Monitor (“IM”), and other
2 protocols EAI utilized for the 2014 EAI RFP;

3 • the analyses conducted for proposals submitted in response to
4 the 2014 EAI RFP and how Stuttgart Solar’s renewable
5 proposal compared to other non-traditional proposals in the
6 2014 EAI RFP, resulting in a determination that Stuttgart Solar’s
7 proposal was an attractive renewable resource for EAI’s
8 customers; and

9 • a brief overview of the proposed solar PPA, including a review
10 of certain key provisions of that agreement.

11 2. Scott M. Celino, Manager, Fuel and Special Riders, ESI, who
12 describes the following issues:

- 13 • an overview of Rider ECR;
- 14 • an overview of the existing provision of Rider ECR that allows
15 for recovery of the variable costs of the solar PPA;
- 16 • the manner in which the solar PPA costs will be collected; and
- 17 • the proposed Rider ECR tariff changes requested as part of this
18 proceeding to collect the additional sum as proposed by EAI
19 under Act 1088.

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II. EAI'S RESOURCE PLANNING PROCESS

Q. PLEASE DESCRIBE EAI'S RESOURCE PLANNING ACTIVITIES.

A. EAI's Resource Planning and Market Operations team is responsible for identifying and addressing the Company's resource needs consistent with the provisions of MISO's Resource Adequacy Construct for each MISO planning year. The core elements of EAI's resource planning are: 1) a determination of the capability of the Company's current resources; 2) a forecast of the peak load and energy that the Company expects to serve over the planning horizon; and 3) a determination of the amount of additional resources that will be needed to meet the Company's load and energy requirements both reliably and cost-effectively. EAI's planning activities are also conducted consistent with the Commission's Resource Planning Guidelines for Electric Utilities ("Planning Guidelines").⁶ These Planning Guidelines require APSC-jurisdictional utilities to file an IRP at least every three years. EAI's most recent IRP was filed in 2012 ("2012 IRP").⁷ The 2012 IRP was unique in that it reflected the changes to the Company's planning processes resulting from its exit from the Entergy System Agreement. Accordingly, EAI's development of the 2012 IRP focused solely on the needs of EAI and its customers and was 1) developed by EAI's Resource Planning and Operations Staff, 2) reviewed

⁶ Docket No. 06-028-R, Order No. 6, Attachment 1.
⁷ See, Docket No. 07-016-U, EAI 2012 IRP (October 31, 2012).

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1 by EAI's RPOC, and 3) approved by EAI's President and CEO, Hugh T.
2 McDonald. The Company is currently in the process of developing its 2015
3 IRP and expects to file it with the Commission in the 4th quarter of this
4 year.

5 Given the uncertainty inherent in longer-term resource planning,
6 EAI's IRP provides the framework within which the Company will operate
7 over the next few years. The IRP, however, does not serve as a definitive
8 plan for identifying EAI's long-term generation needs and options for
9 meeting those needs. Rather, the IRP provides a snapshot of current
10 conditions and future expectations, both of which must routinely be
11 reevaluated to account for changing facts and circumstances and to
12 account for any new market opportunities.

13

14 Q. WHAT ARE THE ROLES OF THE RPOC AND EAI'S PRESIDENT AND
15 CEO IN EAI'S PLANNING PROCESSES?

16 A. The RPOC is an advisory body that provides input and recommendations
17 on EAI planning and operations issues to the President and CEO. The
18 RPOC conducts meetings, typically each month, that cover a variety of
19 topics affecting the planning and operation of EAI's generating assets, as
20 well as MISO transmission planning and market issues.

21 The RPOC has played an integral role in planning and operations
22 activities for EAI, including EAI's participation in the MISO markets, the
23 development of its annual transmission plan as part of the MISO

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1 Transmission Expansion Plan (“MTEP”) process, its congestion costs
2 hedging strategy in MISO, development of the Company’s energy
3 efficiency and demand-side management programs, and its strategy for
4 market solicitations for the acquisition of supply-side and demand-side
5 resources.

