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THE E CUBED COMPANY, L.L.C.

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Providers of
Strategic Energy
Services At
The Exponential
Interface Among

- Energy
- Economics and
- Environment

Ruben S. Brown,
M.A., M.A.L.D.,
President

February 1, 2005

Mr. James McNulty, Secretary
Public Utility Commission
400 North Street, 2nd Floor
Harrisburg, PA 17120

Re: Comment by Joint Supporters in Docket L-00040168
Request for Comment Dealing with Net Metering and Interconnection of
Distributed Generation published in the **PENNSYLVANIA BULLETIN,**
VOL. 34, NO. 49, DECEMBER 4, 2004.

Dear Secretary McNulty:

In response to the request for comment published in the **PENNSYLVANIA BULLETIN, VOL. 34, NO. 49, DECEMBER 4, 2004.** The E Cubed Company, LLC is pleased to submit the attached comments on behalf of an ad hoc voluntary association called the Joint Supporters.

The current list joining in these Joint Supporters comments include: The E Cubed Company, LLC, the Gas Technology Institute (GTI), Allied Utility Network, LLC, Tecogen, American DG Energy, Equity Office Properties Trust (a substantial property owner in Philadelphia), US Microgrid (Norristown, A Penncat Critical Power Systems Affiliate).

The E Cubed Company, LLC and the Joint Supporters (with varying constituencies) have negotiated interconnection and other arrangements, including net metering (farms to 400 kW in NYS), for distributed generation in a series of States including most prominently New York, which recently issued revised standardized guidelines for interconnection of distributed generation to 2 Megawatts. The E Cubed Company, LLC has negotiated interconnection guidelines for Distributed Resources in ten States and at the FERC.

Of primary concern is the need to address interconnection NOW, not defer to future processes at IEEE, e.g. to deal with networks, now.

Twenty-three companies and associations have jointly participated in the current Consolidated Edison Company of New York, Inc. Electric Rate Case with a primary agenda to reform the interconnection of DG to networks and other parts of the distribution company system. The utility, regulators, and twenty-seven signatories have agreed. The Joint Supporters in the Con Edison case which will be implemented over 2005 to 2008 if approved by the NYSPSC in March include Gas Technology Institute, National Association of Energy Services Companies, American Council for Energy Efficient Economy, three packaged CHP system manufacturers, gas companies, engineering firms, service firms and DG developers.

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We anticipate some of these organizations may become involved in the stakeholder process launched by the Pennsylvania Commission.

The Joint Supporters were also active in Delaware, Massachusetts, and Connecticut interconnection processes dealing with DG in the past three years.

Individual entities have tracked the New Jersey processes and the PJM negotiations.

We therefore are convinced that this is an opportunity that will provide extensive and long term benefits to Pennsylvania and to users of distributed generation. We look forward to further discussions with you in the very near future.

Very Truly Yours,

A handwritten signature in black ink that reads "Ruben S. Brown". The signature is written in a cursive style with a large initial "R" and a distinct "S" and "B".

Ruben S. Brown, M.A.L.D.
President, The E Cubed Company,
L.L.C. on behalf of the Joint
Supporters

Encl:

cc: Tecogen
American Distributed Generation Inc
Allied Energy, LLC
Gas Technology Institute
Equity Office Properties Trust
US Microgrid

**Pennsylvania
Public Utility Commission**

Comment on ANOPR Docket No. L-00040168
Regarding Small Generation Interconnection Standards and Procedures
February 2005

COMMENTS OF THE E CUBED COMPANY, LLC, THE JOINT SUPPORTERS¹ AND
OTHER INTERESTED PARTIES
(February 1, 2005)

1. **Introduction** - Pursuant to its request of November 18, 2004 and as published in the Pennsylvania Bulletin on December 4, 2004, the Commission and its Staff is initiating an Advance Notice of Proposed Rulemaking (ANOPR) and requesting comments concerning small generation interconnection standards and procedures. This ANOPR is being undertaken to standardize the way in which small generation connects to the distribution grid. The E Cubed Company, LLC, (“E Cubed”) on behalf of itself, the Joint Supporters, a voluntary association, comprising for this purpose thus far The E Cubed Company, LLC, the Gas Technology Institute (GTI), Allied Utility Network, LLC, Tecogen, American DG Energy, Equity Office Properties Trust, US Microgrid, 1st Rochdale Cooperative and other interested parties offers in the paragraphs that follow comments in response to the Commission’s request. Each party may not support all provisions. The E Cubed Company, LLC and the Joint Supporters have been active participants in interconnection proceedings in New York, Massachusetts, New Jersey, among other states and at FERC (See footnote 1 below).

