



June 10, 2020

Ms. Rosemary Chiavetta
Secretary
PA Public Utility Commission
400 North Street, Keystone Building
Harrisburg, PA 17105-3265

Re: Board of Directors Replacement – Sustainable Energy Fund - Docket # M-00031715 F0003

Dear Ms. Chiavetta:

The Board of Directors of Sustainable Energy Fund (SEF) has approved Mr. Kurt Zwerko and Mr. as Ramesh “Rudy” Shankar Directors. Mr. Zwerko’s and Mr. Shankar’s resumes are attached.

The recruitment process was performed according to Pa. Sustainable Energy Board Best Practice for Nomination, Election and Approval of Directors. The initial pool was presented to the Board of Directors included eleven candidates. The candidates’ credentials were reviewed by the Board of Directors and narrowed down to the five candidates that were scheduled for interviews. The Board appointed a Nominating Committee to conduct the interviews. The Nominating Committee recommended to the Board that Mr. Zwerko and Mr. Shankar be appointed as Directors. The Board accepted the recommendation of the Nominating Committee. Mr. Kurt Zwerko will replace Mr. William DeFalco and Mr. Shankar will replace Mr. Thomson. Both Board members have completed their terms and are term limited.

In addition to Mr. Kurt Zwerko and Mr. Ramesh “Rudy” Shankar resumes, I have included the Candidate Objective and Selection Criteria, the methodology, and a copy of the Board minutes approving Mr. Zwerko and Mr. Shankar to the SEF Board.

Thank you for your continued support and consideration.

Sincerely,

John M. Costlow

President

cc: Robert Thomson, Board Chairman
Scott Gebhardt, PUC
Mr. Kurt Zwerko
Mr. Ramesh “Rudy” Shankar

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Candidate Interview Criteria

Objectives: Regulatory, Technical, and/or Business Development

Candidate Criteria

Priority 1

- Mission Fit
- Team
- Leadership
- Expertise
- Interview
- Ability/Desire to be Active

Priority 2

- Opinion Maker
- Community
- Overall Match
- Professional Background
- Geographic Diversity
- General Diversity

Priority 3

- Petitioner
- Non-profit Experience
- Experience with Preservation/Conservation of Natural Resources
- Possesses Needed Skill Set

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Methodology

The open positions were posted on SEF's website as well as the Commission's website. After approval of the advertising copy, a multi-faceted recruitment effort by SEF ensued including regional newspapers and business journals throughout the PPL-service territory. Resumes of applicants for Board members were taken and screened for the service territory requirements. The resumes were then reviewed by the Board Nominating Committee. Each applicant was evaluated according to SEF stated objectives and criteria.

The project was completed in three phases as follows:

Phase 1: RESUME REVIEW

- The Board acting as the Nominating Committee reviewed each resume comparing it to the solicitation objective and criteria. The focus was given to SEF's three (3) Priority Areas—Financial Expertise and Technical Skill.
- Selection of interview candidates.
- Once the nominating committee selected candidates for interview SEF provided closure in one of the following forms:
 - a. Applicant called for an interview.
 - b. An applicant not called for an interview thanked for interest and notified to apply for future openings if desired.
 - c. An applicant not to be interviewed at this time, but may be considered at a later date. The application remains active for one year.

Phase 2: INTERVIEW

- Confirm residency/workplace requirement (PPL service area).
- Selected interviewed by the Nominating Committee.
- Nominating Committee reviewed interviews and the selected candidate that best fit SEF's needs.

Phase 3:

- Board appointed candidates based on the Nominating Committee's recommendation.

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Sustainable Energy Fund (SEF) is a 501(c)(3) organization dedicated to breaking down financial, educational and regulatory barriers to a sustainable energy future. SEF operates as a financially independent nonprofit enterprise. SEF is seeking a member for its Board of Directors that shares a commitment to its mission and a desire to work collaboratively. Interested candidates should live or work in the 29-county area comprising the PPL Electric rate territory. Please visit www.thesef.org to learn more about the organization. Interested candidates should send a cover letter and resume via e-mail to thesef@thesef.org or via mail to Sustainable Energy Fund, Director Search, 4110 Independence, Dr. Suite 100, Schnecksville, PA 18078. Nominations will be open until 5:00 pm, February 7, 2020. Candidate resumes are reviewed by the Board, selected candidates are invited for an interview, then the selected candidate's appointment will be approved by the Pennsylvania Public Utility Commission. All candidates are subject to a criminal background check.

