Docket No. 13-0499
Pre-filed October 23, 2013

DIRECT TESTIMONY OF
DANIEL NATURA
ON BEHALF OF
THE MIDWEST COGENERATION ASSOCIATION

Q. Please state your name and business address.

A. My name is Daniel Natura and my business address is One South Dearborn, Suite 2100, Chicago, Illinois 60603.

Q. By whom are you employed and in what capacity?

A. I am the Corporate Executive Officer of NewLoop Energy, LLC the authorized distributor of Capstone Microturbine systems for Illinois, Wisconsin, Minnesota and Iowa.

Q. Please describe briefly your educational background and work experience.

A. I have over 20 years of experience as a design consultant in power electronics for alternative energy, transportation sector and renewable energy systems. I graduated from DeVry University with a Bachelor of Science degree in Electronics Engineering Technology. I am a Certified Energy Manager who believes in the many social and environmental benefits of distributed generation.

Q. Please briefly describe the mission and membership of the Midwest Cogeneration Association.

A. The Midwest Cogeneration Association (MCA) is an Illinois not-for-profit professional association which was founded in 1984 and is dedicated to promoting greater public understanding of cogeneration, independent power production, and distributed generation in eight Midwestern states: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio and Wisconsin. Like NewLoop Energy, my company, many MCA members are Illinois businesses owned and operated by Illinois residents. MCA members include Combined Heat and Power and Waste Heat-to-Power, (collectively "CHP") developers and manufacturers with operations in Illinois, as well as Illinois

contractors, consultants, engineering companies, and energy efficiency advocates. The MCA closely follows CHP developments in Illinois and throughout the Midwest region and is familiar with the state and local energy and environmental forums and policy makers.

Q. What is the purpose of your testimony in this proceeding?

A. I am providing testimony on behalf of the Midwest Cogeneration Association (MGA), of which NewLoop Energy LLC is a member, in support of the Combined Heat and Power (CHP) Program included in the Illinois Department of Commerce and Economic Opportunity's (DCEO) three year energy efficiency portfolio plan and recommending that the Illinois Commerce Commission (ICC) approve this important program.

Q. What do you believe to be the benefits of the DCEO's proposed CHP Program?

CHP provides significant cost effective energy savings potential for the public sector market including schools (K thru 12), colleges and universities, municipalities (especially water and wastewater treatment facilities, hospitals, correctional facilities, government buildings, and large multi-family housing. We believe the energy savings results of the proposed program will also benefit DCEO and the State in achieving its statutory energy savings goals as required under 220 ILCS 5/8-103(b) and 220 ILCS 5/8-104(c).

Q. **Please explain the basis of your belief that this program will result in significant energy savings.**

The U.S. Department of Energy's Combined Heat and Power Database indicates that there exists today 1,271 MW of installed CHP capacity at 139 sites in Illinois.[1] However, the Department of Energy's (DOE) Midwest Clean Energy Application Center, now the DOE's Midwest CHP Technical Assistance Program, has found that more than 6,000 MW of technically viable CHP is unrealized

[1] http://www.eea-inc.com/chpdata/States/IL.html

within the state.[2] Although the majority of the CHP technical potential resides in the industrial and large commercial market sectors, they estimate that between 13% and 17% resides in the public sector (over 1,000 MW). They also estimate that these public sector facilities today receive their electricity from the utility grid and their thermal energy from an onsite boiler/furnace with a combined efficiency of approximately 45% and 55%.

Based on my own experience in the CHP industry, I am aware that CHP systems, when properly designed, installed, and operated, can provide electricity and thermal energy to these facilities at efficiencies reaching 60% to over 80%. Thus, the energy savings potential of CHP is significant. Based on my own experience, I can also tell you that the initial investment cost of a CHP system can be a project development barrier. We believe the proposed DCEO CHP Program will provide the cost effective incentives necessary to help move the market forward resulting in significant energy savings in Illinois.

Q. **Please describe what you and MCA members believe to be the key elements of the DCEO CHP Program.**

A. The proposed program, in our opinion, is well structured to provide encouragement to the CHP developers and trade allies as well as the end users that will be investing and operating the CHP systems. In particular, the proposed program contains the following key elements:

1. **Minimum CHP System Efficiency:** We agree with stated minimum requirements that conventional CHP systems (i.e. topping cycle CHP) must demonstrate a minimum fuel use efficiency of 60% with at least 20% of the system's total useful energy in the form of thermal energy. This along with at least 2/3 of the proposed incentive being tied to demonstrating this minimum performance level over the first 12 months of operation of the system

[2] http://www.midwestchptap.org/

(performance based incentives), ensures the systems are designed, installed and operated to realize the energy savings potential of the technologies.

2. **Design and Construction Incentive:** Since CHP systems are capital intensive and require significant time from site evaluations to project implementation, DCEO is correct to make up to 1/3 of the proposed incentive available during the design and construction phase of the project.

3. **Incentive Levels:** The MCA represents many of the developers, engineering firms, and CHP manufacturers that serve the CHP industry. The proposed incentive package represents on average between 25% and 50% of the cost of most CHP systems. It is also structured to provide for both a production and operations incentive. We believe that both the level of the incentives and structure proposed by the DCEO are fair and reasonable and will have a positive impact on our ability to move the market forward in Illinois and realize significant energy savings for both our public sector clients and the State.

4. **Applicable to Multiple Technologies:** There are many different types of CHP technologies all of which can help the State meet its energy savings goals. These technologies include, but are not limited to, combustion turbines, microturbines, reciprocating engines, steam turbines, heat recovery steam generators, absorption chillers, and more. We applaud the DCEO plan for including both topping and bottoming cycle systems. Topping cycle CHP is the concurrent production of electricity and useful thermal energy (heating and/or cooling) from a single source of energy. Bottoming cycle, better known as Waste Heat to Power, utilizes wasted thermal energy in order to generated electricity. Since no additional fuel is needed these systems emit zero incremental emissions.

5. **Calculating Energy Savings**. Though topping cycle CHP systems increase on-site natural gas consumption, through their high efficiencies they are able to save energy when compared to

the avoided separate consumption of grid-generated electricity and on-site boiler or furnace generated thermal energy. DCEO's methodology for counting topping cycle CHP energy savings fairly accounts for the increased on-site use of natural gas and the operating efficiency of the electric grid both of which are important aspects to calculate energy savings for CHP. In addition, the DCEO plan counts 100% of the total electric generation when calculating incentives for bottoming cycle CHP projects. We support these approaches as we feel they best capture the energy that is saved through topping and bottoming cycle CHP operations.

Q. Please describe your thoughts on the adequacy of the DCEO funding for this Program.

A. The MCA appreciates the $13.3 million that DCEO has allocated towards this pilot program over the three year planning cycle. Furthermore, the yearly increases in incentive amounts from program year seven to nine reflect the fact that CHP projects take time to develop and might not be ready to apply immediately. However, if this pilot program is as successful as we think it will be, we would encourage DCEO to consider increasing the funding resources for this program to help realize more energy savings through CHP.

VERIFICATION

I, DANIEL NATURA, first being duly sworn upon oath and say that I am the Corporate Executive Officer of New Loop Energy – Capstone Turbine Midwest; that I have read the above and foregoing instrument and know the contents thereof; that said contents are true in substance and in fact, except as to those matters stated upon information and belief, and as to those, I believe the same to be true.

Daniel Natura

Subscribed and sworn to before me
this 22nd day of October, 2013.

Notary Public

"OFFICIAL SEAL"
Molly I. Guthrie
Notary Public, State of Illinois
DuPage County
My Commission Expires March 16, 2016

10/22/13