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APPLICATION OF THE ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC. FOR A DEBT OBLIGATION ORDER TO FINANCE UPLIFT BALANCES UNDER PURA CHAPTER 39, SUBCHAPTER N, FOR AN ORDER INITIATING A PARALLEL DOCKET, AND FOR A GOOD CAUSE EXCEPTION	**§**	**PUBLIC UTILITY COMMISSION OF TEXAS**

AMENDED DIRECT TESTIMONY

OF

BILL BARNES

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DIRECT TESTIMONY OF

BILL BARNES

I. IDENTIFICATION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Bill Barnes. My business mailing address is 1005 Congress Avenue, Suite 950, Austin, Texas 78701.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by NRG Energy, Inc. ("NRG") as Senior Director, Regulatory Affairs.

Q. WHAT ARE YOUR EDUCATIONAL AND PROFESSIONAL QUALIFICATIONS?

A. I received a Masters of Electrical Engineering degree from the University of Texas at Austin and a Bachelors of Chemical Engineering degree from the University of Dayton.

Q. PLEASE STATE YOUR WORK EXPERIENCE.

A. In my present capacity at NRG, I am responsible for covering Electric Reliability Council of Texas ("ERCOT") market design issues for the retail and wholesale markets, providing analysis, commercial advice, and regulatory advocacy at the Public Utility Commission of Texas ("Commission"). In addition, I serve as an elected member of the ERCOT Technical Advisory Committee, Wholesale Market Subcommittee, and Protocol Revision Subcommittee in the ERCOT stakeholder process.

Prior to joining NRG, I was a Vice President in US Power Trading at J Aron & Company, the commodities trading subsidiary of Goldman Sachs. During my 5 years at Goldman Sachs, I was responsible for commodity trading strategies, managing various power generation assets, conducting power market design and policy research, and providing strategic commercial advice on power deals.

Before joining Goldman Sachs, I was the Manager of Market Settlements at ERCOT. While at ERCOT, I spent over 7 years managing, designing, and maintaining the

commercial aspects of the ERCOT nodal power market. I began my career at Accenture working on competitive retail markets and ISO market development.

My resume is provided as Attachment NRG-1.

II. PURPOSE AND SCOPE OF TESTIMONY

Q. WHAT IS THE PURPOSE AND SCOPE OF YOUR TESTIMONY?

A. The main purpose of my testimony is to support the application filed by ERCOT in this proceeding ("Application") and the adoption of a financing order under the Public Utility Regulatory Act ("PURA") § 39.653. In addition, I include recommendations for certain proposals in ERCOT's Application, including:

- the manner and method of how distributed funds should be prorated;
- the method of calculating the PURA § 39.652(4) "Uplift Balance";
- the documentation requirements for Load Serving Entities ("LSEs");
- the allocation of the PURA § 39.652(5) "Uplift Charges" and true-up process; and
- the transmission-level customer opt-out process.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

A. My recommendations are as follows:

- If necessary, the Commission should prorate the securitization proceeds based on the method used in the ERCOT short-payment process outlined in Nodal Protocol § 9.19(1)(d).
- The Commission should determine the types of costs eligible for securitization in this proceeding while reserving the submission of documentation proving exposure for a parallel proceeding.
- The Commission should determine the eligibility of costs based on ERCOT settlement data, which includes LSE-specific information in the settlement extracts.
- A determination of eligible costs should not occur until ERCOT has finalized all resettlements related to the operating days during the period of emergency so that LSEs have final amounts of eligible costs as invoiced from ERCOT to base their claims.

