ENERGY POLICY UPDATE

January 26, 2015

The Energy Policy Update Electronic Newsletter is published by the Arizona Governor's Office Of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by Community Outreach Personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email Gloria Castro.

UPCOMING WEBINARS

ENERGY STAR Webinars

U.S. Dept. of Energy Tribal Renewable Energy Webinar Series

U.S. Dept. of Energy Webinars

JANUARY 28: Transitioning to NERC CIPv5: What Does it Mean for Electric Utilities - Click here to register.

February 3: How a New Energy Savings Performance Contracts are Improving Energy Efficiency in U.S. Buildings – Click here to register.

2015 UPCOMING EVENTS

Getting to ZERO Nat'l. Forum
Feb. 1-3 Washington, DC

NASEO Energy Policy Outlook Conference 2015
Feb. 3-6 Washington, DC

Solar Power Generation USA
Feb. 4-5 San Diego, CA

Energy, Utility & Environment Conference (EUEC) 2015
Feb. 16-18 San Diego, CA

Like our Facebook page! Learn more about energy in Arizona, get daily posts on a variety of energy topics and use the Comment Section to tell us what you think or ask questions of our energy experts.

CONTENTS

- ARIZONA–RELATED
- ALTERNATIVE ENERGY & EFFICIENCY
- ENERGY/GENERAL
- INDUSTRIES & TECHNOLOGIES
- LEGISLATION & REGULATION
- WESTERN POWER
- STATE INCENTIVES/POLICIES
- GRANTS
- EVENTS
- INTERNATIONAL BUSINESS EVENTS

The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

Arizona Labor Market Finished 2014 on an Upswing

[Arizona Republic, Jan. 23] Arizona employers added a net 7,000 jobs in December, ending 2014 with slow, steady growth that economists say might be a good sign for 2015. However, experts cautioned that last year's closing numbers also must be weighed against continuing sluggishness in Arizona's labor and housing markets, making it difficult to predict when the state's economy will boom again. Many of December's gains in retail hiring, for example, are expected to be erased when the January jobs report is released and temporary holiday jobs are missing. But other sectors of the economy posted gains that look more durable, said Aruna Murthy, director of economic analysis for the Arizona Office of Employment and Population Statistics. Arizona's seasonally adjusted unemployment rate also ended 2014 at 6.7 percent, down slightly from November and from the 7.6 percent level at the end of 2013. "It's been a good month. Our gains across sectors have been pretty decent," Murthy said, as growth in health care is expected to continue into 2015. "I think we are headed to a better 2015. Our consumer confidence is picking up. "Still, those declines fall short of the nation as a whole. The U.S. unemployment rate fell faster in December and stands at 5.6 percent.

Collaborations with Industry Aim To Boost Solar Energy Technology

[ASU News, Jan. 13] Two Arizona State University engineers – Mariana Bertoni and Stuart Bowden – will have roles partnering with industry as part of an effort by the U.S. Department of Energy to aid photovoltaic manufacturing and supply-chain companies in advancing their technologies. Their projects are among research and development endeavors the Department of Energy is supporting through its SunShot Solar Manufacturing 2 program, which is providing more than $24 million to 10 solar energy technology manufacturers based in the United States. The program supports development of innovative technology for novel manufacturing equipment and processes that will reduce costs and increase efficiency. Bertoni, an assistant professor, and Bowden, an associate research professor, are faculty members in the School of Electrical, Computer and Energy Engineering, one of ASU's Ira A. Fulton Schools of Engineering. They both

Sustainability Solutions Festival
Feb. 16-21

GreenBiz 2015
Feb. 17-19 Phoenix, AZ

GreenBiz Forum 2015
Feb. 17-19 Phoenix, AZ

2015 Sustainability Solution Festival
Feb. 17-22 Phoenix, AZ

Natural Gas Vehicles + Infrastructure
Mar. 10-11 Phoenix, AZ

GLOBALCON Conference & Expo
Mar. 17-18 Philadelphia, PA

Arizona Science & Engineering Fair
Apr. 7-9 Phoenix, AZ

Solar Summit 2015
Apr. 14-15 Phoenix, AZ

Utility Solar Conference
Apr. 27-29 San Diego, CA

CxENERGY 2015 Conference & Expo
Apr. 27-30 Las Vegas, NV

Alternative Clean Transportation (ACT) Expo
May 4-7 Dallas, TX

Solar Power Generation Mexico
May 19-20
World Trade Center, Mexico

Energy Efficiency Finance Forum
May 31-Jun. 2 San Francisco, CA

West Coast Energy Management Congress (EMC)
Jun. 3-4 Long Beach, CA

14th Annual Small Business Forum & Expo
Jun. 16-18 Phoenix, AZ

ASHRAE Annual Conference
Jun. 27-Jul.1 Atlanta, GA

RES Las Vegas
Mar. 9-12 Las Vegas, NV

ACEEE Summer Study on Energy Efficiency in Industry
Aug. 4-6 Buffalo, NY

also are Senior Sustainability Scientists in the Global Institute of Sustainability. Bertoni will work with SolarWorld Industries America Inc. to develop technology for a novel silicon ingot growth, the process by which the material for solar cells is manufactured. Funding from the Department of Energy will help transition SolarWorld's proprietary NeoGrowth manufacturing process from pilot stage into early-stage production. SolarWorld is the largest U.S. solar panel manufacturer and one of the world's largest solar-technology producers, headquartered in Hillsboro, Oregon. The project will upscale the NeoGrowth production capacity to 300 megawatts of high-quality silicon wafers at a cost that is competitive with wafers on the open market. Bertoni will identify the most detrimental defects present in the new crystals grown by SolarWorld and analyze the impact of the crystals on the performance of solar cells. The results will help SolarWorld optimize growth conditions to minimize as-grown defects and maximize the power-conversion efficiency of the final solar cells.

