**NEW YORK STATE BOARD ON ELECTRIC GENERATION SITING AND THE ENVIRONMENT**

**IN THE MATTER**

**of the**
**Application by TransGas Energy Systems LLC for a Certificate of Environmental Compatibility and Public Need to Construct and Operate a 1,100 Megawatt Combined Cycle Generating Facility in the Borough of Brooklyn, New York**

**Case 01-F-1276**

# Surrebuttal Testimony of
# David A. Schlissel
# and
# Geoffrey L. Keith

## On behalf of
## The Brooklyn Borough President
## and the
## Greenpoint Williamsburg Waterfront Task Force

## November 6, 2003

**Q. Mr. Schlissel, please state your name, position and business address.**

A. My name is David A. Schlissel. I am a Senior Consultant at Synapse Energy Economics, Inc, 22 Pearl Street, Cambridge, MA 02139.

**Q. Mr. Keith, please state your name, position and business address.**

A. My name is Geoffrey L. Keith. I am an Associate at Synapse Energy Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

**Q. Have you previously submitted testimony in this case?**

A. Yes. We filed direct testimony on September 29, 2003 and rebuttal testimony on October 27, 2003.

**Q. What is the purpose of this rebuttal testimony?**

A. In this rebuttal testimony we will respond to new analyses presented in the rebuttal testimony filed by TGE witnesses Younger and Solzhenitsyn.

**Q. Please comment on the claim by TGE witnesses Younger and Solzhenitsyn that proper system planning should not assume that all permitted projects will be constructed.[1]**

A. It may be reasonable in long-term system planning to examine alternative scenarios in which permitted plants not yet under construction are either built or not built. However, the four plants that we have said should be fully represented in the Applicant's modeling in this proceeding are facilities that either are already under construction (i.e., NYPA Poletti Expansion), that already have contracts to provide power in the near term (i.e., SCS Astoria Energy) or that are very likely to enter into contracts to provide power in the near term (i.e., ANP Brookhaven or KeySpan Spagnoli Road). In these circumstances, i.e., where the Siting Board needs to evaluate the system benefits that would be provided by a proposed unit, we believe it is important to reflect all of the capacity from such facilities. Based on the rebuttal testimony of Mr. Younger and Mr. Solzhenitsyn, it appears that

[1] Younger/Solzhenitsyn Rebuttal Testimony, at page 5, lines 19-20.

their revised MAPS analyses now appropriately reflect the entire capacity of both the SCS Astoria Energy and the NYPA Poletti Expansion facilities as well as the approximate 600 MW of new capacity that we said can be expected to be added on Long Island.

**Q. Mr. Younger and Mr. Solzhenitsyn cite a number of reasons why the 80 percent in-City capacity rule may be increased in the next several years.[2] Would such a change affect the results of your reliability analyses?**

A. No. As can be seen on Table 7 in our September 29, 2003 direct testimony, installed in-City capacity would be almost 90 percent of the projected summer peak demand in 2008 even if only the East River Repowering, KeySpan Cogeneration, NYPA Poletti Expansion, and SCS Astoria Energy facilities are completed. Tables 5 and 6 in our direct testimony show that the installed in-City capacity would exceed 94 percent of projected 2008 peak demand if the Astoria Repowering Project or the Cross Hudson Cable, or both projects, are built.

**Q. Have you seen any factors which might suggest that the in-City minimum capacity might not be increased in future years?**

A. Yes. Mr. Younger and Mr. Solzhenitsyn cite a number of reasons why the installed in-City capacity requirement might be increased above the current 80 percent level. It also is possible that the in-City capacity requirement may not be increased by 2008. In fact, as we explained in our rebuttal testimony, there are at least four proposals to add new transmission lines that would increase the amount of capacity that can be brought into New York City.[3] The existence of this additional transmission capacity, and the alternate routes by which power can be carried into the City, would support maintaining, and not increasing, the in-City installed capacity requirement at 80 percent.

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[2] Younger/Solzhenitsyn Rebuttal Testimony, at page 8, lines 9-12.

[3] Schlissel-Keith Rebuttal Testimony, at page 7, lines 14-21.

