

The following memo provides recommendations for actions that both the Administration and Congress can take to help increase the use of Combined Heat and Power (CHP) and Waste Heat Recovery (WHR) in order to help improve U.S. manufacturing competitiveness, create jobs, make the electricity grid more stable, and lower greenhouse gas emissions.

I. ACTIONS OR POLICIES FEDERAL AGENCIES CAN ADOPT, USING EXISTING AUTHORITIES, TO REDUCE EMISSIONS OF HEAT-TRAPPING POLLUTION

As the President acknowledged during his State of the Union address, executive level action may be the most effective path “to reduce pollution, prepare our communities for the consequences of climate change, and speed the transition to more sustainable sources of energy.”¹ The Administration has already taken an initial step in this direction with the issuance of Executive Order 13624, which establishes a goal of increasing deployment of CHP and WHR by 50 percent (40 gigawatts) by the year 2020. This goal is achievable, and the technical potential is far greater.² The Executive Order sends an important signal to the states, federal agencies, and to Congress about the value of CHP and WHR. The Administration must now adopt policies to achieve – and surpass – the 40 gigawatt goal. As demonstrated at length below, we believe the Executive Branch has considerable authority to reduce emissions by increasing deployment of clean and efficient Combined Heat and Power (CHP) and Waste Heat Recovery (WHR).

A. Federal Procurement and Deployment of CHP and WHR

The Administration can stimulate demand for CHP and WHR by encouraging deployment of CHP and WHR systems in federal buildings and procurement of it when it is purchasing electricity. As the largest electricity user in the country, the federal government can save money, reduce pollution, drive markets for CHP and WHR, and serve as a model for the private sector. This memo offers recommendations to increase the use of CHP and WHR on federal property:

1. Procurement
 - a. Clarify that the Use of CHP Is Consistent with Executive Order 13514;
 - b. Clarify Power Purchase Agreements with the U.S. Army and Other Branches of the Military Extend to CHP and WHR; and
 - c. Explore Options for Creative Financing for Energy-Efficiency Projects in the Industrial Sector

¹ “Obama’s 2013 State of the Union Address,” Feb. 12, 2013 (<http://www.nytimes.com/2013/02/13/us/politics/obamas-2013-state-of-the-union-address.html?pagewanted=print>).

² See, e.g., Oak Ridge National Laboratory (ORNL), Dec. 1, 2008, *Combined Heat and Power: Effective Energy Solutions for a Sustainable Future*, at 4 (http://www1.eere.energy.gov/industry/distributedenergy/pdfs/chp_report_12-08.pdf) and U.S. EPA and U.S. DOE, Aug. 2012, “Combined Heat and Power: A Clean Energy Solution,” at 13. (http://www1.eere.energy.gov/manufacturing/distributedenergy/pdfs/chp_clean_energy_solution.pdf).

2. Deployment
 - a. Update DOE's 2002 Analysis Assessing the Scale of the Opportunity
 - b. Urge Department of Defense to Commit to Fuel Switching and CHP for Regulated Coal and Oil-Fired Boilers on Military Property
 - c. Address the Potential Conflict Between the Administration's Industrial Efficiency Agenda and the Proposed Phase-Out of Fossil Fuels in Federal Buildings for Facilities that Install CHP

These recommendations are elaborated below.

1. Increase Federal Procurement of CHP and WHR
 - a. Clarify that the Use of CHP and WHR Are Consistent with Executive Order 13514

To reduce costs and greenhouse-gas emissions, we encourage the President to promote the use of CHP and WHR by clarifying that such technologies are consistent with Executive Order 13514 and should be used.³ Executive Order 13514 articulates a goal of “leverage[ing] agency acquisitions to foster markets for sustainable technologies [and...] design[ing], construct[ing], maintain[ing], and operat[ing] high performance sustainable buildings.” To this end, EO 13514 directs agency heads to consider potential reductions associated with “increasing agency use of renewable energy and implementing renewable energy generation projects on agency property.” Unfortunately, CHP and WHR are not included in the Order's definition of qualifying renewable energy projects. The Administration should issue a presidential directive to clarify that CHP and WHR are important strategies for complying with EO 13514. Through the use of CHP and WHR, federal agencies will reduce their use of conventional power, thus lowering their Scope II emissions in accordance with the executive order.