6

7 Q. AS PART OF THESE PLANNING ACTIVITIES, HAS EAI EVALUATED
8 LONG-TERM RENEWABLE RESOURCES?

9 A. Yes. EAI evaluated market opportunities to add long-term renewable
10 resources to the Company’s generation portfolio through the 2014 EAI
11 Request for Proposals for Long-Term, Supply-Side and Renewable
12 Generation Resources (“2014 EAI RFP”). Issuance of the 2014 EAI RFP
13 was consistent with the action plan in EAI’s 2012 IRP, which indicated that
14 the Company would consider economically-attractive renewable
15 generation, taking into account evolving mandates and an on-going
16 assessment of costs and availability.

17 At the August 21, 2013 RPOC meeting, my team presented EAI’s
18 needs for additional long-term resources. That presentation is provided as
19 Highly Sensitive EAI Direct Exhibit KWC-1 attached to my testimony. At
20 that meeting, the RPOC recommended, and Mr. McDonald approved, EAI
21 moving forward with developing and ultimately issuing in May 2014 the
22 2014 EAI RFP. In his testimony, Company witness H. Matt Wolf describes
23 the 2014 EAI RFP and EAI’s conclusion that the solar PPA will help

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1 address the Company's long-term resource needs at an economically-
2 attractive cost consistent with the requirements of Act 1088.⁸

3

4 Q. DID THE RPOC REMAIN INVOLVED IN THE 2014 EAI RFP?

5 A. Yes. The RPOC was updated on the status of the development of the
6 2014 EAI RFP, as well as its progress, once it was issued, at each of the
7 RPOC's monthly meetings. After proposals had been received and
8 evaluated, the RPOC was presented the evaluation results, and, in turn,
9 made recommendations to Mr. McDonald for his consideration and
10 decision.

11

12 **III. RENEWABLE RESOURCES AS PART OF EAI'S PORTFOLIO AND**
13 **BENEFITS OF THE SOLAR PROJECT**

14 Q. HAS THE GENERAL ASSEMBLY SET FORTH REQUIREMENTS TO
15 CONSIDER IN EVALUATING LONG TERM PPAS?

16 A. Yes. Pursuant to Act 1088, to enter into a PPA for more than five years,
17 the Commission must find:

18 (1) The cost of the power purchase agreement is reasonable and
19 prudent;

⁸ Act 1088, new Ark. Code Ann. §23-18-108(c)(1) and (2).

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- 1 (2) The power purchase agreement will provide savings for retail
2 customers as compared to other generation and power supply
3 options over the term of the power purchase agreement;
- 4 (3) The power purchase agreement is required by public
5 convenience and necessity;
- 6 (4) The power purchase agreement is necessary to supplement or
7 replace the utility's existing generation sources; and
- 8 (5) Approval of the power purchase agreement is in the public
9 interest.

10 While Mr. Wolf and I both discuss a variety of ways that this solar
11 PPA complies with the requirements in Act 1088, including that it is in the
12 public interest, my testimony primarily supports findings 3-5 above, and
13 Mr. Wolf's testimony primarily supports findings 1-2.

14

15 Q. WILL THE STUTTGART SOLAR PPA HELP MEET THE LONG TERM
16 NEEDS DESCRIBED IN EAI DIRECT EXHIBIT KWC-1?

17 A. Yes. As the Exhibit demonstrates, this solar PPA will help the Company
18 meet the long term needs of its customers consistent with the Company's
19 Resource Planning Principles.

20

21 Q. IS THE STUTTGART SOLAR PPA AN APPROPRIATE RESOURCE TO
22 SUPPLEMENT EAI'S EXISTING GENERATION IN ORDER TO
23 ADDRESS EAI'S CUSTOMERS' LONG-TERM RESOURCE NEEDS?

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1 A. Yes. Consistent with the requirements in new Ark Code Ann. §23-18-
2 108(c)(3) through (5), this solar PPA adds diversity to EAI's generation
3 portfolio and is an economically attractive, emission-free resource. It
4 provides EAI with a geographically well-suited resource for meeting the
5 Company's customers' long-term energy needs and would be the first
6 large-scale solar project constructed in Arkansas, which in and of itself is
7 expected to provide additional societal and economic development
8 benefits.