First Solar Marks New Milestone with 10 Gigawatts of Installed PV Capacity

14,000 gigawatt hours of energy generated per year is sufficient to power Washington, D.C.

[Business Wire, Jan. 19] TEMPE, Ariz. & ABU DHABI, United Arab Emirates – First Solar, Inc. (FSLR) today announced that it has achieved 10 gigawatts (GW) of photovoltaic (PV) solar capacity installed globally, making it the first thin film PV module manufacturer in the world to achieve this milestone. The announcement was made at the start of the World Future Energy Summit in Abu Dhabi, where First Solar is showcasing a comprehensive range of solar energy solutions. Founded in 1999, First Solar made its first commercial shipment in 2002, and since then its advanced thin film modules have been used in a wide range of applications, from kilowatt-scale mini-grid and rooftop applications, to multi-megawatt utility scale solar energy plants. With enough modules installed worldwide to circle the planet three-and-a-half times, First Solar's 10GW of installed capacity produces an estimated 14,000 gigawatt hours (GWh) a year. This is equivalent to the annual energy consumption of the city of Washington, D.C. It is also sufficient to power five million average households and displaces the need for as many as 20 average coal-powered plants.

No Consensus on Plastic Bags in Flagstaff

[Arizona Daily Sun, Jan. 15] Flagstaff City Council chambers were packed Tuesday night and the subject was immediately obvious. Plastic bags, tied to wrists, packed in bigger bags, pinned to hats and fashioned into skirts were everywhere during a community discussion about the single-use totes. Plastic bags in Flagstaff was the only topic on the Council's agenda, but even so, many attendees didn't have a chance to comment before the meeting's end. The council didn't make any decision at the meeting and will continue the discussion at a yet-to-be-determined date. Before Council convened, dozens of people, some wearing "Ban the Bag Flagstaff" T-shirts and other plastic bag-inspired outfits, gathered in front of City Hall to march in support of taking action to reduce the bags. The gathering was organized by the Friends of Flagstaff's Future, Speak Up and the Northern Arizona University Green Jacks student group, among others.

One River's Outsize Impact—and the Threat of Drought

The Colorado Supplies Economic Lifeline to Seven States but Its Future Is Threatened

[Wall Street Journal, Jan. 14] A new study for the first time quantifies the economic importance of Colorado River water to seven Western states—and the dire outcome should ongoing droughts dry up even a portion of it. The river's water fuels $1.4 trillion in annual economic activity in California, Arizona, Nevada, Utah, Colorado, New Mexico and Wyoming, says the research by economists at Arizona State University. With just a 10% reduction in the water available for human use the gross economic product of those states would fall by $143 billion and cost 1.6 million jobs. At a 20% drop, those numbers would shoot up to $287 billion in lost economic activity and 3.2 million jobs, according to the study. The study assumes that no increase in water from other sources would be available. Those states, all of which have contractual rights to water from the Colorado, so far have managed to largely offset reductions in river flow brought on by a 15-year drought by drawing from underground reserves and stepping up conservation, among other measures. The researchers warn that real economic pain could occur when shortfalls no longer can be made up as population continues to grow and climate change affects rainfall.

Phoenician Shades Guests with 2,000 Solar Panels

[Arizona Republic, Jan. 16] The Phoenician resort near the Phoenix-Scottsdale border is using clean, renewable energy to boost sustainability and create shaded outdoor meeting places for guests with about 2,000 new solar panels going up around the property. One of just four Arizona luxury hotels with the five-diamond designation from AAA, the Phoenician boasts more than 600 rooms at the foot of Camelback Mountain, with rates starting around $430 per night for a

Solar Power Int'l. 2015
Sep. 14-17 Anaheim, CA

ACEEE National Conference on Energy Efficiency as a Resource
Sep. 20-22 Little Rock, AR

World Energy Engineering Congress (WEEC)
Sep. 30-Oct. 2 2015
Orlando, FL

ASU Sustainability Series Events

Green Building Lecture Series
Scottsdale, AZ

weekend in January. Resort-owner Starwood Hotels & Resorts Worldwide is partnering with NRG Energy to build the 568 kilowatt solar installation, which can generate enough electricity to power 90 homes, the company said. Starwood has a company-wide goal to reduce energy consumption and carbon emissions by 30 percent and water use by 20 percent within the next five years. The Phoenician is the first of three Starwood hotels set to get solar panel installations, with projects also planned at the Westin St. John Resort in the U.S. Virgin Islands and the Westin Maui Resort & Spa in Hawaii. Rows of new solar panels at the Phoenician now cover the top of a parking garage on the south side of the resort, providing covered parking as well as outdoor event space as needed. Panels are also planned atop two or three other resort parking areas.