- b. Clarify that Power Purchase Agreements with the U.S. Army extend to CHP and WHR

Last February, the U.S. Army issued a Solicitation for Power Purchase Agreements to procure “reliable locally generated renewable and alternative energy.”⁴ This Solicitation is consistent with the Department of Defense's mandate to produce or procure at least 25 percent of its electricity consumption from renewable resources by 2025. We were gratified by the Army's request and submitted comments to clarify that CHP and WHR projects would qualify for the acquisition. In particular, we urged the Army to explicitly identify WHR as a renewable resource and list CHP as an alternative energy technology. Unfortunately, the Army ultimately rejected this approach. We

³ Executive Order 13514, Oct. 5, 2009, "Federal Leadership in Environmental, Energy, and Economic Performance."

⁴ U.S. Department of the Army, Solicitation Number: W912DY11R0036, Feb. 24, 2012, "Renewable and Alternative Energy Power Production for Army Installations."

believe that the Army should reassess its position, as such statements by the Administration can play a key role in expanding deployment of CHP and WHR.

c. Explore Options for Creative Financing for Energy-Efficiency Projects in the Industrial Sector

In December 2011, President Obama announced a nearly \$4-billion commitment in combined federal- and private-sector energy upgrades to be financed through long-term energy savings to pay for up-front costs through the use of Energy Savings Performance Contracts. We urge the Administration to continue to explore the removal of barriers to extend these and other forms of alternative financing to the industrial arena.

d. Require Consideration of CHP and WHR in all Critical Government Facilities

Last spring, the Louisiana legislature enacted legislation requiring consideration of CHP in all critical government facilities and to require installation of such equipment wherever the expected energy savings exceed the expected costs over a twenty-year period.⁵ Such a requirement will increase the use of CHP, reducing emissions, enhancing resilience, and lowering federal energy costs. We urge the Administration to consider adoption of a similar measure for critical federal buildings and believe that such a measure could be adopted using existing executive authority.

2. Increase Federal Procurement of CHP and WHR

a. Update DOE's 2002 Analysis Assessing the Scale of the Opportunity

In 2002, Department of Energy's Oak Ridge National Laboratory assessed the potential application of CHP systems at federal sites, and found that CHP could be successfully and economically applied in nine percent of large Federal facilities, producing 1.5 to 1.6 GW. At this level, federal facilities could generate 13 percent of all electricity use in the Federal sector.⁶ DOE should update this analysis to reflect new projects and opportunities. This analysis can be completed as part of the barriers study, which Congress authorized last December through HR 6582.

DOE's 2002 analysis was limited to projects with less than a 10-year payback period, based on 2000 industrial rates for each state. Significantly, the report notes that "CHP economics are highly sensitive to utility rates," and that changing assumptions about energy prices "can give widely different amounts of CHP potential and energy savings."⁷ Elsewhere, it notes that "[a]s energy

⁵ Senate Resolution No. 171, June 2012, "Requests the Department of Natural Resources to adopt administrative rules encouraging the use of combined heating and power systems in critical government facilities" (<http://www.govtrack.us/states/la/bills/2012/sr171>).

⁶ Department of Energy, Oak Ridge National Laboratory, May 2002, "CHP Potential at Federal Sites" (available online at http://www1.eere.energy.gov/femp/pdfs/federal_chp_mkt_assmt.pdf).

