



PACE LAW SCHOOL  
P A C E U N I V E R S I T Y

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September 8, 2008

Hon. Secretary Jaclyn Brilling  
Public Service Commission  
3 Empire State Plaza  
Albany, New York 12223

RE: Case 08-E-0539 – Proceeding on Motion of the  
Commission as to the Rates, Charges, Rules and Regulations  
of Consolidated Edison Company of New York, Inc. for Electric  
Service

Dear Secretary Brilling:

Please find attached an original and 5 copies of the Prefiled Direct  
Testimony of Thomas R. Bourgeois for filing in the above referenced  
case.

Best regards

A handwritten signature in black ink, appearing to read "Dan Rosenblum".

Dan Rosenblum  
Senior Attorney

Enclosures

**STATE OF NEW YORK**  
**PUBLIC SERVICE COMMISSION**

**CASE 08-E-0539 – Proceeding on Motion of the Commission as to the Rates,  
Charges, Rules and regulations of Consolidated Edison  
Company of New York, Inc. for Electric Service**

Direct Testimony of

**Thomas G. Bourgeois**

On Behalf of

**Pace Energy and Climate Center**

**SEPTEMBER 8, 2008**

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**PREFILED DIRECT TESTIMONY OF  
THOMAS R. BOURGEOIS**

**I. IDENTIFICATION AND QUALIFICATIONS**

**Q. Please state your name and business address.**

A. My name is Thomas G. Bourgeois. My business address is 78 North Broadway, E-House Room 206, White Plains, New York 10603.

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

A. I am the Deputy Director of the Pace Energy and Climate Center (Pace), which is affiliated with Pace University's School of Law.

**Q. Please describe your background, including relevant employment experience, education, and other professional qualifications.**

A. I have worked for the Energy and Climate Center and its predecessor organization, the Pace Energy Project, for over fifteen years. In my various capacities with Pace, I have provided economic, financial analysis and database services, with the primary focus of my work in the area of Combined Heat and Power (CHP).

Before being appointed Deputy Director in October 2007, I was the Director of Research at Pace.

As part of my responsibilities at Pace, I am Co-Managing Director of the Northeast Regional CHP Applications Center (NERAC), a project of the U.S. Department of Energy, the New York State Energy Research and Development Authority (NYSERDA) and the Energy Offices of the New England. I authored

1 an online Guidebook on Codes, Siting & Permitting for Small Distributed  
2 Generation (DG), a guide on Emission Reduction Credits and small DG, and  
3 market assessments of CHP potential. I was also contributing author to a  
4 NYSERDA report on the economic impact of variations in power quality and  
5 interruptions in electrical service to industrial and large commercial/institutional  
6 consumers. I am currently involved in several CHP-related studies, including a  
7 study on DG-CHP and Infrastructure Security, another on CHP in hospitals, and  
8 CHP on Redeveloped Brownfield sites. In addition, I have been primary and  
9 contributing author of numerous reports and publications on energy efficiency and  
10 renewable energy policy, regional economic development concerns and market  
11 assessments. I have been contributing author on numerous briefs and other  
12 submissions to the New York Public Service Commission and the New Jersey  
13 Department of Public Utilities, and have provided testimony as an expert witness  
14 on behalf of Pace in proceedings before these respective agencies.

15 Prior to joining Pace, I was the Director of the Economic Information Unit of the  
16 New York State Data Center, housed within the former New York State  
17 Department of Economic Development (now the Empire State Development  
18 Corporation). I also served as Principal Economist of the New York State  
19 Assembly Ways and Means Committee, where I was responsible for econometric  
20 modeling and preparing state and national economic forecasts for use by the tax  
21 policy and budget staff of the Assembly.

22 I have a masters degree from the University of North Carolina at Chapel Hill from

1 the School of Regional Planning (with a concentration in Economic  
2 Development), and successfully completed all coursework and passed all four  
3 comprehensive exams leading to the completion of a Ph.D. in managerial  
4 economics at Rensselaer Polytechnic Institute (RPI) in Troy, New York. The  
5 managerial economics Ph.D. program is a joint degree program offered by the  
6 Economics program and the School of Management at RPI.

