Jan Brewer
Governor, State of Arizona

Leading the Way on Solar Energy

Arizona has a long history of providing a balanced set of traditional resources to generate electricity, including nuclear, coal, natural gas and hydro power. We have the largest nuclear power plant in the United States. Our tribal nations have large coal reserves, and our hydroelectric dams are the foundation upon which our state was built. However, over the past several years we have seen a transition from using traditional sources alone to also using a variety of newer energy technologies.

Arizona's solar resource not only has the potential to help us become more energy independent but also to provide enormous opportunity for economic growth. As we enter a new era in energy, Arizona is working toward developing a strong solar energy industry and infrastructure.

Since before statehood, Arizona has provided leadership in fostering solar energy research, development, manufacturing and deployment for the benefit not only of the people and the economy of Arizona, but the nation and the world. Since the 1800s, Arizona has utilized solar for heating and pumping water, and tested and certified solar products and new solar technologies. More recently, Arizona has enacted numerous solar tax incentive programs for both business owners and residents.

Under my leadership, solar energy has become a growing sector of our diverse energy portfolio, with Arizona being dubbed the "Solar King" by industry trackers due to our state's ideal climate and thriving environment for renewable-energy technologies and manufacturing.

Making Arizona the "Solar Capital of the World" is one of my commitments. It is supported by aggressive state financial incentives, which has created a climate perfectly suited to put Arizona on that path. Driven in part by Arizona's Renewable Energy Standard (RES), which requires that 15 percent of retail power production come from renewable sources by 2025, Arizona's solar installations grew by 250 percent in just 2010 alone – an unprecedented feat for any state.

One of my first acts as Governor of Arizona was to increase the number of renewable energy installations in Arizona. In 2009, 50 percent of the State Energy Program funding was leveraged for a total of $104 million, and was dedicated to renewable energy projects. The results were 472 PV systems installed with 5,287 kilowatts of capacity and 168 solar hot water systems with over 23,000 gallons tank capacity. Included in these numbers receiving systems were 89 school districts, 51 nonprofit organizations, 41 ranches & farms and 9 state government facilities.

I also established the Solar Energy Task Force. This group, in keeping with my commitment to regulatory reform, helped us identify ways to streamline the solar permitting process and make installations easier and more affordable.

Arizona's rapidly expanding research and development resources for the renewable energy industry demonstrate a strong commitment to the industry's growth at the government, business and university levels.

Arizona is home to some of the world's most innovative renewable energy initiatives, including The Solar Zone research park in the University of Arizona's Science and Technology Park, which houses nearly 50 companies; 7,000 high-tech employees. It also includes the Arizona Center for Innovation, a business incubator for developing technology companies, which offers services to solar start-ups.

Arizona's world-renowned research universities and effective industry-university collaboration continue to drive solar advancements in the state. That helps deliver an exceptional workforce and secure Arizona's position as a global leader in the solar industry.

With approximately 61,000 students spread across four campuses, Arizona State University (ASU) is the state's largest university. Recently named one of the "greenest" universities in the country, ASU launched the nation's first School of Sustainability, offering graduate and undergraduate degrees in sustainability, with a focus on collaborative learning techniques designed to address challenges of the 21st century. ASU is also home to LightWorks, a multidisciplinary effort to leverage ASU's expertise in solar and other renewable energy fields to expedite the technology needed to make it affordable and mainstream; and to a number of research centers, including the Flexible Display Center and Photovoltaic Testing Laboratory.

The University of Arizona (UA) is Arizona's second largest university and ranked one of the top 20 public research universities in the country. UA is home to AzRISE, a global institute using powerful industry-education collaboration – supported by research and economic and public policy – to drive innovative solar energy solutions; and to The Solar Zone, a pioneering solar research park spread across 222 acres in the University of Arizona Science and Technology Park. The Solar Zone's strategic location, synergistic environment, specialized talent pool, and access to quality research and resources give solar companies operating there a major competitive advantage.

Northern Arizona University (NAU) is home to the Center for Sustainable Environments (CSE), a national leader in the university-based "sustainable science." It offers programs that address the survival of humanity and other species on Earth. One area of emphasis is in the reduction of ecological impacts related to energy use. CSE is housed in NAU's College of Engineering and Natural Sciences and participates in many educational, research and outreach activities, including the Campus Sustainability Program and the Sustainable Economic Development Initiative.

Today, the solar industry is stabilizing from a frenzy of activity. Over the last two years, a number of high-profile solar firms have failed, restructured or scaled back investment in the solar market. While concerning, these setbacks are not uncommon for a relatively new technology still maturing in the global marketplace. With time and continued technological improvements, I'm confident the solar industry will emerge stronger.

Arizona remains focused on solar energy's still-promising future. This includes next-generation advances that will reduce manufacturing costs, increase energy retention with high-efficiency photovoltaic panels and improve utility with smaller, more efficient batteries.

Interest in Arizona among solar firms remains high.

Two years ago, I met with several such companies while on a trade mission in China. Similar discussions occurred last summer in Europe, during meetings in Berlin, Munich and Paris. This past fall, my Arizona Commerce Authority completed strategic outreach and company meetings during Solar Power International – the industry's largest global gathering.

Arizona has many unique renewable energy attributes, with solar energy being our most abundant. The Solar Energy Industries Association reports that our state:

- Ranks second nationally with 1,097 MW (distributed and utility-scale) of installed solar capacity, enough to power more than 267,561 homes;
- Is adding 426+ MW of utility-scale capacity;
- Creates electricity from 15,000 solar PV installations;
- Ranked second nationally for PV installations during 2012; and
- Boasts more than 265 solar companies, including 27 manufacturers.

