
The Opportunity For Government Energy Aggregation To Improve Adoption Of Renewable Energy In New Jersey

A Study By Sustainable Jersey

Commissioned By The NJ Board Of Public Utilities

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Introduction

NJ legislation allows local government entities to serve as community-wide energy aggregators. If widely adopted, Government Energy Aggregation (GEA) could become a significant new mechanism for municipal influence on energy use within the community¹. In addition to delivering economic and consumer protection benefits, GEA could also make renewable energy more widely available to NJ citizens, at lower cost. This report summarizes the results of a study completed for the NJ Board Of Public Utilities regarding the GEA opportunity, and recommendations about whether it would be appropriate to support municipal action through GEA as part of the Sustainable Jersey program.

Study Scope

This study was commissioned by the BPU as part of Sustainable Jersey's FY14 contract. This is a high level study, focused on three specific questions identified in the study's scope of work:

- 1) What is the extent of municipal interest and activity in the GEA concept in NJ,
- 2) What are the market options for including renewable content in municipal GEA offers, and are there market examples of communities that have implemented GEA successfully (with and without increased renewable content), either in NJ or nationally,
- 3) Based on the above market scan, identify the issues that may affect using municipal aggregation as a vehicle for increasing mainstream adoption of renewable energy.

The goal of the study is to determine whether municipal aggregation is a worthwhile approach to encouraging mainstream renewable energy use in NJ, leading to a recommendation as to whether a Sustainable Jersey action related to that opportunity should be developed. This small research project will build upon existing sources of information, with a focus on assessing the NJ opportunity, scoping potential impact, and identifying best practices for renewable-enhanced aggregation. This project does not include the development of the potential Sustainable Jersey action itself.

Methodology

This is a high level study conducted over a very short period of time (the fourth quarter of 2013), focused primarily on collecting existing information and synthesizing trends and conclusions. Information from both NJ and national sources (especially from other states where GEA is a more mature concept), were considered. The survey was based on the following sources of information:

¹ The enabling NJ legislation, and related regulations, refer to this framework as Government Energy Aggregation (GEA), and that is the term used in this study. There are a variety of other terms used for similar initiatives nationwide, although the term "Community Choice Aggregation" is becoming common.

- Discussions with NJ municipal advocates and staff that are involved with, or actively considering GEA implementation for their community (approximately half dozen individuals),
- In-depth interviews with several active NJ GEA market participants, including consultants and suppliers that have extensive first-hand experience with GEA market mechanics²,
- Literature review (mostly web-based) used to assess NJ township participation in GEA, as evidenced through public notices and proceeding documentation or public communications,
- Collaborative investigations with the World Wildlife Fund (WWF), who is supporting a nation-wide effort to promote GEA as part of their Climate Change Program. WWF has done a detailed scan of GEA efforts nationwide, with in-depth analysis of more mature markets (especially Illinois and Ohio). WWF is also working with federal EPA and DOE who has also started assessing GEA opportunities nationwide. For example EPA's Green Power Communities program now recognizes communities that contract for renewable energy on behalf of their residents. The WWF studies were a primary source of national perspective on the emerging GEA market, especially regarding different approaches and early best practice models.

Given the early state of the market, most of this information was qualitative in nature. As summarized in the following sections, the study focused on collecting existing information, organizing it relative to the three study questions, and identifying trends and points of corroboration across different data sources.

It should also be noted that once Sustainable Jersey began this study, there was considerable feedback from various towns that have been considering a GEA program. There was extensive discussion on this subject at the League of Municipalities Conference in November of 2013.

Background

NJ legislation empowers local government entities (mostly municipalities and counties) to provide energy aggregation services for their community. As outlined in a NJ BPU GEA summary (1):

The Government Energy Aggregation Act of 2003 (L. 2003, c. 24, "GEA Act"), authorizes municipalities and/or counties of New Jersey to establish Government Energy Aggregation (GEA) programs after passing an ordinance or a resolution. A GEA program allows municipalities, working alone or in a group, to aggregate the energy requirements of residential, commercial and municipal accounts so that the GEA program can purchase energy supply from non-utility sellers of electricity and gas supply

² Some information was provided in confidence, given the market sensitivity of the information involved.

(Third Party Suppliers or TPS) at prices lower than the average utility price, with the possibility of added benefits such as higher renewable energy content.