**Q. Do you think that the explanation given by Mr. Younger and Mr. Solzhenitsyn as to why it is more reasonable to expect that the proposed TGE facility will be built than Reliant's Astoria Repowering Project is credible?[4]**

A. No. As we explained in our direct testimony, Reliant is an established power supplier and owns a large number of facilities. To the best of our knowledge, TGE owns only one facility in upstate, New York. Consequently, Reliant can be expected be in a better position to obtain project financing than TGE. In fact, TGE has provided absolutely no evidence, of which we are aware, that it even will be able to obtain any financing for its proposed project if it is certified by the Siting Board and receives the necessary local approvals.

Mr. Younger and Mr. Solzhenitsyn also claim that the benefits would be lower for the Astoria Repowering Project than for TGE's proposed facility.[5] This is pure speculation on their part. They provide no evidence of Reliant's projected costs and revenues for its proposed Astoria Repowering Project. Nor do they provide any evidence of TGE's projected costs and revenues for its proposed facility. Without such evidence, there is no basis to speculate on the relative benefits that each project will provide for its owner.

**Q. Do you agree with the treatment that Mr. Younger and Mr. Solzhenitsyn discuss for the proposed Hudson Energy/Gen Power and Neptune transmission lines?[6]**

A. Yes.

**Q. Do you find TGE's revised projections of the $SO_2$ benefits from its proposed project to be reasonable?**

A. Absolutely not. On page 22 of the Younger/Solzhenitsyn rebuttal testimony, TGE revises its projected $SO_2$ benefits from the 3,310 tons of the original filing to 431

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[4] Younger/Solzhenitsyn Rebuttal Testimony, at page 11, lines 3-12.

[5] Younger/Solzhenitsyn Rebuttal Testimony, at page 10, lines 3-4.

[6] Younger/Solzhenitsyn Rebuttal Testimony, at page 12, line 17, through page 13, line 19.

tons. That is, they claim that emissions of $SO_2$ with the TGE plant would be lower than in a scenario without the TGE plant by 431 tons. As we described in our September 29 testimony, there is no theoretical basis for the assertion that the TGE facility will result in *any* measurable near-term $SO_2$ reductions in the context of a statewide cap.[7]

There is no basis for this assertion because, absent evidence to the contrary, we must assume that the market for $SO_2$ allowances in New York will operate reasonably efficiently and that total state emissions will be very close to the capped level. If a new plant like TGE displaced the output of a high-$SO_2$-emitting plant, the owners of the latter plant would maximize profits by selling the unneeded allowances to another New York generator.

Therefore, if total $SO_2$ emissions are significantly below the cap in 2008, it will mean that the generating sector has voluntarily overcomplied with the regulation in that year. TGE has provided no evidence to show that such voluntary overcompliance will occur. But more importantly, even if voluntary overcompliance was to result in actual $SO_2$ emissions being significantly under the capped level, *it would not be a result of adding the TGE facility*.

**Q. Is it difficult to simulate compliance with an emissions cap with a model like MAPS?**

A. It is time consuming. MAPS does not simulate allowance trading, like some other models do. That is, it does not reallocate allowances endogenously, converging on an optimized allocation of allowances. Thus, allowance trading programs must be simulated in an iterative way with MAPS. The modeler must make assumptions about the effect of the emission cap, run the model, observe total system emissions in that run, adjust the assumptions as necessary and rerun the model. The assumptions usually altered in this iterative process are "$SO_2$ costs" (a proxy for the price of allowances), $SO_2$ emission rates at selected plants and plants in service.

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[7] Schlissel-Keith Direct Testimony, at page 33, lines 23-25.

**Q. Should the modeler always continue iterating until the cap has been matched exactly?**

A. Not necessarily. In dispatch modeling, efforts to be more and more precise usually provide diminishing value. Especially considering the ranges of uncertainty associated with other inputs and outputs in a dispatch model, getting total system emissions exactly at the capped level may not be worth the time. However, total emissions must be close to the cap to produce a credible simulation of the study year. The important point here is not that TGE's modeled $SO_2$ emissions were slightly below the cap with the proposed plant operating. It is that they attributed these lower $SO_2$ emissions to the addition of the new TGE facility. The result of $SO_2$ emissions slightly below the cap was driven by the way that TGE simulated compliance with the new $SO_2$ regulation, not by the addition of the TGE plant to the model.

**Q. Do you find TGE's revised $NO_x$ benefits to be reasonable?**

A. No. TGE makes the same mistake with $NO_x$ emissions that it made with $SO_2$ emissions. As we pointed out in our September 29 testimony, $NO_x$ emissions in 2008 from large electric generators in New York State will be capped during the non-summer season by a state-specific emissions cap.[8] In the summer months, $NO_x$ emissions across the entire eastern half of the country will be capped by the federal $NO_x$ SIP Call program.