⁷ *Id.* at 10, 5.

prices increase and CHP system costs decrease, the amount of cost-effective CHP potential will rise.”⁸ Electricity markets have changed dramatically in the ensuing decade. In fact, industrial electricity rates have risen nationally by 41 percent since 2002.⁹ As such, projects that may not have seemed viable in 2002 may appear more favorable today. We urge the Administration to update this analysis to reflect current electricity and natural gas prices. Such an updated analysis can help guide the government’s investment decisions.

b. Urge Department of Defense to Commit to Fuel Switching and CHP for Regulated Coal and Oil-Fired Boilers on Military Property

More than 1,200 coal- and oil-fired boilers are subject to EPA’s Industrial Boiler Rule and thus candidates for fuel switching to natural gas and the addition of CHP. By our analysis, if these boilers installed natural gas-fueled CHP or WHR systems, they could provide 25 gigawatts of clean and efficient electricity.¹⁰ We commend the Environmental Protection Agency for drafting a rule that encourages industrial boiler owners to consider CHP and WHR as part of a commonsense compliance option. The Boiler Rule will lower emissions, save American manufacturers money on their energy bills, enhance their competitiveness, and increase electric reliability in industrial states.

There are 66 coal- and oil-fired industrial boilers at military facilities, which are subject to the rule. (Table 1) The Administration should take a leadership role and convert these boilers to gas with CHP systems, thus demonstrating to the private sector that these boilers can comply with the rule while also creating new jobs and generating more clean power. By converting these units to clean and efficient natural-gas-fired CHP, the Department of Defense could produce roughly 510 MW of new CHP capacity. We urge the Administration to build on work that is occurring through DOE’s regional efforts and support the conversion of these regulated boilers.

⁸ *Id.* at 9.

⁹ U.S. Energy Information Administration, Feb. 2012, “Electric Power Monthly” (available online at http://www.eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_5_3).

¹⁰ Estimate assumes CHP installations for 1,196 major source, non-limited use coal- and oil-fired boilers (601 and 595 units, respectively) equal to or greater than 10 MMBTU/hr from EPA’s “Emissions Database for Boilers and Process Heaters Containing Stack Test, CEM, & Fuel Analysis Data Reported Under ICR No. 2286.01 and ICR No. 2286.03 (Version 6).mdb”, Feb, 2011 and “Appendix B-1 Emission Reduction Detail for Existing Units,” December 2011. (both data sets available online at <http://www.epa.gov/ttn/atw/boiler/boilerpg.html>). DOE has since expanded this database to include additional boilers. Using the expanded database, the CHP potential would be even greater.

TABLE 1: Regulated Boilers on Military Property

State	Total Boilers	Coal Boilers	CHP Potential, Coal (MW)	Oil Boilers	CHP Potential, Oil (MW)	Total CHP Potential (MW)
CT	1	-	-	1	15	15
IL	3	3	40	-	-	40
MD	4	3	62	1	4	66
NC	44	6	126	38	53	179
PA	1	-	-	1	1	1
TN	12	3	57	9	126	183
WV	1	1	28	-	-	28
Total	66	16	313	50	199	512

- c. Address the Potential Conflict Between the Administration's Industrial Efficiency Agenda and the Proposed Phase-Out of Fossil Fuels in Federal Buildings for Facilities that Install CHP

While we are encouraged by the Administration's growing commitment to industrial energy efficiency, we are concerned that this effort may conflict with an October 2010 Department of Energy Notice of Proposed Rulemaking, which proposes to eliminate fossil fuel-generated energy from new and renovated federal buildings by 2030 (as anticipated by Section 433 the Energy Independence and Security Act of 2007).¹¹ Because CHP and WHR often rely on natural gas, such a rule may discourage the use of these technologies over time. We believe that the objective of limiting fossil fuel use in federal buildings should not be pursued to the detriment of promoting energy efficiency. Instead, DOE should distinguish among fossil fuel types, so as to be able to provide appropriate incentives for efficient technologies such as CHP. We encourage the Administration to explore ways that CHP and WHR projects can survive, despite the proposed proscription.

