

Application No. 17-1127SPV

Direct Testimony of

**Laurence Greene**

on behalf of

Techren Solar I, LLC

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is Laurence Greene. My business address is 300 Spectrum Center Dr., Suite 1020, Irvine, CA 92618.

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

A. I am employed as the Head of Project Development—U.S. West and Canada Country Manager for 174 POWER GLOBAL Corp. (“174PG”), a Hanwha Company, that is the parent company of Techren Solar LLC, which in turn is the parent company of Techren Solar I LLC (“TSI”). In this role I am the project development manager for the Techren Solar I Project.

**Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?**

A. I am testifying on behalf of TSI, which has filed the tax abatement application that is the subject of this proceeding.

**Q. DOES ATTACHMENT 1 TO YOUR TESTIMONY ACCURATELY DESCRIBE YOUR BACKGROUND AND EXPERIENCE?**

A. Yes, the overview of my experience is as outlined on Attachment 1. I have a Bachelor's degree in Geology from the University of California, Los Angeles, a Master's degree in Geology from U.C. Davis, and an MBA from the UCLA Anderson School of Management. I have 30 years of international energy industry experience, the last 17 of which has been exclusively in renewable energy project development (solar, wind, biomass, biodiesel), including the development of 805 MW of utility-scale wind and solar energy projects now operating in the United States and Canada.

**Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS PROCEEDING?**

A. The purpose of my Direct Testimony is to support TSI's application for partial abatement of property, sales, and use tax under the Nevada Governor's Office of Energy Renewable Energy Tax Abatement Program. In addition to responding to questions with respect to the TSI Project and its Power Purchase Agreement ("PPA") and interconnection to the NV Energy transmission grid, I will address the environmental, economic development, and other benefits that the TSI Project will provide to the State of Nevada, Clark County, Boulder City, and their residents.

**Q. CAN YOU PLEASE PROVIDE AN OVERVIEW OF TECHREN SOLAR I LLC?**

A. TSI is a limited liability company that was created to develop the TSI Project. TSI is a subsidiary of Techren Solar LLC, which, through its subsidiaries, is developing a series of utility-scale solar photovoltaic projects in the Boulder City Energy Zone. TSI is also a subsidiary of 174PG, which is headquartered in Irvine, California. Through its subsidiaries 174PG has a total pipeline of over 3 GW of utility-scale solar energy generating facilities under development, 900 MW of which is under executed power purchase agreements. 174 PG is an affiliate of Hanwha Energy Corporation, a Korean Corporation, and part of the Hanwha Group of companies, a multinational conglomerate that is the 8<sup>th</sup> largest business enterprise in South Korea and ranks 246<sup>th</sup> on the Fortune Global 500. Hanwha Group is vertically integrated in the solar market, including one of the largest manufacturers of solar panels in the world, as well as development, construction, and solar operations and maintenance companies.

**Q. IS TECHREN SOLAR I QUALIFIED TO DO BUSINESS IN NEVADA AND DOES IT HOLD A NEVADA BUSINESS LICENSE?**

A. Yes. TSI holds a Nevada business license, and TSI is in good standing and qualified to do business in Nevada.

**Q. HAVE YOU REVIEWED TECHREN SOLAR I'S APPLICATION FOR THE PARTIAL ABATEMENTS?**

A. Yes.

**Q. IS ALL OF THE INFORMATION IN THE APPLICATION STILL ACCURATE?**

A. Yes.

**Q. WHAT TYPES OF ABATEMENTS IS TECHREN SOLAR I REQUESTING?**

A. TSI is requesting a partial abatement of property, sales, and use tax pursuant to NRS 701A.300 - .390, *inclusive*, as permitted under Nevada Governor's Office of Energy Renewable Energy Tax Abatement Program.

**Q. WHY IS TECHREN SOLAR I REQUESTING THE PARTIAL TAX ABATEMENTS REFERENCED IN THE PRIOR QUESTION?**

A. The availability of the sales, use, and property tax abatements provided under the Nevada Governor's Office of Energy Renewable Energy Tax Abatement Program were an important consideration in 174PG's decision to develop solar energy generating facilities in Nevada. Additionally, these partial abatements were factored into the pricing for the power purchase agreement ("PPA") for the project, which allowed the energy from the TSI project to be priced significantly lower than would otherwise be possible, and these savings will be passed on to the Nevada ratepayers. Because these abatements were factored into the pricing for the PPA, they are critical for the successful development of the TSI project.