- As part the cost documentation process, the Commission should require LSEs to provide ERCOT settlement statements, invoices, and settlement extract data showing their exposure. In addition, depending upon the relationship between an LSE and its Qualified Scheduling Entity ("QSE"), LSEs may need to provide copies of any contracts that govern that relationship and the allocation of charges from ERCOT settlements to supplement the ERCOT settlement data.
    - If the Commission determines netting is appropriate, the Commission should also require LSEs to provide the settlement information reflecting the payment and charge amounts received by affiliated generation and if necessary, to provide customer agreements demonstrating costs directly assessed to these customers that are not reflected in the netted amount.
- ERCOT should calculate the Uplift Charge in a manner similar to the ERCOT System Administration Fee calculation process, calculating a MWh-based fee on an annual basis that all LSEs will pay through a separate invoice process. This charge should be set conservatively so that it would be unlikely that ERCOT under collect funds required to service the bonds.
- ERCOT should only true up the Uplift Charge once per year.
- The Commission should approve a form notification as part of the financing order that retail electric providers ("REPs") may send to their transmission-level customers such as the draft notice provided by Joint Intervenors with their statement of position.
- Transmission-level customers should be required to execute an opt-out by a fixed date and send executed copies to both their current REP of Record and their REP of Record during the period of emergency. REPs should be required to provide notice of the opt-out to ERCOT, who would reduce each LSE's verified costs accordingly. Transmission-level customers who do not affirmatively opt out should be included in the securitization process.

III. BACKGROUND AND ERCOT APPLICATION

Q. PLEASE EXPLAIN THE REGULATORY BACKGROUND OF THIS PROCEEDING.

A. During Winter Storm Uri, the ERCOT market endured a prolonged period of scarcity which resulted in extraordinary costs for LSEs related to ancillary services and the Reliability Deployment Price Adder ("RDPA"). Together, these charges accounted for

$3.42 billion in approximate costs to LSEs,[1] a substantial portion of which was borne by NRG. The Texas Legislature passed HB 4492 amending PURA to include a new Subchapter N, which provides a means of securitizing these unexpected costs incurred by LSEs. ERCOT filed the Application in accordance with the requirements of PURA Subchapter N seeking the issuance of a Debt Obligation Order.

Q. WHAT COSTS ARE ELIGIBLE FOR SECURITIZATION UNDER PURA SUBCAPTER N?

A. Up to $2.1 billion of RDPA charges and ancillary service charges in excess of the system-wide offer cap ("SWCAP") incurred by LSEs during Winter Storm Uri may be securitized.[2] This amount is referred to in PURA § 39.652(4) as the "Uplift Balance."

Q. HOW DOES ERCOT PROPOSE TO SECURITIZE THE UPLIFT BALANCE?

A. ERCOT proposes to securitize the Uplift Balance under the process set forth in PURA § 39.653, wherein ERCOT will create a special purpose entity that would issue bonds equal to the Uplift Balance plus expenses. The proceeds of the bonds would be distributed to LSEs through their Qualified Scheduling Entities ("QSEs"). LSEs are then required to pass on funds to retail customers that were directly assessed and paid for the RDPA and ancillary services charges over SWCAP.

Q. IS THE ADOPTION OF A FINANCING ORDER UNDER PURA § 39.653 IN THE PUBLIC INTEREST?

A. Yes. Securitization of the Uplift Balance under PURA § 39.653 will inject much needed liquidity into the ERCOT market. Securitization will support the financial integrity of the wholesale power market following Winter Storm Uri and provide for direct relief to consumers assessed the costs covered by the securitization.

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[1] ERCOT's Response to NRG Energy, Inc.'s First Request for Information, NRG No. 1-1 (Aug. 2, 2021). This figure excludes costs incurred by Brazos Electric Cooperative and Rayburn Electric Cooperative.

[2] PURA § 39.652(4).

IV. PRORATION OF ELIGIBLE COSTS

Q. CAN THE COMMISSION AUTHORIZE ERCOT TO SECURITIZE ALL OF THE COSTS ELIGIBLE FOR INCLUSION IN THE UPLIFT BALANCE?

A. The Commission cannot yet determine the exact amount of costs eligible to be included in the Uplift Balance until LSEs' submit proof of exposure and electric cooperatives, river authorities, municipal utilities, certain retail electric providers ("REPs") and transmission-level customers have the opportunity to opt out. For this reason, the Commission cannot know if eligible costs will exceed the $2.1 billion cap imposed by PURA § 39.652(4). NRG recommends that the Commission set forth a method for prorating the securitization proceeds in the event the eligible costs exceed $2.1 Billion.