B. Utility Policy

1. Convene a CEO-Level Meeting of Key Policymakers and Stakeholders to Identify and Overcome Obstacles

State utility policies often present a barrier to CHP and WHR deployment. The American Council for an Energy-Efficient Economy (ACEEE) recently laid out these barriers in its 50-state

¹¹ U.S. Department of Energy, Oct. 15, 2010, 75 Fed. Reg. 63404, "Fossil Fuel-Generated Energy Consumption Reductions for New Federal Buildings and Major Renovations of Federal Buildings, Notice of Proposed Rulemaking."

assessment of CHP policies.¹² Efforts are now underway in some states to overcome these obstacles. For instance, the Public Utilities Commission of Ohio recently established a CHP working group. In January 2013, the National Association of Regulatory Utility Commissioners adopted a resolution committing to support efforts to credit Waste Heat Recovery in state utility policies.¹³ This resolution is an important first step; however, it does not on its own overcome utility barriers to CHP and WHR.

We urge the President to use his convening ability to bring together top executives from manufacturers, electric utilities, CHP and WHR providers, as well as Governors and Public Utility Commissions to develop utility policies that can overcome barriers and encourage power produced through industrial-efficiency projects to be put on the grid. Through such a meeting, the Administration can elevate the profile of CHP and WHR among these key stakeholders, establish deployment as a national priority, and drive consensus around new policy approaches among state governments.

2. Ensure FERC Rulemakings Consistently Recognize the Benefits of Distributed Generation

The Administration can also directly influence utility policy through the Federal Energy Regulatory Commission. The White House should encourage FERC to explicitly recognize the benefits distributed generation brings to the grid by reducing line losses and enhancing energy security and electric reliability. One way this can be done is by building on the Commission's decision in Order 755, through long-term contracts that compensate CHP and WHR project owners for the frequency regulation benefits supplied by their installation at industrial sites, or through the development of wholesale market rules (in regions where wholesale markets exist) that eliminate barriers to entry for CHP and WHR resources. Such long-term contracts or market revenue opportunities are needed because CHP and WHR units require major capital investments. By compensating distributed-energy projects for their local power-factor support, grid operators could balance reactive power throughout the transmission and distribution system while reducing line losses. At the same time, such distributed power projects would improve energy efficiency and manufacturing productivity.

¹² Anna Chittum and Nate Kaufman, Report IE111, Sept. 2011, "Challenges Facing Combined Heat and Power Today: A State-by-State Assessment" (available online at <http://www.aceee.org/sites/default/files/publications/researchreports/ie111.pdf>).

¹³ "Resolutions Passed by the Board of Directors of the National Association of Regulatory Utility Commissioners at NARUC's 2013 Winter Meeting," Feb. 6, 2013 (<http://winter.narucmeetings.org/2013WinterResolutions-Final.pdf>).

C. Clean Air Act Regulation

The Environmental Protection Agency (EPA) has undertaken a number of Clean Air Act rulemakings, which provide a valuable tool for advancing industrial energy efficiency. EPA regulations have historically discriminated against energy efficiency by setting emission limits based on the fuel used, rather than the energy produced. In recent years, EPA has done an exceptional job recognizing the benefits of energy efficiency and finding ways for efficiency to serve as a compliance option. In several of these rulemakings, EPA has explicitly recognized that energy efficiency – including in industrial buildings – can be an “integral, highly cost-effective component of power companies’ compliance strategies.”¹⁴ EPA has supported industrial efficiency by incorporating output-based standards, crediting avoided line losses from distributed generation, allowing energy efficiency set asides in state air plans, and clarifying that installation of CHP equipment may support a request for a compliance extension. We applaud these actions and offer several recommendations to guide EPA’s actions going forward:

1. Publicize and Urge Participation in the Boiler MACT Technical Assistance Program

EPA recently launched an interagency technical assistance program with the Department of Energy for industrial boiler owners affected by the Industrial Boiler MACT. For its part, DOE is meeting with owners of facilities with regulated coal and oil boilers to “discuss strategies for compliance, including combined heat and power, as well as provide information on potential funding and financing opportunities.”¹⁵ We believe the Technical Assistance Program will play a pivotal role in encouraging industrial utilities to convert their boilers and incorporate CHP into their facilities. The Administration should publicize and support this valuable effort. The Administration should also encourage states with large concentrations of industrial boilers to cooperate with this interagency effort. This is a very time-limited opportunity, as the three-year compliance clock is already running. As such, we urge the Administration to prioritize such outreach.