**Q. WILL ANY FUNDING BE PROVIDED BY ANY GOVERNMENTAL ENTITY IN THIS STATE FOR THE ACQUISITION, DESIGN OR CONSTRUCTION OF THE TECHREN SOLAR I PROJECT OR FOR THE ACQUISITION OF THE LAND?**

A. No.

**Q. WILL THE TECHREN SOLAR I PROJECT BE OWNED, OPERATED, LEASED OR OTHERWISE CONTROLLED, EVEN IN PART, BY A GOVERNMENTAL AGENCY?**

A. No.

**Q. HAVE YOU APPLIED FOR OR ARE YOU RECEIVING ANY OTHER TAX ABATEMENT OR EXEMPTION FOR THE TECHREN SOLAR I PROJECT?**

A. No.

**Q. CAN YOU PLEASE EXPLAIN IN DETAIL THE TECHREN SOLAR I PROJECT?**

A. The Techren Solar I facility will be a 100 Megawatt solar energy facility installed on approximately 667 acres of the City of Boulder City's municipally owned lands in the Boulder City Solar Energy Zone located in Eldorado Valley, Nevada. The project has undergone a thorough environmental review under the National

Environmental Policy Act. Both the solar site itself, and the associated 230 kilovolt high voltage generation tie line connecting the TSI site and the point of interconnection at NV Energy's Nevada Solar One substation located approximately 9 miles away, have received all of the required rights-of-way, environmental permits, and a Utility Environmental Protection Act ("UEPA") Permit to Construct from the Public Utilities Commission of Nevada. We anticipate that additional required construction permits (i.e., building permits) will be issued within the next 45 days.

Regarding the PPA, as a result of a competitive request for proposal process conducted by Nevada Power, Techren Solar LLC successfully negotiated a 25-year PPA between Nevada Power and Techren Solar LLC for the TSI Project, and this PPA has been approved by the Public Utility Commission of Nevada. Techren Solar will assign this PPA to TSI within sixty (60) days of this testimony.

Regarding the environmental benefits of the TSI Project, the TSI Project provides a sustainable, renewable and clean source of energy – solar energy. Solar energy conserves natural resources by considerably reducing fossil fuel dependence, greenhouse gas emissions and peak time grid constraints. Solar PV projects work by converting sunlight directly into electricity without generating byproducts. The largest and most obvious environmental benefit of the TSI Project is the avoidance of air emissions. A solar PV facility can generate electricity without any of the byproducts of traditional fossil fuel power plants, including air emissions, noise, vibration, odor or waste generation. Further, as opposed to both fossil fuel power plants and even renewable solar thermal facilities, the TSI Project does not require

the use of any water for cooling or the generation of electricity. A minimal amount of water will be used for panel washing. Thus, the project's use of solar photovoltaic technologies takes advantage of one of the State of Nevada's most abundant, renewable resources, the sun, without depleting one of the State's scarcest resources, water.

**Q. WHAT BENEFITS WILL THE TECHREN SOLAR I PROJECT BRING TO THE STATE AND CLARK COUNTY?**

A. In addition to the environmental benefits and the economic benefits described in my responses to other questions, and in addition to the permanent and part-time job creation described in my responses to previous questions, the TSI project will also generate approximately 150 temporary construction jobs and increase local purchases and sales tax revenue during construction. There will be also be ongoing revenue to the local community through Operations and Maintenance activities such as panel washing, site security, and general labor for maintenance and vegetation cutting. Further, even if the property tax abatement is granted, the TSI project will still generate significant property tax revenue for Clark County (estimated by the State of Nevada Department of Taxation to be in excess of \$9,000,000.00 over the course of the abatement period). Even factoring in the partial tax abatements, the tax revenue that Clark County will receive from the TSI project will greatly exceed the cost of the minimal services that Clark County will provide the TSI project. Additionally, the TSI project will generate lease payments

to the City of Boulder City of approximately \$1 million dollars annually during the course of the TSI land lease.

**Q. PLEASE PROVIDE A BRIEF SUMMARY OF THE CONSTRUCTION OF THE TECHREN SOLAR I PROJECT?**

A. To date, the TSI project has been designed and preliminary work, including fencing and the installation of fiber optic cables, has begun. The TSI project has a strict construction schedule and it is anticipated that the project will be completed by the end of 2018 and begin commercial operations on December 31, 2018.