Q. HOW SHOULD THE COMMISSION PRORATE THE PROCEEDS IF ELIGIBLE COSTS EXCEED $2.1 BILLION?

A. NRG urges the Commission to prorate eligible costs, to the extent necessary, using the method used in the ERCOT short-payment process outlined in Nodal Protocol § 9.19(1)(d). Under this approach, the eligible costs would be reduced based on a pro-rata basis of monies owed to each recipient. For example, if the total amount of eligible costs equaled $4.2 Billion, and ABC LSE had $100 in eligible costs, then under the short-pay method, ABC LSE would only receive $50 in proceeds from the securitization process. This method of prorating proceeds distributed to each eligible LSE is fair and has been utilized in the ERCOT settlement and billing process since the start of the market. Adopting a different proration methodology that prioritizes certain market participants or the types of specific eligible costs would result in an inequitable distribution of proceeds.

Q. WHAT ARE THE BENEFITS OF PRORATING THE PROCEEDS IN THE METHOD YOU HAVE SUGGESTED?

A. The pro-rata reduction of all LSE's eligible costs consistent with ERCOT's short-payment process ensures equitable distribution of proceeds to all recipients and is a method already familiar to ERCOT market participants.

V. DETERMINING COSTS ELIGIBLE FOR INCLUSION IN THE UPLIFT BALANCE

Q. WHERE AND WHEN SHOULD THE COMMISSION DETERMINE WHICH COSTS ARE ELIGIBLE FOR INCLUSION IN THE UPLIFT BALANCE?

A. NRG believes that the Commission should determine the types of costs eligible for inclusion in this proceeding. However, I agree with ERCOT that the submission of documentation to determine the exact dollars that are eligible should be determined in the parallel proceeding in Docket No. 52364.[3]

Q. HOW SHOULD THE COMMISSION DETERMINE WHICH COSTS ARE ELIGIBLE FOR INCLUSION IN THE UPLIFT BALANCE?

A. The ultimate decision of what costs are eligible will be based in part on the Commission's decision regarding whether eligible costs should be netted against payments received by an affiliate of the LSE. However, regardless of the approach taken, the Commission should base its determinations on ERCOT settlement data, which includes LSE-specific information in the settlement extracts.[4] This will enable ERCOT to independently verify the accuracy of each LSE's submission.

Q. WHAT OTHER STEPS SHOULD PRECEDE A FINAL DETERMINATION OF ELIGIBLE COSTS?

A. ERCOT should finalize all resettlements related to the operating days during the period of emergency so that LSEs have final amounts of eligible costs as invoiced from ERCOT to base their claims. Recently, ERCOT has issued notices of some resettlements that will change the amount of some LSEs eligible costs.[5] ERCOT must have this process finalized so that the potential universe of eligible costs are known to LSEs and are verifiable by ERCOT.

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[3] ERCOT Application at 1.

[4] *See* Nodal Protocol § 2.3(1)(c) ("The MIS must include any available information that may be used by a Qualified Scheduling Entity (QSE) to estimate or verify bills for all ERCOT-provided settlements.")

[5] *See e.g.*, Notice M-B071321-03 Real-Time Market Resettlements for Operating Days February 17 – 19, 2021 (July 27, 2021), http://www.ercot.com/services/comm/mkt_notices/archives/5955 (adjusting components of the RDPA by nearly $50 million.)

VI. LSE REQUIRED DOCUMENTATION

Q. HAS ERCOT PROPOSED A METHOD FOR LSEs TO DOCUMENT COSTS ELIGIBLE FOR INCLUSION IN THE UPLIFT BALANCE?

A. No. ERCOT has merely suggested that such a verification occur in a parallel proceeding. Commission Staff has opened Docket No. 52364, *Proceeding for Eligible Entities to File an Opt Out Pursuant to PURA § 39.653(d) and for Load-Serving Entities to File Documentation of Exposure to Costs Pursuant to the Debt Obligation Order in Docket No. 52322*, that would serve as this parallel docket.

Q. DO YOU HAVE A RECOMMENDATION AS TO HOW THE COMMISSION SHOULD REQUIRE LSEs TO DOCUMENT COSTS ELIGIBLE FOR INCLUSION IN THE UPLIFT BALANCE?