7 **Q. What is the purpose of your testimony?**

8 A. My testimony addresses the following points:

- 9
- 10 • Achieving increased penetration of CHP facilities would provide economic  
11 benefits to utility customers, particularly under the circumstances in Con  
12 Edison's service territory where such facilities may obviate or delay  
transmission and distribution (T&D) investments in some areas.
  - 13 • Increased penetration of CHP facilities would provide significant  
14 environmental benefits, including significant reductions of greenhouse gas  
15 (GHG) emissions.
  - 16 • Tremendous potential currently exists for installing CHP facilities within  
17 Consolidated Edison's service territory, and policymakers have targeted New  
18 York City for more aggressive development of CHP. PlaNYC 2030, for  
19 example, includes an ambitious target for new distributed generation within  
20 New York City. Very little has been accomplished, however, to make any  
21 progress toward achieving that objective.
  - 22 • Given Con Edison's familiarity with its customer base, Con Edison should

1 reasonably be expected to play a more proactive role providing assistance to  
2 its customers considering the installation of CHP facilities. Any financial  
3 barriers that may have discouraged Con Edison from facilitating customer  
4 installation of CHP facilities have largely been addressed through the  
5 Commission's policy on decoupling. Simply removing the disincentives,  
6 however, does not provide a financial incentive to the utility to promote CHP.

- 7 • We recommend that the Commission adopt an incentive program that would  
8 provide monetary payments to Con Edison for facilitating the installation of  
9 CHP within its service territory. Incentive payments would be made after the  
10 facility commences commercial operation, and upon a showing that Con  
11 Edison played a material role in facilitating the installation of the project. We  
12 propose that the payments be "tiered" to allow greater incentives for  
13 (1) targeted areas where the project would enable T&D investment to be  
14 deferred, or (2) projects having exceptionally high average efficiency levels.  
15 Projects in these categories provide more benefits for customers, and a higher  
16 level of incentives can be justified. Finally, we propose a lifetime cap of \$20  
17 million on the costs of the proposed CHP incentive program.

18 **II. BENEFITS OF COMBINED HEAT AND POWER WITHIN**  
19 **CON EDISON'S SERVICE TERRITORY**

20 **Q. What benefits does CHP provide for utility customers?**

21 A. As the Commission is aware, CHP (also known as "cogeneration") captures the  
22 heat by-product from the generation of electricity and makes it available for a

1 variety of purposes including heating or cooling a building, domestic hot water, or  
2 for an industrial process. Pace has promoted development of CHP due to its  
3 benefits in (1) increased efficiency in the use of energy, (2) reducing the need to  
4 invest in transmission and distribution (T&D) facilities (because the generation is  
5 de-centralized), (3) increased reliability from having generation on site during  
6 system outages, and (4) substantially reducing GHG emissions as compared to  
7 using separate fossil-fuel fired power plants and boilers.

8 **Q. Have these benefits from CHP been quantified?**

9 A. Yes. Pace participated in an October 2002 study commissioned by NYSERDA,  
10 entitled "Combined Heat and Power Market Potential for New York State,"<sup>1</sup>  
11 which quantified many of the benefits of CHP. This study found that the  
12 acceleration of the penetration rate of clean CHP in New York as compared with  
13 "business as usual" would produce total energy savings of 75 trillion BTUs in  
14 2012 (the tenth year following the study) and 316 trillion BTUs of energy over the  
15 2003-2012 period, which translates to dollar savings of \$1.825 billion over the 10-  
16 year period.

17 **Q. How does CHP produce energy efficiency benefits?**

18 A. Two-thirds of all the fuel used to make electricity in the U.S. is generally wasted  
19 by venting unused thermal energy into the air or discharging it into rivers. This  
20 waste heat can be used productively, such as to provide domestic hot water and/or

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<sup>1</sup> This study, Final Report 02-12, is available on NYSERDA's website at [www.nyserdera.org/chpnys/market.asp](http://www.nyserdera.org/chpnys/market.asp).

1 heating for multi-family buildings, hospitals, nursing homes, or schools, or to  
2 provide heat for an industrial process, such as drying or sterilization. The waste  
3 heat can also be used to drive absorption chillers to provide heating and cooling to  
4 commercial or institutional buildings. By harnessing this waste heat, instead of  
5 dumping it into the atmosphere, we can achieve the huge gains in energy  
6 efficiency quantified in the NYSERDA study.