¹ Some of the recent filings on distributed resource topics by Joint Supporters are available at <http://www.ecubedllc.com>

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2. **Summary of Position** – It is appropriate for the Public Utility Commission to update its rules at this time. There is substantial experience in other states that standardized rules and procedures will greatly ease the process of interconnecting small generation to the grid. There is also evidence that the connection of small generation to the grid helps improve its operation and functioning. Experience in other states has also shown that utility commission rules and regulations will have a significant impact on the development of small generation within a state. Therefore, we endorse and fully support in particular your desire to “streamline the regulatory process and encourage manufactures and developers to enter the market”. We also support the call to explore how to define “small”, though we respectfully urge you to examine this matter in terms of “distributed generation” and not simply “generation”. In addition, we also urge the accommodation of IEEE 1547, including the interconnection of larger sized systems of up to 10 MW. We also urge particular attention be paid to interconnection to network systems, and we support certification of equipment, as long as that function is handled via nationally recognized testing laboratories, as per the Wisconsin Rules, to provide a current transition base until IEEE 1547 is fully evolved. We support establishing tight turn around times for utility performance of studies and engineering. We support holding the utilities to cost estimates within a ten percent tolerance band as per the Massachusetts rules. We commend the broader use of standard applications and contracts and make recommendations based upon experience.

Our most important recommendation, however, is that we strongly urge the PAPUC to establish a strong collaborative process over the coming months so those stakeholders who

stand to benefit the most from this process can fully express their ideas and so the broadest possible range of solutions can be fully explored.

3. **Interim Actions By Other Bodies** – In the wake of the New York State collaborative initiative in 1998 and 1999 (staffed by The E Cubed Company, LLC) a number of other States and the Federal Energy Regulatory Commission (FERC) have considered and have established interconnection standards for Distributed Generation. During the intervening period an extended process of deliberation by the standard setting committees of the IEEE and at testing laboratories, such as Underwriters, have resulted in the adoption of IEEE 1547 and UL 1741 which now serve to buttress the actions of many jurisdictions. IEEE 1547 was finally accepted in May 2003 and task forces are at work on further implementation. Entities identified with these comments participated in reviews in other States, FERC, and in IEEE. We do not believe, however, that action in Pennsylvania should await action by IEEE 1547 in all aspects, especially in dealing with networks.

4. **NARUC and other States** – NARUC developed a standard model for the FERC negotiations and a number of states advanced their own guidelines process in the time period before IEEE 1547 committees were able to come to terms. States that have set or revised standards in this period include: California, Massachusetts, Minnesota, Nevada, Ohio, Texas, Wisconsin, New Jersey, New York and others.

a. **Texas** Notably the Public Utility Commission of Texas (PUCT) established a set of guidelines for facilities to 10 MW, including secondary networks in 2002.

b. ERCOT & FERC - The Texas model served to provide a model for ERCOT and in the preliminary stages for the FERC negotiations which drew a dividing line at 20 MW between large and small facilities. It is acknowledged that FERC has not yet acted in the matter of smaller generator interconnection standards.

a. Most Recent State-Level Actions –

- **Wisconsin's** Rules for Interconnecting (PSC 119) Distributed Generation Facilities took effect in January 2004. Their simplicity and comprehensive nature address many of the positions that we support, although all entities joining in this comment have not specifically endorsed these rules and applications. They deal with facilities to 15 MW, address secondary and spot networks, and deal with certification by alternative nationally recognized national laboratories.
- **Massachusetts** – A number of the entities here participated in the DTE collaborative and support as a matter of record many of the positions there as finally approved in February 2004, especially measures that tighten turn-around time obligations, and limit costs to within a range that does not exceed the utility's estimates by more than 10 percent.
- **Connecticut** – The DPUC issued its Order in 2004. Several of the entities here provided comments recently supporting action and proposing that

sufficient experience with network interconnection is emerging that the Department should not prohibit network interconnection until resolved at the level of IEEE or elsewhere. The Joint Supporters strongly concurs that action on network standardization should occur in Pennsylvania and should not be deferred to IEEE negotiations.