A. Yes. The Commission should require LSEs to provide ERCOT settlement statements, invoices, and settlement extract data showing their exposure. ERCOT settlement data is the best source of LSE documentation because it can be verified by ERCOT. In addition, depending upon the relationship between an LSE and its QSE, copies of any contracts that govern that relationship and the allocation of charges from ERCOT settlements may be needed as well to supplement the ERCOT settlement data.

Q. ARE THERE OTHER ISSUES THAT MAY IMPACT THE TYPES OF REQUIRED DOCUMENTATION?

A. Yes. If the Commission decides that netting is appropriate, LSEs should also be required to provide the settlement information reflecting the payment and charge amounts received by affiliated generation. This documentation should also be based on ERCOT settlement statements, invoices, and settlement extract data. Under a netting approach, it also may be necessary to provide customer agreements to demonstrate costs directly assessed to these customers that are not reflected in the netted amount.[6]

[6] *See* NRG Energy, Inc.'s Response to Order Requesting Briefing at 6 (Aug. 4, 2021) (describing NRG's recommended approach to netting in the event the Commission determines it is appropriate.)

VII. ALLOCATION OF UPLIFT CHARGES, INVOICES AND THE TRUE UP PROCESS

Q. WHAT HAS ERCOT PROPOSED REGARDING ALLOCATION AND INVOICING OF CHARGES TO LSEs.

A. In order to recover the amounts financed pursuant to the Debt Obligation Order, ERCOT proposes to implement an "Uplift Charge" to QSEs as provided for in PURA § 39.652(5). ERCOT proposes to allocate the Uplift Charges on a daily basis using the load ratio share for the "day prior" for LSEs represented by the QSE. ERCOT will exclude the LSEs and customer load that has opted out. The charge will be determined based on the monthly amortization amount, and ERCOT proposes to create a new daily settlement invoice for the Uplift Charges only. In addition, ERCOT proposes that each Counterparty representing a QSE for an LSE to post collateral equal to four months of the LSE's estimated Uplift Charges.

Q. DO YOU HAVE ANY RECOMMENDATIONS REGARDING THE ALLOCATION AND INVOICING OF UPLIFT CHARGES AS PROPOSED BY ERCOT?

A. Yes. It is NRG's understanding that ERCOT has determined it is feasible to use adjusted metered load values from initial, final, and true up settlements to determine the load ratio share for the allocation of Uplift Charges rather than calculating a load ratio share based on load data for the day prior, and that is it possible to calculate a fixed dollar per MWh fee. NRG agrees with this approach. NRG also recommends that the fee amount be published well in advance so LSEs can manage their costs appropriately.

Q. PLEASE EXPLAIN WHAT ADDITIONAL RECOMMENDATIONS YOU HAVE REGARDING THE ERCOT PROPOSAL TO ALLOCATE UPLIFT CHARGES?

A. ERCOT should calculate the Uplift Charge in a manner similar to the ERCOT System Administration Fee calculation process.[7] Under this approach, ERCOT would calculate a MWh-based fee on an annual basis that all LSEs will pay through a separate invoice process. This charge should be set conservatively so that it would be unlikely that ERCOT under collect funds required to service the bonds. ERCOT should institute an annual true

[7] Nodal Protocol § 9.16.1.

up process where it credits LSEs for over or under collections by adjusting the next year's fee. The amount of the Uplift Charge would be determined for each year at least 30 days in advance and published for LSEs to review and account for. Such an approach would provide fee predictability and stability for LSEs, while also ensuring that ERCOT collects enough funds to cover its bond payments. Finally, this approach should also prove easier for ERCOT to administer as it does not require ERCOT to calculate charges daily.

Q. HOW DOES ERCOT PROPOSE TO TRUE UP UPLIFT CHARGES?

A. ERCOT proposes to use an annual true-up mechanism to correct any over or under collections during the preceding twelve months. However, ERCOT also proposes to conduct a true-up six months following the closing of a series of bonds, as well as a quarterly true up calculation and other true-ups as needed.

Q. DO YOU HAVE CONCERNS WITH ERCOT'S TRUE-UP PROPOSAL?

A. Yes. The number of true ups proposed by ERCOT and the changes required to the Uplift Charges as a result will make it difficult for REPs to predict and manage costs.