7 **Q. How does using this waste heat produce huge gains in energy efficiency?**

8 A. Compare the status quo of what we call “separately generated” heat and power –  
9 providing power remotely from an electric generating station and clean on-site  
10 CHP. In the “business as usual” case, we use 100 units of input energy and we get  
11 out just 50 units of useful heat and power. With CHP, the same 100 units of input  
12 energy can provide us with 70, 75 or even in some cases 80 units of useful energy.  
13 This is an energy efficiency gain of 40 percent, 50 percent or, conceivably, as  
14 much as 60 percent.

15 **Q. Please describe how CHP reduces the need to invest in T&D facilities.**

16 A. In Con Edison’s service territory, there are many areas with significant grid  
17 constraints. These areas require upgrades to maintain sufficient reliability  
18 standards for the region that they serve. Upgrades are costly and time consuming.  
19 Pace is currently involved in joint research with RPI to determine how to use CHP  
20 and distributed generation as a tool to mitigate this problem. In general, more on-  
21 site power, in the right places and with the right characteristics, should bring  
22 significant benefits to the T&D system. Con Edison has already recognized these

1 benefits through its targeted energy efficiency program, which provides greater  
2 incentives if the energy efficiency measures are installed in the areas in its service  
3 territory producing the greatest reductions in deferred T&D investment.

4 **Q. Please describe how CHP provides reliability benefits.**

5 A. Strategically locating CHP units can bolster the resiliency and the reliability of the  
6 distribution system. One of the selling points of CHP is its ability to offer a site a  
7 source of power to continue operations through a system-wide blackout like the  
8 August 2003 occurrence in the northeast or more localized disruptions as occurred  
9 in Queens in July 2006 or in Washington Heights a few years ago. In East  
10 Hartford, Connecticut, for example, a CHP system was recently installed with  
11 blackstart capability, permitting the system to start up and operate after a local or  
12 regional blackout has occurred. Properly designed CHP systems can permit  
13 essential facilities to operate as “Centers of Refuge” – places such as a high  
14 school or community center, where the local residents could go in case of an  
15 outage to help in mitigating the serious consequences that an extended power  
16 outage might cause.

17 **Q. Please describe how CHP substantially reduces GHG emissions.**

18 A. Reducing our reliance on imported fossil fuels and reducing pollution are  
19 important policy concerns in New York State and nationally. Increasing the  
20 utilization of economically viable, clean CHP addresses both of these objectives.  
21 CHP cuts down on our reliance on fossil fuels by making the best possible use out  
22 of any input energy source. Society uses far less energy to get the same power,

1 heating and cooling benefits. CHP does this by greatly reducing the waste in the  
2 system, by in effect “recycling energy” and turning waste heat into a useful output.

3 **Q. Please provide an example illustrating the potential reductions in GHG**  
4 **emissions from CHP.**

5 A. The October 2002 NYSERDA study estimated that there are 526 apartments in  
6 Con Edison territory amenable to CHP, representing 343 MW of untapped CHP  
7 potential. We have estimated that CHP reduces GHG emissions at the rate of .11  
8 tons per megawatthour (MWh). Assuming a 42 percent capacity factor, or 3,679  
9 hours per year, 1 MW of CHP would save 405 tons per year. Therefore, on a  
10 simple basis collecting all the residential technical potential would save 138,816  
11 tons per year of GHG. Installing CHP in half works out to 69,408 tons.

12 Capturing just one quarter of available apartment buildings in Con Edison’s  
13 service territory would reduce GHG emissions by more than 35,000 tons annually.

14 **Q. Does CHP reduce levels of pollutants other than GHG emissions?**

15 A. Yes, the 2002 NYSERDA study found that clean, high efficiency CHP can  
16 markedly reduce emissions of criteria (regulated) pollutants as well as greenhouse  
17 gases that contribute to global warming. Over the 10-year period covered by the  
18 NYSERDA study, the environmental benefits included a reduction of 10,282 tons  
19 per year of NO<sub>x</sub> and 27,766 tons per year of SO<sub>2</sub>, in addition to 3,854,000 tons  
20 per year of CO<sub>2</sub>.

1 **Q. What are some of the additional benefits CHP can provide for utility**  
2 **customers?**

3 A. In addition to the benefits described above, CHP can lower business costs,  
4 improve productivity and enhance local economic development by making New  
5 York's businesses more competitive. Studies have shown that by using otherwise  
6 wasted energy in a productive manner, the demand for natural gas is reduced,  
7 thereby putting downward pressure on natural gas prices.

