



April 12, 2011

VIA EXPRESS MAIL

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 19120

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SECRETARY'S BUREAU

**Re: Act 129 Energy Efficiency and Conservation Program Phase Two
Docket No. M-2012-2289411**

Dear Secretary Chiavetta:

Enclosed for filing, please find an original and three copies of the comments of the Commonwealth Recycled Energy and Economic Development Alliance ("CREEDA"). CREEDA applauds the energy efficiency successes of the first round of Act 129 programs, but believes that greater efficiency gains can be achieved at lower cost by including incentivizes for cogeneration and combined heat and power applications, both which take greater advantage of full fuel cycle economics.

CREEDA is an organization committed to the development of Combined Heat and Power projects (CHP) within the Commonwealth of Pennsylvania. Our membership is a cross section of interested parties supporting the development of CHP projects and includes engineering firms, public utilities, construction companies, manufacturers, service providers, end users and other companies supporting energy efficiency measures within the Commonwealth. CREEDA is supported in its mission by the Department of Energy's Mid-Atlantic Clean Energy Application Center and Pennsylvania State University. CREEDA, through its membership, is uniquely positioned to present to the Commission the end-use customer's perspective on what is required to deploy this technology to a level that could impact both the supply side and end-use efficiency of electric usage within the Commonwealth, while at the same time improving the reliability of the electric distribution network.

Should you have any questions concerning these comments, please feel free to contact me.

Very truly yours,

Douglas J. Aldinger, PE, LEED AP
Chairman, CREEDA



BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

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Act 129 Energy Efficiency and Conservation Program Phase Two :
Docket No. M-2012-2289411

COMMENTS OF THE COMMONWEALTH RECYCLED ENERGY AND ECONOMIC DEVELOPMENT ALLIANCE (CREEDA)

I. INTRODUCTION

The Commonwealth Recycled Energy and Economic Development Alliance (“CREEDA”)¹ appreciates this opportunity to submit comments in response to the Commission’s March 1, 2012 Secretarial Letter at the above docket. CREEDA is a non-profit organization of participants that support the cost-effective deployment of combined heat and power projects. CREEDA members include government agencies, cogeneration technology providers, engineering and energy service companies and natural gas distribution companies.

CREEDA agrees with Chairman Powelson’s statement at this docket that the fundamental goal of Act 129 was to empower the Commonwealth’s electric consumers to take actions to control their electric energy consumption and associated costs by promoting energy efficiency and demand response. Real increases in efficiency can benefit both program measure

¹ CREEDA participants joining in these comments are named at the end of the letter. Individual CREEDA participants may also be submitting individual supplemental comments.



recipients and all other customers by placing downward pressure on wholesale energy costs and by enhancing the Commonwealth's environment. As discussed in more detail below, gas-fired cogeneration facilities can play a powerful role in promoting the energy efficiency of the Commonwealth on a cost-effective basis, place significant downward pressure on wholesale electric (and natural gas) energy prices, reduce strains on electric distribution systems, play a significant role in bettering the Commonwealth's environment and encourage the use of locally produced natural gas to the economic benefit of the Commonwealth and its citizens.

CREEDA also agrees with Chairman Powelson that as the Commission considers the implementation of a second round of Act 129 programs, it is essential that the Commission be fully armed with "all of the facts ... to ensure the costs and benefits of these programs truly weigh in on the side of consumers" and that "any future Act 129 programs are effective uses of consumers' money."

CREEDA applauds the energy efficiency successes of the first round of Act 129 programs, but believes that greater efficiency gains could have been achieved at lower cost by including, for example, measures to incentivize cogeneration or other fuel substitution measures that would have been more cost-effective by incentivizing incremental efficiency gains related to full fuel cycle economics, which are quantifiable and measureable. CREEDA also recognizes, however, that the Commission was operating under a tight statutory implementation deadlines, and needed to study the fuel substitution and technologies such as Combined Heat and Power deployment in more detail, which subsequently occurred in the Commission's fuel substitution working group.

In approaching a potential second round of Act 129 programs, the Commission should recognize that EDCs will have a natural bias against program measures that have the potential to eliminate or significantly reduce electric loads, since such programs may offer less opportunity for the EDCs to recover lost revenues through the base rate mechanisms available under Act 129. The Commission accordingly will need to take proactive measures to arm itself “with all the facts” in establishing any second round Act 129 programs by ensuring that interested parties will have the opportunity to propose program alternatives to those proposed by EDCs, and should take advantage of the additional time it will have in reviewing second round Act 129 filings and applying the experience it has gained to ensure that the most cost effective program measures are selected.

In this effort, CREEDA stands ready to work collaboratively with the Commission, EDCs and other stakeholders to make sure that the benefits of gas-fired cogeneration facilities are fully understood and considered, and that appropriate Act 129 program measures are adopted to appropriately empower consumers to control their energy costs through the use of cogeneration facilities.

