CHP Center Southeast

Combined Heat and Power Newsletter

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This summer we are pleased to bring you the latest issue of our quarterly newsletter Combined Heat and Power. This free newsletter will highlight stories and events of interest to the CHP community, and will occasionally provide in-depth insight into the latest "hot topics."

While our focus is primarily upon the Southeast region, we will also incorporate news from across North America. You can link directly to our sources by clicking "more details" at the bottom of each item. This newsletter will be prepared by the CHPCenterSE and published at the end of each quarter. We welcome your thought and contributions.

To subscribe to the electronic version of this newsletter, please click here. For questions or to provide comments, please send an email to Maureen Quinlan at mequinla@ncsu.edu.

News from the Southeast

Florida Will Update Interconnection and Net Metering Laws, Draft RPS

Stemming from a directive from Governor Crist, the Florida Public Service Commission established the rules necessary to administer NM and IC legislation in March 2008. In June, HB 7135 was passed which requires both investor owned utilities and munis and coops to "develop a standardized interconnection and net metering program for customer-owned renewable generation" for systems up to 2 MW by July 2009. The PSC will also be developing a draft renewable portfolio standard which will require that 20% of the state's electricity comes from renewable resources, primarily wind and solar.

More Details

Alabama Adopts Voluntary Interconnection Law

The Alternative and Renewable Energy Act (H.B. 234) was enacted on May 8. According to the law, the state's municipalities, rural electric cooperatives, and Alabama Power, are allowed to offer interconnection services to distributed generation systems, but not required. These systems cannot exceed 100 kW, and compensation for power fed to the grid cannot exceed the utility's avoided cost, unless the DG system is fueled by renewables, in which case the rate of compensation is at the utility's discretion. (This would not be considered a net metering policy since the customer-generator is compensated below retail rates.)

More Details

NC Industrial Conference Focuses on CHP and REPS

The 3rd Annual Industrial Energy Conference was held April 9 in Raleigh, NC. The Conference, titled Energizing NC Industries through Efficiency and Advanced Technologies, drew an audience of nearly one hundred. Attendees learned how North Carolina's Renewable Energy and Energy Efficiency Portfolio Standard, which specifically calls out CHP, will affect industrial operations. The North Carolina Solar Center organized the event which was comprised of half day workshops on CHP and energy efficiency. North Carolina's REPS require 12.5% of electricity demand to be met by renewable resources or energy efficiency by 2021. CHP can potentially count in either category. Participants of the day also got an overview of the future costs of energy and state, federal and utility programs that can benefit their efficiency and innovation efforts. The agenda and presentations are available on the Solar Center's website.

More Details

CHP Energy Star Awards Announced, Includes South Carolina Project

The Environmental Protection Agency's Energy Star CHP Award recognizes Combined Heat and Power systems that demonstrate significant fuel and pollution reductions over their conventional counterparts- separate systems for creating power and heat. In June, the EPA announced the latest round of recipients, among which was Calpine Corporation's Columbia Energy Center in Gaston, South Carolina. The CHP system can produce up to 500 MW of electricity, powered by one steam turbine and two natural gas-fired combustion turbines. While the electricity is fed directly to the grid, a nearby chemical plant utilizes the recovered heat, which can amount to one million pounds of steam per hour. In this case, the efficiency of CHP translated to 31% fuel savings over the separate heat and power alternative. Other award recipients include a Kansas ethanol plant, a New York apartment complex, and a New Jersey YMCA.

More Details

North Carolina Upgrades Interconnection Policy

On June 9, 2008, the North Carolina Utilities Commission issued a final order modifying the state's interconnection rules, which previously received a failing grade in the 2007 edition of Freeing the Grid. "Interconnection rules" are those governing if and how distributed generation resources are able to connect and feed energy to the grid. North Carolina's rules apply only to investor owned utilities, and identify a wide range of eligible technologies, including CHP. There is no longer an individual system size limit, and the application process has been simplified for smaller generators. The law also requires a reasonable amount of insurance for the DG systems but does not require a redundant external disconnect switch, which can delay and increase the cost of interconnection. On the same day, the Commission also initiated the procedure for updating NC's net metering rules, and will consider increasing the cap on system size and aggregate net metering cap, among other issues.