Phoenix Gas Prices Fell Again, But Is This End of Ride?

[Arizona Republic, Jan. 20] Phoenix gas prices continued their downward spiral, falling 7.8 cents per gallon in the last week and averaging $1.83 on Monday, but prices could be nearing the bottom, according to GasBuddy.com. Nationally, gas prices dropped 5.8 cents and gas prices averaged $2.05 a gallon, according to the website. Phoenix per gallon prices Monday were $1.40 lower than the same day a year ago, and 44.5 cents lower than a month ago, according to GasBuddy, which surveyed 1,094 gas outlets in Phoenix. The national average decreased $1.24 per gallon from last year and 39.4 cents per gallon from last month. But with rallies in oil prices last week, the end of the gas price slide could be in sight, said Patrick DeHaan, senior petroleum analyst with GasBuddy. "Last week saw a rally in oil prices Wednesday, before caving again Thursday, then rallying again Friday -- a sign that perhaps we've seen a bottom in oil prices, and perhaps thus a bottom in gasoline prices as well," DeHaan said. "We'll certainly be watching the price of oil during this shortened trading week, and if oil fails to continue declining, it's likely that it won't get much better at the pump.' Still, DeHaan noted, even if prices begin to rise, motorists have had a "great ride."

SRP Will Provide Free Wind Energy to Super Bowl

[Arizona Republic, Jan. 14] Salt River Project will light the Feb. 1 Super Bowl in metro Phoenix with electricity from wind power. The municipal utility announced the energy sponsorship Tuesday, although the board of directors approved the deal in 2013 as part of a $1 million sponsorship of the Super Bowl Host Committee, a non-profit liaison between the league and the host region. The power to the Super Bowl originally was estimated to cost about $200,000, but SRP spokeswoman Patty Garcia Likens said Tuesday the cost now is expected to be about $50,000 for the electricity, services to the stadium and renewable-energy credits. SRP will provide $500,000 cash, $450,000 of in-kind services and $50,000 for electric energy, the related services and renewable energy credits for University of Phoenix game-day related period, a company representative said Tuesday. Originally, the utility was to provide $225,000 cash.

SunZia Announcement May Bring Renewable-Energy Jobs

[Albuquerque Business First, Jan. 23] For years, New Mexico has touted its renewable-energy potential. There hasn't been a way for the state to export the electricity it generates from renewable sources, but on Saturday there will likely be a breakthrough when Secretary of the Interior Sally Jewell visits Albuquerque to make a major announcement about the SunZia Southwest Transmission Line. The proposed SunZia line is a giant electricity transmission line that would send power generated in New Mexico to Arizona and California. The idea is to load the line with solar or wind electricity and deliver it to states that don't have the same renewable capacity. But the line, which has been planned for years, has faced many hurdles, including its route through New Mexico. It would be the first such line to carry electricity made here to another state. Though the announcement about Saturday's visit didn't say whether the line will be approved, it did drop a hint: "Jewell's visit follows President Obama's State of the Union address earlier this week, where he underscored his administration's Climate Action Plan to create American jobs, develop domestic clean energy sources and cut carbon pollution." An analysis done by New Mexico State University and the University of Arizona said the line would create 6,200 jobs during its construction, as well as 36,000 jobs from the construction of new renewable plants in Arizona and New Mexico. In New Mexico, the study said, the project would bring $275 million in estimated wages. The line promises to promote more renewables growth in New Mexico by leveraging the state's wind and solar potential to sell electricity generated from renewable to other Arizona.

Tempe Lab Helps Break Electricity World Record

[Arizona Republic, Jan. 14] In a research facility off the Loop 101 in Tempe, about 30 researchers in clean rooms wearing protective suits, gloves and hair nets test some of the most efficient semiconductor materials on the planet for solar panels and LEDs. They must be doing something

right at Soitec Phoenix Labs. In December, Soitec and partners in France and Germany announced breaking the world record for a solar cell converting sunlight to electricity. The cell was certified to have a conversion rate of 46 percent. That is about double the efficiency of most common solar cells that use a single semiconductor material to convert sunlight to electricity. Soitec makes "multijunction" solar cells that use more than one semiconductor material. The next best multijunction cells have been certified to an efficiency of a little over 40 percent, but Soitec officials believe they are on the verge of reaching 50 percent efficiency.

ALTERNATIVE ENERGY & EFFICIENCY

'Sexy' No Longer, Solar May See More Consolidation, Hanwha Says

[Bloomberg, Jan. 22] Tumbling oil prices will maintain pressure on the solar industry to consolidate by drying up investor interest in building new factories, according to an executive who just carried out a $1.2 billion merger. Dong Kwan Kim, chief commercial officer of Hanwha SolarOne Co. (HSOL), said the industry has been "unfairly penalized for oil prices" and that the company that ranks among the top three panel makers may return to profit this year for the first time since 2010. "When oil prices were very high and green energy was a sexy, hot sector, I think a lot of money was pouring into overcapacity," Kim said in an interview at the World in Davos today. "The oil price should help in that sense while not hurting our business materially." Oil's decline is thwarting the sort of deals that built China's solar industry in the last decade -- and left it with a crippling excess of capacity that gutted prices and margins across the industry. Solar panels now are selling for about 70 cents a watt, down from more than $2 in 2010. The slump in panel prices bankrupted at least two dozen producers, including Q-Cells of Germany, which was once the industry's biggest producer and now is a part of SolarOne. Shares of renewable energy companies have plummeted since June, when oil started its slide. Brent crude futures at less than $50 a barrel today are less than half their peak last year, and the WilderHill New Energy Global Innovation Index of 105 clean-energy companies has fallen almost 20 percent since then.