**Q. HAS TECHREN SOLAR I APPLIED FOR ALL REQUIRED PERMITS TO CONSTRUCT THE TECHREN SOLAR I PROJECT?**

A. Yes. TSI has applied for all required permits to construct the TSI project, and TSI has already received all required discretionary permits such as a UEPA Permit to Construct and a BLM Right of Way Grant. Ministerial building and construction permits have been applied for and are pending.

**Q. PLEASE PROVIDE AN UPDATED LIST OF CONTRACTORS AND SUBCONTRACTORS.**

A. The following contractors and subcontractors are currently expected to perform construction work on the TSI Project:

- Hanwha Q CELLS USA EPC LLC, General Contractor, Irvine California



- Westwood Professional Services, Middleton, WI —Mechanical and Electrical Design
- Louis Berger, Las Vegas, NV, Civil Design
- Tri-Axis, Albuquerque, NM, High Voltage Design
- Rosendin Electric, Las Vegas, NV, High Voltage Construction

**Q. WILL TECHREN SOLAR I NOTIFY THE GOVERNOR’S OFFICE OF ENERGY ONCE ADDITIONAL CONTRACTORS ARE SELECTED SO THAT COMPLIANCE WITH NRS 701A.365 CAN BE VERIFIED?**

A. Yes, an updated listing of contractors and sub-contractors will be provided to the Governor’s Office of Energy as additional contractors and sub-contractors are identified so that compliance with the wage, benefit, residency, and other requirements of NRS 701A and the Nevada Governor’s Office of Energy Renewable Energy Tax Abatement Program can be verified.

**Q. HOW MANY EMPLOYEES WILL WORK ON CONSTRUCTION OF THE TECHREN SOLAR I PROJECT?**

A. Approximately 150 employees will work on the construction of the TSI project.

**Q. HOW MANY FULL-TIME EMPLOYEES WILL BE WORKING ON THE TECHREN SOLAR I PROJECT DURING THE SECOND QUARTER OF CONSTRUCTION?**

A. Approximately 150 full-time employees will work on the construction of the TSI project during the second quarter of construction.

**Q. HOW MANY OF THOSE EMPLOYEES WILL BE RESIDENTS OF NEVADA?**

A. It is estimated that 65%, or approximately 98, of the employees will be residents of Nevada.

**Q. EXCLUDING MANAGEMENT AND ADMINISTRATIVE EMPLOYEES, WHAT WILL BE THE AVERAGE WAGE OF THE EMPLOYEES WORKING ON THE CONSTRUCTION OF THE TECHREN SOLAR I PROJECT?**

A. Approximately \$73 per hour, using the definition of “wages” set forth in NRS 338.010(24).

**Q. WILL EMPLOYEES WORKING ON CONSTRUCTION OF THE TECHREN SOLAR I PROJECT BE PROVIDED A HEALTH INSURANCE PLAN, PROVIDED BY A THIRD PARTY ADMINISTRATOR, THAT INCLUDES COVERAGE FOR DEPENDENTS OF THE EMPLOYEES?**

A. Yes.

**Q. WILL THE HEALTH INSURANCE PLAN OFFERED TO EMPLOYEES COMPLY WITH THE REQUIREMENTS OF NRS 701A.365(1)(d)(4) AND ALL APPLICABLE REGULATIONS?**

A. Yes.

**Q. HOW LONG WILL THE TECHREN SOLAR I PROJECT BE IN OPERATION?**

A. The TSI project has entered into a PPA with NV Energy with an initial term of 25 years. The TSI project's design life is for 35 years, and TSI's land lease with Boulder City is for a period of 50 years with the option to renew. While the PPA's initial term is for 25 years, it is anticipated that with regular maintenance and periodic major equipment replacement, the TSI project will be in operation well over 35 years.

**Q. HOW MANY EMPLOYEES WILL BE WORKING AT THE TECHREN SOLAR I PROJECT AFTER IT IS FULLY OPERATIONAL?**

A. Approximately 4 full-time employees and an additional 3 part-time employees or sub-contractors (for security and periodic solar panel cleaning) will be employed at the TSI project during its operational stage. The average annual wage paid to the operational employees of the TSI project will be in compliance with NRS 701A.365(1)(d)(3).