9

10 Q. PLEASE EXPLAIN HOW THIS RESOURCE WOULD PROVIDE
11 ADDITIONAL DIVERSITY TO EAI'S GENERATION PORTFOLIO.

12 A. Cost and performance parameters for generation technologies differ.
13 Diversity means utilizing a mix of generating technologies and fuel
14 sources within the generation portfolio. A diverse generation portfolio
15 mitigates risk by helping protect customers from fluctuations in the cost
16 and availability of the fuel needed to produce electricity. For example, a
17 diverse generation portfolio protects customers from supply disruptions
18 associated with particular fuel sources or delivery channels because
19 alternatives fuels are available within the portfolio. Similarly, fluctuations
20 in the price of particular fuels are less likely to affect total supply cost. The
21 effect of changes in the price of any one fuel is less significant because a
22 diverse generation portfolio relies on a variety of fuels and resource types,
23 the prices of which are not likely to move in perfect unison. Increases in

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1 the price of one fuel may be offset or mitigated by other fuels that exhibit
2 declining or stable costs.

3 In recent years, economic options for increasing diversity have
4 been limited. Among conventional resource alternatives, natural gas-fired
5 combined cycle gas turbine (“CCGT”) and combustion turbine (“CT”)
6 technologies have been the most attractive. Based upon production cost
7 modeling, these highly-efficient technologies are economically attractive
8 across a wide range of fuel and environmental assumptions. New nuclear
9 and advanced coal technologies do provide fuel price stability relative to
10 the price of natural gas that is used to fuel CCGTs and CTs. However
11 nuclear and advanced coal technologies are not attractive options relative
12 to natural gas-fired technology because of the current assumptions for the
13 level of required capital expenditures and on-going operating costs,
14 primarily driven by uncertainty around existing and pending environmental
15 requirements.

16 The remaining technology alternatives that can provide such
17 diversity are renewable energy resources. The proposed Project offers an
18 opportunity to further diversify EAI’s generation portfolio with the addition
19 of a resource that offers stable pricing while avoiding exposure to volatile
20 fuel prices as well as anticipated CO2 and other environmental emission-
21 based costs. Significantly, the 2014 EAI RFP economic evaluation for the
22 solar PPA indicates that these diversification benefits can be achieved
23 while lowering customer costs, which also supports the requirement in

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1 new Ark. Code Ann. §23-18-108(c)(2) that the PPA provide savings for
2 retail customers as compared to other power supply options over the term
3 of the agreement.

4

5 Q. WOULD YOU EXPLAIN THE SIGNIFICANCE OF AVOIDING
6 EXPOSURE TO POTENTIAL CO2 AND OTHER ENVIRONMENTAL
7 EMISSION-BASED COSTS?

8 A. Yes. As I mentioned above, nuclear and coal resources provide greater
9 fuel-price stability relative to natural gas resources, given the high
10 variability that natural gas prices have shown over the past two decades.
11 There are, however, future cost uncertainties associated with nuclear and
12 coal resources. For example, the environmental impacts of emissions
13 associated with coal-fired generation and the costs required to address
14 those impacts present issues that will need to be dealt with as additional
15 environmental regulations (e.g., CO2 emission regulations), may be
16 imposed upon such facilities. With respect to nuclear resources, while
17 they do not emit greenhouse gases, there are a host of safety and
18 compliance issues that may arise over the lives of these generation
19 facilities.

20 The Stuttgart Solar Project will not release emissions, will not
21 require significant volumes of water, and will not require pipelines or
22 railways to be constructed to bring fuel to the plant. From an
23 environmental cost risk, as well as an environmental impact standpoint,

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1 this solar PPA sourced from the Stuttgart Solar Project has a much lower
2 risk profile than nuclear and coal resources.

3

4 Q. YOU ALSO MENTIONED THAT THE DIVERSIFICATION BENEFITS OF
5 THE SOLAR PPA CAN BE ACHIEVED WHILE ALSO LOWERING
6 CUSTOMER COSTS. HAS EAI IDENTIFIED ECONOMIC BENEFITS
7 ASSOCIATED WITH THE SOLAR PPA?

8 A. Yes. Through the 2014 EAI RFP, the Company sought to identify
9 renewable energy proposals that are economically attractive for
10 customers. As discussed by Mr. Wolf and consistent with new Ark. Code
11 Ann. §23-18-108(c)(1) and (2), the solar PPA was the most attractive solar
12 proposal submitted in the 2014 EAI RFP, and EAI's analysis of that
13 resource indicates that it will provide economic benefits to customers over
14 the term of the PPA.

