nrg®

San Diego
Energy Center

Energy Center News

April 2016 Volume 5 | Issue 1

2 **Sustainability-focused San Diego Central Courthouse**
An NRG Energy Center San Diego customer

The new 22-story San Diego Central Courthouse for the Superior Court of California is under construction in downtown San Diego and is slated to open in 2017. Courtesy Judicial Council of California, Skidmore Owings & Merrill.

3 **New Year, New Chillers**
Plant upgrades improve environment, reliability

3 **Solar-Charged Mobiles**
NRG Street Charge® solar charging stations, a business opportunity

An Architect's View

Connecting the San Diego Central Courthouse to NRG Energy Center San Diego's chilled-water service has many advantages according to Clifford Ham, Architectural Program Lead:

> "Using district cooling is inherently more sustainable in the long term than in-building chiller plants. It offers higher energy efficiency, requires less capital investment and means less maintenance for the Judicial Council. As part of the Energy Center's system, we don't spend the time and energy on water treatment that we'd otherwise need to. The space-saving aspect is also key since we have such a tight footprint. Using chilled water allows us to save about 4,000 square feet that would otherwise be devoted to chillers and use that for court operations instead."

San Diego's New Green Central Courthouse

The face of downtown San Diego is changing with the addition of the new 704,000-square-foot San Diego Central Courthouse for the Superior Court of California—a new NRG Energy Center San Diego customer. Built to replace multiple outdated, overcrowded and seismically risky facilities in the metropolitan area, the new courthouse is designed to achieve, at minimum, a LEED Silver certification. Designed by Skidmore Owings & Merrill, the 22-story building began construction in late 2013 and is expected to open in early 2017.

The new courthouse consolidates the current County Courthouse, Family Law Courthouse and Madge Bradley Courthouse functions: criminal, civil, probate, family court and small claims services; administration; and security operations. With its 71 courtrooms and other spaces arranged in a logical sequence, the building's design accommodates the court's unique traffic patterns and security requirements: High-volume public and administrative activities are concentrated on the first five floors, and trial court departments are located on the upper floors.

The San Diego Central Courthouse is expected to use about 17% less energy per year than a standard code-compliant building in California.

Not only logistically efficient, the new Central Courthouse will be a model of energy efficiency as well. It is expected to use about 17% less energy per year than a standard code-compliant building in California. "We're fortunate that our climate is so moderate, as it allows us to take advantage of using outside air on our air-handling side without conditioning it too much," says Clifford Ham, Project Director and Architectural Program Lead with the Judicial Council of California's Capital Program Office. "That helps keep our energy use down. In addition, we think that using district cooling is inherently more sustainable. We have NRG Energy Center San Diego to thank for that."

NRG Energy Center San Diego welcomes the new Central Courthouse to the district cooling system. We're proud to support the important work that you do. ■

The project includes constructing a bridge to link the existing adjacent Hall of Justice Courthouse to the new courthouse's jury assembly space featuring a café and the main elevator stops. The bridge will allow the public, jurors and court and county staff to move easily between the two courthouses once they have been security-screened in one building or the other.

Courtesy Judicial Council of California, Skidmore Owings & Merrill.

Jay Zaghloul, PE, CEM

Happy Anniversary, Jay!

Jay Zaghloul became NRG Energy Center San Diego's Director of Business Development and Customer Service in February 2015. "I've enjoyed getting to know our customers and the San Diego community, including the Downtown San Diego Partnership and the San Diego Regional Economic Development Corporation," says Jay. "I also serve on the board of CleanTECH San Diego and have connected with many high-sustainability and environmentally-driven communities and companies in southern California." In addition, Jay works for NRG Energy Center Phoenix, where he helped start the district cooling system. Jay is a registered Professional Engineer and is also a Certified Energy Manager. Interested in district cooling service? Have a service question? Contact Jay at Jay.Zaghloul@nrg.com, 602.524.4051.

Chiller Replacements, Plant Upgrades

Fresh start for the new year

Following a year of planning and design, NRG Energy Center San Diego recently installed new cooling equipment in our Kettner Boulevard plant after removing two older 1,200-ton chillers that used R-11 refrigerant.

We replaced the old units with two electric chillers—one at 1,500 tons and one at 2,000 tons—that use HFC-134a refrigerant, which is more ozone-friendly than its predecessors. The Energy Center also has a 2,400-ton electric chiller, a 2,000-ton gas-turbine-driven chiller and several small absorption units.