Spanish Companies Plan To Invest $14 Bn in Power Projects in Mexico

[Latino Fox News, Jan. 13] pain's Iberdrola, Gamesa and Acciona said they planned to invest nearly $14 billion in Mexico's energy industry between 2015 and 2018. Mexico expects to have an installed generating capacity of more than 9,500 MW, a level equivalent to 8 percent of total power generation in the country. Iberdrola has plans to invest up to $5 billion in Mexico, Alvaro Portellano, director of regulatory affairs for renewable energy of the company's Mexican subsidiary, said in a joint press conference with executives from the other firms. Eduardo Andrade, Iberdrola's corporate director for Mexico, told Efe that the investment will go into natural gas and renewable energies. Hipolito Suarez, director of Gamesa for Mexico and Central America, said his firm would invest $950 million in new wind farms, $500 million in supplier development and $6 million in a service center. "We are building three (wind) farms with a rough capacity of 2,000 MW a year, and projects for about $650 million," Miguel Angel Alonso Rubio, Acciona's general director, said. As of Dec. 31, Mexico had installed generating capacity of 2,551 MW of wind power, Mexican Wind Energy Association president Adrian Escofet said.

Where the Clean Energy Money Flowed Last Year

[Gigaom.com website, Jan. 19] New investments in clean energy — from project financing to government funding to VC — rebounded in 2014 to $310 billion invested globally, just shy of the annual global record for clean energy investments in 2011, according to a new report from Bloomberg New Energy Finance. That is 16 percent growth from the amount of funding that went into clean energy in 2013. The founder of Bloomberg New Energy finance, Michael Liebreich, who is also chairman of the advisory board for Bloomberg New Energy Finance, said that while BNEF was predicting a bounce back in 2014, the annual figures "exceeded our expectations." The $310 billion includes a lot of things, like investments in new big clean energy projects — say, a new solar or wind farm or a battery bank — funding into rooftop solar projects, government funding in clean energy R&D, money into corporate R&D (from GE, for example), new investments in the public markets (like an IPO, or Tesla's convertible issues), and equity investments into developing technology from venture capitalists and private equity investors. Silicon Valley makes up a very tiny fraction of this overall investing. It was the big clean energy projects (asset financing) that grabbed most of the money ($171 billion). Solar panel farms in China and the U.S., and offshore wind farms in Europe received the lions share of these funds. Solar was single biggest contributor to the clean energy funding, says the report, delivering almost half of the total, the sector's highest contribution to date. In addition, there were seven European billion-dollar offshore wind projects financed, including ones in the U.K., the Netherlands and Germany. China, in particular, was responsible for 29 percent of the world's

total clean energy investments, and the country drew in $89.5 billion for clean energy last year. China's investment in solar made up the majority of that. U.S. solar investments were high, too.

ENERGY/GENERAL

Harmonizing Electric and Natural Gas Infrastructures

[Fierce Energy, Jan. 20] A new report, commissioned by the Eastern Interconnection States' Planning Council (EISPC) and the National Association of Regulatory Utility Commissioners (NARUC), offers recommendations intended to harmonize electricity and natural gas markets, and raise awareness within the industry and regulatory community about potential challenges that may arise. In light of the anticipated increase in the use of natural gas as a fuel for new electricity generating facilities, driven by new environmental regulations and a plentiful domestic supply of gas, EISPC believes the report is timely and necessary at a time when state regulators and others are raising concerns about how greater use of natural gas will impact consumers and the integrity of both the electricity and gas systems.

Mexico To Add 66 GW to Power Grid

[Electric, Light & Power, Jan. 26] Mexico will add 66 GW to its power grid over the next 15 years, with investments of $90 billion expected in renewables, a high-ranking Mexican energy official told Business News Americas. César Hernández, the Sener energy ministry's electric power undersecretary, said during an Institute of the Americas webinar on Friday that private companies and state utility CFE will have the opportunity to provide more electric power to the country. The energy reform will create a competitive market and encourage use of renewables by awarding clean energy certificates, Hernández said. The country will also see more investments in transmission to optimize connectivity, reducing CFE losses and risks to investors, he added. The reform's aim is also to lower electricity costs by diversifying sources of generation and assuring a reliable service. Electricity prices for residential customers dropped 2 percent at the beginning of this year, and declined 16 percent for industrial users over the last 12 months. The CFE has pledged further price cuts as a result of the reforms.