Q. PLEASE DESCRIBE ANY SUGGESTED CHANGES YOU HAVE TO THE ERCOT TRUE-UP PROCESS.

A. NRG recommends implementing a true-up process that occurs annually. So long as the Uplift Charge incorporates a reasonable margin to protect against unexpected decreases in demand, an annual true-up process provides sufficient coverage for bond holders. The true-up process is further addressed in the statement of position filed by Joint Intervenors in this docket (NRG is a member of the Joint Intervenors).

VIII. TRANSMISSION-LEVEL CUSTOMER OPT-OUT PROCESS

Q. HAS ERCOT PROPOSED A MECHANISM THAT TRANSMISSION-LEVEL CUSTOMERS COULD USE TO OPT OUT.

A. No. However, Commission Staff has proposed a process that required transmission-level to opt in.

Q. HOW SHOULD THE COMMISSION ENABLE TRANSMISSION-LEVEL CUSTOMERS TO OPT OUT OF THE SECURITIZATION PROCESS IF THEY SO CHOOSE?

A. NRG recommends that the Commission approve a form notification as part of the financing order that REPs may send to their transmission-level customers such as the draft notice provided by Joint Intervenors with their statement of position. NRG recommends that the Commission order LSEs to provide this notice by a fixed date. The order should require transmission-level customers to execute the opt-out by a fixed date, and ensure both their current REP of Record, and REP of Record during the period of emergency receive an executed copy. The opt-out process should require REPs to provide this information to ERCOT. ERCOT would then reduce each LSE's verified costs accordingly to reflect the transmission-level customer opt-outs. Transmission-Level customers who do not affirmatively opt out should be included in the securitization process.

IX. CONCLUSION

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

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William F. Barnes

Current Address:
6709 Blissfield Dr.
Austin, Texas
78739

EDUCATION

Graduate

University of Texas – Austin, Texas

Master of Science in Computer and Electrical Engineering with a concentration in Software Engineering: December, 2004

- Cumulative GPA: 3.86/4.00

Masters Report Topic: Independent System Operator/Regional Transmission Organization Software Systems and Service-Oriented Software Architecture.

Undergraduate

University of Dayton – Dayton, Ohio

Bachelor of Chemical Engineering: May, 1998

Magna Cum Laude

- Cumulative GPA: 3.87/4.00
- Major GPA: 4.00/4.00

WORK EXPERIENCE

NRG Energy Inc. – Austin, Texas *04/13 to current*

Senior Director, Regulatory Affairs

- Act as ERCOT market design expert and regulatory affairs liaison.
- Participate in PUCT proceedings and ERCOT stakeholder process.
- Act as advocate in stakeholder processes to promote efficient and competitive markets.
- Author and submit comments at the PUCT and ERCOT stakeholder process.
- Review and advise commercial contracts and structures.
- Provide regular updates to NRG retail customers on regulatory matters of interest.

Goldman Sachs & Co./J Aron – New York, NY *04/08 to 03/13*

Vice President, US Power Trading

- Develop and execute commercial strategies for power trading and sales franchise focusing on ERCOT.
- Experience trading the following markets: ERCOT short-term bilateral markets, ERCOT Day Ahead Market (DAM), ERCOT Congestion Revenue Rights (CRRs), PJM financial market, PJM Day Ahead Market (DAM), PJM Up-to-congestion, and SERC physical market (Entergy and TVA).
- Asset manager for 500 MW Combined Cycle Power Plant in SERC (Entergy/TVA).
    - Responsible for short-term and long-term marketing of the plant output.
    - Perform daily economic analysis of spark spreads and direct plant operational decisions.
    - Expand commercial utilization of the asset by executing novel strategies and accessing adjacent markets such as PJM and MISO.
    - Manage plant maintenance outage schedules.
    - Reserve, purchase, and manage transmission products.
- Asset manager for 200 MW wind farm in West zone of ERCOT.
    - Evaluate and direct daily operation of the wind farm.
    - Optimize commercial results of the asset by trading around the daily wind forecast.
    - Analyze historical dispatch and curtailment patterns to inform commercial decisions.
    - Manage portfolio of Renewable Energy Credits (RECs), monetize REC inventory based on market conditions.
    - Improve performance of the asset through ramp-rate changes and SCADA response adjustments.
    - Manage compliance with wind resource protocol changes.
- Develop congestion trading and hedging strategies and implement in CRR auctions and DAM.
- Act as ERCOT market design expert and regulatory affairs liaison.
- Draft language to capture complex business concepts for power purchase agreements and trade confirmations (structuring).
- Support the sales/origination desk and equity research department through market analysis and client visits and discussions.
- Facilitate the development and execution of a power market database to collect and quickly analyze real-time market data to inform trading and commercial decisions.

