Job growth drives San Antonio’s push for renewable energy — cleaner air is a beneficial byproduct. Since two recent mayors have embraced this approach, the country’s seventh-largest city has developed a unique business ecosphere. Political leaders hope early gains will make San Antonio a leader in the “New Energy Economy.”

Using the purchasing power of CPS Energy — among the largest municipally owned utilities — the city convinced four cleantech companies to relocate to San Antonio in June, while a fifth company, SunEdison, will open a local office to support a 30-megawatt solar project. Each company is expected to bring jobs and contribute financially to education programs and research in exchange for long-term business deals with the utility and city.

The four companies are Consert Inc., a provider of energy-management and conservation solutions, which is relocating its headquarters to San Antonio from Raleigh, N.C.; GreenStar, a supplier of advanced lighting products, which is also relocating its headquarters to San Antonio; Cold Car USA, a manufacturer of refrigerated truck bodies; and Summit Power Group LLC, a developer of carbon-capture power projects.

“It’s more than work-force train-
ing or identifying goals for greening the economy,” says Deb Perry of the Vermont-based Institute for Sustainable Communities, which uses San Antonio as an economic development case study. “They are thinking how to create demand for energy services and how to supply it.”

Mayor Julián Castro expects to create 230 green jobs by the middle of next year and up to 1,000 by 2015. He hopes investment in research, development and education will sustain gains through the Mission Verde Center, a multipurpose sustainability campus.

“We have the opportunity to reel in research and development jobs, which has been a missing component from San Antonio,” Castro says.

Phil Hardberger, Castro’s predecessor, was the first mayor to get the city on board with a bold approach to clean technology.

“When we looked out into the 21st century, it seemed pretty evident there would be a dramatic shift in the kind of energy used,” says Larry Zinn, Hardberger’s former chief of staff who now heads cleantech project development firm Tejas Verde Group.

Renewable Energy Projects by CPS
This map shows about 916 MW of renewables, which will eventually increase to about 1,516 over two to five years with 200 MW more wind through a power purchase agreement with Duke Energy’s Los Vientos Windpower Project South of Corpus Christi. The project will add up to 400 MW at sites throughout the San Antonio area.

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Seeking Solar Manufacturing

The center of the city’s New Energy Economy initiative is an effort to anchor a world-class solar company, or multiple companies, with facilities that will assemble or manufacture photovoltaic (PV) panels to supply up to 400 megawatts of power through a long-term power purchase agreement (PPA).

Castro says the project can bring more than 500 jobs.

Iterations of this model have been discussed across the country, but few cities or utilities have been able to pull it off; says Shyam Mheta, a senior analyst at GTM Research. AEP Ohio, a division of private utility American Electric Power, convinced Spain’s Isofoton to site its North American manufacturing facility in Napoleon, Ohio, to supply a 49.9-megawatt solar farm, scheduled to begin construction next year.

Anchoring and Nurturing

San Antonio hopes to differentiate itself with investments in R&D and attracting venture capital for startups,
such as Sologen Systems, which is attempting to develop grid-scale geothermal power at abandoned oil wells.

CPS Energy is providing the University of Texas at San Antonio with $60 million over 10 years to create the Texas Sustainable Energy Research Institute. The city will also focus on building capacity of companies with promising technologies.

“That bodes well for the future because we can help them grow organically,” says CPS CEO Doyle Beneby.

Consert Inc.’s headquarters relocation from Raleigh will create 50 jobs by the first quarter of 2012, with more to follow. The company inked a deal to install energy-management software in 140,000 homes and small businesses in the CPS service area.

“No one has done something of this scale yet, so there are a lot of things we will be learning together,” says Consert CEO Jack Roberts.

Consert serves electric co-ops and municipally owned utilities. A pilot project with CPS showed average farm employment opportunities increased 61 percent 1997-2008.

6. Corpus Christi: 27.8-percent job growth over the last five years in natural resources, mining and construction; healthy energy sector.

**Big Cities**

2. Houston-Sugar Land-Baytown: Modest growth across sectors; manufacturing jobs up 2.3 percent in the last year.
5. Dallas-Plano-Irving: Slightly negative growth since 2007, but gains in education, government and health service sectors.

**Small Cities**

1. Odessa: Job growth of 5.5 percent last year; robust energy sector activity; mining and construction sector cumulative growth up 905 percent since 2003.
2. Longview: Manufacturing job growth is up 9.8 percent since 2003.
4. Laredo: Job growth is up 15.8 percent over the last four years, most due to strong service sectors.
5. College Station-Bryan: Non-farm employment rose 3.2 percent in 2008; strong service-sector job growth.