Oil Output Seen Rising, Despite Fall in Its Price

[New York Times, Jan. 13] HOUSTON — Even with oil prices continuing to plummet and oil companies decommissioning drilling rigs every day, the Energy Department on Tuesday projected that domestic crude production would continue to rise in 2015, although growth would slow. The forecast of even more American supplies on an oversupplied global market was not unexpected, but it added to the probability that oil prices that have plummeted around 55 percent since June will not completely recover any time soon. But the department projected a modest recovery for the Brent global oil price benchmark, now around $46 a barrel, which it said would average $58 a barrel this year but rebound to $75 in 2016. On Tuesday, both Brent and the American benchmark oil prices tumbled sharply, but later rose from their lows. The projection came hours after North Dakota regulators reported that oil companies had decommissioned eight rigs overnight, reducing the number in the state to the lowest level in over four years. North Dakota, the No. 2 state in oil production behind Texas, still has 158 rigs drilling, but only last month there were 183 rigs operating. Nevertheless, the report issued by the department's Energy Information Administration forecast that total American crude production that averaged 9.2 million barrels a day at the end of 2014 would average 9.3 million barrels a day in 2015.

Wholesale Power Prices Increase Across the Country in 2014

[Energy Information Administration, Jan. 12] Wholesale on-peak electricity prices were up at trading hubs across the nation between 2013 and 2014, driven largely by increases in spot natural gas prices and high energy demand caused by cold weather in the beginning of the year. Electricity prices were highest in the Northeast, driven by record-high natural gas prices early in the year during a very cold winter. Spot natural gas prices at the Henry Hub averaged $4.38 per million British thermal units (MMBtu) in 2014, an increase of 17% from 2013, and prices at other major trading points were up 16%-40% in 2014. Electricity prices were the lowest, and increased the least (only 3%), in the Pacific Northwest, where abundant low-cost hydroelectric generation often leads to the lowest prices in the nation. A major factor for electricity prices in 2014 was the extreme weather system that covered much of the United States, resulting in heavy snowfall and bitterly cold temperatures during the winter of 2013-14, which strained the energy grid in several ways.

INDUSTRIES AND TECHNOLOGIES

Hydrogen Fuel Cell Market To Reach Nearly $57bn by 2023

[The Manufacturer, Jan. 14] The global hydrogen fuel cell market continued to accelerate in 2013 and 2014 and the market is likely to reach $57bn (£37bn) annually by 2023, according to a new report from Navigant Research. Rising demand in portable and transportation hydrogen fuel cell applications as well as stationary uses, such as utility-scale use in industrial and commercial buildings and residential power, drove the increase. “Right now, the stationary sector of the fuel cell market is where we’re seeing the most interest,” says Lisa Jerram, principal research analyst with Navigant Research. “In terms of fuel cell systems shipped, this area has the strongest global potential.” Encouraging this potential is the power sector’s shift toward distributed generation, which means moving away from central power generation models to a more diverse and resilient grid infrastructure. According to the report, however, the launch of commercial hydrogen fuel cell vehicles in 2015 and 2016 will bring the transportation sector to the fore. By 2023, the transportation sector is expected to command the largest share of the fuel cell market in terms of capacity shipped. Many automotive companies have already created their first working hydrogen fuel cell cars. The Toyota Mirai went on sale in Japan last month and will be launched in Europe and the United States this year.

U.S. Nuclear Power Plants Posted Record Efficiency In 2014

[Electric Light & Power, Jan. 23] U.S. nuclear energy facilities generated electricity at a record high level of efficiency in 2014, again demonstrating nuclear energy's value to the reliability and stability of the electric grid and to the nation's economy. One hundred nuclear power plants operating in 31 states posted an estimated average capacity factor of 91.9 percent, based on preliminary 2014 data compiled by the Nuclear Energy Institute. That surpasses the industry's prior record set in 2007 by one-tenth of a percentage point. Capacity factor measures total electricity generated as a percentage of year-round potential generation. Actual electricity production from nuclear energy facilities last year was the sixth highest ever, at an estimated 798.4 billion kWh. The industry's record high electricity generation came in 2010, when the 104 reactors then operating produced 806.9 billion kwh of electricity while posting an industry average capacity factor of 90.9 percent.

U.S. Solar Jobs Climb 22% as Clean Power Aids Economic Recovery

[Bloomberg, Jan. 15] U.S. solar companies boosted their employee rolls by 22 percent last year, and now employ 86 percent more workers than they did in 2010, driven by rising demand in the world’s third-largest market. Almost 174,000 people are working in the U.S. solar industry, compared with 143,000 in 2013 and 93,500 in 2010, according to a report today from the Solar Foundation. Another 36,000 solar jobs may be added this year, including factory workers, salespeople, installers, developers and researchers. The growth indicates that solar energy is one of the industries helping drive an economic recovery in the U.S., while slumping oil prices are prompting oil companies to reduce capital spending and cut employment. About 3 million Americans found work last year, the most in 15 years, and one out of every 78 new positions was in solar.

U.S. Wind-Power Installations Rose Sixfold in 2014: BNEF

[Bloomberg, Jan. 22] Installations of wind power in the U.S. surged sixfold last year, making it the largest market for the technology worldwide after China. The U.S. added 4.7 gigawatts of new onshore wind capacity in 2014 compared with 764 megawatts a year earlier, largely due to the extension of the Production Tax Credit in January 2013, Bloomberg New Energy Finance said today in a statement. Total U.S. onshore wind installations are now 64.2 megawatts. China remains the biggest market for wind with installations rising a record 38 percent, or 20.7 gigawatts, from a year earlier, according to BNEF. China’s grid-connected wind-energy capacity now is 96 gigawatts, more than that of the entire U.K. power fleet. Wind energy is China’s largest power source after coal and hydropower.

LEGISLATION AND REGULATION

For States, $48 Million To Help Cut Emissions

[New York Times, Jan. 20] Two charitable groups will spend $48 million over the next three years to help states figure out how to reduce emissions from electricity production, an effort to seize the possibilities that are opening up as the cost of clean power falls. The plan is to be announced Wednesday morning in New York. Half the money will come from Bloomberg Philanthropies, the charitable organization set up by Michael R. Bloomberg, former mayor of New York City, and half

will come from Mark Heising and Elizabeth Simons, a California couple who have taken a strong interest in reducing the risks of climate change. In interviews, people involved in the project said the goal was to provide technical assistance, including economic forecasting and legal analysis, for a dozen or so states that are willing to consider ambitious clean-energy plans. One motive for the grant is that the Obama administration is expected this summer to make final its emissions-cutting targets for the power industry. If that plan survives expected political and legal challenges, it may require extensive revamping of electricity markets that are largely regulated by the states. In addition, the low cost of natural gas, the falling cost of renewable energy and the rise of technologies that can shave electrical demand are all putting pressure on electric utilities, especially those dependent on coal. Even without the impetus of President Obama's plan, those factors would require adjustments in the electricity markets, many energy analysts have concluded.

New King in Saudi Arabia Unlikely To Alter Oil Policy

[New York Times, Jan. 23] LONDON — The new king of Saudi Arabia moved quickly on Friday to assure global energy markets that the country would maintain its strategy of pushing other top exporters to maintain a high level of oil production. But a prolonged slump in oil prices, as well as budget pressures at home, will test his resolve. As the new head of the dominant Middle East oil producer, King Salman bin Abdul-Aziz immediately emerged as the most powerful figure in the global oil patch. Saudi Arabia is the unchallenged leader of the Organization of the Petroleum Exporting Countries, the group of 12 oil-rich nations that has resisted cutting production, contributing to the recent sharp drop in crude prices. The death of King Abdullah, announced early Friday, sparked speculation that Saudi Arabia could shift direction, and prices initially rose 2 percent. Oil prices eased later, though, as the new king said in a televised address that he would stick with "the correct policies which Saudi Arabia has followed since its establishment."

Obama Is Planning New Rules on Oil and Gas Industry's Methane Emissions

WASHINGTON — In President Obama's latest move using executive authority to tackle climate change, White House officials on Wednesday announced plans to impose new regulations on the oil and gas industry's emissions of methane, a powerful greenhouse gas. The administration's goal is to cut methane emissions from oil and gas production by up to 45 percent by 2025 from the levels recorded in 2012. The Environmental Protection Agency will issue the proposed regulations this summer, and final regulations by 2016.

Rare Moment of Consensus for Senate on Keystone Pipeline

[New York Times, Jan. 20] WASHINGTON — The Senate on Tuesday overwhelmingly approved an amendment to the Keystone XL pipeline bill that is aimed at improving energy efficiency in buildings — a rare moment of bipartisan agreement in a tense debate that is nowhere near being settled. Lawmakers voted, 91 to 5, to add the popular energy-efficiency provision to a contentious bill that would approve construction of the Keystone pipeline. The amendment, offered by a Republican, Rob Portman of Ohio, and a Democrat, Jeanne Shaheen of New Hampshire, is backed by President Obama and has broad support among members of both parties in Congress. But the measure will almost certainly languish in Congress for months before it can become law as part of the Keystone bill or as a stand-alone measure. Congress is expected to pass the Keystone bill after another several weeks of debate and send it to Mr. Obama, who will almost certainly veto it. The president wants to retain the authority to make the final decision on approving the 1,179-mile pipeline, which would carry 800,000 barrels of oil a day from the oil sands of Alberta to ports and refineries on the Gulf Coast. Mr. Portman and Ms. Shaheen, who have been working together for more than a year on the efficiency measure, say they hope the unusual display of support for it could pave the way for its eventual passage into law, even in a political environment in which energy issues have become fiercely partisan.

Will EPA's New Methane Regulations Hurt Domestic Energy Boom?