2. Urge EPA to Continue Promulgating Output-Based Emission Standards to Encourage Energy Efficiency

Output-based standards are essential if EPA seeks to encourage investments in energy efficiency. Traditional input-based emissions regulations fail to credit CHP systems for their greater efficiency. Traditional “input-based” regulations set emission limits based on the amount of fuel used (e.g., pounds of pollutant per million BTUs). In contrast, output-based limits are expressed as

¹⁴ EPA, Aug. 2, 2010, “Federal Implementation Plans To Reduce Interstate Transport of Fine Particulate Matter and Ozone,” 75 Fed. Reg. 45352-53.

¹⁵ DOE, Fact Sheet: “Boiler MACT Technical Assistance” (http://www1.eere.energy.gov/manufacturing/distributedenergy/pdfs/boilermact_tech_asst_factsheet.pdf).

emissions per unit of useful energy output (e.g., pounds per megawatt hour). This rewards generators that have the highest “output” of megawatt hours and the lowest “output” of pollutants. In recent years, EPA has adopted several output-based emissions standards,¹⁶ and has issued guidance encouraging states to adopt the same.¹⁷

EPA has recognized the benefits of output-based regulations, noting that output-based standards “encourage[] energy efficiency and clean energy supply, such as combined heat and power (CHP), by relating emissions to the productive output of the process rather than the amount of fuel burned.”¹⁸ Executive Order 13624 similarly encourages federal agencies to “employ[] output based approaches as compliance options in power and industrial sector regulations, as appropriate, to recognize the emissions benefits of highly efficient energy generation technologies like CHP.” We are grateful for this direction and believe it will encourage increased use of CHP and WHR by regulated entities.

3. EPA Should Credit Offsite Energy-Efficiency Improvements, Including CHP and WHR, in Any Forthcoming GHG Regulations for Existing Utilities

As EPA develops carbon pollution standards for existing power plants, responsible for 40 percent of U.S. carbon pollution, we urge it to consider the full range of emission reduction potential that is available in the power sector. As elaborated above, reducing wasted heat from power generation and supply-side energy efficiency, including CHP and WHR, are widely available resources that, if deployed, could meaningfully reduce power sector greenhouse gas emissions while at the same time saving American families and businesses money, cutting co-pollutant emissions, stimulating local economies, and creating jobs. Mobilizing demand-side energy efficiency, expanding renewable energy generation and shifting utilization to cleaner generation sources similarly offer significant potential to reduce emissions from conventional power plants. We strongly recommend that EPA develop a protective carbon pollution standard for existing power plants reflecting the full range of solutions that can secure meaningful and cost-effective emissions reductions.

¹⁶ The Industrial Boiler Rule includes an output-based emissions limit as an alternative compliance option. See U.S. EPA, Jan. 31, 2013, “Final Rule: National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters,” 78 Fed. Reg. 7138. EPA has also used an output-based approach for the new source performance standards (NSPS) for NO_x from utility boilers, NSPS for mercury from coal-fired utility boilers, and cement kilns. For instance, the most recent New Source Performance Standards for Stationary Gas Turbines ([EPA-HQ-OAR-2004-0490, FRL-8033-4], RIN 2060-AM79, p. 38483) provides turbine owners with the option of using an output-based standard for calculating NO_x emitted per unit of useful recovered energy. In its final NESHAP rule for the Portland Cement Manufacturing Industry ([EPA-HQ-OAR-2007-0877]; RIN 2060-AO42), EPA proposed an output-based methodology for PM, NO_x and SO₂.

¹⁷ See U.S. EPA, Aug. 2004, “Output-Based Regulations: A Handbook for Air Regulators” (http://www.epa.gov/chp/documents/obr_final_9105.pdf).

¹⁸ U.S. EPA, “Output Based Environmental Regulations Fact Sheet” (http://www.epa.gov/chp/documents/output_based_regs_fs.pdf).

4. EPA Should Provide Support to Manufacturers and Other Entities that Wish to Install CHP and WHR Equipment

Industrial facilities may be intimidated by the array of EPA regulations and permits they would need to satisfy to realize the environmental and economic benefits of installing a CHP or WHR unit. EPA should provide support to such entities to help increase the use of CHP and WHR.

First, EPA should appoint an ombudsman to help states, industrial facilities, and others navigate the EPA permitting process and to address concerns about specific projects. Second, EPA should develop a case-study guide with details about the permitting process for WHR and CHP projects. This would help encourage similar investments by others by allowing regulated entities to identify other facilities that can provide support throughout the permitting process. This would also allow facilities to make more accurate projections about the permitting timeline and better identify potential benefits from project implementation. Ideally, this compendium would include examples reflecting a range of industry sectors so that facilities could coordinate with similarly situated facilities. We understand that EPA's CHP Partnership is already gathering case studies to help assuage concerns that manufacturers may have about New Source Review and believe this will be a very valuable resource.

II. ACTIONS OR POLICIES FEDERAL AGENCIES CAN ADOPT, USING EXISTING AUTHORITIES, TO MAKE OUR NATION MORE RESILIENT TO THE EFFECTS OF CLIMATE CHANGE

All of the actions elaborated above can be taken using existing authorities. To the extent these actions encourage increased deployment of CHP and WHR, they will make the nation more resilient to the effects of climate change. Indeed, one of the core features of CHP and WHR is that these technologies enhance electric reliability by allowing a facility to generate its own power for on-site use. This lowers electricity costs and protects facilities from unstable electricity prices. This feature of CHP and WHR also makes its hosts more resilient to the effects of climate change.

We witnessed this benefit last December when 8.5-million people lost power during and after Superstorm Sandy.¹⁹ Strikingly, institutions, hospitals and businesses with CHP systems were able to keep the lights on. These included Co-op City in the Bronx, Salem Community College and Princeton University in New Jersey, and New Milford and Danbury Hospitals in Connecticut.²⁰ CHP's reliability benefits were also evident in Jackson, Mississippi during Hurricane Katrina, where a 4.3 megawatt CHP system at the Mississippi Baptist Medical Center allowed the facility to

¹⁹ Energy.gov, Dec. 2012, "Hurricane Sandy-Nor'Easter Situation Reports" (<http://energy.gov/articles/hurricane-sandy-noreaster-situation-reports>) (visited Feb. 13, 2013).

²⁰ Phyllis Cuttino, Feb. 11, 2013, Huffington Post, "Energy Efficiency Means Security, Jobs and Competitiveness" (http://www.huffingtonpost.com/phyllis-cuttino/energy-efficiency-means-security_b_2647758.html).

remain fully operational throughout the storm. As a consequence, the 624-bed hospital was able to function as an emergency response center throughout the storm.²¹

Time and again, facilities with CHP and WHR have been able to keep the lights on despite disruptive extreme weather events.²² This will become increasingly important as climate change increases the frequency and intensity of severe storms.

III. LEGISLATION CONGRESS SHOULD ENACT TO STRENGTHEN THE ABILITY OF FEDERAL AGENCIES TO PREVENT AND RESPOND TO THE EFFECTS OF CLIMATE CHANGE

In recent years, there has been bipartisan support for several initiatives which would increase deployment of CHP and WHR. We urge members of the Bicameral Task Force on Climate Change to champion these efforts and help move them forward in the 113th Congress. In particular, we would like to highlight seven legislative options to help advance CHP and WHR:

1. Improve the existing Investment Tax Credit for CHP and extend it to WHR;
2. Extend Master Limited Partnerships to include energy efficiency and renewable energy sources;
3. Develop a repayable tax credit for utilities that invest in CHP and WHR projects;
4. Support an ambitious CHP/ WHR doubling goal;
5. Support inclusion of CHP and WHR in a Clean Energy Standard;
6. Clarify that the fossil fuel proscription in the Energy Independence and Security Act of 2007 does not extend to CHP and WHR projects; and
7. Support other initiatives that create markets for power from efficient CHP and clean WHR projects.

1. Strengthen and Expand the Existing Investment Tax Credit for CHP

While CHP and WHR offer substantial long-term savings, they require up-front investments, which can be cost-prohibitive. Congress can lower these initial costs by supporting several improvements to the existing investment tax credit (ITC) for CHP. The existing CHP ITC provides limited benefit to manufacturers. WHR now receives no tax benefits, and CHP obtains only a 10-percent investment tax credit for the first 15 megawatts of a project limited to 50 megawatts in size. We urge Congress to lift these size and capacity constraints by making the first 25 megawatts of all projects (regardless of size) eligible for the credit, extending the credit to WHR,

²¹ Southeast CHP Application Center, Aug. 9, 2007, "CHP (Cooling, Heating and Power) at the Mississippi Baptist Memorial Hospital" (http://gulfcoastcleanenergy.org/Portals/24/Events/Hurricane_2006/MississippiBaptistMemorialHospital.pdf).

²² For a compendium of articles on this topic, see Pew, Industrial Efficiency Technology Kept the Lights on During Hurricane Sandy (available online at http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Other_Resource/clean-Sandy_Breifing_Web_Dec2012.pdf).

and increasing the credit to 30 percent to provide parity with tax credits for other clean energy technologies. Many entrepreneurial CHP and WHR developers, moreover, lack the net revenue needed to take advantage of tax credits, a problem that was fixed by the now-expired 1603 program. Congress could ensure the existing 10 percent credit actually helps CHP and WHR developers by providing some level of refundability to this incentive.

2. Extend Master Limited Partnerships to Include Energy Efficiency and Renewable Energy Sources

Master Limited Partnerships (MLPs) are business structures that are taxed as partnerships, but whose ownership interests are traded like corporate stock on a market, which allow investors to lower their tax liability and access liquid investment opportunities. While certain oil, gas, and some biofuel projects qualify as MLPs, clean energy projects do not. Expanding the definition of MLPs to encompass renewable energy and energy efficiency investments (including CHP and WHR) would level the playing field and allow these projects to move forward. By lowering the cost of capital in this manner, investors will be more inclined to finance CHP and WHR projects.

3. Develop a Repayable Tax Credit for Utilities that Invest in CHP and WHR Projects

Last year, Senator Shaheen developed an innovative proposal that encouraged utilities to support CHP and WHR projects at industrial sites. The cost of the credit to federal taxpayers was minimized by requiring the industrial host to repay its value during a set time (e.g., five years). To be eligible for the federal tax credit, the legislation further required utilities to secure approval from the appropriate state Public Utilities Commission to rate-base the cost of the investment (minus the value of the tax credit). This proposal enlisted utilities as partners in developing CHP projects at industrial sites. We encourage Congress to continue to explore financing options that prompt utilities and industrial hosts to work together to develop CHP and WHR projects.

4. Support an Ambitious CHP/ WHR Doubling Goal

Last August, the President issued Executive Order 13624, establishing a goal of increasing CHP deployment by 50 percent by 2020. In fact, the Department of Energy has found that CHP and WHR capacity far exceeds this amount. Alongside the Executive Order, EPA and DOE issued a report estimating 130 gigawatts of remaining CHP potential.²³ While Executive Order 13624 provides an important first step, Congress should embrace a more ambitious proposal of doubling CHP and WHR deployment (to 170 gigawatts) by 2020, as reflected in legislation that was introduced in the House with bipartisan support last session (HR 4017). Doing so would send a strong signal to federal agencies that they must take the necessary steps to realize this full-scale deployment. Such a bold pronouncement would also be consistent with the President's

²³ U.S. EPA and U.S. DOE, Aug. 2012, "Combined Heat and Power: A Clean Energy Solution," at 13 (http://www1.eere.energy.gov/manufacturing/distributedenergy/pdfs/chp_clean_energy_solution.pdf).

commitment in the State of the Union to “cut in half the energy wasted by our homes and businesses over the next twenty years.”²⁴

A CHP doubling goal paints a bold vision for our energy future. Like John F. Kennedy’s vision to place a man on the moon in 10 years, doubling CHP deployment by 2020 is likewise, bold, concise and specific. Kennedy’s vision of a moon landing was a powerful motivator for progress in the 1960s. It led to technical innovations and encouraged risk taking – and it moved our nation forward. Yet, in 1961, we did not yet possess the technology to get to the moon. Strikingly, we *do* have the technology to double CHP and WHR deployment by 2020. In fact, the technology has been around since the time of Thomas Edison – long before Kennedy was in the White House. HR 4017 challenges the nation to seize that technology and overcome other – lesser – barriers to realize our clean energy future. As such, we urge the Bicameral Task Force on Climate Change to support this more ambitious agenda.