— Mark Arend
energy savings of 10 percent, convincing Beneby that Consert could help cut 250 megawatts of peak power demand.

Energy efficiency and the addition of renewables are part of a strategy to retire an aging coal-fired plant by 2018. The city opted to invest in clean technology instead of spending $500 million in retrofits required to meet new emissions standards. The regulations have pitted Gov. Rick Perry against the Environmental Protection Agency.

“With the cloud of additional regulation and uncertainty of the costs of traditional energy sources, we decided it made sense to diversify the energy mix,” Castro said.

San Antonio set a target for 20 percent renewable energy by 2020 as well. CPS has developed most of that goal around wind power PPAs since Texas has more than 10,000 megawatts of wind farms — the greatest concentration in the country, due in part to a successful renewable portfolio standard (RPS).

Billy Hamilton, a fiscal policy consultant and former chief deputy comptroller for Texas, says the state’s renewable energy markets could create 23,000 jobs, adding $2.7 billion in annual tax revenue over the next decade.

“Texas has seen success with wind in the last decade because of its aggressive RPS,” Hamilton says. “Solar was slow to take off because prices were too high.”

But that’s already changing.

**Solar Power Approach**

In the past two years, PPA prices were 12 to 15 cents per kilowatt-hour for San Antonio’s 14-megawatt Blue Wing solar project by JUWI Solar Inc., Boulder, Colo., and the 30-megawatt project by Beltsville, Md.-based SunEdison, according to sources familiar with the negotiations. The lowest prices for a recent 50-megawatt RFP came in at less than 10 cents per kilowatt-hour.

“That’s basically grid parity with prices for our coal power plants,” says Lanny Sinkin, executive director of Solar San Antonio, an advocacy nonprofit that helps finance rooftop solar.

Designated a Solar America City by the U.S. Department of Energy, San Antonio has become a major market for residential solar, in part because it boasts a DOE solar value of 5 kilowatt hours. CPS’s $3-per-watt rebate helps, too.

In July, the utility received 111 proposals for the 50-megawatt RFP. Beneby couldn’t confirm nor deny exact amounts, but he does say that lower-than-expected prices convinced
the utility to expand the RFP to 400 megawatts. The larger footprint, Beneby says, sweetened the lure for the assembly and manufacturing component.

“They would come in here with … a pretty good running start,” Beneby says. “You’ve got a good pipeline of demand … up to 400 megawatts to get you started.”

GTM Research’s Mehta says low PV prices are due to China’s vertically integrated solar manufacturers scaling “way the hell up,” which forces U.S. and European manufacturers to reduce prices. While the price points are good for utilities eager to purchase more solar, they have devastated manufacturing and assembly prospects inside the U.S. with a few exceptions.

Perhaps more than a few, according to the Solar Energy Industries Association (see sidebar, page 781). “Fifty solar manufacturing plants in the U.S. have actually been upgraded in the past two years, making the U.S. a net exporter of solar materials and components,” says SEIA spokesperson Monique Habis. Among U.S. companies that have expanded their solar energy production

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**Top Texas Projects From January 2010 to Present**

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th>Product</th>
<th>New/ Expansion</th>
<th>Investment ($Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samsung Electronics Co.</td>
<td>Austin</td>
<td>Semiconductors</td>
<td>E</td>
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</tr>
<tr>
<td>Freeport LNG</td>
<td>Freeport</td>
<td>Natural gas liquefaction</td>
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<td>International Power</td>
<td>Goliad County</td>
<td>Coal</td>
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<td>Cheniere Energy Inc.</td>
<td>Sabine Pass</td>
<td>Liquefied Natural Gas Facility</td>
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<td>Deer Park Refining</td>
<td>Deer Park</td>
<td>Heavy Sour Crude Oil Processing</td>
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<tr>
<td>Premier Studios LLC</td>
<td>Frisco</td>
<td>Media Firm</td>
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<td>Texas Industries</td>
<td>New Braunfels</td>
<td>Cement Plant</td>
<td>E</td>
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<td>Hawkins</td>
<td>Oil &amp; Natural Gas</td>
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<td>General Motors</td>
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<td>Automobiles</td>
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<td>Lake Jackson</td>
<td>Chemicals</td>
<td>E</td>
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<td>Olefins</td>
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<td>Powered Activated Carbon</td>
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<td>Cactus</td>
<td>Processed Meat</td>
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<td>Jasper</td>
<td>Paperboard</td>
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<td>Rohm and Haas Texas Inc.</td>
<td>Deer Park</td>
<td>Chemicals</td>
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<tr>
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<td>Aluminum Oxide Abrasives</td>
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<td>Austin</td>
<td>Data Center</td>
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<td>Copano Energy LLC</td>
<td>Houston</td>
<td>Pipeline Construction</td>
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<td>Baytown</td>
<td>Plastic Resins</td>
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<td>Construction Machinery</td>
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<td>Alvin</td>
<td>CO2 Processing Facility</td>
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<td>Dalhart</td>
<td>Cheese</td>
<td>E</td>
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<td>Toyota Motor Manufacturing Texas</td>
<td>San Antonio</td>
<td>Trucks</td>
<td>E</td>
<td>$100</td>
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<tr>
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<td>Pasadena</td>
<td>Adhesives</td>
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<td>San Antonio</td>
<td>Pipeline Company</td>
<td>N</td>
<td>$100</td>
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<td>TriQuint Semiconductor</td>
<td>Richardson</td>
<td>Communications semiconductors</td>
<td>E</td>
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<tr>
<td>Target</td>
<td>Denton</td>
<td>Distribution</td>
<td>N</td>
<td>$100</td>
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</tbody>
</table>