II. EXECUTIVE SIUMMARY OF RECOMMENDATIONS

CREEDA recommends:

- That the Commission establish a working group to address cogeneration issues to identify in a timely manner any potential remaining barriers, including existing or lacking policies, to the adoption of cogeneration programs into Act 129 programs, to ensure the Commission is fully armed with any necessary information. CREEDA previously

presented this idea to Vice Chairman Coleman who believed a working group approach had merit.

- That the Commission requires EDCs, in any future Act 129 program filings, to either (1) propose distinct cogeneration programs measures and budgets or (2) provide an analysis explaining why such measures were not proposed and why the alternative program measures proposed will be more cost effective under the Total Resource Cost (“TRC”) test.
- That the Commission requires EDCs to produce in a more transparent manner all underlying assumptions they will use in performing their TRC test calculations, to facilitate the review of such analyses by third parties and to enable alternative proposals to be submitted utilizing common assumptions so that the Commission may more easily compare and evaluate the available alternatives.
- To the extent specific cogeneration measures and budgets are not adopted, but “custom” programs are authorized, the Commission requires such customer programs to have clear rules indicating if cogeneration projects will be considered as custom measures and, if so, establish protocols to ensure that cogeneration projects will not be disfavored and that the mechanism for establishing potential incentive payments is clearly understood and transparent.
- That the Commission requires CHP be removed from the Special category included in most of the EDC Act 129 programs and that a specific category for CHP projects be created.
- Customers and project developers need specific certainty related to the grant levels provided by each EDC. Each EDC should create a budget as part of its Act 129 filing to

support CHP projects. In addition each project should be provided specific financial support. This ensures both the project developer and the end use customer can assess the return on investment to make sure the project is viable prior to submitting the project to the EDC for approval. In current process where these types of projects are treated as one off or unique projects thwarts development efforts. Under the current Act 129 program, neither the customer or the developer have any idea of the potential level of support available to a project since it must be reviewed on its merits on a case by case basis. For CHP projects to be most effective they must deploy the excess heat created by the generating device. Since each end use application is different significant engineering design must be invested to fully understand the life cycle economics of the project. Customers and developers are hesitant to invest the time necessary to develop the project unless specific signals such as specific grant levels are spelled out.

- CREEDA recommends AS A MINIMUM that each EDC create a budget and provide an incentive of 20% of the capital cost necessary to develop and construct a CHP project up to and including three (3) mega-watts. In no case should capital grant per project exceed a million dollars of incentive funding and all projects should have a simple payback of not less than four (4) years. CREEDA would further support shaping a program for larger installations up to 10 MW based on grant values (\$/kW) that decreases in proportion to size. The final program should be focused on maximizing the long term benefits the rate payer and establishing the best overall economic development program for the Commonwealth in light of the competition we face domestically and internationally.

III. THE BENEFITS OF GAS-FIRED COGENERATION

- Shale gas is a game changer that significantly enhances the economic, societal, and environmental benefits offered by Combined Heat and Power (CHP) in Pennsylvania. *Low infrastructure investment, near-term realization, positive environmental impact and local job creation embodied in customer-based CHP make this an essential Shale gas utilization project. CHP can be deployed now; no infrastructure is required and the competitive benefits to Pennsylvania employers can be felt immediately.*
- CHP lowers the marginal cost of electric power and reduces the need for the next generating unit or the utilization of relatively high-cost and environmentally unfriendly peak power.
- Shale gas (produced in Pennsylvania) fueled CHP delivers the lowest cost supply-side method of reducing carbon emissions while providing a non-intermittent and safe, clean energy supply.
- Small and large businesses can benefit from the economic drivers of CHP. CHP technology is scalable and can be deployed as small as 60 kW. CHP can be staged and added over time to support increased demand. CHP can support small to mid-size business growth within the Commonwealth immediately. Small businesses have felt the downturn of the economy to a larger extent than any other class of business. CHP incentives will allow small to mid-size businesses to deploy energy efficiency measures to operate more competitively within the Commonwealth.
- Customer-based CHP is more energy efficient and costs less than central station combined cycle power plants plus transmission and distribution systems necessary to deliver electricity at the margin. Pennsylvania currently has over 3,300 MW of CHP

(representing 10% to 12% of peak day demand) that was primarily built between 1985 and 1995 with the support of Federal PURPA regulations. However, over the past 15 years only 83 MW of new CHP have been built because policies have not encouraged CHP construction. In order to realize the many benefits of Shale gas-fired CHP, the Pennsylvania statutory framework should institute support measures for CHP.

- The PUC and the Pennsylvania General Assembly have expressed concern about reducing peak day demand and overall electric energy usage. These sentiments have manifested themselves in the Act 129 process. CHP deployment can help delay the next generating unit, transmission line or distribution feeder and can be a significant new cost-effective power generation source if the proper incentives and policies are developed. Due to that fact that CHP can be deployed in small increments, it should not have the negative impacts of large-scale generation projects can have on the grid and can be integrated into the power supply network seamlessly.
- The Department of Energy projects that Pennsylvania has a total CHP market potential of 7.2 GW without export (sold back to the EDC) that can be used within the customers fence and 11GW with export.
- CHP uses 40% less primary energy than grid power and natural gas boilers.
- CHP reduces carbon emissions by over 50% versus grid power and natural gas boilers.
- CHP can provide reliable base load electricity, heating, and cooling during 8,000 hours or $\pm 90\%$ of the year.
- CHP provides waste heat conversion to cooling that further reduces electric consumption.
- CHP uses 1.5% of the land area and removes 788% more carbon dioxide than photovoltaic solar per dollar invested.

IV. LESSONS LEARNED

CREEDA compliments the commission on its efforts to date implementing the Act 129 program. Significant value has been captured by the customers of the EDCs in Pennsylvania without a negative impact on the EDCs themselves. Much has been accomplished in one of the most difficult economic climates in which many businesses have operated over the last twenty to thirty years. The Act 129 accomplishments to date have been significant and all should be pleased with the effort and the result; however more can be done.

EDCs should be encouraged to support projects where the actual reduction in peak day demand and overall demand can be measured on a straightforward basis. CHP installations have demonstrated performance at a load factor of over 85% on an annual basis. Maintenance can be scheduled during off-peak periods, allowing the system to operate during the hottest 100 hours of the peak summer demand period. In addition, the efficiency gains and cost savings in full fuel cycle economics are easily measured and documented. EDCs should be encouraged to incentivize projects on a straight forward and on a prescriptive basis (known incentives) to encourage incremental efficiency gains, no matter what the fuel source. By allowing the EDCs to treat CHP projects as “Special” projects or unique one-off projects, the market is not given the correct signals to invest and further develop these types of projects.

V. SUGGESTED CHANGES TO THE ACT 129 PROGRAM

CREEDA recommends the following changes to the ACT 129 Program:

- EDCs should be encouraged to seek greater efficiency gains through lower costs by encouraging the use of technology that supports full fuel cycle economics.

- Combined Heat and Power projects (CHP) should be afforded its own incentives so the correct market signals are sent to both end-use customers and project developers.
- The Commission should encourage the use of technology where the savings in both peak day demand and overall demand can be easily measured.
- AS A MINIMUM, each EDC should be required to prepare a budget to support CHP projects. We believe incentives should be at a level of 20% of the capital required to develop and construct a CHP project, with no single project receiving more than \$1 million of incentives. All projects should not be funded beyond a four year payback. CREEDA would further support shaping a program for larger installations up to 10 MW based on grant values (\$/kW) that decreases in proportion to size. The final program should be focused on maximizing the long term benefits the rate payer and establishing the best overall economic development program for the Commonwealth in light of the competition we face domestically and internationally. Note: Other states with natural gas have incentivized CHP project with similar programs. For example, New Jersey recently passed \$2.00 per watt or 30% of a hot water CHP and 40% of Tri-Generation capital cost.

VI. CONCLUSION

CREEDA applauds the Commissions efforts to date; much has been gained and much learned.

Since the launch of the Act 129, much has changed. Marcellus Shale gas is an absolute game changer for the Commonwealth and, once fully deployed, will bolster the economic vitality of the Commonwealth of Pennsylvania. Regulatory policy that supports full fuel cycle economics and least-cost deployment is good for the Commonwealth and good for the EDCs themselves. A more competitive business climate fueled by low-cost energy will attract both

business and industry to the Commonwealth, where all win through growth. CHP and Marcellus Shale gas can be deployed now and significantly enhances the economic, societal and environmental benefits for all within the Commonwealth. It provides for low infrastructure investment, near-term realization of the benefits, positive environmental impact, local job creation through more competitive business and industry and requires a small level of support to take hold. CREEDA encourages the Commission to adopt its comments and stands ready to support any type of collaborative working group to impact the Act 129 process in a positive way.

CREEDA participants joining in these comments:

Veolia Energy North America

Avalon Energy Services, LLC

Stradley Ronon Stevens & Young, LLP

Philadelphia Gas Works

e-Finity Distributed Generation

Capstone Turbine Corporation

UGI HVAC Enterprises

UGI Performance Solutions

UGI Utilities, Inc.

Integrated CHP Systems Corp.

Quandel Construction Group, Inc.

....and over 650 individuals signed on to CREEDA's membership list.

CREEDA expresses special gratitude to the Mid-Atlantic Clean Energy Application Center, Pennsylvania State University, and the Department of Energy in reviewing this letter for technical issues.