8 **III. THE POTENTIAL FOR CHP WITHIN CON EDISON'S**  
9 **SERVICE TERRITORY**

10 **Q. What is the technical potential for CHP within New York State?**

11 A. The October 2002 NYSERDA study in which Pace participated found that the  
12 technical potential for CHP statewide was about 8,500 MWs. To put that into  
13 context, the maximum peak load for Con Edison is about 13,500 MWs.

14 **Q. Of this total technical potential, how much is in the Downstate area?**

15 A. About 38 percent of this total, or over 3,200 MWs, is in the Con Edison service  
16 territory. Close to 74 percent of the total, remaining technical potential was found  
17 to be at smaller sites – less than 5 MWs – and primarily at commercial and  
18 institutional facilities.

19 **Q. Of the 8,500 MWs of technical potential CHP within New York State, how**  
20 **much can realistically be expected to be achieved over a multi-year period?**

21 A. For a host of reasons, technical potential at a site does not necessarily indicate that  
22 the project is economically viable. Likewise, not all economically viable projects

1 will actually be installed. Our prior analysis found that about 20 – 25 percent, or  
2 2,200 MWs statewide, was both economical and likely to occur over a twenty year  
3 period assuming the right market environment for CHP.

4 **Q. What economic sectors are the best candidates for CHP installations?**

5 A. The greatest remaining opportunities for CHP in New York are in the  
6 commercial/institutional sectors. More specifically, our study found that the top  
7 ten sectors for CHP potential were:

- 8 • Commercial Buildings,
- 9 • Schools,
- 10 • Hotels,
- 11 • Hospitals/Healthcare,
- 12 • Multifamily Buildings,
- 13 • Nursing Homes,
- 14 • Colleges and Universities,
- 15 • Restaurants,
- 16 • Prisons, and
- 17 • Waste water treatment plants.

18 There are also significant remaining opportunities in government buildings,  
19 supermarkets and data centers. Within the Industrial Sector, the top candidates  
20 were Chemicals, Food Processing, Instruments & Equipment, Paper industry and  
21 Metals.

1 **Q. Have policymakers recognized the potential for CHP installations within Con**  
2 **Edison’s service territory?**

3 A. Yes. PlaNYC, for example, adopted a goal of 800 megawatts of new clean  
4 distributed generation (DG) by 2030. With respect to CHP in particular, PlaNYC  
5 states that:

6 “Clean DG can be even more efficient when it  
7 utilizes the waste heat from electrical generation to  
8 create hot water, heating and cooling for buildings,  
9 so it is often called Combined Heat and Power  
10 (CHP). CHP can be done on a building level of  
11 developed as a ‘mini-grid’ for multiple buildings  
12 within a small area, known as ‘district energy.’”<sup>2</sup>

13 PlaNYC also mentions the “11-step connection process that can take months to  
14 complete” in order to connect CHP within Con Edison’s service territory, and  
15 commits that the City “will work with Con Edison and relevant agencies to reduce  
16 the financial, technical, and procedural barriers related to interconnection in order  
17 to achieve, at a minimum, 800 MW of Clean DG by 2030.”<sup>3</sup>

18 **Q. What has been accomplished with respect to achieving the goal of 800**  
19 **megawatts of Clean DG?**

20 A. The most recent PlaNYC progress report mentions that “safe-use regulations”  
21 have been adopted for micro-turbines – “an efficient and commercially available  
22 technology that is already in demand by many building owners” – and refers to

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<sup>2</sup> PlaNYC at page 111.

<sup>3</sup> Id.

1 support for the net metering legislation to remove key barriers to solar electricity  
2 in the city.<sup>4</sup>

3 **Q. What role can Con Edison be expected to play in encouraging customers**  
4 **within its service territory to consider CHP facilities?**

5 A. We think Con Edison could play an integral role in facilitating the installation of  
6 CHP facilities within its service territory. After all, the utility knows its customer  
7 base extremely well. In the case of energy efficiency programs, for example, Con  
8 Edison stated that its program offerings:

9 “[P]resent[ed] a better overall package for the  
10 Commission to approve because its programs have  
11 been developed to take advantage of the Company’s  
12 customer relationships, have a sector-by-sector  
13 approach specifically geared to its service territory,  
14 and are geared toward the Company’s overall  
15 system planning.”<sup>5</sup>

16 We agree that Con Edison has (or should have) strong relationships with its  
17 customers, and is in an excellent position to identify the most promising  
18 candidates for CHP installations that best meet its system planning needs. Con  
19 Edison’s key account representatives have the necessary information regarding  
20 load profile and customer needs to identify the most promising “candidates” for  
21 CHP installations. And Con Edison also has the information regarding the areas  
22 of its service territory with the most capacity constraints where CHP would be

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<sup>4</sup> PlaNYC 2008 Update at page 28.