Because the non-summer cap covers only New York State, allowances will only be traded within New York during that period. Thus, the TGE facility would not reduce state $NO_x$ emissions for the reasons stated above. Under the summer cap, if the TGE plant reduced the output of a $NO_x$-emitting plant in New York, the state might benefit from the emission reduction, because the free up allowances might be sold to a plant in a distant state. It is impossible to predict with MAPS how allowances will be traded and what total emissions will be in different states.

[8] Schlissel-Keith Direct Testimony, at pages 33-34.

Thus, all that can be said with confidence is that the TGE plant *might* result in $NO_x$ reductions in New York *during the summer season*.

**Q. Do you believe that the TGE plant would have any impact at all on the generating sector's compliance with New York's $SO_2$ and $NO_x$ caps?**

A. Yes. The $SO_2$ and $NO_x$ emission rates of the proposed TGE plant would be below the emission rates targeted by the caps – the emission rates used to allocate allowances to generators. Thus, to the extent that the output of the TGE plant displaced the output of a high-emitting plant, allowances would be effectively freed up for sale. This increase in the supply of allowances would exert downward pressure on the price of allowances. Depending on the amount of high-emission electricity that TGE displaced, a price effect might or might not be discernable.

**Q. Would a price effect in an allowance market result in cost savings for New York electricity consumers?**

A. In the near term, we do not know. For customers to see lower prices, New York's power generators would have to reflect the savings in their wholesale market bids, and the state's electricity retailers would have to pass the savings on to customers. The output of one plant might not have a discernable effect on this supply chain.

Over time, however, as many new low-emission plants are added to the New York grid, one would expect the cost of meeting the $SO_2$ cap to fall. Hopefully, these cost reductions would be reflected in customers' bills. Air regulators also might respond to this situation by tightening the cap.

**Q: Do you have other concerns about the revised emissions benefits claimed by TGE?**

A: Yes. We find it strange that the changes TGE has made in their modeling inputs have resulted in a substantial reduction in system $CO_2$ emissions relative to their previous claims. The table on page 22 of the Younger/Solzhenitsyn rebuttal testimony shows revised $CO_2$ reductions (across New York, New England and PJM) of 1.1 million tons. This is roughly 22 percent higher than the benefits

predicted in their December 2002 model runs (919,000 tons). Presumably, all of the changes TGE made to its modeling inputs were made to both the base case and the scenario with the TGE plant. Thus, we would not expect these changes to affect the $CO_2$ emission reductions attributable to the TGE plant. Note that the changes TGE made to its modeling inputs reduced the projected $NO_x$ and $SO_2$ benefits, as one would expect. We believe that the $CO_2$ benefits shown in TGE's revised modeling runs should not be viewed as credible unless TGE provides a plausible explanation for why these benefits increased so much over their original projections.

**Q. Do you believe that the Applicant's new analyses present a more credible picture of the impact of the proposed TGE facility on the air quality in the Greenpoint and Williamsburg communities than the original analyses filed as part of the Application?**

A. No. The Applicant's new analyses of the impact of the proposed facility on the neighboring communities assumes that TGE would displace significant amounts of steam that would otherwise be produced by duct firing at the East River Repowering Project, at the Hudson Avenue Station, at the South Steam Station, and by East River Boiler Nos. 60 and 70. In fact, the Applicant assumes that its proposed facility would displace over 90 percent of the steam produced at the South Steam Station and by East River Boilers Nos. 60 and 70, i.e., 3,037 mmlbs per year of the 3,349 mmlbs per year that Con Edison expects to produce at these facilities in a typical year. The Applicant also assumes that it will displace 63 percent of the steam that Con Edison expects to produce at the Hudson Avenue Station in a typical year and another 1,683 mmlbs/year of the steam that Con Edison expects to produce by duct firing at the East River Repowering Project.

However, the Applicant fails to present any evidence that Con Edison will enter into a contract for the purchase of steam from the proposed TGE facility or that the Public Service Commission will require Con Edison to enter into such a contract. The Applicant also fails to provide any evidence that the price of producing steam at the proposed TGE facility (considering all of the related costs,

including the capital costs that have to be spent on needed facilities such as the new steam tunnel) would be more economic than the cost of producing steam at the Hudson Avenue, the South Steam Station, East River Boilers Nos. 60 and 70, or through duct firing at the East River Repowering Project. Without this evidence, the Applicant's claims are not credible.