15

16 Q. DO RENEWABLE ENERGY RESOURCES HAVE BENEFITS BEYOND
17 THE ECONOMIC VALUE TYPICALLY DETERMINED BY PRODUCTION
18 COST MODELING?

19 A. Yes. As set forth in greater detail in EAI's Application the Arkansas
20 General Assembly has issued various legislative findings recognizing that
21 the value of renewable energy resources can extend beyond the specific
22 economic value that the resource provides to customers in the form of

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1 lower fuel and purchased energy costs.”⁹ Consequently, the statutes
2 impose an obligation on electric utilities subject to APSC jurisdiction to
3 consider renewable resources as part of their resource plans. This solar
4 PPA is for a renewable resource and is consistent with that obligation.

5 Further, as EAI noted in its action plan in the 2012 IRP regarding
6 renewable resources, “EAI will consider economically attractive renewable
7 generation, taking into account evolving mandates and an on-going
8 assessment of cost and availability.”¹⁰ This solar PPA is consistent with
9 this goal.

10

11 Q. WHY IS THE PROJECT’S GEOGRAPHIC LOCATION BENEFICIAL?

12 A. The geographic location of this facility is beneficial because it is physically
13 sited within Arkansas and is interconnected to the Company’s
14 transmission facilities, making it close to the customers that EAI serves.
15 In addition, its reliance on solar energy enhances this resource’s fit within
16 the Company’s generation portfolio, as a connection can be drawn
17 between the energy needs of EAI’s customers and the energy that this
18 solar PPA will provide. At a high level, customers’ energy needs are
19 highly influenced by the weather, which encompasses the amount of
20 sunlight in the Company’s service territory. The peak energy usage
21 periods arise in the summer months and typically are higher because

⁹ Ark. Code Ann. § 23-18-701 *et seq.* and § 23-18-502 (c)(1).

¹⁰ Docket No. 07-016-U, EAI 2012 IRP at 24 (October 31, 2012).

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1 weather conditions prompt customers to use more energy (e.g., higher air
2 conditioner use). With a resource that generates energy from the same
3 source that is causing those higher loads (*i.e.*, the sun), this solar PPA is
4 expected to provide energy at the times when EAI's customers' energy
5 needs are higher, and when one would expect power prices to be higher
6 as well. Mr. Wolf provides additional detail regarding locational benefits
7 associated with this resource in his testimony.

8

9 Q. WHAT IS YOUR UNDERSTANDING OF THE ECONOMIC
10 DEVELOPMENT BENEFITS THAT THE STUTTGART SOLAR PROJECT
11 MAY PROVIDE?

12 A. The bulk of construction on the Project is expected to begin in the Spring
13 of 2016, with engineering, procurement, and permitting occurring in 2015.
14 The Project is designed to qualify for the 30 percent federal investment tax
15 credit ("ITC") that will be used by the provider to offset its cost of
16 construction. From my conversations with Stuttgart Solar, I understand
17 that the Project is expected to have a positive economic impact on the
18 local economy. Specifically, Stuttgart Solar or its affiliate(s) have
19 represented to EAI that they expect to employ approximately 200 to 300
20 workers during the construction phase; generally, workers and vendors
21 employed by contractors are sourced locally. EAI further understands that
22 Stuttgart Solar estimates its sales and use tax contributions to the State of
23 Arkansas during the construction phase to be approximately \$8 million. I

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1 would think it is reasonable to conclude that local businesses such as
2 stores and hotels may also benefit indirectly from the infusion of
3 construction workers and activity during this time period. Further, Stuttgart
4 Solar has represented to EAI that during the 20-year operational life of the
5 Project, it will staff the facility with two to three full-time employees who will
6 be responsible for day-to-day operations and anticipates additional
7 opportunities for local businesses to contract to provide specialized
8 services on-site, such as vegetation control, minor maintenance work,
9 internal road improvements, and similar activities. In addition, the Project
10 is expected to contribute approximately \$400,000 to \$600,000 in annual
11 property taxes during its operational life.

12

13 Q. GIVEN THE BENEFITS YOU DESCRIBE ABOVE, IS THE STUTTGART
14 SOLAR PPA IN THE PUBLIC INTEREST?

15 A. Yes, I believe it is. As previously mentioned, the General Assembly has
16 found that renewable resources in general are in the public interest. In
17 addition to the economic benefits that Mr. Wolf addresses in his testimony,
18 this solar PPA addresses a long-term resource need for EAI's customers
19 and supplements the Company's existing generation portfolio by providing
20 locational and fuel diversity benefits and is, therefore, in the public
21 interest.