Ramesh (“Rudy”) Shankar

154 W Langhorne Ave, Bethlehem, PA 18017

704-430-7233; rudy.shankar@gmail.com

Executive Summary

Accomplished technology development leader directing a variety of organizations focused on research and development in the energy and defense sector and commercial markets. Skilled senior executive with responsibility for managing budgets up to \$30M, and staff of approximately 50 in the research, development and execution of technology advancements in the energy industry such as smart grid enhancements, expanding infrastructure to support electric cars and implementing on-line monitoring technology using modern sensors and pattern recognition models for reliable early detection of incipient faults. Accomplished public speaker who has presented to various audiences worldwide on a variety of energy-related topics.

Experience

Director, Energy Systems Engineering, Lehigh University

Bethlehem, PA

July 2016 – Present

The Lehigh University Energy Systems Engineering prepares students and mid-career professionals with an undergraduate degree for a master’s degree in energy. The mission is to produce a new generation of excellent leaders for the energy industry.

Prepare, coordinate with industry, and faculty council, and deliver 30-credit, 10-month curriculum for students to graduate with a Master of Engineering in Energy. Select capstone research projects that focus on core themes for an advanced energy community, the grid edge and distributed energy resources. Develop and impart evidence-based teaching curriculum, supervise student Capstone projects; establish strong interactions with the Institute’s energy industrial advisory council made up of energy industries which provide mentoring, financial and curriculum guidance; organize industrial seminars, and ongoing and additional industrial support.

- Concentrated on student recruitment from very well established colleges in a 200-mile radius; recruitment has been on an upward trend.
- Collaboration with industries & faculty increased to support capstone projects through student scholarships

Professor, University of North Carolina at Charlotte

Charlotte, NC

February 2014 - June 2016 (2 years 5 months)

EPIC is a collaborative industry/education partnership that produces a technical workforce, advancements in technology for the global energy industry while supporting the Carolinas’ economic and energy security

Identify and forge opportunities for research collaboration between students, faculty and energy industry partners resulting in meaningful technological advances. Provide direct oversight of 35 professors and 3 graduate students performing applied research in the areas of power system modernization, electric vehicles, and energy storage technology. Promote collaboration between EPIC faculty, energy industry partners and

other university research centers by obtaining grants and scholarship funds to support faculty and students.

- Strategic consulting with EPIC staff and select industry personnel to develop business plan & sales strategy development.
- Supported energy start-up companies being incubated by the University to position them for federal awards and seed funding by partnering with utilities and/or energy research organizations (such as EPRI) for prototype demonstrations
- Advised new businesses on formation of corporations and business structures
- Mentored mid-level energy managers to strengthen organizational skills
- Active board member of a Charlotte-based energy accelerator company and was the lead to recruit the Executive Director of that company

**Vice President & Chief Technology Advisor, Technology Innovation at Tennessee Valley Authority
Knoxville, TN**

April 2010 – October 2013 (3 years 6 months)

TVA is a corporate agency of the U.S. federal government that provides electricity for business customers, maintains federally owned lands, manages the water resources for hydrogenation, and provides local power companies serving 9 million people in parts of seven southeastern states.

- Led research and development for the \$11B federal agency. Directed strategic business units to develop the "Living Lab", this is where the TVA system was offered to technology and equity partners to develop breakthrough technologies, demonstrate disruptive technologies (for example, distributed generation, novel solar technologies—such as equipped with efficient heat dissipaters', smart inverters--, and documented results. One of the outcomes of this effort was the development of the TVA Monitoring and Diagnostic (M&D) Center, a fleet-wide capability to monitor and diagnose equipment problems. The techniques applied advanced pattern recognition to large-scale data sets to analyze and detect anomalies. Developed a system with TVA's major partner, EPRI, to assist in pilot tests, selection of plants to monitor, a modeling framework, and validation of equipment models. The results (documentation not available) are expected to match the implementation success at several U.S. & international utilities of comparable size (for example, Southern Company, Entergy, Duke Energy, etc.)
- Selected, developed and executed the implementation of three signature technologies for TVA, which included:
 - Selection, and licensing for operation small modular reactors (SMRs);
 - Collaborating with a major vendor for widespread deployment of electric vehicle charging technology; and
 - Assisting TVA distributors for implementation of smart meters and pilot demonstrations for reducing/shifting peak demand.
- Instituted a "one-voice strategy" to manage TVA's \$15M yearly investment with EPRI to assure the entire agency selected EPRI programs aligned with the agency mission and vision.
- Devised a communication strategy to focus EPRI strategic support for key signature technology areas, and to disseminate progress reports across the Agency. In the two years under my leadership, the EPRI value to the Agency as reflected by internal customers increased from 5 to 1 to >10 to 1; the \$ leverage (i.e., a

conservative assessment of life time cost savings with technology versus investment in technology) increased from a nominal 10:1 to over 15:1.