In the Article X Case for the Ravenswood Cogeneration Project, KeySpan claimed the potential to sell steam to Con Edison as a potential benefit for its proposed facility. These claims were even more credible than those by TransGas in this proceeding, because there was an existing steam tunnel between Ravenswood and Con Edison's system in Manhattan and Con Edison already produced steam on the Ravenswood site. However, no contract for the sale of steam has yet been entered into between KeySpan and Con Edison.

**Q. Does the new analysis demand curve analysis presented in the rebuttal testimony of Mr. Younger provide a reasonable picture of the magnitude of the capacity costs that can be expected from the proposed TGE facility?**

A. No. For several reasons, Mr. Younger's new analysis dramatically overstates the capacity cost savings that can be expected as a result of the addition of the proposed TGE facility.

First, Mr. Younger understates that amount of new capacity that can reasonably be expected to be added in New York City by 2008 even if the TGE facility is not built. As we have explained in detail in our direct and rebuttal testimony, there will be approximately 10,690 MW of generating capacity in the City if only those units currently under construction (East River Repowering, Ravenswood Cogeneration, and NYPA Poletti Expansion) and SCS Astoria are completed. This represents 8,840 MW of existing summer capacity and 1,950 MW of new capacity.

If you assume a projected peak load of 11,935 MW in 2008, as we believe is reasonable, the 80 percent in-City requirement would be 9,550 MW. This means that, at a minimum, there will be about 1,150 MW (i.e., 10,690 MW minus 9,550 MW) above the minimum requirement. If either the Astoria Repowering Project

or the Cross Hudson Cable is in service in 2008, there will be another 462 MW to 550 MW of capacity available: meaning that there would be about 1,700 MW of capacity in the City above the minimum requirement. If both the Astoria Repowering Project and the Cross Hudson cable are in service, there would be about 2,100 MW of capacity in the City above the minimum requirement.

At the same time that he understates the amount of capacity that will be available in New York City in 2008, Mr. Younger overstates the percentage of the in-City capacity that would be eligible for any price reductions resulting from the availability of additional capacity and changes in prices along the demand curve. At present, 92.5 percent of the capacity requirements in New York City are under contract – therefore, only 7.5 percent are not under contract.[9] With only a cursory analysis, Mr. Younger assumes that the percentage of capacity requirements not under contract will grow to at least 50 percent by 2008.

As we have explained in our rebuttal testimony, a significant amount of capacity in New York City is either under price caps or is subject to very long term contracts. Thus, the percentage of capacity not under contract is unlikely to grow as quickly as Mr. Younger claims.

Mr. Younger also ignores the fact that to a significant extent Con Edison and NYPA are both sellers and buyers of capacity. Indeed, by 2008, Con Edison will be a seller of approximately 1,900 MW of capacity and NYPA will be a seller of another 1,850 MW of capacity. Consequently, Con Edison's "savings" from lower capacity prices due to the TGE facility would be substantially lower than the figures in rebuttal exhibit MY-1 would suggest: any lower prices that Con Edison will pay for the capacity it might purchase subject to the demand curve will be offset to a large extent by the reduced revenues it will earn on the sale of its 1,900 MW of capacity. Thus, Con Edison's customers would not see any "savings" due to reduced capacity prices for this 1,900 MW of capacity. The same is largely true for NYPA and its customers.

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[9] Schlissel-Keith Rebuttal Testimony, at page 4, lines 16-19.

These two factors together suggest that, at most, 25 percent of the capacity in New York City actually will be eligible for or will reflect the effect of capacity cost reductions from changes in the prices along the demand curve due to the availability of the TGE facility.

**Q. Have you revised Mr. Younger's new analysis to reflect the availability of more capacity in addition to TGE and the fact that less of the in-City capacity actually will be eligible for price reductions?**

A. Yes. Surrebuttal Exhibits SK-1 and SK-2 present modified versions of Mr. Younger's Rebuttal Exhibit MY-1 that add (1) additional columns for 1,150 MW and 1,700 MW of capacity above the minimum requirements and (2) additional rows to reflect the fact that less than 50 percent of the in-City capacity will be eligible for or will feel the effect of lower capacity prices.