5. NYPSC Revision of SIR - In November 2004 the NY Commission issued an order for a further standardization to conform to IEEE1547, raise the upper size limit to 2,000 kW, apply standards to utility distribution systems, including networks, and replaced state-level type testing with certification by UL, etc. A significant consequence and natural evolution of this effort would be to standardize arrangements and contracts to larger sizes. This guideline was extended significantly in the Joint Proposal for Settlement in Case No. 04-E-0572 Consolidated Company of New York, Inc. Electric Rate Case now pending before the NY PSC.

6. The IEEE 1547 process – As noted above in comments on Connecticut, is important to not to deter action on networks until IEEE 1547 is further advanced. UL 1741 also provides a frame of reference for various items in the meanwhile. It should be noted that IEEE 1547 does not constrain the size level to 2,000 kW.

7. Size Considerations –The framework for addressing standardization should be targeted to larger sizes to conform to the 10 MW level available in the IEEE 1547 guidelines, the 10 MW Texas standards or the 15 MW level in the Wisconsin Rules. We do not concur with the use of a low breakpoint as had been implemented in some cases, but instead recommend one of at least 5

MW as The E Cubed Company, LLC/Joint Supporters recently negotiated in New York with Consolidated Edison for expedited processing.

8. Network Considerations -It is appropriate to advance treatment of network interconnections in the Standardized rules. We offer the rules from Wisconsin and the rules from Texas as examples. There is also ample experience with network protector delay settings, etc. to handle generators on network grids, e.g. developed in dealing with elevators.

A growing number of cases provide models as well.²

9. Utility Performance Requirements – Turn Around Times

-
- ² Consolidated Edison Company of New York, Inc.
- 717 5th Avenue, NYC
 - Holiday Inn at LaGuardia Airport, Queens, NY. Induction system. We don't know if it still operates.
 - St Mary's Hospital, Brooklyn, NY, Synch.
 - Kingsbrook Jewish Medical Center, Brooklyn, NY, Synch. Not operating
 - Lutheran Medical Center, Brooklyn, NY Synch.
 - Montefiore Hospital, Bronx, NY Synch.
 - St Johns Hospital, Yonkers. NY Synch.
 - Staten Island University Hospital, Staten Island, NY, (two synchronous systems)

PG&E territory: (All synchronous)

- Elihu Harris Building (1515 Clay Street, Oakland, CA)
- 199 Fremont, San Francisco, CA
- 50 Beale, San Francisco, CA
- 595 Market, San Francisco, CA - finishing construction

NSTAR

- Suffolk County Jail, Boston, MA, Induction System

We have found that in many instances slow utility turn around time of information requests and delayed reviews of proposed system designs can be as crippling to potential projects as any other factor. As result we urge the Commission to consider:

- Prompt turn around times as a critical objective of market participants at each stage of the process.
 - The assignment of a single point of technical contact. This generally works well, even in the multiple divisions of the larger distribution companies.
 - Directing utilities to strive to meet the project's deadlines whenever possible. This provides the utilities win an incentive to expedite whenever they can. This was obtained in the Mass DTE Order.
 - A maximum time for the utility to perform its system review and/or interconnection study be six (6) weeks for DG applications and that the six (6) weeks timetable also be applied to network system evaluations. This is similar to the standard for dealing with networks in the Texas Guidelines.
 - Cost Estimates provided should be expected to be relatively accurate and while there should be a true-up procedure, a maximum range for upward deviations should be established and it should not exceed 10%. Beyond that the costs should be the responsibility of the utility. This was achieved in the Mass DTE Order.
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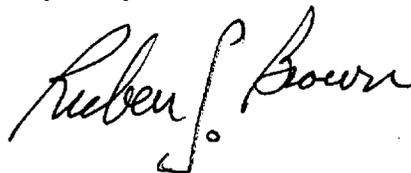
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10. Collaborative Process Involving Stakeholders That Can Benefit Most –

We strongly believe that the ANOPR you have issued offers a rare opportunity to deal with issues and concerns that have been either ignored or deferred to a later date for resolution by other states. An open process will allow those most involved and experienced in these issues to put forth solutions that will greatly advance the adoption of advanced distributed generation and interconnection technologies, and thereby meet your goal to “encourage manufacturers and suppliers to enter the market”.

Please do not hesitate to contact us should you have any questions. Again, we thank you for the opportunity to submit these exceptions.

Very Truly Yours,

A handwritten signature in black ink that reads "Ruben S. Brown". The signature is written in a cursive style with a large initial "R" and a distinct "S" and "B".

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