<sup>5</sup> CASE 07-M-0548, Energy Efficiency Portfolio Standards, Initial Brief of Con Edison and Orange & Rockland Utilities (April 11, 2008) at 3.

1 most valuable, and the areas providing the greatest potential for obviating or  
2 deferring T&D investment.

3 **Q. What is the basis for your observations regarding the role of the utility in**  
4 **facilitating CHP installations?**

5 A. In my work at Pace, I specialize in CHP-related issues. More specifically, I work  
6 throughout the seven state New York – New England region to boost CHP  
7 deployment. As Co-Director of DOE’s NERAC and through my work supporting  
8 NYSERDA’s CHP research demonstration and deployment program, Pace has  
9 built strong partnerships with industry and key stakeholders and interested  
10 organizations including EPA Region 1 and Northeast States for Coordinated Air  
11 Use Management (NESCAUM). In our previous work, we have conducted  
12 preliminary surveys with CHP developers, and sought their evaluation (by scale of  
13 importance) of the various forms of incentive that are the most effective in  
14 improving market acceptance of CHP projects. In addition, in connection with  
15 our previous involvement in Con Edison regulatory proceedings and in  
16 preparation for filing this testimony, we developed relationships with several real  
17 estate developers in New York City that are interested in opportunities for CHP in  
18 their new and existing buildings. Through these relationships, we have a good  
19 understanding of some of the obstacles and challenges facing developers seeking  
20 to pursue CHP installations in Con Edison’s service territory.

1 **Q. What have you learned about recent experiences of developers seeking to**  
2 **install CHP within Con Edison's service territory?**

3 A. We are encouraged by improvements that Con Edison has implemented in recent  
4 years to streamline the interconnection process and generally to address the  
5 obstacles to installations of CHP. The feedback we have received in our  
6 interactions with the CHP community and real estate developers has generally  
7 been positive with respect to improvements in Con Edison's responsiveness to  
8 their needs.

9 **Q. What are some of the improvements mentioned by developers?**

10 A. The improvements in Con Edison's performance include the following:

- 11 • One of the largest sources of complaints previously was the unavailability of  
12 synchronous generation in many parts of Con Edison's service territory, and  
13 the lack of information about when synchronous generation would become  
14 available. With synchronous generation, customers with CHP installations  
15 can be configured for stand-alone operation and thereby provide the greatest  
16 reliability benefits for customers. The potential of fault current, however,  
17 could adversely affect Con Edison's utility operations. The necessary  
18 upgrades to Con Edison's network to mitigate fault current concerns are  
19 scheduled over a period of years and, in the absence of such upgrades,  
20 synchronous generation is not available in portions of Con Edison's service  
21 territory. Over the past few years, Con Edison has provided better information  
22 about its schedule for the network upgrades that would make synchronous

1 generation available – including maps of its system available on its website<sup>6</sup> –  
2 and has established a fault current margin queuing position process to  
3 establish an equitable process for allocating available fault current margin.<sup>7</sup>

- 4 • Con Edison has simplified and streamlined the interconnection process, due in  
5 large part to the Commission’s initiative in developing Standardized  
6 Interconnection Requirements.
- 7 • Con Edison has designated a very helpful “ombudsperson” dedicated to  
8 addressing interconnection issues and attempting to facilitate CHP  
9 installations. In addition, it appears that Con Edison is devoting additional  
10 personnel to support these efforts.

11 **Q. What are some of the remaining issues or concerns?**

12 A. The remaining issues include the following:

- 13 • Developers would like to accelerate the schedule for the necessary upgrades to  
14 Con Edison’s network to permit synchronous generation. While Con Edison  
15 has provided more information about the locations on Con Edison’s system  
16 where synchronous generation is currently available and the schedule for  
17 making it available, acceleration of that schedule is important to the CHP  
18 community and real estate developers. The “work-arounds” necessary in the  
19 absence of the upgrades to the Con Edison network (1) add 7-8 percent to the

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<sup>6</sup> The map for Manhattan, for example, is available at <http://m020-w5.coned.com/dg/images/maps/m.pdf>.

1 costs of the CHP installations, (2) reduce overall system efficiency, and  
2 (3) take up additional building space (which, of course, is extremely valuable  
3 in many parts of Con Edison's service territory). In addition, there is some  
4 frustration over the inflexibility of Con Edison with respect to its adopted  
5 schedule of network upgrades. For example, we understand that Con Edison  
6 will generally not approve any schedule variations that may be necessary to  
7 accommodate synchronous generation for a proposed installation in the "red"  
8 territory on Con Edison's synchronous generation map, regardless of the  
9 feasibility of the proposed installation and the likelihood (based on the  
10 reputation of the developer) of its actuality.

- 11 • Although Con Edison has streamlined its interconnection process and  
12 identified the eleven steps of that process, there is some frustration regarding  
13 the time necessary to complete that process. Con Edison has internal goals or  
14 standards for processing the interconnection applications in a timely manner,  
15 but the actual performance timeline seems to be somewhat uneven.
- 16 • The internal communications process seems to be uncoordinated, and the  
17 overall level of responsiveness is adversely affected. In addition, it appears  
18 that the Con Edison personnel involved in the process are overloaded and thus  
19 unable to be as responsive as developers would prefer. Developers have  
20 suggested that Con Edison could be more helpful by identifying key contacts

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<sup>7</sup> The fault current margin queuing position process can be found at <http://m020-w5.coned.com/dg/configurations/queuing%20procedures.pdf>.

1 within each borough to perform the various tasks associated with a CHP  
2 project. In general, the process needs to be more streamlined and prompt in  
3 order to avoid spending unnecessary money that ultimately could make a  
4 project uneconomic.

- 5 • The feasibility of CHP installations is affected not only by Con Edison's  
6 electric operations, but by its gas and steam operations as well. In the case of  
7 gas service, for example, an installation may be infeasible because of the  
8 unavailability of a sufficient gas supply, and this infeasibility is not easily  
9 determined under the existing procedures. In addition, CHP installations in  
10 some locations may have implications on the viability of Con Edison's steam  
11 system, which unnecessarily complicates the analysis and may result in  
12 Company-wide economic impacts that adversely affect the promotion of CHP  
13 installations.

#### 14 **IV. PROVIDING INCENTIVES FOR UTILITY PROMOTION** 15 **OF CHP INSTALLATIONS**

16 **Q. Why should it be necessary to provide incentives to encourage CHP**  
17 **installations within a utility's service territory?**

18 A. Utilities traditionally have had some understandable resistance to installation of  
19 CHP within their service territories. First, there are legitimate system integrity  
20 issues, as utilities need to be satisfied that interconnection arrangements do not  
21 jeopardize the reliability of the utility's system or the safety of utility workers.  
22 Second, there are economic reasons, insofar as power generated by a customer

1 obviously reduces the revenue stream to the utility through which it must recover  
2 its fixed costs. These economic reasons are largely addressed through the  
3 Commission's policies on decoupling;<sup>8</sup> a properly designed Revenue Decoupling  
4 Mechanism should remove a utility's disincentive to promote the installation of  
5 customer-owned CHP or distributed generation. Removing a disincentive,  
6 however, is not the same as providing an incentive to a utility. Given the benefits  
7 that CHP provides to Con Edison and its customers, we think it is appropriate to  
8 consider implementing measures that would provide a financial incentive for Con  
9 Edison to facilitate the installation of CHP within its service territory.

10 **Q. Can you cite examples where the availability of incentives has produced**  
11 **tangible results in the deployment of CHP?**

12 A. Yes. Connecticut in June 2005 passed legislation (Senate Bill 7501) which  
13 provided incentives for utilities to facilitate the installation of distributed  
14 generation (including CHP) within their service territories. Under the legislation,  
15 a utility would receive an incentive payment to "educate, assist, and promote  
16 investments in customer-side distributed resources developed in such company's  
17 service territory." When implemented in 2006, the size of the incentive payment  
18 was \$200 per kilowatt. Each year thereafter, the incentive decreases by \$50 per  
19 kilowatt until 2010, when the incentive payment becomes \$50 per kilowatt. The  
20 payment is made at the time the resource becomes operational.

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<sup>8</sup> CASE 03-E-0640, Order Requiring Proposals for Revenue Decoupling Mechanisms, issued April 20, 2007.

1 **Q. What is the source of the revenue for the incentive payment?**

2 A. According to the legislation, the cost of the incentive payments is to be recovered  
3 from “federally mandated congestion charges.”

4 **Q. What are the results under the Connecticut program since it was enacted?**

5 A. During the short time the incentive program has been in place (since January 1,  
6 2006), applications for 79 CHP projects totaling about 280 megawatts have been  
7 filed, of which about 230 megawatts have been approved. The utilities in  
8 Connecticut would receive about \$68 million in incentives based upon the  
9 applications currently on file with the Connecticut Department of Public Utility  
10 Control. These are very impressive results, which suggest that providing a utility  
11 with incentives to facilitate CHP installations is effective in achieving greater  
12 penetration of CHP technology. The incentive payments have stimulated a  
13 proactive role by the utility; it is my understanding that in Connecticut, the  
14 utilities play an active role in helping with the approval process, facilitating the  
15 interconnection arrangements, and keeping the projects moving along.

16 **V. PACE’S RECOMMENDATIONS**

17 **Q. What does Pace propose to provide as an incentive for Con Edison to play a**  
18 **greater role in facilitating the installation of CHP facilities in its service**  
19 **territory?**

20 A. We recommend that the Commission adopt an incentive program that would  
21 provide monetary payments to Con Edison for facilitating the installation of CHP

1 projects within its service territory. Our recommended program has the following  
2 elements:

- 3 • Incentive payments would be made after the facility commences commercial  
4 operation.
- 5 • Con Edison would be required to demonstrate that it played a material role in  
6 facilitating the installation of the project.
- 7 • Payments would be “tiered” to allow greater incentives for (1) targeted areas  
8 where the project would enable T&D investment to be deferred, or (2) projects  
9 having exceptionally high average efficiency levels.
- 10 • The program would have a lifetime cap of \$20 million.

11 **Q. When would the incentive payments be made?**

12 A. The incentive payments would be made after the projects have achieved  
13 commercial operation. We propose that one-half of the payment be made one  
14 year after the project achieves commercial operation, with the remaining half paid  
15 two years after the commercial operation date. As discussed below, providing an  
16 appropriate period following commercial operation allows the energy efficiency of  
17 the project to be measured and verified. Projects must meet a minimum annual  
18 efficiency standard of sixty percent (60%) to be eligible for an incentive payment.  
19 Notably, this sixty percent efficiency requirement is the same as under the existing

1 Standby Rate Waiver Requirement,<sup>9</sup> so no additional staffing requirements are  
2 imposed on Con Edison to impose an efficiency requirement or verification by  
3 audit.<sup>10</sup>

4 **Q. What would Con Edison be required to show with respect to its role in the**  
5 **development of the CHP project?**

6 A. Under our proposal, the only sites that could qualify for a payment would be those  
7 where a NYSERDA-approved audit was performed. Con Edison would have to  
8 demonstrate that it played a material role in encouraging the project. This role  
9 would include:

- 10 • Referral of the project by Con Edison staff to the NYSERDA audit programs.  
11 A project for which a NYSERDA audit had previously been performed  
12 without Con Edison involvement would be ineligible for the incentive  
13 payment.
- 14 • Documented evidence that the project resulted from a contact at a Con Edison-  
15 sponsored Education and Outreach program.

16 Con Edison will determine how to design its services to meet these program  
17 requirements, which will involve a mix of education, outreach, and on-site

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<sup>9</sup> SERVICE CLASSIFICATION NO. 14-RA P.S. C. No. 2 – Retail Access, Sixth Revised Leaf No. 142, pg. 8 defines “Customer With Designated Technologies,” efficient types of CHP.

<sup>10</sup> Con Edison could decide, of course, to devote more resources for feasibility studies or audits if it felt that the current resources were inadequate. If it did so, Pace would likely support recovery of the reasonable costs of devoting such resources. If in Con Edison’s estimation there

1 customer visits by key account representatives.