[Washington Business Journal, Jan. 14] The Obama administration announced plans to reduce methane emissions from the oil and natural gas industry by up to 45 percent by 2025, using both new regulations and voluntary steps to achieve this goal. Nearly 30 percent of methane emissions in 2012 came from oil production and the production and transmission of natural gas. Methane is a much more potent greenhouse gas than carbon dioxide, so reducing these emissions is necessary in order to fight climate change, according to the Environmental Protection Agency. The EPA said it would consult with the oil and natural gas industry, as well as states, in developing new regulations to reduce methane emissions from hydraulically fractured oil wells, pneumatic pumps, and leaks from well sites and compressor stations. The agency acknowledged that methane emissions from the oil and natural gas industry have declined by 16

percent since 1990, but noted they are projected to increase by 25 percent over the next

WESTERN POWER

Colorado Industries Get Incentives for CHP

[Energy Manager Today, Jan. 12] In a late December ruling, the Colorado Public Utilities Commission approved Public Service Company of Colorado, a subsidiary of Xcel Energy, to provide financial incentives to industrial facilities that convert waste heat to power, a type of combined heat and power (CHP). The ruling, a first for the state, places cogeneration technologies alongside better-known renewables like wind, solar, biomass and geothermal. CHP produces electricity with no added emissions and no added fuel. The ruling allows Xcel Energy to pay an incentive of about $500 per kilowatt of the recycled energy. The incentive is paid over 10 years, which reduces the payback period on a company's initial investment. The ruling also allows Xcel Energy to count up to 20 MW of recycled energy per year through 2016 toward its goals of 30 percent renewable energy by 2020 under the Renewable Energy Standard originally adopted by the state legislature in 2007. Individual projects can be as large as 10 MW. There is no minimum project size.

On to Plan B as Oil Work Stalls in Texas

[New York Times, Jan. 19] MIDLAND, Tex. — With oil prices plummeting by more than 50 percent since June, the gleeful mood of recent years has turned glum here in West Texas as the frenzy of shale oil drilling has come to a screeching halt. Every day, oil companies are decommissioning rigs and announcing layoffs. Small companies that lease equipment have fallen behind in their payments. In response, businesses and workers are bracing for the worst. A Mexican restaurant has started a Sunday brunch to expand its revenues beyond dinner. A Mercedes dealer, anticipating reduced demand, is prepared to emphasize repairs and sales of used cars. And some well-off oil company managers are cutting back at home, rethinking their vacation plans and cutting the hours of their housemaids and gardeners. Dexter Allred, the general manager of a local oil field service company, began farming alfalfa hay on the side some years ago in the event that oil prices declined and work dried up. He was taking a cue from his grandfather, Homer Alf Swinson, an oil field mechanic, who opened a coin-operated carwash in 1968 — just in case. "We all have backup plans," Mr. Allred said with a laugh. "You can be sure oil will go up and down, the only question is when." Indeed, to residents here in the heart of the oil patch, booms and busts go with the territory. "This is Midland and it's just a way of life," said David Cristiani, owner of a downtown jewelry store, who keeps a graph charting oil prices since the late 1990s on his desk to remind him that the good times don't last forever. "We are always prepared for slowdowns. We just hunker down. They wrote off the Permian Basin in 1984, but the oil will always be here."

Portland Now Generating Hydropower in Its Water Pipes

[OPB.com, Jan. 20] A Portland start-up has tapped the city's water pipes as a new source of renewable hydropower that doesn't disrupt fish migration or stream flows. Lucid Energy has installed a series of small hydroelectric generators inside a pipe that carries drinking water to the city. The company announced Tuesday that its new in-pipe hydro system is now producing power for Portland General Electric customers. It's the first arrangement of its kind in the country. Lucid has a 20-year agreement to sell the power generated by water rushing through the city pipe. Some of that revenue will come back to the city to help offset the cost of running its water system. Lucid Energy CEO Gregg Semler said his company's in-pipe system offers a way to generate hydropower without environmental impacts. Plus, he said, it's constant – unlike solar and wind energy.

Reverse Net-Metering? California Penalizes Certain Types of Energy Efficiency

[Forbes, Jan. 13] Can you imagine paying your local utility for electricity you did ***not*** consume? This seems absurd. We don't pay taxes for income we never earn. In most places and most industries, this kind of scheme would be considered outrageous. But then California is not like most places and investor-owned utilities are not like most industries. That may help explain why a subsection of utility customers in California are legally required to pay a fee for electricity they do not use. The fee is called a "departing load charge" (DLC) and utilities collect it from customers who self-generate with pretty much anything other than solar panels. Energy efficiency is supposed to be exempt from DLC charges. Who would pay extra for energy-efficient light bulbs if they knew they would be charged a fee for every kilowatt-hour of electricity they saved? Nobody or almost nobody. That is why regulation in California utilities claims not to collect DLC charges from customers who invest in energy efficiency. In reality, only some types of energy efficiency

investments are granted an exemption from the DLC charges. Combined heat and power (CHP) is not one of them. CHP is not a single technology, but rather a suite of technologies combined in various ways to recover heat that is normally wasted as useful energy.

University Supplies Own Electricity
[Energy Manager Today, Jan. 14] The University of California will begin directly supplying electricity to its campuses and medical centers this month. Last year, UC became a registered Electric Service Provider (ESP), allowing its Wholesale Power Program to serve as the primary energy supplier, under direct access rules, to UC Irvine and its medical center, UC San Diego and its medical center, UC San Francisco and its medical center, UC Santa Cruz, UC Merced and a number of other accounts throughout the university. Throughout January, UC will discontinue its relationship with the incumbent electricity supplier and begin to provide electric power directly to the five above-named campuses and three medical centers, along with other electric accounts throughout the university. According to UC, making this switch will give it more control over the type of energy it buys and provide it with more price transparency. UC staff estimate the change also could trim the university's power bills by as much as 10 percent in 2015. Mark Byron, who oversees UC's Wholesale Power Program, said 25 percent of the energy will be procured from two suppliers of renewables (wind and geothermal), and 75 percent will come off the grid via California ISO.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

- **INCENTIVES**

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- Job Training
- Quality Jobs
- Qualified Facility
- Computer Data Center Program
- Research & Development
- Foreign Trade Zone
- Military Reuse Zone
- Angel Investment
- Renewable Energy Tax Incentive
- Healthy Forest
- Sales Tax Exemption for Machinery and Equipment
- Lease Excise
- Additional Depreciation
- Work Opportunity
- Commercial/Industrial Solar
- SBIR/STTR
- Private Activity Bonds
- QECB's

- **(ACA) PROGRAMS**

- **DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)**

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News
  DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is

searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- Micro-scale Optimized Solar-cell Arrays with Integrated Concentration (MOSIAC) (DE-FOA-0001256) – Concept Paper due January 22, 2015
- WaterSMART: Water and Energy Efficiency (R15AS00002) – Application due January 23, 2015
- Wood Innovations Programs (USDA-FS-WERC-2015) – Application Due Date: January 23, 2015
- Wood Innovations Close Date: 1/23/2015
- Water Conservation Field Services Program (R15AS00025) – Applications due January 26, 2015
- Buildings University Innovators & Leaders Development (BUILD) – 2015 Funding Opportunity #:DE-FOA-0001167 – Concept Papers due December 19, 2014 Close Date: 1/28/2015
- Notice of Intent: State Energy Program 2015 Competitive Awards
- Environmental Workforce Development And Job Training (EWDJT) Grants (EPA-OSWER-OBLR-15-01) – Application Due Date: February 3, 2015
- Building America Industry Partnerships for High Performance Housing Innovation Funding Opportunity #:DE-FOA-0001117 Close Date: 02/04/2015
- Choice Neighborhoods Implementation Grant Program (FR-5800-N-11) – Application Due Date: February 9, 2015
- Buildings University Innovators and Leaders Development (BUILD) - 2015 – Close Date 02/11/2014
- Powering Agriculture: An Energy Grand Challenge for Development (AID-SOL-OOA-00005) – Applications accepted between December 8, 2014 through February 12, 2015
- Advanced Research in Dry-Cooling (ARID) (DE-FOA-0001197) – Applications due February 13, 2015
- Infrastructure Management and Extreme Events (PD-15-1638) – Application Due Date: February 17, 2015
- National Institute of Food and Agriculture Tribal Colleges Research Grant (USDA-NIFA-TCRGP-004795) – Applications due February 20, 2015
- DE-FOA-0001261: OPEN 2015 – Submission Deadlines: Notice of Intent Deadline: 2/20/2015 5:00 PM ET, Concept Paper Submission Deadline: 2/27/2015 5:00 PM ET, Full Application Submission Deadline: TBD
- Thermal Transport Processed (PD-14-1406) – Application due February 20, 2015 and October 20, 2015
- Student Program for Environmental Excellence in Design (SPEED) (EPA-OAR-OTAQ-15-02) – Application Due Date: February 22, 2015

- U.S. Department of Agriculture – Phase II (USDA-NIFA-SBIR-004815) – Applications due February 26, 2015
- The Resilient Electricity Delivery Infrastructure (REDI) Initiative (DE-FOA-0001219) – Application Due Date: March 4, 2015
- EPA-EE-14-02 - Environmental Education Local Grants Program – Close Date: March 6, 2015
- Physics of Reliability: Evaluating Design Insights for Component Technologies in Solar 2 (PREDICTS2) – Close Date: 3/12/2015
- Sustainable and Holistic Integration of Energy Storage and Solar PV (SHINES) Close Date: 3/19/15
- Desalination and Water Purification Research and Development (DWPR) (R15AS00019) – Application Due Date: April 27, 2015
- Desalination and Water Purification Research and Development (DWPR) Pilot (R15AS00021) – Application Due Date: April 27, 2015
- American Apprenticeship Initiative (FOA-ETA-15-02) – Application Due Date: April 30, 2015
- Flexible Hybrid Electronics Manufacturing Innovation Institute Grant (BAA-RQKM-2015-0014) – Applications due May 29, 2015
- Advanced Frontiers in Renewable Hydrogen Fuel Production via Solar Water Splitting Technologies – Letter of Intent due October 7, 2015
- Land and Water Conservation Fund State and Local Assistance Program – Application Due Date: 08/11/2015
- Landscape Design for Sustainable Bioenergy Systems (DE-FOA-0001179) – Concept Paper due November 21, 2015
- Repowering Assistance Program - Ongoing
- Rural Business Enterprise Grants - Ongoing
- Rural Business Opportunity Grants – Ongoing
- Sunshot Catalyst Prize (DE-FOA-0001126) - Applications Accepted on a Continuous Basis - The U.S. Department of Energy SunShot Catalyst is an open innovation program that allows the public to rapidly create and develop products and solutions that address near-term challenges in the U.S. solar marketplace through prize challenges.
- Sustainable Agriculture Research and Education Grants - Ongoing
- Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines
- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- Green Refinance Plus – Ongoing
- National Science Foundation Funding Opportunities