22

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1

2 **IV. RISKS ASSOCIATED WITH THE SOLAR PPA**

3 Q. ARE THERE RISKS ASSOCIATED WITH THIS AGREEMENT?

4 A. Yes, as there are with any commercial arrangement. As the Commission
5 has recognized previously, there are always risks with respect to resource
6 planning decisions, because the outcomes are always dependent upon
7 future facts and circumstances.¹¹ However, in this instance, the solar PPA
8 would be the first long-term PPA that EAI has executed in a number of
9 years, and accordingly, the manner in which those risks are allocated and
10 borne by the seller on one hand and the Company and its customers on
11 the other should be considered in the evaluation of whether the terms of
12 this solar PPA are in the public interest.

13 To understand the distinction, first consider a situation where EAI is
14 acquiring a generating facility, such as the Ouachita or Hot Spring facilities
15 that were acquired recently. In those cases, EAI owns the resources, and
16 consistent with the utility business model, the Company is provided the
17 opportunity to recover its costs of operating and maintaining the unit and
18 earn a fair and reasonable return of and on its capital investments. EAI
19 also must operate in a prudent manner and bears the risk for not doing so.

20

21 Q. HOW IS THE ARRANGEMENT DIFFERENT WITH THIS SOLAR PPA?

¹¹ Docket No. 03-028-U, Order No. 9 at (May 30, 2003).

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1 A. With this solar PPA, EAI is not earning a return of and on its invested
2 capital commensurate with the prudence relationship I mentioned above
3 with respect to the Company's owned generating assets. While Act 1088
4 does provide for recovery of an additional sum in the form of a
5 corresponding return on the PPA as would be allowed for an equivalent
6 investment in a power plant, EAI is not seeking an additional sum
7 calculated in that manner for this PPA. In contrast, the contractual
8 obligations of Stuttgart Solar are established in the contract, including
9 damages for failing to comply with its obligations. EAI's corresponding
10 rights and obligations (and therefore those of its customers) against
11 Stuttgart Solar for any failure to perform are as set forth under the
12 contract. Notably, any damages potentially owed by Stuttgart Solar under
13 the solar PPA may not be based upon the difference between the solar
14 PPA costs and the actual costs incurred for Stuttgart Solar's failure to
15 perform its obligations under the contract. Instead, the Company has
16 negotiated the most advantageous contractual terms that it could in order
17 to address such issues. Again, EAI is not seeking recovery of an
18 additional sum in this instance commensurate with bearing the risk of
19 holding customers harmless for any such potential failures by Stuttgart
20 Solar to perform. Rather, Stuttgart Solar would be responsible to
21 customers only insofar as the applicable contractual provisions of the solar
22 PPA would require. Mr. Wolf discusses several of the key contractual
23 terms.

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1

2 **V. COST RECOVERY SOUGHT BY EAI AND ADDITIONAL SUM**

3 Q. WHAT COST RECOVERY IS EAI SEEKING FROM THE COMMISSION
4 IN THIS PROCEEDING?

5 A. EAI is seeking approval to recover all costs of the solar PPA as well as an
6 additional sum in recognition of the unique characteristics of the solar
7 PPA, which is in the public interest.

8 This solar PPA is a long-term commitment that would be
9 undertaken by EAI for its customers. Due to the financial obligations
10 associated with the solar PPA, that the Company would assume, EAI
11 seeks the Commission's approval for its decision to enter into this
12 agreement. Indeed, it is for this reason that EAI included a provision in the
13 solar PPA that conditions the agreement on the Commission's approval,
14 including appropriate cost recovery.

15

16 Q. PLEASE DESCRIBE THE COST RECOVERY PROVIDED BY ACT 1088
17 AND THE COMPANY'S PROPOSAL FOR THIS SOLAR PPA?

18 A. Yes. First, Act 1088 authorizes the Commission to approve recovery of
19 costs over the term of a PPA that it finds to be in the public interest. As
20 discussed, the facts of this case support that this solar PPA is in the public
21 interest and, therefore, EAI should be permitted to recover the costs of the
22 PPA over the term of the agreement. These costs would include the
23 upgrade costs as described by Mr. Wolf.

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1 Second, Act 1088 authorizes the Commission to provide a utility
2 recovery of an additional sum recognizing the unique characteristics of a
3 PPA and the benefits that arise from such an agreement if the
4 Commission finds that the additional sum is in the public interest. In
5 determining the additional sum, Act 1088 provides that the Commission
6 may consider an equitable sharing of savings between the utility and
7 customers, with customers receiving no less than 75 percent of any
8 savings.

9

10 Q. IS EAI REQUESTING THAT THE COMMISSION ALLOW IT TO
11 RECOVER SUCH AN ADDITIONAL SUM?

12 A. Yes. Should the Commission approve the solar PPA, EAI requests that
13 the Commission also approve recovery of an additional sum representing
14 an equitable sharing of the savings with customers. By entering into this
15 solar PPA, EAI is taking steps to provide customers with an attractively
16 priced, emission-free renewable energy resource that offers a variety of
17 economic and environmental benefits, including bringing the first large-
18 scale solar project to the State of Arkansas as I mentioned previously.
19 The Company recognizes that, at this point in time, the benefits of this
20 solar PPA are more readily achievable by contracting with an entity that is
21 highly skilled at owning and operating this type of technology. Allowing
22 EAI to recover an additional sum for this solar PPA is not only in the public

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1 interest, but it will encourage the further pursuit of transactions of this type,
2 when these transactions can benefit customers.

3

4 Q. HOW DOES EAI PROPOSE TO CALCULATE THE ADDITIONAL SUM IN
5 THIS CASE?

6 A. EAI proposes to calculate the additional sum for this solar PPA based on
7 an equitable sharing of savings with customers consistent with Act 1088,
8 whereby customers receive 75 percent of the savings and the Company
9 receives 25 percent of the savings. As explained by Mr. Wolf, the
10 proposed solar PPA has a projected 2015 net present value (“NPV”)
11 savings of \$25 million in the reference case production cost scenario over
12 the term of the agreement. EAI’s 25 percent share of this NPV savings is
13 approximately \$6.25 million. A levelized additional sum of [REDACTED]
14 has been calculated that would provide the Company this amount over the
15 term of the PPA based on Stuttgart Solar’s expected energy production
16 and a start date for the PPA in December 2016. Like the PPA price of
17 [REDACTED], the additional sum would not change over the term of
18 the PPA. Assuming an energy usage of 1,000 kWh a month, the effect of
19 the additional sum on a residential customer’s bill will be less than 3 cents
20 per month. The values for the additional sum and the associated
21 customer bill effects are summarized in Highly Sensitive EAI Direct Exhibit
22 KWC-2.

23

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1 Q. HOW DOES EAI PROPOSE TO RECOVER THE ADDITIONAL SUM?

2 A. After receiving the Commission's approval of the additional sum in this
3 docket, EAI proposes to recover the additional sum pursuant to a
4 modification to Rider ECR. The Company is also proposing to recover the
5 cost of the solar PPA through Rider ECR. EAI witness Scott Celino
6 discusses the proposed modification to Rider ECR to provide for recovery
7 of the additional sum.

8

9 Q. WHAT ARE THE UNIQUE CHARACTERISTICS OF THE PPA THAT
10 SUPPORT A FINDING BY THE COMMISSION THAT INCLUDING THE
11 ADDITIONAL SUM IS IN THE PUBLIC INTEREST?

12 A. The unique characteristics of this solar PPA and the reasons why it is in
13 the public interest are discussed throughout the testimony filed in support
14 of the Application. I summarize the key points below, any one of which is
15 unique and in the public interest:

- 16
- 17 • The solar PPA provides a fixed price resource to EAI's
18 generation portfolio that provides the Company's customers with
19 additional fuel diversity and a hedge against fuel price
20 fluctuation and inflation;
 - 21 • The solar PPA provides EAI with an emissions-free resource,
22 which will provide the Company's customers with a hedge
against future environmental regulation uncertainty;