- Created the first TVA Technology Innovation prospectus, describing organization's mission and vision, its recent performance and future goals.
- Revamped organizational structure for better "line of sight" to the work being performed and its relevance to the TVA core innovation mission. Motivated staff by implementing new accountability measures using performance-driven metrics,
- Nominated several direct reports for leadership development and management programs, including training on conflict resolution and teamwork strategies.
- Created the WOW award in the group recognizing creative and innovative contributions that resulted in cost savings, industry recognition aligned with TVA vision.
- The group's organizational health index, a measure adopted by the agency after a recent safety incident, rose steadily over a two-year period to equal and then surpass the norm
- Promoted several staff to senior management positions as well as key employees, who were results driven, and motivating to their subordinates
- My group collaborated with several TVA Business Units to convert a 10-MW hydro-facility and surrounding park (called the Melton Hill Dam) into a sustainable recreation area¹.
Under my leadership at TVA, the organization transformed from a low morale work environment to a mission-driven business unit.

President/CEO, Signatech Systems (<http://signatechsystems.com>)

Matthews, NC

June 2007 - present

Signatech Systems works with the global electric power industry and companies in that supply chain. Its strengths are in sensor technologies to monitor process/equipment conditions, maintenance technologies and intelligent asset management.

- Developed specifications and conducted workshop under a contract with U.S. DOE and USAID for 20+ plant managers of a large Asian utility with over 30GW capacity on the Indian subcontinent to implement fleet wide monitoring to improve reliability, leverage emerging sensor technologies and smart monitoring
- Teamed with the world-class visualization laboratory at UNC Charlotte to develop Visualization Methods for Distribution Networks under a DOE SBIR contract
- Consulted with the International Atomic Energy Agency (IAEA) in Vienna, Austria, to develop guidelines for Grid Stability and Nuclear Power
- Appointed chairman of an IAEA group developing guidelines for wireless technology applications in nuclear power plants

Electric Power Research Institute (1986-2007)

EPRI is an independent, nonprofit organization that focuses on research related to energy and environment, electricity generation, distribution, and utilization, and nuclear power. Its membership includes most of the utilities in North America, Europe and Asia and South America.

Market Director, Power Delivery and Markets

Charlotte, NC. February 2006 - 2007 (1 year 11 months)

- Developed and positioned annual R&D portfolio for EPRI members to fund the Power Delivery and Markets sector (\$65M) by developing marketing collaterals, preparing executive presentations and pricing products to assure simplicity and fairness to the global members

Program Manager at EPRI

Charlotte, NC; Palo Alto, CA. July 1986 - January 2006 (19 years 7 months)

- Planned, prioritized, budgeted and executed on Annual R&D Programs varying from \$2 to \$5M over the years; presented the R&D components for their consideration to purchase and budget plans to various Program Committees, sector councils and at international forums; expand membership by assisting sales and marketing staff.
- The program results assisted utility members to utilize technologies for diverse applications including:
 - advanced nondestructive (NDE) signal processing methods for flaw detection and characterization
 - instrumentation and control calibration reduction for safety related systems,
 - developing topical reports for defense of safety evaluation to NRC,
 - Crosscutting technology for application to fossil-fueled plants.
- The results led to developing an industry coalition for fleet-wide monitoring of capital assets utilizing wireless sensors and advanced pattern recognition for first-of-a-kind demonstration at a nuclear plant facility.
- Managed a utility interest group to share and learn from their individual experiences in the planning and implementation. They included utilities from the U.S. (Southern Company, Duke Energy, TVA, etc.), Europe (EdF, Iberdrola) and Asia (India)

AMF

Development of commercial, industrial and recreational products

Research and Development Manager at AMF

Sterling, VA.

February 1984 - February 1985 (1 year 1 month)

- R&D and prototype testing manager of future industrial and consumer products for the conglomerate. The products extended from industrial goods (oil country tubular goods testing) to consumer products (Bowling balls, yachts, etc.)

Tetra Tech, Inc.

Provided support to Department of Defense in various areas including undersea warfare

Principal Engineer and Business Development Manager

Arlington, VA

February 1980 - February 1984 (4 years 1 month)

- As the principal investigator of various contracts for Department of the U.S. Navy on antisubmarine warfare (ASW) technologies, developed novel signal processing techniques for detection of static and dynamic targets
- Initiated new projects in nondestructive technologies for US Navy assets as well as for the nation's U.S. nuclear power plants

Project & Principal Engineer at Adaptronics, Inc.

McLean, VA

June 1973 - February 1980 (6 year 9 months)

- Developed proposals and was the lead engineer in several U.S. Department of Defense projects for pattern recognition of targets.
- PI on several projects for private companies, from bioengineering applications to econometric forecasting and nondestructive evaluation.