**Q. What are the results of your revisions to Mr. Younger's analysis?**

A. If no capacity is added beyond the new in-City plants under construction and SCS Astoria, the addition of the TGE facility could be expected to produce, at most, $50 to $90 million of capacity cost savings during summer months and no savings during winter months.

If, as we believe is reasonable to expect, either the Astoria Repowering Project or the Cross Hudson Cable are in service by 2008, the addition of the TGE facility could be expected to produce, at most, $1 to $3 million of capacity cost savings during summer months and, again, no savings during winter months.

If both the Astoria Repowering Project and the Cross Hudson Cable are in service by 2008, the addition of the TGE facility could be expected to produce no capacity cost savings during either summer or winter months.

However, it is important to remember that these figures are based on the current demand curve which is projected to be revised before 2008. These forecast savings may be lower under a revised demand curve.

**Q. Does this complete your surrebuttal testimony?**

A. Yes.

**Summer Savings from added Transgas capacity**

| | MW Summer Capacity Exceeds the Minimum Requirement | **0** | **200** | **400** | **600** | **800** | **1000** | **1150** | **1200** | **1400** | **1600** | **1700** | **1800** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | % of Requirement Under Contract | *Summer Savings in Millions of Dollars* | | | | | | | | | | | |
| Capacity under existing contract | **0%** | 438 | 458 | 477 | 497 | 418 | 333 | 268 | 245 | 153 | 58 | 9 | 0 |
| Capacity under existing contract | **10%** | 391 | 411 | 431 | 450 | 380 | 303 | 244 | 223 | 140 | 53 | 8 | 0 |
| Capacity under existing contract | **20%** | 345 | 364 | 384 | 403 | 341 | 273 | 220 | 202 | 127 | 48 | 8 | 0 |
| Capacity under existing contract | **30%** | 298 | 317 | 337 | 357 | 302 | 243 | 196 | 180 | 113 | 43 | 7 | 0 |
| Capacity under existing contract | **40%** | 251 | 271 | 290 | 310 | 264 | 213 | 172 | 158 | 100 | 38 | 6 | 0 |
| Capacity under existing contract | **50%** | 204 | 224 | 244 | 263 | 225 | 183 | 148 | 136 | 87 | 33 | 5 | 0 |
| Capacity under existing contract | **60%** | 158 | 177 | 197 | 216 | 187 | 152 | 124 | 115 | 73 | 28 | 5 | 0 |
| Capacity under existing contract | **70%** | 111 | 130 | 150 | 170 | 148 | 122 | 100 | 93 | 60 | 23 | 4 | 0 |
| Capacity under existing contract | **75%** | 87 | 107 | 127 | 146 | 129 | 107 | 88 | 82 | 53 | 21 | 3 | 0 |
| Capacity under existing contract | **80%** | 64 | 84 | 103 | 123 | 109 | 92 | 77 | 71 | 46 | 18 | 3 | 0 |
| Capacity under existing contract | **90%** | 17 | 37 | 56 | 76 | 71 | 62 | 53 | 49 | 33 | 13 | 2 | 0 |

**Winter Savings from added Transgas capacity**

| | MW Winter Capacity Exceeds the Minimum Requirement | **750** | **950** | **1150** | **1350** | **1550** | **1750** | **1900** | **1950** | **2150** | **2350** | **2450** | **2550** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | % of Requirement Under Contract | *Winter Savings in Millions of Dollars* | | | | | | | | | | | |
| Capacity under existing contract | **0%** | 439 | 355 | 268 | 177 | 82 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity under existing contract | **10%** | 395 | 320 | 242 | 160 | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity under existing contract | **20%** | 351 | 285 | 216 | 143 | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity under existing contract | **30%** | 307 | 250 | 190 | 127 | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity under existing contract | **40%** | 263 | 216 | 165 | 110 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity under existing contract | **50%** | 219 | 181 | 139 | 93 | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity under existing contract | **60%** | 176 | 146 | 113 | 77 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity under existing contract | **70%** | 132 | 111 | 87 | 60 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity under existing contract | **75%** | 110 | 94 | 74 | 51 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity under existing contract | **80%** | 88 | 76 | 62 | 43 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity under existing contract | **90%** | 44 | 42 | 36 | 26 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capacity under existing contract | **100%** | 0 | 7 | 10 | 10 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |