

Combined Heat and Power in North Carolina

Replacing Large Power Plants by Putting Wasted Energy to Work



SUMMARY

Combined heat and power, also known as cogeneration, represents a tremendous untapped source of energy — and a timely opportunity to dramatically reduce carbon emissions while avoiding soaring electricity rates in the Carolinas.

CHP technology combines the on-site processes of electricity generation and heating or cooling in order to allow a wide range of facilities to use energy far more efficiently — by capturing and putting to work large amounts of thermal energy that is otherwise simply wasted into the environment. Many facilities already have existing waste heat streams and add electric generating equipment to their existing components when adopting CHP technology.

Although the fossil fuels that power CHP-equipped facilities are not clean, more efficient usage greatly reduces overall pollution including greenhouse gases.

As a proven energy efficiency technology in use worldwide for several decades at large industrial plants, recent advances make CHP practical and cost-effective at smaller facilities.

Thousands of facilities in North Carolina — including industrial plants, schools, hospitals, prisons, health clubs and hotels — could decrease their annual energy bills by 30% or more by adding CHP to their current heating or electric generation systems.

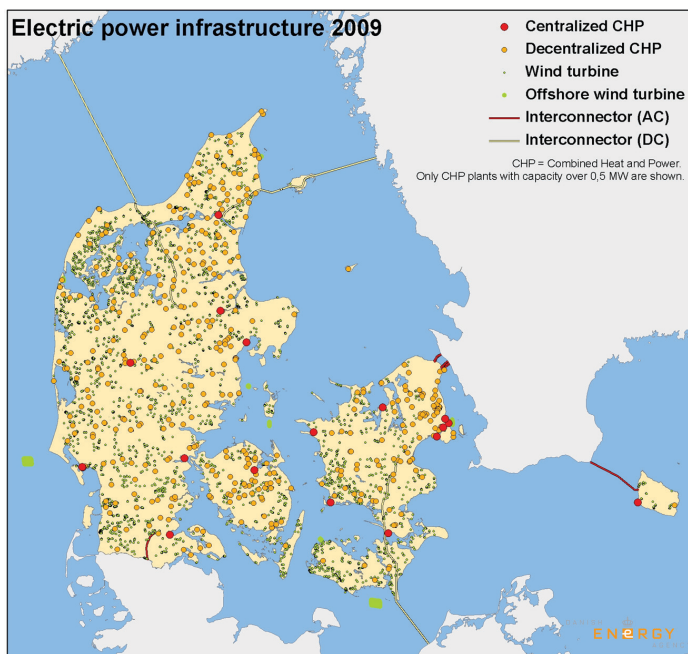
Paybacks on facility CHP investments average 4–7 years, but can be as low as 2–3 years. The estimated cost of CHP-generated electricity is approximately 6 cents per kilowatt hour — cheaper than most customers now purchase power from the grid.

CHP expansion is now being promoted by both the U.S. Department of Energy and Environmental Protection Agency. Their research

inspired a presidential executive order in August 2012 calling for the equivalent of 40 large power plants from CHP by 2020.

Duke Energy and subsidiary Progress Energy could follow the lead of other U.S. utilities that are investing in CHP by installing and leasing systems to customers, or by launching utility-owned distributed CHP programs.

Utility-owned CHP programs would be paid for by all Duke-Progress ratepayers but would be far less expensive than new, centralized nuclear or natural gas-fired power plants.



Distributed CHP in Denmark, 2009

Cogeneration accounts for around 50% of electricity production in the country. It is one of the only countries that is energy independent.

Thus, CHP can help save all North Carolina customers from rate hikes year after year.

North Carolina's CHP capacity might be the equivalent of around ten large power plants. Therefore, construction of new centralized power plants — and repeated rate hikes for electricity customers — can be avoided if even a substantial fraction of distributed CHP is implemented.

CHP capacity is also ready to be tapped in South Carolina, which shares Duke's distribution system with North Carolina customers.

The greatest barriers to the expansion of CHP in North Carolina are the lack of education about technology advances, and resistance by the state's electric utilities to adopt CHP-friendly policies.

A current legislative proposal to eliminate North Carolina's renewable energy tax credit would, if enacted, harm efforts to create jobs and energy savings from CHP.

A growing CHP market is a key step on the path toward stabilizing our climate and avoiding staggering rate hikes to pay for new power plants that simply are not needed.

With a monopoly over electric sales in North Carolina, Duke-Progress has a duty to take advantage of distributed CHP as an investment opportunity that will prove beneficial to the corporation and, more importantly, to the people of the state.

With so much electric generation capacity simply being wasted at present, the NC Utilities Commission must ensure a full examination of CHP before allowing Duke-Progress to move forward with plans for construction of billions of dollars in fossil-fueled or nuclear power plants.