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Comments on the Draft Solicitation for Federal Loan Guarantees for Advanced Fossil Energy Projects

The Alliance for Industrial Efficiency appreciates the opportunity to comment on the draft solicitation for Federal Loan Guarantees for Advanced Fossil Energy Projects. The Alliance is a diverse coalition that includes representatives from labor, contractor groups, and the business community. We are committed to enhancing manufacturing competitiveness and reducing emissions through industrial energy efficiency, particularly in the form of clean and efficient combined heat and power (CHP) and waste heat to power (WHP). The draft solicitation takes an important step toward achieving these goals. Our comments applaud this advancement and identify opportunities to achieve even greater efficiency gains from the industrial sector.

We are pleased that the Department of Energy (DOE) recognizes both "combined heat and power" and "Waste heat recovery on industrial facilities" as illustrative types of efficiency improvements that could be eligible for the loan program.[1] The draft solicitation outlines several eligibility requirements for efficiency improvements. An eligible project:

1. Uses advanced fossil energy technology (within the meaning of that term in Section 1703(b)(2) of Title XVII) and is described in one or more of the following technology areas…
    d) Efficiency Improvements. Projects or facilities that incorporate new or improved technologies to increase efficiencies and substantially reduce greenhouse gas emissions associated with fossil fuel supply and use; and
2. Meets both of the following requirements:
    a) Projects or facilities that avoid, reduce, or sequester air pollutants or anthropogenic emission of greenhouse gases; **and**

[1] Department of Energy, 2013, "Draft Loan Guarantee Solicitation Announcement for Federal Loan Guarantees for Advanced Fossil Fuel Energy Projects," at 2-3 (https://lpo.energy.gov/wp-content/uploads/2013/07/Draft-Advanced-Fossil-Solicitation.02.07.13.pdf).

b) Projects or facilities that employ New or Significantly Improved Technology as compared to Commercial Technology in service in the United States at the time the Term Sheet is issued.[2]

CHP and WHP projects meet each of these stated requirements.

While we commend DOE for explicitly including CHP and WHP in the loan guarantee program, we are concerned that several requirements in the draft solicitation will present challenges to CHP and WHP applicants under the program, and may limit the use of the loan program as an effective means for expanding deployment. In a 2011 report based on conversations with over 50 individual CHP developers, hosts, and supporters, the American Council for an Energy-Efficient Economy (ACEEE) found that one of the most significant barriers to wider CHP deployment nationwide was its high upfront cost, going so far as to call the cost "staggering."[3] The draft solicitation adds several significant fees to these upfront costs:

1. A "non-refundable application fee…in the amount of $1,000,000";
2. A "non-refundable facility fee…in an amount equal to 1/2 of 1.0% of the principal amount of the Guaranteed Obligation"; and
3. A "non-refundable annual maintenance fee…expected to be $500,000 per calendar year."

Moreover, "DOE anticipates that the project(s) approved pursuant to this solicitation will require the Applicant to directly pay the non-refundable Credit Subsidy Cost" (which is equal to "the net present value of the estimated long-term cost to the U.S. government of a loan guarantee") due to DOE's lack of expectation to "request or receive appropriated amounts from Congress to cover the Credit Subsidy Costs."[4] Taken together, these fees amount to a substantial increase in existing expenses, which could deter many projects from applying for the loan guarantee.

For instance, consider a 5 megawatt CHP or WHP project that costs $15 million to build and $400,000 annually to operate and maintain (O&M). If the developers were to apply for a loan guarantee for the full cost of such a project, the applicant would be required to pay $250,000 of the application fee and $18,750 of the facility fee (25 percent of the total) upon submission of Part I of the application. Later in the application process – but prior to completion of the project – the applicant would be subject to the remaining $750,000 of the application fee, the remaining $56,250 of the facility fee, a $500,000 maintenance fee, and a loan-guarantee credit subsidy cost of an unknown amount. Adding these costs, the applicant will have paid $1,575,000 in fees before the project is commercial – increasing the total project cost by 10.5 percent. Each year thereafter, the annual maintenance fee would be 3.3 percent of the total project cost ($500,000/$15 million), or 125 percent of the annual O&M cost for the facility. In fact, the maintenance fee alone would amount to $10 million over the life of a 20-year project, or 67

[2] *Id.* at 1-2 (emphasis in original).
[3] American Council for an Energy-Efficient Economy, September 2011, "Challenges Facing Combined Heat and Power Today: A State-by-State Assessment," at iv and 6 (http://aceee.org/node/3078?id=3933).
[4] *See*, *supra* note 1, at 13-14.

percent of the project's initial capital outlay. For smaller projects, the burden would be even greater. Indeed, for a project only half this size and cost (i.e., $7.5 million), these percentages would be virtually double (under this scenario, the $1,537,500 in fees would increase the total project cost by 20.5 percent and the annual maintenance fee would comprise 6.7 percent of the total project cost, or 250 percent of the normal annual O&M cost). By comparison, application fees for CHP and WHP projects in the private sector are typically 1 percent of the loan amount.

This fee structure would limit the program to only the largest projects. Moreover, maintenance fees are seldom attached to private loans, which further reduces the attractiveness of the program. DOE should modify this fee structure to make the loan guarantee more attractive to CHP projects. As proposed, the $1,000,000 non-refundable application fee is due in its entirety before the loan is awarded. We recognize that there are administrative costs associated with processing the application; however, do not believe that such costs reach $1,000,000.

Accordingly, we suggest the following changes to increase the attractiveness of the loan program to potential project developers. First, we believe that the application fee should be proportionate to the size of the loan (rather than establishing a flat fee for all projects). Second, we suggest that DOE modify the program so that the full fee is not due until the loan is approved. For instance, 25 percent of the application fee can continue to be due upon filing Part I of the application. An additional 25 percent (rather than 75 percent) can be due upon filing Part II of the application. The remaining 50 percent should be due only after – and only if – the loan is approved. These simple modifications would ensure that the loan application process is not cost-prohibitive, while still providing sufficient resources to "cover applicable administrative expenses" of the loan guarantee program."[5]

We are very grateful that CHP and WHP projects are eligible for the loan guarantee. CHP and WHP address an often-ignored area of energy efficiency – making the production of electricity more efficient. Conventional power generation is very inefficient. In fact, as Figure 1 (next page) illustrates, roughly two-thirds of energy inputs (68 percent) are simply emitted into the air, with a mere 32 percent actually delivered to customers. The unfortunate results are lost competitiveness and jobs, as well as increased pollution.

CHP and WHP greatly reduce these loses. By capturing and reusing waste heat, a CHP system can convert what would otherwise be wasted energy into additional electricity and thermal energy (heat). This dramatically increases fuel efficiency (to upwards of 75 percent) and substantially reduces associated greenhouse gas emissions – allowing utilities and companies to "get more with less." As Figure 2 (next page) illustrates, total fuel use is significantly greater with conventional separate heat and power generation (here 147 units) than it is under combined heat and power (here 100 units).

[5] *Id.* at 13.

FIGURE 1: LOSSES FROM CONVENTIONAL POWER GENERATION[6] (TWh)

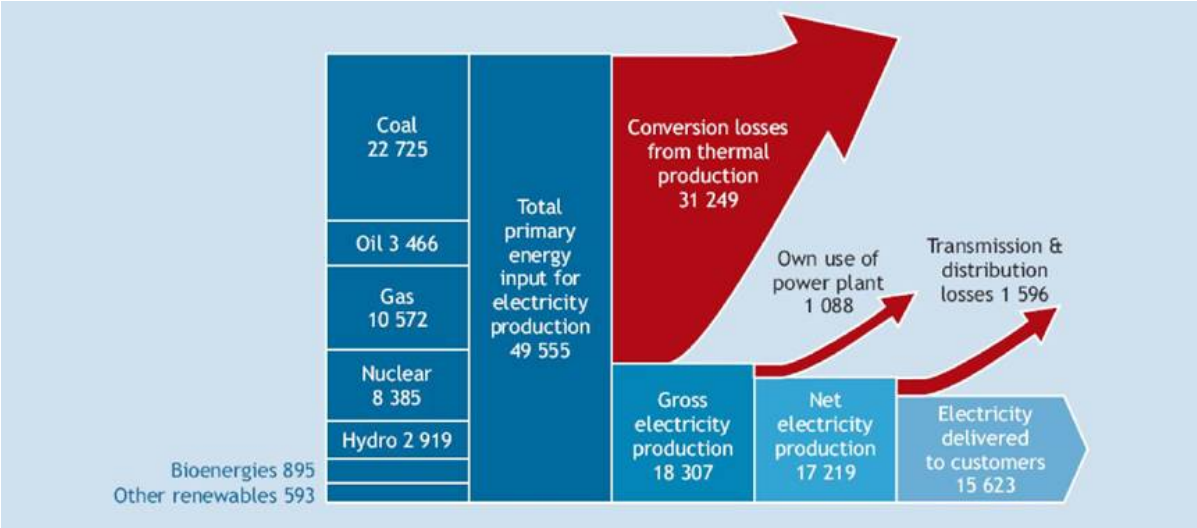
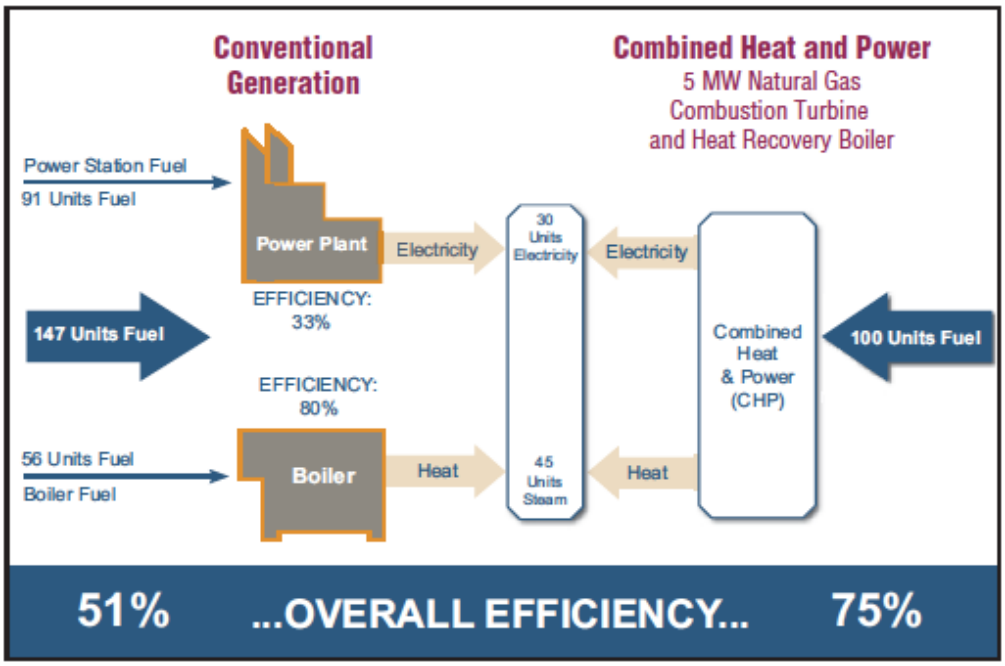


FIGURE 2: CHP SYSTEM EFFICIENCY[7]



Last year, DOE and the Environmental Protection Agency (EPA) released a report that highlighted these efficiency gains, explaining that "CHP can provide significant energy efficiency and environmental advantages over separate heat and power," and noting that CHP

[6] International Energy Agency, 2008, "*Combined Heat and Power: Evaluating the benefits of greater global investment,"* at 6 (Figure 3) (http://www.iea.org/publications/freepublications/publication/chp_report.pdf).

[7] US EPA, "Output-Based Environmental Regulations" (http://www.epa.gov/chp/documents/output_based_regs_fs.pdf) (Note that this figure is for illustration only. CHP performance relative to separate heat and power depends on numerous site- and project-specific factors).

applications operate at 65 to 75 percent efficiency.[8] The same report also compared the greenhouse gas emissions of a 10-megawatt natural gas-fired CHP system with separate heat and power systems and found a 42,751-ton reduction in carbon dioxide emissions and a 59.4-ton reduction in nitrogen dioxide over the separate systems.[9] According to DOE and EPA, CHP and WHP can improve U.S. manufacturing competitiveness, lessen the need for new transmission and distribution infrastructure, improve power grid security, and enhance energy reliability.[10] Additionally, the recent Hurricane Sandy Rebuilding Task Force strategy document outlined the resilience to disaster brought about by utilizing CHP, and recommended increased CHP deployment as a means of "ensur[ing] that Sandy recovery energy investments are resilient."[11] Each of these actions demonstrates the Administration's growing recognition of the varied benefits of CHP and WHP. We are very grateful for this and recognize that the draft solicitation for Federal Loan Guarantees for Advanced Fossil Energy Projects provides another indication of the Administration's regard for CHP and WHP.

In spite of these clear economic and environmental benefits, CHP and WHP investments fall short of their potential. While the Oak Ridge National Laboratory projects that CHP could provide 200,000 megawatts of clean electric power, or 20 percent of U.S. electricity demand by 2030,[12] current levels are less than half that amount (82 GW).[13] By including CHP and WHP among projects eligible for federal loan guarantees, the DOE has taken an important step toward realizing this full potential. We hope that you will modify the fee structure for such projects, however, to ensure that CHP and WHP projects are able to benefit from this valuable program.

Thank you for your consideration of these comments. We are encouraged by DOE's recognition of the benefits of CHP and WHP and are hopeful that the benefits of the new loan program can be expanded by lowering the associated upfront costs.

Sincerely,

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Alliance for Industrial Efficiency

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[8] US DOE, US EPA, Aug. 2012, "Combined Heat and Power: A Clean Energy Solution," at 7 (http://www1.eere.energy.gov/manufacturing/distributedenergy/pdfs/chp_clean_energy_solution.pdf).
[9] *Id.* at 8.
[10] *Id.* at 5.
[11] Hurricane Sandy Rebuilding Task Force, "Hurricane Sandy Rebuilding Strategy," at 62-63 (http://portal.hud.gov/hudportal/HUD?src=/sandyrebuilding).
[12] 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).
[13] See *supra* note 8 at 5.