



CPS Energy's New Energy Economy:

Leveraging Buying Power for Clean Energy and Community

A New Model for Public - Private Partnerships?

by [Monika Maeckle](#)

In June 2011, CPS Energy CEO Doyle Beneby made the unprecedented announcement that the largest municipally owned utility in the country would be “unapologetically aggressive” in pursuing local economic development.

The plan: leverage billions in buying power to bolster local job growth and infrastructure development, protect the environment, increase energy efficiency and diversify the utility’s energy portfolio in the face of increasing regulation. The occasion marked the birth of San Antonio’s “New Energy Economy.”

Three and a half years later, the unusual initiative has paid off handsomely for San Antonio and been lauded by the [Sierra Club](#), [Pew Center](#), [Environment Texas](#), and earned a [Silver Medal from the International Economic Development Council](#).

By the close of 2014, CPS Energy had partnered with eleven clean energy companies, four of which have moved their headquarters to San Antonio. As of April, 2015, more than 700 new jobs have been created, generating almost \$40 million in payroll, capital investment of \$137 million yielding an

annual economic impact of more than \$680 million.¹ When indirect and induced jobs are tallied, job totals soar to 3,797. The economic impact expands to \$1.1 billion million with multiplier effects taken into account. In addition, the companies have invested \$2.6 million in science, technology, engineering and math (STEM) education programs and \$15 million in the development of the EPIcenter, the Energy Partners Innovation Center.

As the New Energy Economy has taken root, an ecosystem of new energy companies has sprouted in San Antonio. Global companies such as Korea-based OCI Company and Germany's KACO New Energy have established operations in the Alamo City, bringing brainpower and technical expertise to Texas in addition to more solar power.

Mission Solar Energy, the first commercial n-type solar cell and module manufacturing plant in the U.S.,² now calls Brooks City Base, a redeveloped former air force base, home. New Energy sector players like Silver Spring Networks, Landis+Gyr, Consert and Greenstar have set up shop in San Antonio.

This White Paper defines the NEE Initiative, explains how it came together, and how this approach of leveraging one utility's buying power might serve others as a new model for public – private partnerships.

What is New Energy?

“New energy” includes more efficient and cleaner ways of providing power, such as solar, wind and landfill gas that complement carbon-emitting “old energy” like coal, gas and oil. It also includes efficiency programs like demand response, which involve encouraging end-users to voluntarily reduce energy use during peak demand times to reduce load and avoid exorbitant pricing on the energy spot market.

¹ Economic status report, May 2015, assembled by Dr. Steven Nivin, St. Mary's University and the Saber Institute.

² [Sun Rises on Mission Solar Energy](#), Yahoo! News, September 22, 2013

Apart from cutting emissions and helping power suppliers satisfy increasingly stringent environmental requirements, embracing new energy and its accompanying technologies can serve as an economic boon to those communities that embrace it.

“A Turn in the Road”

CPS Energy recognized the potential of new energy technology and resources early on with the arrival of a new CEO, Doyle N. Beneby, from Exelon Corporation in 2010. Shortly after his arrival, Beneby faced a tough decision with wide ranging implications: should CPS Energy spend half a billion dollars to add expensive upgrades to two aging coal plants or invest the funds earmarked for those updates in a more diverse, clean energy portfolio?

For Beneby, the answer was clear. Rather than retrofit the “old energy,” carbon-emitting coal plants, he chose to redirect those resources to cleaner “new energy” investments. Even more daring, his plan included leveraging the utility’s substantial buying power to create jobs, infrastructure and investment in education from willing business partners—all while keeping rates among the most affordable and reliable in the nation and mitigating risk through a more diversified energy portfolio.

In light of the growing uncertainties with coal generation, CPS Energy was already looking to further diversify the company’s generation mix. The utility set a goal to achieve 65% low carbon generation. The mandate: a holistic commitment to sustainability at the highest level. CPS Energy also invested in a new combined cycle, low carbon-emitting gas plant at a time when gas prices were entering a period of historic lows thanks to advancements in oil drilling technologies associated with the nearby Eagle Ford Shale.

CPS Energy made clear the NEE's goals:

- Rebalance CPS Energy's portfolio by achieving 1500 MWs, or 20% of generation capacity, from renewable energy with a total of 65% low- or no-carbon emitting power plants by 2020.³
- Leverage utility investments, clean energy and innovative technologies for job creation and education investment.
- Reduce emissions by an amount equal to removing almost 1.5 million cars from the road.
- Fuel investment in the economy and education of San Antonio.

Making It Happen by Creating a new Model

Finding appropriate corporate partners for this unusual venture and negotiating successful agreements were major undertakings given the newness of the sector and CPS Energy's strict purchasing requirements. Ideally, CPS Energy was interested in companies with staying power--yet luring established businesses would be more difficult than convincing those with shallower roots and less financial security to partner and move to San Antonio.

Finding the ideal combination of newness and financial strength was challenging. Start-ups typically do not look to municipal utilities as business partners in Texas. The winning candidate company also needed a progressive approach, a solid business plan and a good chance for long-term sustainability. CPS Energy's AA+ bond rating would lend credibility and excellent, low interest rates to the project, providing financial security that could contribute to success.

The utility seemed to find the perfect combination of established staying power and new energy gumption in OCI Solar Power, a subsidiary of OCI Company, a chemical and green energy company based in Seoul, Korea. The company was chosen from 111 submissions.

³ Renewables such as wind and solar energy emit no carbon; clean coal and nuclear power are considered low carbon emitting forms of energy.

Fashioning contracts and benchmarks acceptable to both partners created its own set of challenges. Neither CPS Energy nor the respondents had much experience negotiating for major economic development. No models for such agreements existed.

Historically, as a conservative utility, RFPs and other project purchases were made in increments as annual budgets allowed. But with the hefty upfront economic development requirements of the NEE projects, CPS Energy learned that OCI, or any potential partner, would need a bigger, longer term commitment than first envisioned. Rather than the 100 MW power purchase agreement originally planned, CPS Energy issued a revised RFP for 400 MWs and extended the terms to 25 years.

If CPS Energy were to dive in long term into a quarter-of-a-century partnership with a NEE company for 400 MWs of power, it would up the ante by also insisting on support for local educational initiatives as part of the program. Investments in science, technology, engineering and math, STEM fields directly related to developing CPS Energy employees for the future, became part of the requirements.

Ultimately, the NEE-OCI Solar Power contract outlined a partnership that would result in:

- An N-type solar manufacturing facility in the San Antonio area that would produce solar power plant components
- More than \$100 million in capital investment
- 800+ jobs with an annual payroll of nearly \$40 million
- A 25-year power purchase agreement for up to 400 MWs of solar generation
- Educational/community investment totaling \$10.5 million by 2019.

Contracts also required steps that benchmarked each progression in the agreement, almost like a series of small contracts stitched into one. The

approach has been tagged laudable and fundamental to the program's success.

"That was a brilliant stroke," said Dino Barajas, attorney and partner at Akin Gump. Barajas, who is outside counsel to OCI Solar Power, specializes in global infrastructure and financing with a renewable energy focus. He has fashioned dozens of public-private partnerships around the world. "The approach taken by CPS Energy is quite innovative and was key to success," said Barajas.

For example, the massive 400 MW power purchase agreement with OCI Solar Power known as The Alamo Project, is broken into nine solar farms over five years. This allowed OCI Solar Power to ramp up its workforce, production and facilities while getting its consortium partners in place.

Then-Mayor Castro, now Secretary of Housing and Urban Development in the Obama administration, championed the initiative and embraced it as part of his overall [SA2020 strategic plan](#). Environmental groups like the Sierra Club became advocates. The Environmental Defense Fund called the plan "among the most progressive in the country."⁴ Educational organizations praised the inclusion of STEM funds for elementary and secondary schools, as well as colleges and universities. CPS Energy customers appreciated the environmental opportunities, and the community supported the clean tech job development potential.

Good for companies, good for the community

The benefits of the NEE Initiative for the San Antonio community have been well documented, but how has the initiative played out for participating companies? So far, the unique structure seems to be paying off.

"After we satisfy our 400 MW delivery to CPS Energy, we'll need additional contracts to keep these companies here," said John Huffaker, Vice president of development for OCI Solar Power, alluding to the five-year deadline set by CPS Energy for delivering the 400 MWs of solar power. Huffaker mentioned that the southeastern U.S., Mexico, Central and South

⁴ [Leveraging Local Buying Power for Clean Energy](#), EDF blog, 2014

America are all ripe prospect territories for future business. “We are well positioned to service those markets from here,” said Huffaker.