> **"Our recent chiller replacements decrease our environmental footprint, support our customers' LEED goals and increase cooling capacity at our plant to 9,000 tons so we can continue to add customers."**

"Our recent chiller replacements decrease our environmental footprint, support our customers' LEED goals and increase cooling capacity at our plant to 9,000 tons so we can continue to add customers," says Brian Marshall, Plant Manager, NRG Energy Center San Diego. "We're also replacing two cooling tower cells and upgrading all plant controls to streamline operations and provide even higher reliability."

The plant also has combined heat and power technology utilizing two 750 kW natural gas-driven turbines. We use the electricity to power the plant, and the resulting waste heat to run a 400-ton absorption chiller, increasing overall system efficiency. The generators allow us to minimize peak electricity demand from the utility, helping reduce the demand for new generating facilities. ■

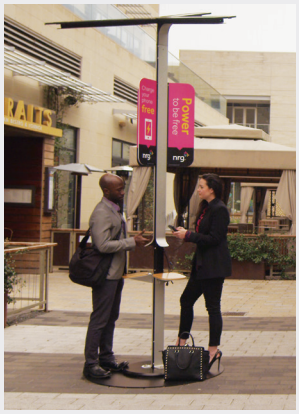
Charging on the Go

Solar energy leads the way

Already up and running in 18 cities worldwide, NRG Street Charge® solar charging stations give people what they expect: power everywhere. The charging stations harness the power of the sun to keep users fully charged and engaged, increasing stay time at the places that host them. The stations marry form with function while providing branding opportunities for businesses.

Street Charge stations can be installed permanently or temporarily, with phones charging as fast as if they were plugged into the wall. Each station features three 20-watt solar panels for primary power, a168 watt-hour lithium battery storage for night use, and built-in weather and tamper-resistant cords for charging up to six phones simultaneously. No hardwiring is necessary.

Introduced in 2013, NRG Street Charge® stations are now part of the NRG family's commitment to provide clean power where and how people want it. Interested in an NRG Street Charge® station for your site? **Contact Jay Zaghloul at Jay.Zaghloul@nrg.com, 602.524.4051, or visit nrgstreetcharge.com for more information.** ■



NRG Street Charge®
solar charging station

NRG Energy Center San Diego, LLC
901 Kettner Blvd.
San Diego, CA 92101

nrg.com/san-diego
619.231.0015
sandiegoinfo@nrg.com

NRG Energy Center San Diego LLC is owned by NRG Yield, Inc., and NRG Energy, Inc. NRG and the plus signs are registered service marks of NRG Energy, Inc. © 2016 NRG Energy, Inc. All rights reserved.

Printed on paper made of 100% post-consumer waste.

From the General Manager

Tackling Carbon: NRG has innovative project underway

NRG Energy Center San Diego is growing along with the community as we add new customers including the San Diego Central Courthouse, profiled in this issue. We're exploring ways to invest in and expand our chilled-water system, including using thermal storage or adding a new plant to increase system capacity, operational flexibility, resiliency and reliability.

Our growth reflects the overall growth and innovation we're seeing companywide, aimed at achieving the sustainability goals NRG Energy announced in 2014: grow our business while reducing carbon dioxide (CO_2) 50% by 2030 and 90% by 2050.

NRG Energy's sustainability goals: grow our business while reducing CO_2 50% by 2030 and 90% by 2050.

One approach NRG Energy is taking is tackling carbon emissions through Petra Nova, a 50/50 joint venture between NRG and JX Nippon Oil & Gas Exploration. The two companies are developing a commercial-scale post-combustion carbon capture project at NRG's WA Parish generating station southwest of Houston, Texas.

Slated to be operational in 2016, this project is designed to capture approximately 90 percent of the CO_2 from a 240 MW slipstream of flue gas and use or sequester 1.6 million tons of this greenhouse gas annually. The captured CO_2 will be used to enhance production at mature oil fields in the Gulf Coast region.

Jim Lodge, Vice President and General Manager
James.Lodge@nrg.com
Photo: Tevis Photographic

From carbon sequestration to solar energy to district cooling, NRG is committed to a clean-energy future. NRG Energy Center San Diego is pleased to be a part of the energy-saving and environmentally-responsible opportunities that lie ahead for the San Diego community. ■