More Details

News from across North America

Leading On-Site Utility Says Demand for CHP is Up

According to their Annual Shareholder's Letter, American DG Energy's revenue increased by 84% in 2007 thanks to an "increased desire for energy efficiency and green sustainability." Based in Massachusetts, American DG provides clean distributed power systems to healthcare, athletic, housing, and industrial facilities across New England. The company owns and operates the CHP systems they install, charging customers for the energy produced, at lower rates than the local utilities.

More Details

EPA to Establish Recoverable Waste Energy Inventory Program

In accordance with the Energy Independence and Security Act of 2007, the Environmental Protection Agency will maintain a survey of all major commercial and industrial combustion sources in the US. In addition to the location of these sites, EPA will also track the quantity and quality of the waste energy. Sites with the best financial opportunities for waste-heat recovery projects will be listed in a Registry of Recoverable Waste Energy Sources, and a grant program will be established to fund efficiency programs.

More Details

World Trade Center to be Powered by Fuel Cell– CHP System

In June, it was announced that four towers under construction at the World Trade Center site in Manhattan, including the Freedom Tower, will receive power from a 4.8 MW fuel cell system. Upon completion, it will be one of the largest fuel cell installations in the world. The New York Port Authority selected UTC Power's new ultra low emissions PureCell Model 400. Each produces 400 kW of electricity and 1.7 million Btu/hr of heat which will be captured to help heat and cool the towers. The efficiency of this CHP system will reduce energy expenses, avoid additional energy demand and infrastructure upgrades on the city's grid, and help the World Trade Center complex achieve its goal of LEED Gold Certification.

More Details

CHP-related Provisions in the 2007 Energy Bill

In December 2007, the President signed into law the Energy Independence and Security Act (EISA). This legislation does not extend two major incentive programs for which CHP would be eligible if fueled by renewables- the Renewable Electricity Production Credit and the Clean Renewable Energy Bonds. However, EISA did create new programs, and amend existing programs, that are potentially applicable to CHP. In June, the EPA published a concise overview of these provisions which range from grant and loan programs, to fuel standards, to EPA's own waste energy recovery program detailed in this newsletter. This summary is available on the EPA CHP Partnership website (www.epa.gov/chp).

More Details

88% Efficient Fuel Cell Introduced for CHP

CFC Solutions GmbH, a subsidiary of the Tognum Group, has introduced a new series of carbonate fuel cells, the HotModule HM 320, redesigned to achieve higher efficiency, higher maximum power production, and lower cost per kWh. The cylindrical fuel cell stack of previous models was replaced with a square design, and the entire construction was enlarged. These changes allow the HM 320 to achieve a 45% increase in electrical power and a 38% increase in thermal power over its predecessors. The HM 320 can supply 345 kW (AC) to the distribution system, and CFC is planning to produce units up to 1 MW in the coming years. These fuel cells are ideal for CHP application sin sectors such as healthcare, industrial facilities, and sewage treatment plants.

More Details

Texas Hospital Increases Reliability with CHP

Backup generation is a necessity for critical facilities such as hospitals, who cannot afford to endanger patients or compromise important research in the event of a black out. Many healthcare facilities are turning to CHP to provide back up electricity, heat, and water more efficiently than conventional technologies.

The largest medical complex in the world, Texas Medical Center in Houston, is converting their district energy center to a CHP system. This 46 institution complex includes research, academic, and hospital space. The conversion is set for completion in 2012 and the increased efficiency will allow the Medical Center to produce nearly twice as much power with the same amount of fuel! This increases the reliability of their services while reducing costs.

More Details

EPA Establishes Clean DG Policy and CHP Webinar Series

Beginning in June, the EPA will host a monthly webinar series on various topics related to Distributed Generation and Combined Heat and Power including market opportunities, successful implementation strategies, best practices, and the services that EPA provides to support clean DG and CHP. These webinars are free and open to the public, and will be held on the last Thursday of every month from 3:00-4:30 EST. The presentations from the webinars will be posted on the EPA CHP Partnership website. The series kicks off June 26 with a discussion of best practices for effective interconnection standards.