The NEE deal became the Seoul, Korea-based company’s first foray into the renewable energy market in the United States. To date, the company has staked out its global headquarters in San Antonio, opened four of nine solar farms that comprise the Alamo Project, launched Sun Action Trackers, a solar tracking manufacturing facility and opened Mission Solar Energy.

The stepped-up benchmarks and five-year timeline with a 2017 finish have allowed OCI to grow quickly and confidently in the region. The first solar farms, Alamo 1, 2 and 4 went live in 2013 and 2014, respectively. They produce 85 MWs for San Antonio.

By January of 2015, however, Alamo 3, generating 5 MWs, became the first of the nine projects to tap local manufacturing resources to supply its farms—solar panels from Mission Solar Energy, tracking devices from SunAction Trackers as well as solar inverters from NEE partner company KACO New Energy. All three OCI Solar Power consortium partners have set up shop in San Antonio and contribute to San Antonio’s “made in San Antonio solar power” cluster.

OCI Solar Power recently announced the sale of Alamo 3, 4 and 5 to Con Edison. Proceeds of that deal will help pay for future projects and contribute even further to the hundreds of millions of dollars already invested in San Antonio, said Huffaker. The deal also brings another outside player into the market that can tap into the growing new energy ecosystem.

“Part of what attracted us to the deal was not just the prospect of building the solar megawatts, but the potential of creating a green energy nucleus we can build on,” he said.

KACO New Energy, another NEE consortium partner, supplies OCI Solar Power with the solar inverters that convert the direct current of solar power into alternating current so it can be fed into the electrical grid. But their sights don’t stop there, said Jurgen Krehnke, the company’s CEO.

Krehnke said the NEE Initiative has allowed KACO to create a presence in the region. The German company opened its manufacturing facilities in San Antonio in late 2013 and sees infinite market possibilities in the Sunbelt. “We have ambitious plans for 2015,” said Krehnke. “The arrangement with CPS Energy and OCI Solar Power has given us a footprint in the region. We are grateful for the opportunity,” said Krehnke.

Is this a new model for public private partnerships?

With its unique corporate structure, CPS Energy may have an advantage over other municipal utilities in executing a New Energy Economy Initiative. Rather than operating as a department of the City, the utility runs as a separate company with an independent charter and separate board of directors, but is owned by the City of San Antonio. Such a structure lends itself to more independent operation and management and ensures a certain—though not total—immunity to political whims. That said, other utilities could borrow from CPS Energy’s approach.

“In the case of renewable energy, leveraging the public dollar like this is a unique way to bring long-term investment to your jurisdiction,” said Barajas, who has done more than 100 renewable energy deals around the globe. “Water utilities should take a look.”

Dr. Steven Nivin, assistant professor of economics at St. Mary’s University, chief economist of the SABER Institute and former chief economist and industry development manager for the City of San Antonio, explained that creating a vibrant ecosystem of new energy companies by leveraging public sector buying power results in sticky assets that pay off for generations. Nivin authors a quarterly status update on NEE progress.

“The education, trained workforce, labor exchange and brainpower dividend that results from an initiative like this pays off for the community for generations,” said Dr. Nivin. “Educated, trained workers are the annuity that never ends.”

Good paying jobs with benefits, millions in infrastructure development, ongoing investment in education and increased brainpower to the community also create an excellent opportunity for politicians and policymakers to sell the costs and benefits of new energy to constituents.

New Energy Economy Company Roster

From 2011 to 2014, CPS Energy partnered with seven clean energy companies to bring economic development to San Antonio. More companies followed as suppliers, totaling 11 thus far.

As a result, these companies have opened up manufacturing facilities, corporate headquarters and local offices. Companies that have established corporate headquarters include Consert Inc., GreenStar, and OCI Solar Power along with suppliers for OCI: Mission Solar, Sun Action Trackers, Mortenson, and KACO. Companies with local offices include Silver Springs and Landis+Gyr. Manufacturing facilities have also been established by Mission Solar, KACO, Sun Action Trackers and GreenStar.

Details on how these and other partner companies have contributed to improving San Antonio follow.