Source: Conway Data, Inc. New Plant Database
facilities recently are First Solar in Perrysburg, Ohio, SolarWorld in Hillsboro, Ore., and Suntech in Phoenix. “Driving that is growing demand in the U.S., while demand weakens in Europe due to austerity measures and other factors.”

But in August, Germany’s SOLON Corp. announced the shuttering of a 60-megawatt assembly plant in Tucson, Ariz. Evergreen Solar filed for bankruptcy the same week.

“Most of these closures are the result of fierce global competition,” Mehta says. “If you want to keep that factory afloat and running, you need to keep a dedicated source of demand.”

CPS Energy’s Beneby says the utility can learn from SOLON and Evergreen, which benefited from local and state incentive packages. CPS Energy has considered working with both a vertically integrated crystalline-silicon manufacturer and a promising thin-film company to hedge against future trends.

“There’s no question these things aren’t guaranteed,” Beneby says. “We’re certainly going to look into (case studies) so we can help the companies we partner with to be more sustainable.”

He says relatively cheap land on the South Side — also home to a Toyota Tundra factory — can factor in to lower costs. CPS can also offer a facility reduced utility rates since it controls electricity generation and distribution.

“Smart Grid and Storage”

San Antonio had about 916 megawatts of renewable energy as of August. A 200-megawatt wind PPA and the latest solar project would bring renewable output to about 1,500 megawatts in the next few years.

Integration of all that intermittent energy remains an elephant in the room, however. The state’s booming wind farms in West Texas are criticized be-
cause most generation kicks in at night, after peak demand. CPS has increased investment in PPAs with South Texas wind farms along the Gulf Coast, where generation picks up during the hottest time of the day. Intermittency for solar remains an issue, so CPS is developing a storage project.

“There is a vision for energy storage to figure out how we can work all this together and integrate it,” says Lisa Lewis, CPS Energy spokeswoman. The utility is collaborating on storage and smart grid R&D with UTSA and the Southwest Research Institute. San Antonio is also a major military city and cyber security hub, so UTSA is exploring research options to develop cyber security solutions for renewable energy networks, particularly for the military, which looks to technology as a strategy for enhancing “energy security.”

For Mayor Castro, the possibilities for job growth don’t stop there, either. “There is a vision for energy storage to figure out how we can work all this together and integrate it,” says Lisa Lewis, CPS Energy spokeswoman. The utility is collaborating on storage and smart grid R&D with UTSA and the Southwest Research Institute. San Antonio is also a major military city and cyber security hub, so UTSA is exploring research options to develop cyber security solutions for renewable energy networks, particularly for the military, which looks to technology as a strategy for enhancing “energy security.”

For Mayor Castro, the possibilities for job growth don’t stop there, either. “The playing field is still wide open,” he says. “I see San Antonio as a future leader and center of gravity for clean technology.”

Tire Recycling & Processing, LLC (TRP) has announced plans to establish a center to process used tires into granules, carbon black and biofuels in Harlingen. The company has purchased a 42,777-sq.-ft. (3,974-sq.-m.) facility in the Harlingen Industrial Park and will install new equipment valued at $3.8 million. The operation will create 30 new jobs. TRP was formed by Ecologist Services & Dispositions, Inc. (ESD) to address the abundance of used tires in the environment. TRP will use state-of-the-art technology to process over 5,000 tires per day; the process involves no chemicals, odors, noise or emissions.

“We considered sites from across the Rio Grande Valley, but Harlingen’s central location makes it the perfect site for receiving raw material and shipping the finished product to clients across the U.S. and around the world,” says Marta Martinez, vice president of TRP. “Harlingen has an excellent distribution system which makes it an easy choice.”

Photo courtesy of Harlingen EDC

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