**Q. HOW MUCH OF A CAPITAL INVESTMENT WILL TECHREN SOLAR I LLC MAKE IN CONNECTION WITH THE TECHREN SOLAR I PROJECT?**

A. The TSI project is anticipated to make a total capital investment of approximately \$152,586,993.00. Approximately thirty percent (30%) of the total capital investment associated with the project, or approximately \$45,776,097.00, will be made in the State of Nevada. The capital investment made by the TSI project in the State of Nevada will exceed the statutory requirement of NRS 701A.365(1)(d)(2) by over Thirty Million Dollars (\$30,000,000.00)

**Q. WILL THE FINANCIAL AND EMPLOYMENT BENEFITS THE STATE OF NEVADA AND ITS RESIDENTS RECEIVE FROM THE TECHREN SOLAR I PROJECT EXCEED THE LOSS OF TAX REVENUE THAT WILL RESULT IF THE PARTIAL ABATEMENTS ARE GRANTED?**

A. Yes. The TSI project will result in an eight-figure capital investment in the state of Nevada, the payment of roughly nine million dollars in unabated property taxes, the payment of roughly one million dollars per year in lease revenue to Boulder City. Additionally, the TSI project will employ approximately 150 construction workers (approximately 65% of which will be Nevada residents) and several operational and maintenance workers at the wages required by NRS 701A.365(1)(d),

**Q. ARE YOU FAMILIAR WITH NRS CHAPTER 701A's CRITERIA REGARDING ELIGIBILITY FOR PARTIAL ABATEMENTS OF SALES, USE, AND PROPERTY TAXES?**

A. Yes.

**Q. DO YOU BELIEVE THAT THE TSI PROJECT MEETS ALL OF THE CRITERIA SET FORTH IN NRS CHAPTER 701A TO QUALIFY FOR THE PARTIAL ABATEMENTS TECHREN SOLAR I LLC IS REQUESTING?**

A. Yes.

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

A. Yes, it does. If any modifications or additions to this testimony are required, I will make them at the public hearing on this application.

## ATTACHMENT 1

Laurence is an energy development executive with 30 years of international energy industry experience, the last 17 of which has been exclusively in renewable energy project development (solar, wind, biomass, biodiesel). He has developed 805 MW of utility-scale wind and solar energy projects now operating in the United States and Canada. His focus has been in designing and completing complex NEPA and CEQA permitting programs for energy projects on Federal (BLM, DOE, DOD) lands, negotiating power off-take and interconnection agreements, securing equipment supply, preparing project financing packages, the identification of green field project opportunities and business development activities relating to the acquisition and sale of such projects. He advises on strategic planning, instituting scalable business processes, managing industry relations and public policy.

Laurence is the Head of Project Development—U.S. West and Canada Country Manager for 174 POWER GLOBAL Corp., a Hanwha Company, that is the Manager of Techren Solar LLC. He is the project development manager for the Techren Solar I project. Hanwha is one of the world's largest solar companies, that specializes developing, owning and operating solar photovoltaic energy projects. He has been an employee of Hanwha for the past four years, prior to which, Laurence, as the Principal of Greene Renewable Energy Inc, (GREI) served as a senior consultant for Hanwha for an additional three years. His other clients at GREI included: the U.S. Army, for whom he advised on renewable energy development and energy security matters on Department of Defense installations in Hawaii, California, Arizona and New York; and a Midwest wind developer/operator, for whom he has successfully negotiated PPA and interconnection agreements and assisted with corporate finance matters.

Prior to mid-2011, Laurence served as the Director of Public Policy for Acciona Energy North America. There he was responsible for all governmental and industrial affairs across Acciona's U.S. and Canadian energy businesses: Acciona Wind Energy (wind development); Acciona Wind Power (wind turbine manufacturing); Acciona Solar Power (solar thermal power development); and Acciona Solar Energy (solar photovoltaic development). He was previously the Vice President of Development for the Wind Energy group and the Director of Development for the Solar Power group, where he hired and led a team of development professionals responsible for land lease, wind and solar resource assessment, interconnection, power purchase RFP bids, environmental permitting, project acquisition due diligence, and project finance.

Prior to joining Acciona in 2005, Laurence served for four years as Vice President of Development at Global Renewable Energy Partners (GREP), a Vestas Company, and led the company's market expansion and project development activities across the USA and Canada since 2001.

From 1988 through 2000, Laurence worked as a Program Manager for Unocal Corporation (now Chevron), developing oil and gas resources, primarily in Asia.

Laurence was formerly the President of the California Wind Energy Association and a former American Council on Renewable Energy (ACORE) Leadership Council member. Laurence holds a Master of Science Degree (Geology) from the University of California, Davis, and an MBA from UCLA's Anderson School of Management, where he specialized in international market development strategy and business management. Laurence also holds a Certificate in Environmental Engineering, and is a Registered Professional Geologist in the State of California (#5447).