With an "All of the Above" energy plan that takes advantage of all available resources, including traditional forms like coal and natural gas, we can ensure that Arizona has the energy necessary to power a growing economy. Renewable energies, such as solar, will continue to play an important role – and Arizona is positioned to benefit economically as these technologies mature. Tax incentives I have signed into law allow Arizona to compete globally, be more aggressive in attracting foreign direct investment, and secure quality jobs. It's an investment in our future which will attract world-class renewable energy manufacturers and produce the jobs necessary to support our Arizona families.

We have seen significant investments and industry growth in Arizona. These include:

- **Faist Greentek** is a U.K.-based metal fabricator that opened a 56,000-square-foot manufacturing plant in Phoenix to support the Power-One manufacturing efforts. The plant employs 125 to 150 people.
- **First Solar**, headquartered in Tempe, Ariz., the world's leading manufacturer of thin-film solar modules, is building a $300 million, 600-employee solar-powered factory in Mesa, Ariz., that will produce an annual total generating capacity of 250 million watts. Fluidic Energy is commercializing a revolutionary energy storage technology developed at ASU and will build a manufacturing plant in Maricopa County.
- **Gestamp Solar Steel** has a new manufacturing facility that will build steel structures for utility-scale, concentrated solar generation stations in its new 75,000-square-foot facility in Surprise, Ariz. It will house a steel fabrication factory and the U.S. headquarters for Gestamp, employing approximately 50 people.
- **Power-One Inc.**, a California-based solar and wind inverter manufacturer, opened a 120,000-square-foot manufacturing facility in Phoenix (its first in North America), citing Arizona's strong workforce and the intellectual resources of ASU as reasons for choosing Arizona for its U.S. manufacturing base. It employs hundreds of Arizonans, and Power-One's main suppliers are also expected to relocate to the Valley.
- **Rioglass Solar**, a Spanish company, is completing a glass reflector manufacturing plant in Surprise, Ariz., which supplies tempered-glass reflectors concentrated solar power (CSP) units.
- **Schletter Inc.** is a German-based company that built its first U.S.-based operation center in Tucson, Ariz., in 2008, after looking at cities across Arizona, Colorado and California. Schletter manufactures solar mounting systems for small- to utility-scale generating stations.
- **TÜV Rheinland** of Germany built its photovoltaic testing laboratory in Arizona, upgrading the technology and more than doubling the capacity of the former ASU photovoltaic lab. The new lab provides a unique one-stop source for clients to get full testing and certification for all safety and performance standards in use by the industry anywhere in the world.

I am proud to share that Arizona installed more utility-scale solar in 2012 than any other state, according to the Solar Energy Industries Association's 2012 Solar Market Insight Report.

Installations totaled 710 mega-watts. Add to this significant projects already under development or recently completed.

- **Abengoa Solar** is building a 280-megawatt CSP plant (Solana) in Gila Bend, Ariz., which will generate enough energy to power 70,000 homes. The Solana generating station will create 1,500 construction jobs and when completed in 2013, it will employ 85 highly skilled technicians. The plant will also be the first large-scale solar plant in the nation to store the energy it generates for later use, enabling it to provide power at night and during cloudy weather.

- **APS/Luke Air Force Base Photovoltaic** includes 52,000 high-efficiency SunPower solar panels generating 15 megawatts across 100 underutilized acres on the base. It will be the largest solar installation on U.S. government property.

- **Sempra Gas and Energy** completed its Mesquite Solar Complex in Arlington on former agricultural land near existing transmission lines, commissioning Suntech Power to provide its solar modules, some of which were produced at its Goodyear facility. At build-out, the site could grow to 600 megawatts, becoming one of North America's largest photovoltaic solar generation plants. Phase one is now generating 150 megawatts with a capital investment estimated at $500 million.

- **The Solar Zone**, on 250 acres in the heart of the University of Arizona's Science and Technology Park, was designed to enable utilities and developers to evaluate solar technologies side by side to determine the most efficient and economical systems. Supported by Tucson Electric Power, six projects by various solar companies are currently in the works, making The Solar Zone the largest multi-technology solar demonstration site in the U.S.

Quick Solar Facts:

9,800

Jobs in the solar industry in Arizona in 2012 (The Solar Foundation, 2012 Jobs Census Report). This represents 8.2% of total U.S. solar industry jobs and makes Arizona the second largest solar employer in the country.

No.1

State in the Mountain Region (NM, CO, UT, ID, MT, NV, WY, AZ) for number of solar establishments. (The Solar Foundation, 2012)

$590M

Amount invested in 2012 to install solar on homes and businesses. (Solar Energy Industries Association, 2013)

$1.1B

Estimated economic output of the renewable industry in Arizona in 2011, produces more than $417 million in wages. (Elliott D. Pollack & Company Economic Impact Analysis, Feb. 2012)

By focusing on renewable energy innovation, solar installation, and energy efficiency, Arizona will continue to lead the nation in the development and implementation of products that move the State of Arizona – and the world - toward energy independence. By continuing to foster a solar industry that will someday become an economic force of great significance, Arizona will diversify its economy, grow green jobs, and better the environment for the citizens of this great State.

My belief in solar energy isn't just lip service. I've used the Arizona sun to help power my own home since the 1970s, so I know from personal experience the potential of renewable energy in our state.

Engage in this statewide effort through my Arizona Commerce Authority. Please visit ***www.azcommerce.com***