More Details

Connecticut RPS Drives Hospital CHP Projects

Connecticut is one of many states who've adopted Renewable Energy Portfolio legislation, which requires utilities to obtain a percentage of their electricity from renewable energy or other cleaner technologies. Connecticut's utilities must obtain 20% of their electricity from clean energy sources by 2020, and the state legislature has set an intermediate goal of 150 MW under contract by October 2008, known as Project 150.

Two hospital fuel cell-CHP projects have been announced as part of Project 150, located at Stamford Hospital and Waterbury Hospital. The hospitals will employ FuelCell Energy's DFC3000 power plants in a combined heat and power application, feeding the electricity back to the grid and using the thermal energy for heating and cooling the facilities, and creating hot water for laundries and sterilization. Together, the two projects will feed 7.2 MW of clean energy to Connecticut's electric grid-enough to power approximately 7,000 homes.

More Details

Energy Efficiency is Most Successful Energy Strategy, Least Understood

The American Council for an Energy-Efficient Economy (ACEEE) report, *The Size of the U.S. Energy Efficiency Market: Generating a More Complete Picture*, attempts to quantify how energy efficiency improvements have affected U.S. energy consumption over time, and the current state of the market. The study, released in May, shows that the energy efficiency of the American economy has doubled since 1970, yet this success story has largely gone unnoticed. Without proper recognition, and sufficient funding, the authors conclude that the potential benefits of efficiency will go untapped. Click here to view the full report.

More Details

NY Times Illustrates Opportunity for CHP

On June 1, the New York Times published an article titled *Wasted Energy* which explored how and why, in creating electricity over 60% of the fuel energy put in is lost. The culprit? Conversion and Distribution losses. This point is clearly and creatively displayed in the multimedia graphic that accompanies the article. The illustration presents a snapshot of U.S. 2006 electricity production by source, consumption by sector, and lost energy. Of the 67% of energy lost to create electricity, nearly all of it is lost as heat escapes the system!

More Details

Connecticut School Gets "Green" On-site Power

In May, Branford High School announced it would be the first customer for UTC Power's new ultra clean PureComfort tri-generation system. The system will provide electricity, heating, air conditioning, and hot water for over 1,000 students, in addition to supporting the facility as an off-grid community shelter in the event of an emergency. A PureComfort system is comprised of a series of 65 kW natural gas driven microturbines and a double-effect absorption chiller/heater. The 90% efficiency of the CHP system and emissions reductions is a drastic improvement in a state whose school systems were recently ranked among the least efficient in the U.S. Supported by Connecticut's clean energy incentives, Branford High has reduced their energy costs and minimized their emissions while fostering a sustainable learning environment for their students.

More Details

Upcoming Events

CleanTech Forum XVIII
September 15-17, 2008
Washington, D.C.

Biomass South 2008 Conference
September 21-23, 2008
Raleigh, NC

EPA Clean DG Policy and CHP Webinar: CHP Greenhouse Gas Tools
September 25, 2008

EPA Clean DG Policy and CHP Webinar: The Role of CHP in State Portfolio Standards
October 30, 2008

EPA Clean DG Policy and CHP Webinar: CHP Opportunities and Incentives in the Utility Sector
November 20, 2008

EPA Clean DG Policy and CHP Webinar: TBA
December 18, 2008

DistribuTECH 2009
February 3-5, 2009
San Diego, CA

Renewable Energy Technology Conference and Exhibition
February 25-27, 2009
Las Vegas, NV

About Us

The Southeast CHP Application Center (CHPCenterSE) was established in 2004 for the US Dept. of Energy. Its mission is to provide application assistance, technology information, and educational support for CHP in the Southeastern U.S. The CHPCenterSE is co-located at Mississippi State University and North Carolina State University. We encourage you to visit our website, www.chpcenterse.org, for more information.