5. Support Inclusion of CHP and WHR in a National Energy Efficiency or Renewable Portfolio Standard

To date, 40 states have adopted Renewable Energy or Energy Efficiency Standards. Of these, 23 states have policies that explicitly credit CHP and/ or WHR.²⁵ The existing portfolio standards vary widely from one another and no two standards are alike. A national standard would help establish a single uniform baseline and create a market for clean energy sources. Such a standard should credit CHP and WHR to help encourage increased deployment of these technologies.

An example of this approach can be found in the Ohio General Assembly’s recent passage of SB 315, which allows CHP to count toward compliance with the state’s energy efficiency standard and treats WHR as renewable. By crediting CHP and WHR in the state’s renewable energy and energy efficiency standards, utilities have an incentive to help customers develop CHP and WHR projects to save energy as they work to achieve annual energy efficiency benchmarks. These utility investments will help projects secure financing, shorten the return-on-investment, and resolve interconnection and stand-by issues. Ohio’s progress in this area is a testament to the leadership of Governor John Kasich, who identified industrial efficiency as a centerpiece of the state’s energy plan.

²⁴ “Obama’s 2013 State of the Union Address,” Feb. 12, 2013 (<http://www.nytimes.com/2013/02/13/us/politics/obamas-2013-state-of-the-union-address.html?pagewanted=print>).

²⁵ See U.S. EPA, Combined Heat and Power Partnership, “Portfolio Standards and the Promotion of Combined Heat and Power” (http://www.epa.gov/chp/documents/ps_paper.pdf).

6. Clarify that the Fossil Fuel Proscription in the Energy Independence and Security Act of 2007 Does Not Extend to CHP and WHR Projects

Section 433 of The Energy Independence and Security Act of 2007 proposes to eliminate fossil fuel generated energy from new and renovated federal buildings by 2030.²⁶ While directionally correct, this proscription should not extend to CHP or WHR, which typically rely on natural gas, but offer substantial economic and environmental benefits over other conventional sources of power. If necessary, Congress should pass legislation clarifying that the legislation does not, in fact, extend to these technologies. We believe that the objective of limiting fossil fuel use in federal buildings should not be pursued to the detriment of promoting energy efficiency.

7. Create Markets for Power from Efficient CHP and Clean WHR Projects

The Public Utility Regulatory Policies Act (PURPA) enabled clean energy developers to market their electricity when it cost less than what utility monopolies would pay to develop a new power plant. The Energy Policy Act of 2005 gutted these provisions, limiting the ability of CHP and WHR projects to sell their power. CHP deployment has declined significantly in the ensuing years. Congress needs to reinstate long-term power markets that allow clean energy projects to compete.

CONCLUSION

We thank you for the opportunity to submit comments on policies that the Bicameral Task Force on Climate Change should consider to reduce emissions of greenhouse gas emissions. As elaborated above, Combined Heat and Power and Waste Heat Recovery are important technologies to lower greenhouse gas emissions, while simultaneously reducing energy costs, improving U.S. manufacturing competitiveness, and enhancing the nation's resilience to climate change. The Alliance for Industrial Efficiency looks forward to working with you in the coming months to identify steps that both the Administration and Congress can take to help these technologies realize their full potential.

²⁶ U.S. Department of Energy, Oct. 15, 2010, 75 Fed. Reg. 63404, "Fossil Fuel-Generated Energy Consumption Reductions for New Federal Buildings and Major Renovations of Federal Buildings, Notice of Proposed Rulemaking."