Vice President, Commodities Operations

- Managed team responsible for providing market intelligence and analysis in the power industry to trading and sales desks.
- Led an analysis effort for the Investment Banking Division to advise a MISO generation portfolio sale.
    - Estimated the impact of increased renewable resource development in MISO.
    - Studied the potential for further Utility migration between MISO and PJM.
- Produced research on ERCOT power market fundamentals such as supply stack and demand behavior, transmission constraints, dispatch patterns and impacts of reserves, Competitive Renewable Energy Zones (CREZ), and impacts of pending EPA rules and market rule changes.
- Acted as project manager and subject matter expert for ERCOT Nodal Market transition.
    - Drafted requirements for nodal functionality and tested system changes to accommodate nodal rules for the following systems: Power scheduling and bid/offer submission system, Trade capture and risk system (delivery point and price marking), Trade and deal settlement system, Trade confirmation system, and Trade reporting system (FERC filing).
    - Converted legacy trade portfolio to new nodal pricing locations.
    - Facilitated resolution of non-standard delivery point trades with clients.
    - Contributed to industry standard ISDA/EEI Nodal Protocol amendment to accommodate nodal scheduling rule changes.
    - Developed Three-Part Offer and Current Operating Plan submission process for wind asset.
    - Led business process preparation including training and review of procedure updates for credit, settlements, regulatory reporting, trade confirm processing, ISO settlement & invoicing, and value-at-risk assessment.
- Assisted conversion of CinHub to Indiana Hub in MISO as a result of Duke migration to PJM.
    - Analyzed Indiana Hub electrical bus composition compared to CinHub.
    - Evaluated legacy trade portfolio and trade confirm language to determine proper pricing locations post-migration.
    - Facilitated resolution of final delivery points with clients.
- Managed portfolio of complex power transactions and developed settlement processes for them.
- Reviewed and drafted non-standard trade confirmations and power purchase agreements.
- Supported back office functions including standard trade and deal settlement, invoice processing, credit and collateral management, and regulatory compliance.

Electric Reliability Council of Texas (ERCOT) – Austin/Taylor, Texas *11/00 to 09/01, 04/02 to 03/08*

Manager, Settlements and Billing

- Directly responsible for the financial settlement of $1.5 Billion zonal-based electric power market and the implementation of complex nodal market design.
- Managed team of 31 direct reports – 22 FTEs and 9 Contractors.
- Prepared and administered $2.3 Million annual team budget and financial goals.
- Served as an expert witness at hearings with Public Utility Commission of Texas.
    - *Deposition* - Docket #32686: Application of the Electric Reliability Council of Texas for approval of a Nodal Market Implementation Surcharge and Request for Interim Relief
    - *Expert analysis* - Docket #32992: Compliance Proceeding to Final Order in Docket 31243 (Complaint of TXU Portfolio Management Company LP and TXU Energy Retail Company LP against the Electric Reliability Council of Texas)
    - *Direct testimony* - Docket #33416: Constellation NewEnergy, Inc's Appeal and Compliant of ERCOT decision to approve PRR676, PRR674 and Request for Expedited Relief
    - *Affidavit* - Docket #33500: Complaint of Constellation Energy Commodities Group, Inc. against the Electric Reliability Council of Texas
- Participated in ERCOT stakeholder process to create and implement wholesale power market rules.
- Conducted and reported market studies and analysis to guide and facilitate market design decisions.
- Led a team through nodal market implementation; business requirements and use case creation, software design, software test planning/preparation and execution, and market trial design.
- Directed the day-to-day operation of zonal market settlements, Transmission Congestion Rights (TCR) auctions, and the accurate and timely billing of both functions.
- Managed vendors during nodal implementation by setting detailed work objectives, providing analysis to assist development of software, and outlining implementation plans.
- Created and executed nodal transition plan for Settlements and Billing team: Re-organized team structure, developed appropriate business processes, focused team on long term goals, and outsourced zonal market settlement operations.

- Presented regularly at ERCOT market meetings and worked with Market Participants to resolve issues.
- Developed a detailed level of understanding of competitive electric power markets.
- Mentored employees, conducted performance reviews, and assisted in their professional development.

Texas Nodal Market Redesign Program
Transition from Zonal market model to Nodal

Nodal Technical Lead, Commercial Systems
- Conducted ISO Settlement System Research.
- Designed Nodal Settlement System Architectures.
- Prepared and planned Nodal Settlement System Prototype.
- Drafted Settlements & Billing System Upgrade Plan.
- Provided input for vendor strategy, hardware estimation, Nodal System architecture.

Nodal Project Management Office (PMO) Evaluation Committee Member
- Tasked with evaluating the creation of an independent Program Management Office for the ERCOT Nodal Market Redesign effort.
- Worked with a team to analyze benefits and risks of a Nodal PMO.
- Studied various organizational structures for a PMO.
- Assisted in the creation of an RFP to outsource varying portions of the Nodal PMO.
- Reviewed vendor proposals and acted as decision maker in vendor evaluation and selection.

Rational Implementation Team
- Analyzed ERCOT procedures for business and software requirements management.
- Evaluated IBM Rational Tool Set for requirements analysis.
- Helped develop a requirements management plan that integrated the Rational Tool set.

Wholesale Market Development - Business Project Manager;
Market Operations and Settlements Systems
- Evaluated and analyzed market participant project requests from market working group subcommittees.
- Estimated market project software impacts and costs – submit project request to Directors for approval.
- Solicited and acquired system requirements from stakeholders and business users.
- Modeled and refined system requirements; created software requirements specifications and designs.
- Communicated software requirements to IT development teams.
- Created software test plan, test scripts, test conditions, and test data; Unit, Product, and Integration testing.
- Facilitated software development and testing by acting as liaison between business users and developers.
- Directed software projects from inception to production migration.
- Led new software vendor solicitation, evaluation, and selection processes.
- *Projects*: Mismatched Inter-QSE Schedule Settlement, EMMS Release 4 – Replacement Reserve and Resource Plan changes, Generate Settlement Statement Re-engineering, Ancillary Service Obligation Settlement Calculations, Market Total Determinants, Ancillary Service Multiple Markets, DCTie Automation, OOM tool enhancements, Lodestar 3.7 Upgrade, Service-Oriented Architecture TIBCO implementation, Zero charges – Settlement Architecture review, Batch Scheduling Software Replacement, RAID 5 Storage.

Commercial Systems Wholesale Testing Team Lead
- Managed wholesale testing team (2 FTEs) responsible for Settlements, Data Aggregation, Data Acquisition, and critical interface system quality assurance.
- Led merger of Wholesale Product Test and Integration Test teams (FTEs and infrastructure); efficiencies gained from single testing unit included testing resource coverage, knowledge transfer, and improved procedures.
- Managed wholesale test pipeline by controlling projects and SIRs which enter the test environments.
- Developed and refined testing procedures and controls for the team using input from all stakeholders.
- Assured team followed the documented procedures for SAS70 compliance.
- Logged and resolved software defects and database issues; communicated to IT development and business teams.
- Planned environment maintenance and expansion to meet testing needs.
- Assisted procurement of new hardware and configured servers accordingly.
- Balanced project and SIR testing efforts with special business analysis efforts such as Load Profiling Annual Validation, UFE analysis for 10-day settlement, and Back-dated QSE analysis.

Technical skills obtained at ERCOT: Lodestar, Oracle, PLSQL, XML, EDI, Perl, Tivoli Maestro, AppWorx, Siebel, SeeBeyond, TIBCO, HTML, Web-Portal. Software versioning tools; VSS, CVS.

Accenture LTD (formerly Andersen Consulting) – St. Petersburg, Florida *6/98 to 04/02*
Clients served: ERCOT (11/00 – 09/01), Niagara Mohawk (01/00 – 10/00; 09/01 – 04/02), Orange & Rockland (10/00 – 11/00), Ameren (09/98 – 01/00)
Energy Software and Information Technology Consultant - Energy and Utility Information and Business Software Solutions.

- Studied various business infrastructures, business systems, and electricity deregulation strategies.
- Gathered business requirements and designed custom software to fulfill these requirements.
- Managed team of business analysts (6 FTEs) to solve billing and revenue issues.
- Applied business integration methodologies to fit client needs; implemented solution.
- Adapted to multiple corporate client cultures; worked with client to implement IT goals.
- Managed teams of software developers and clients by guiding work load and resources.
- Acquired computer-related technical knowledge through training and experience; applied it.

Technologies include: Customer 1, Oracle, DB2, Access, SQL, Lodestar, Siebel, HTML, Web-Portal, XML, EDI, FTP, C+, COBOL, VB Script, SeeBeyond. Software versioning tools; PVCS, VSS.

- Involved in Accenture mentoring program: fostered professional development of new hires.

ACTIVITIES

- Speaking engagements:
  - Panel participant at University of Texas Renewable Energy Institute Conference in Austin, Texas: January 2013
    Presentation Topic: Cost of Energy, Impacts of renewable on wholesale power markets
  - Guest speaker at Platts Texas Power Market Forum in Houston, Texas; July 2011.
    Presentation Topic: Evaluation of the Texas Nodal Market 6-months after implementation, Energy-only Market design and proper price formation
  - Panel participant at Vinson & Elkins Power Market Symposium in Houston, Texas; October 2010.
    Presentation Topic: Launch of the upcoming ERCOT Nodal Market in December 2010, Concerns and market impact
  - Guest speaker at EUCI Conference in Austin, Texas; November 2006.
    Conference Topic: Overcoming Market Settlement Challenges
    Presentation Topic: ERCOT Settlement Data and Timing Challenges
  - Guest speaker at Lodestar Users' Conference in Portland, Maine; August 2005.
    Presentation Topic: Lodestar from an ISO Perspective; ERCOT's use of Lodestar
- Published author of energy-related IT papers (Energy Central, University of Texas).
- Military Family Readiness Group (FRG).
- American Institute of Chemical Engineering (AIChE) – U of Dayton student chapter Vice President.
- University of Dayton Engineers Supporting Peers – engineering, physics, and chemistry tutor.

52322 Bill Barnes Affidavit.DOCX

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E-Signature Summary

E-Signature 1: Bill Barnes (BB)
August 13, 2021 12:58:40 -8:00 [96D060A6DA17] [66.28.21.206]
Bill.Barnes@nrg.com (Principal)

E-Signature Notary: Lauren Ivey (LIV)
August 13, 2021 12:58:40 -8:00 [35B811C24966] [66.28.21.206]
lauren.ivey@bakerbotts.com
I, Lauren Ivey, did witness the participants named above electronically sign this document.

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STATE OF TEXAS §
§
COUNTY OF HARRIS §

AFFIDAVIT OF BILL BARNES

BEFORE ME, the undersigned authority, on this day personally appeared Bill Barnes, who being by me first duly sworn, on oath, deposed and said the following:

1. "My name is Bill Barnes. I am of sound mind and capable of making this affidavit. The facts stated herein are true and correct based on my personal knowledge. My current position is Senior Director, Regulatory Affairs for NRG Energy, Inc.

2. The foregoing direct testimony and the attached exhibit have been prepared by me or under my direct supervision and are true and correct to the best of my knowledge."

Further affiant sayeth not.

Bill Barnes
Signed on 2021/08/13 12:58:40 -8:00

Bill Barnes

SUBSCRIBED AND SWORN TO BEFORE ME ON THIS 13th of August, 2021

Lauren Elizabeth Ivey
Commission # 124906959
Notary Public
STATE OF TEXAS
My Comm Exp. Jul 05, 2022

Notary Stamp 2021/08/13 12:58:40 PST 35B811C24966

Signed on 2021/08/13 12:58:40 -8:00

Notary Public for the State of Texas

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