2 **Q. What level of incentive payments is Pace proposing?**

3 A. We are proposing a two tiered incentive structure. Con Edison would receive an  
4 incentive payment of \$125 per kilowatt (Tier 1) for projects:

- 5 • Located in the area designated under Con Edison's Targeted Demand Side  
6 Management Program<sup>11</sup> (or upon a similar showing that customers would  
7 benefit from deferral of T&D investment),<sup>12</sup> or  
8 • Having an annual efficiency greater than seventy percent (70%).

9 The incentive payment for all other eligible projects (Tier 2) would be \$70 per  
10 kilowatt.

11 **Q. Why are you proposing a lifetime cap of \$20 million on the costs of the**  
12 **program?**

13 A. As a new program, we think it is reasonable to establish at the outset that the costs  
14 will not exceed a specified figure over the lifetime of the program. To put this  
15 proposed cap in context, the \$20 million figure represents 160 MWs of  
16 incremental CHP in Con Edison's service territory if all projects qualify as Tier 1

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was a long backlog that was delaying viable projects, Con Edison could request authorization to do audits or request that NYSERDA increase the capacity of existing feasibility study programs.

<sup>11</sup> Con Edison issued an RFP in April 2006 for Demand Side Management to Provide Transmission and Distribution System Load Relief and Reduce Generation Capacity Requirements in targeted load areas, as identified in Appendix A of the RFP.

<sup>12</sup> Con Edison could petition to receive the Tier 1 payment for a site that would offer demonstrable distribution system benefits such as deferral of a need for new capital investment. Such a petition would have to be supported by evidence to the Commission's satisfaction of significant avoided distribution system benefits.

1 projects. If all projects are Tier 2, the cap represents 285 MWs of new CHP. That  
2 figure roughly corresponds to the amount of incremental CHP applied for in the  
3 initial three years (January 1, 2006 – August 2008) of the CHP Incentive Program  
4 implemented in Connecticut, as discussed earlier in my testimony.

5 **Q. What is the source of the revenue for the incentive payment under your**  
6 **proposal?**

7 A. We propose that the cost of the program be recovered as part of Con Edison's  
8 overall revenue requirement. Given the benefits to customers from achieving  
9 greater levels of CHP deployment within Con Edison's service territory, these  
10 program costs should be recoverable from all customers.

11 **Q. Is this recommended incentive program for CHP installations consistent with**  
12 **Commission policy on incentives?**

13 A. We think so. In its August 22, 2008 Order Concerning Financial Incentives in  
14 CASE 07-M-0548, the Energy Efficiency Portfolio Standard proceeding, the  
15 Commission recognized that incentive payments – in the context of energy  
16 efficiency programs – “fulfill a number of purposes that are important to the  
17 success of the [EEPS] proceeding.” In particular, the Commission cited the role  
18 of incentives to “promote better program performance” and to “motivate utilities  
19 to pursue efficiency programs as a resource option.”<sup>13</sup> For the reasons stated  
20 earlier in my testimony, we think Con Edison can do more to facilitate CHP

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<sup>13</sup> CASE 07-M-0548, Order Concerning Utility Financial Incentives, p. 34.

1 installations, and that an incentive payment would provide additional motivation  
2 necessary to achieve the benefits of CHP for Con Edison's customers.

3 In addition, the Commission's order went on to cite a number of factors to be  
4 considered in establishing a model for program incentives (in the case of energy  
5 efficiency programs). These factors include the likely impact of the selected  
6 model on ratepayers; the extent to which the incentives will encourage innovation;  
7 the impact of the incentives on portfolio balance; the administrative complexity of  
8 the model; the extent to which it relies on precise measurement and verification;  
9 and its vulnerability to gaming.<sup>14</sup> Our recommended incentive program is  
10 reasonably consistent with these recommendations. It would be relatively easy to  
11 administer, would be difficult to game, and leaves Con Edison with the flexibility  
12 to encourage innovation in designing whatever outreach and custom-specific  
13 education is necessary to meet program objectives. The impact of the program on  
14 customers appears to be reasonable in light of the tremendous energy efficiency  
15 and environmental gains from increased CHP deployments, and the related T&D  
16 benefits that achievable depending upon the location of the particular installations.

## 17 VI. CONCLUSION

18 **Q. Does this conclude your prefled direct testimony?**

19 A. Yes.

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<sup>14</sup> Id. at p. 35.