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- 1 • The solar PPA is designed to capture for EAI's customers the
2 value of the current 30 percent federal income tax credit; this
3 value is reflected in the PPA's attractive contract price, and the
4 30 percent ITC will expire at the end of 2016, providing a limited
5 remaining window of opportunity for Stuttgart Solar to qualify for
6 these credits;
- 7 • According to Stuttgart Solar, as the first large-scale solar project
8 in Arkansas, the Project is anticipated to provide a positive
9 economic contribution to the local and state economies and to
10 enhance Arkansas' competitiveness to attract new businesses;
11 and
- 12 • Critically, the solar PPA provides all of these benefits, while also
13 providing EAI's customers with an attractive source of energy
14 during the periods where customers' peak energy needs are the
15 highest, and a resource that is forecasted to provide savings to
16 customers over the term of the agreement in MISO's various
17 markets.

18

19 Q. WHY IS EAI REQUESTING A DECISION BY THE COMMISSION BY
20 SEPTEMBER 30, 2015?

21 A. As also described by Mr. Wolf and as I discuss further below, this date is
22 expected to provide Stuttgart Solar a reasonable opportunity to obtain the
23 30 percent ITC. The September 30, 2015 date allows Stuttgart Solar an

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1 adequate amount of time to complete construction of the Project such that
2 it will be eligible for these federal tax credits. The 30 percent ITC is
3 scheduled to expire at the end of 2016, and it is unknown whether it will be
4 extended. Additional details regarding the timing of approvals relative to
5 the Project are discussed by Mr. Wolf.
6

7 Q. PLEASE SUMMARIZE THE RELIEF EAI IS SEEKING IN THIS
8 PROCEEDING?

9 A. For the reasons stated below and supported in the accompanying
10 testimony, EAI is hereby requesting that, prior to September 30, 2015, the
11 Commission issue an order granting:

12 a. declaratory relief that the legislative findings set forth in the
13 Arkansas Clean Energy Development Act of 2012 and included
14 in the Utility Facility and Environmental and Economic
15 Protection Act, as well as the economics and efficiencies
16 associated with the agreement, support the conclusion that the
17 instant solar PPA is required by the public convenience and
18 necessity and in the public interest;

19 b. approval of the terms and conditions set forth in the solar PPA
20 as being in compliance with the requirements set forth in Act
21 1088;

22 c. approval of EAI's recovery of the costs of the PPA over the term
23 of the PPA through Rider ECR;

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1 d. approval of EAI's recovery of the costs of the upfront costs
2 representing an alternative to an increased energy cost under
3 the contract through Rider ECR and a return thereon through
4 base rates; and

5 e. approval of EAI's recovery through Rider ECR, as proposed to
6 be amended in this docket, of an additional sum, as determined
7 as a function of this docket, representing an equitable sharing of
8 the savings to retail customers.

9

10 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

11 A. Yes.

CERTIFICATE OF SERVICE

I, Laura Landreaux, do hereby certify that a copy of the foregoing has been served upon all parties of record by forwarding the same by electronic mail and/or first class mail, postage prepaid, this 14th day of April 2015.

/s/ Laura Landreaux
Laura Landreaux

BEFORE THE
ARKANSAS PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE PETITION)
OF ENTERGY ARKANSAS, INC. FOR A)
DECLARATORY ORDER REGARDING A) DOCKET NO. 15-014-U
PURCHASE POWER AGREEMENT FOR)
A RENEWABLE RESOURCE)

EAI DIRECT EXHIBIT KWC-1

AUGUST 2014 RPOC PRESENTATION

THIS EXHIBIT CONTAINS HIGHLY SENSITIVE PROTECTED INFORMATION
AND IS PROVIDED PURSUANT TO APSC INTERIM PROTECTIVE ORDER
NO. 1, DATED MARCH 9, 2015

BEFORE THE
ARKANSAS PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE PETITION)
OF ENTERGY ARKANSAS, INC. FOR A)
DECLARATORY ORDER REGARDING A)
PURCHASE POWER AGREEMENT FOR)
A RENEWABLE RESOURCE)

DOCKET NO. 15-014-U

EAI DIRECT EXHIBIT KWC-2

ADDITIONAL SUM CALCULATION AND BILL IMPACTS

THIS EXHIBIT CONTAINS HIGHLY SENSITIVE PROTECTED INFORMATION
AND IS PROVIDED PURSUANT TO APSC INTERIM PROTECTIVE ORDER
NO. 1, DATED MARCH 9, 2015