Consert, a home area network (HAN) provider, currently employs close to 60 employees in San Antonio and is on their way to a projected 140 professional and technical jobs by 2017. The company's technology works to provide real-time energy use information and to allow aggregation for demand response. In 2010, CPS Energy and Consert launched a pilot program for 1,000 customers to start measuring electrical demand. Consert predicts the program will cut peak energy demand by 205 MWs if fully deployed. Currently, 20,000 installations have been completed with a potential 140,000 residential and commercial customers. Toshiba Corporation acquired Consert in 2013 and Landis+Gyr (another Toshiba affiliate) manages the business for Consert.

GreenStar, a global supplier of LED lighting, relocated its headquarters to San Antonio in 2011 and grew its staff to more than 40 in 2012. The company is working to install 25,000 LED streetlights across San Antonio

over the next several years. The LED bulbs will save energy since each one uses about 60 percent less energy than standard sodium lights. To further boost the economy, GreenStar contributed \$10 from every LED bulb manufactured for CPS Energy to local education initiatives focusing on energy efficiency and renewable energy technology for a total of \$250,000.

OCI Solar Power will provide CPS Energy customers 400 MWs of solar energy and its consortium anchor partner, Mission Solar Energy, just completed a \$130 million manufacturing plant on the City's south side (see below). The consortium will create more than 800 jobs with an average salary of \$47,000. OCI Solar Power also moved its headquarters to San Antonio. The 400 MWs are expected to be generated by nine sites around the state. As of November 2014, 90 MWs have been constructed and are commercially available. When completed, the solar farms will provide enough electricity to power about 70,000 households, or about 10 percent of the utility's customers. The OCI Solar Power consortium is expected to have an economic impact of roughly \$1.3 billion per year in greater San Antonio, once all commitments are completed.

Mission Solar Energy, a subsidiary of OCI Solar Power, became the first manufacturer of n-type solar PV cells and modules when it opened its doors in the United States in September of 2014. The highly efficient n-type solar modules are suitable for utility, commercial and residential applications. The 240,000-square foot facility on the former air force base now called BrooksCity Base can produce 2,000 modules per day and will employ 400 when fully operational.

Sun Action Trackers, another OCI Solar Power partner, builds and assembles dual axis trackers, components in solar arrays that allow solar cells to gather the maximum amount of light for conversion to solar energy.

KACO new energy makes solar PV inverters, the components that convert electrical current from DC to AC so it can be incorporated into the grid. Based in Neckarsulm, Germany, the company's 100,000-square foot San Antonio plant now marks KACO's main North American manufacturing facility well positioned to deliver residential, commercial and utility scale

inverters throughout North and Central America. The headquarters moved to San Antonio from California in late 2013.

Mortenson Construction is the Engineering, Procurement, and Construction (EPC) company for the OCI Consortium. The San Antonio office will be the southern U.S. hub for all energy related business including Mortenson's High Voltage Transmission Group, Wind Energy Group, Solar & Renewable Energy Group and Oil & Gas Group.

SunEdison, one of the largest U.S. solar energy service providers, has added 30 MWs of new solar power to CPS Energy's generation portfolio at three sites in the service territory. CPS Energy will buy the energy produced by the SunEdison solar farms at fixed rates for 25 years. SunEdison contributed \$750,000 to various local education programs, including Alamo Area Academies, San Antonio and Somerset ISD Foundations, KIPP Aspire Academy, UTSA, St. Mary's University, and the University of the Incarnate Word as a result of this solar transaction.

Summit Power Group and CPS Energy negotiated a power purchase power agreement in September 2014 through the Texas Clean Energy Project for the first United States based power plant that combines both Integrated Gasification Combined Cycle and 90 percent carbon capture and storage technologies. The plant, to be built roughly 15 miles west of Odessa, TX, is expected to be online in 2019 and will provide 200 MWs of clean coal electricity to CPS Energy. The agreement calls for Summit Power Group to stage educational workshops and roundtables addressing clean energy issues in San Antonio to elevate understanding of this emerging field as well as establishing an office to handle various aspects of the Project's commercial activities. .

Silver Spring Networks is helping develop CPS Energy's Smart Grid Initiative, by upgrading infrastructure and building a two-way communication system that will increase reliability, give customers greater control over their energy use, reduce outage times, save money, better integrate renewable power into the grid, and improve the environment.

Silver Spring is also establishing an office in San Antonio where they will test and certify new products and services.

Landis+Gyr Technology, Inc. will manufacture more than 700,000 smart electric meters with Silver Spring Networks' technology to further the Smart Grid Initiative.

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