Education

University of Delaware

Ph.D., Applied Sciences, 1972 - 1977

Queens University of Charlotte

MBA, Finance, Operations, Marketing and Strategy, 1999 – 2001

Indian Institute of Technology, Delhi

B. Tech, Elec Engineering, 1964 - 1969

Honors and Awards

- Obtaining U.S. Nuclear Regulatory Commission Approval Safety Evaluation Report (SER) for Instrument Calibration Reduction Methodology,
- Multiple performance recognition awards from EPRI (2000 through 2005), for developing instrument calibration guidelines for nuclear power plants, flexible plant operations and on-line monitoring for improved condition monitoring
- Outstanding U.S. Department of Energy (DOE) Contractor for Developing Specifications for Fleet Wide Monitoring, & Workshop for 20 NTPC Plant Managers in New Delhi, India.

Recent Publications

1. "Embracing Disruption- A Leadership Role for Utilities." *Public Utilities Fortnightly*. Jan. 2014.
2. "Correlation Processing: Big Data at Work." *Public Utilities Fortnightly*. Feb. 2014.
3. "Wireless Sensor Technology- Equipment Health Monitoring for a Modern Utility." *Public Utilities Fortnightly*. July 2014.

Kurt Zwerko
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7 February, 2020
Sustainable Energy Fund
Board of Director Search
The SEF@thesef.org

Dear SEF Board,

I am applying for the open board seat at the SEF and appreciate your consideration.

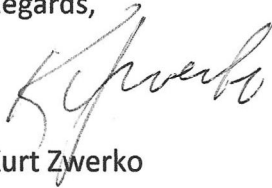
I have almost 20 years of experience in the renewable energy, energy efficiency, LED retrofit and carbon capture fields. I have built businesses, fixed businesses and invested capital in many projects that will provide a sustainable future.

I have worked to capture government grants, dealt with local/state officials and have made education part of many of the projects that were built.

I believe that my experience can be of value to the SEF.

Thank you for your consideration.

Regards,



Kurt Zwerko

KURT ZWERKO
(610) 737-3196
Kurt@zenergy.solutions

SUMMARY OF PROFESSIONAL EXPERIENCE AND ACCOMPLISHMENTS

Board Activity

- Board Chair for Apollo Technology – a Carbon Capture process technology firm

Consultant on Renewable Energy Business, Strategy and Technical Issues:

- NRG Energy: initial solar strategy and projects, Cogen contract
- Private Equity: landfill gas plant operational improvements and business sale
- Private Equity: advise on renewable energy investment and project opportunities

Senior Level Executive who managed, led and grew Businesses to be Successful

- Six businesses in Fortune 250 companies: Air Products and PPL
- Two businesses in smaller companies: Conergy Solar and Pearl Street LED
- COO at Pearl Street, VP Conergy Projects, VP Renewable Energy at PPL, General Manager at AP

Development: Over 200 deals developed and executed from small (\$1mm) to large (\$120mm)

- 25 solar projects executed at Conergy for 45 MW, plus a 75MW pipeline
- 28 Cogen, landfill gas, solar, wind projects at PPL for 45 MW, plus a \$100mm pipeline
- 150 projects at Air Products
 - \$120mm ASU and utility island for Exxon, Bayport
 - \$70mm ASU and merchant equip for Baosteel, Shanghai
 - 28 large ASU projects valued at \$1.2BN in 12 countries
 - Over 125 new and restructured owned and operated “on site” projects

Restructuring: Four businesses were rescued, restructured and grown

- Conergy Solar: reduced and refocused staff, product offerings and costs
- PPL ESCO: negotiated out of 15 long term contracts, focused on stipulated contracts
- Air Products: two business units refocused with new products and markets

Start Ups: Two businesses were started from scratch and are still operating

- Pearl Street LED: LED retrofit business started with partner and personal capital
- PPL Renewable Energy: started up within a large company, now owned by private equity

Teambuilding: Built teams of developers, engineers, operators and financial people

- Pearl Street LED: built a team of 9
- Conergy Solar: reduced from 34 to 17 with better focused capability
- PPL Renewable Energy: built core team of 12, outsourced work
- Air Products: built and managed team of 300 for the large ASU business

Jack-of-All-Trades:

- Develop/sell projects
- Write and negotiate PPA, EPC and commercial contracts
- Develop and implement business and product strategies
- Manage engineering and operations
- Manage financings, financial modeling, M&A and admin
- Domestic and international experience across industries
- Lead, develop and grow people

Education:

- **MBA: University of Chicago Booth School of Business**
- **BS Metallurgical Engineering: Lafayette College**