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North Carolina Department of Environmental Quality  
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**RE: Letter to the Department of Environmental Quality (“DEQ”) supporting Combined Heat and Power (“CHP”) and Waste Heat to Power (“WHP”) in the NC Draft Clean Energy Plan**

Dear Secretary Regan and Chief Deputy Secretary Nicholson:

We, the Alliance for Industrial Efficiency (“Alliance”), commend the DEQ for preparing a draft of the North Carolina Clean Energy Plan for public discussion and comment, and would like to take this opportunity to **strongly recommend that CHP and WHP be prioritized in the strategy area of increase use of energy efficiency and demand side management resources.**

Additionally, **we support the current recommendations under Section 4.5: Energy Efficiency and Beneficial Electrification**, particularly sub-section K-3, which would modify the existing Renewable Energy and Energy Efficiency Portfolio Standard (“REPS”) to require investor owned utilities (“IOUs”) to meet at least 25% and up to 40% of their REPS obligations with energy efficiency measures by 2021.

The Alliance is a diverse coalition that includes representatives from the business, non-profit, labor, and contractor communities. We are committed to enhancing manufacturing competitiveness and reducing emissions through industrial energy efficiency, particularly through the use of clean and efficient power generating systems such as CHP and WHP. CHP and WHP capture wasted heat and reuse it, thus using fuels most efficiently while cutting consumer energy costs and emissions. Because they generate power onsite, they improve the reliability of power services by allowing the host to operate even when the grid is down, and they deliver heat—an important and often ignored component in manufacturing.

By prioritizing CHP, WHP and other energy efficiency measures, the DEQ could:

- **Reduce carbon emissions and increase energy savings.** By 2030, North Carolina’s industrial sector customers can save more than \$5.3 billion on electricity costs and reduce CO<sub>2</sub> emissions by 3.7 million short tons annually, using CHP, WHP and other industrial efficiency measures.<sup>1</sup> In 2017 North Carolina’s industrial sector accounted for 19 percent (\$102 billion in 2017) of the total gross state product; employed over 10 percent of the workforce<sup>2</sup>; and

<sup>1</sup> The Alliance for Industrial Efficiency. “State Ranking of Potential Carbon Dioxide Emission Reductions through Industrial Energy Efficiency.” September 2016. [https://alliance4industrialefficiency.org/wp-content/uploads/2016/09/FINAL-AIE-State-Industrial-Efficiency-Ranking-Report\\_9\\_15\\_16.pdf](https://alliance4industrialefficiency.org/wp-content/uploads/2016/09/FINAL-AIE-State-Industrial-Efficiency-Ranking-Report_9_15_16.pdf)

<sup>2</sup> National Association of Manufacturers. “2019 North Carolina Manufacturing Facts.” 2019. <https://www.nam.org/state-manufacturing-data/2019-north-carolina-manufacturing-facts/>



consumed nearly a quarter of the total energy used statewide.<sup>3</sup> Additionally, direct utility investment into CHP and WHP could help IOUs achieve their REPS obligations, strengthen their resource portfolios with dependable power, and realize tangible economic benefits.

- **Seize unrealized CHP and WHP potential.** North Carolina's deployment of CHP and WHP lags far behind its potential to produce power. The state could produce an additional 4,352 MW of power (equal to nine new power plants) from CHP and WHP with more than half of that (2,421 MW<sup>4</sup>) remaining onsite at industrial facilities.<sup>5</sup> But the state has only 66 CHP sites generating 1,122 MW of clean and efficient power.<sup>6</sup>
- **Ensure energy reliability and resiliency in North Carolina's critical infrastructure.** Capturing and using the waste heat allows CHP systems to reach fuel efficiencies of up to 80 percent, compared to about 50 percent for the separate generation of heat and power. When configured properly, a CHP system can continue to operate when the electricity grid is impaired, ensuring an uninterrupted supply of electricity to the host facility—a crucial feature in a coastal state prone to hurricanes and flooding.<sup>7</sup> For example, North Carolina State University installed an 11 MW CHP system that allows the university to keep the heat on and lights running if an unexpected power outage were to occur.<sup>8</sup>

Therefore, we encourage the DEQ to:

1. **Prioritize CHP and WHP** in the state's future energy portfolio mix;
2. **Analyze the potential for CHP and WHP** in the energy efficiency implementation roadmap;
3. **Establish a statewide goal for CHP and WHP deployment;** and,
4. **Strengthen the state energy efficiency targets within the REPS.**

Thank you for your consideration and attention to this matter. As you move forward, we look forward to working with you to explore the potential for CHP and WHP in North Carolina and the appropriate actions to encourage their deployment.

Sincerely,

David Gardiner, Executive Director, Alliance for Industrial Efficiency

<sup>3</sup> U.S. Energy Information Administration. "North Carolina Consumption by End-Use Sector." 2017. <https://www.eia.gov/state/?sid=NC#tabs-2>

<sup>4</sup> The 2,421 MW industrial CHP technical potential number includes 2,339 MW capacity of industrial topping cycle CHP and an additional 82 MW capacity of WHP (primarily located in stone/clay/glass and primary metals sectors).

<sup>5</sup> U.S. Department of Energy. "Combined Heat and Power (CHP) Technical Potential in the United States." March 2016.

[https://www.energy.gov/sites/prod/files/2016/04/f30/CHP\\_Technical\\_Potential\\_Study\\_3-31-2016\\_Final.pdf](https://www.energy.gov/sites/prod/files/2016/04/f30/CHP_Technical_Potential_Study_3-31-2016_Final.pdf)

<sup>6</sup> U.S. Department of Energy. "Combined Heat and Power (CHP) Installation Database: North Carolina." Installations as of December 31, 2018. <https://energy.gov/chp-installs>

<sup>7</sup> Alliance for Industrial Efficiency. "Factsheet: The Opportunity for CHP in Natural Disaster Mitigation." February 2018.

<https://alliance4industrialefficiency.org/resources/fact-sheet-opportunity-chp-natural-disaster-mitigation/>

<sup>8</sup> U.S. Department of Energy. CHP Technical Assistance Partnerships. "Project Profile: North Carolina State University." Issued August 2015. [http://www.chptap.org/Data/projects/ncsu-Project\\_Profile.pdf](http://www.chptap.org/Data/projects/ncsu-Project_Profile.pdf)