A municipality considering implementation of a GEA program in NJ typically follows the following process:

- (1) The township (or county) authorizes the implementation of a GEA program through ordinance or resolution, which is then communicated to the utility. Implementation of the program may be contingent on final adoption by the township, based on the results of the energy procurement process and resulting offer terms.
- (2) The township may act as its own aggregator, but in almost all cases the township will hire a consultant or other contractor to implement the program. Key implementation functions include analysis of community usage, design of the program, design of an RFP (including specifications, scope of work and terms and conditions of service) and bidding approach for energy suppliers, implementation of the bidding process leading to a winning bid selection, and various important communication and approval steps throughout the process. For most townships, the primary effort in a GEA program is procurement of these consulting services, and the majority of the work is performed by the consultant or contractor. The consultant's fee is typically paid by the energy supplier ultimately selected.
- (3) Once a GEA program is authorized, the local utility will provide information about energy usage of residents and business within the township's jurisdiction. This information is critical for informing the GEA offer design and the bid process. Note that in NJ GEA programs are typically focused on residential customers only, although non-residential may also be included if they opt-in. Customers that have already opted-out of default supply (through selection of an alternative Third Party Supplier, or "TPS") are not eligible to participate in a GEA program and may not be solicited for participation in the GEA program while they are a TPS customer.
- (4) The township, through its consultant/aggregator/contractor, must solicit multiple bids in response to the RFP. Once the winning bid is selected, the township enters into a contract with the selected supplier.
- (5) Following final approvals and public communications, the accounts of all participating consumers are switched collectively to the winning bidder, with the resulting changes in energy supply (cost, renewable energy content) being reflected on subsequent monthly bills. In most designs, consumers need not take any action to participate in the aggregated community energy purchase, but they have multiple points in the process where they can opt-out of the program and retain their current provider. They may also opt-out of the program at any time after implementation with 30-day notice. There is typically considerable focus on consumer protection and ensuring awareness and freedom to opt-out of participation.
- (6) Aggregated purchase agreements (in NIJ) are typically for a one to two year period, after which the program may be continued, or usage reverts back to default supply for program participants.

- (7) By law, the energy provided by the GEA program must be less than default supply prices (at the time of contracting), although there is a provision for higher pricing if renewable content is included.
- (8) The municipality typically bears little or no expense in the implementation of a GEA program, with any out-of-pocket expenses incurred being reimbursable from the supplier. The supporting consultant/aggregator/contractor is typically paid by the winning supplier. Municipalities are not able to benefit from the GEA financially in any direct way.
- (9) Note that aggregation of community energy supply is different than aggregation buying pools (or joint energy meeting) a municipality may join for purchase of energy for its own use.

The following references provide details on the enabling legislation and associated rules.

- N.J.S.A. 48:3-92 - N.J.S.A. 48:3-95
- N.J.A.C. 14:4-6
- Local Public Contracts Law, N.J.S.A. 40A: 11-1 et seq., the Public School Contracts Law, N.J.S.A. 18A:18A-1 et seq., the County College Contracts Law, N.J.S.A. 18A:64A-25.1 et seq., and N.J.A.C. 14:4-6.8. as applicable [N.J.A.C. 14:4-6.3(e)]
- Rules of the Department of Community Affairs - N.J.A.C.5:34-7 [N.J.A.C. 14:4-6.4(b)]

GEA Usage In New Jersey

The first goal of the study was to assess the usage of GEA programs in NJ, and to understand market adoption trends that may be emerging. The study resulted in the following findings:

- 1) Although the enabling legislation was implemented in 2003, the GEA program in NJ has only started to be implemented by townships in recent years. As of this writing, ten NJ municipalities that have completed GEA implementation, including Plumsted, Toms River, Lambertville, Monroe Township, West Amwell, West Orange, Montgomery Township, Bayonne, Glassboro, and Willingboro. Several additional NJ townships are in mature stages of GEA implementation, meaning that a winning supplier has been identified and the township is in the final stages of notification and account transition.
- 2) Based on a search of public records and notices, along with (in some cases) direct communication with municipal staff, at least 38 municipalities have announced their intention to consider or implement a GEA program. These program participants span the full range of implementation maturity, from “starting the discussion” to “final stages of supplier selection”, and it is possible that some of these townships will not complete the process. A list of those communities, and references, is included in Appendix A.
- 3) Based on interviews with active market participants (especially consultants, and GEA advocates that are familiar with the market), respondents consistently reported

knowledge of “around 50” NJ townships considering or actively implementing GEA programs.

- 4) Most importantly, most of this activity has emerged within the last year, implying that GEA adoption (after an extended gestation period) has started to grow quickly within the state.
- 5) Several participants in the study noted (and emphasized) that a primary motivation for GEA programs is as a way to protect consumers from (in some cases) abusive or predatory business practices of Third Party Suppliers (TPSs). In essence, a well managed GEA, with fixed and clearly communicated terms, provides the best of both worlds: consumers get better access to the benefits of a competitive deregulated market (lower prices, more renewable content), with less hassle, and with less risk. This consumer protection (and improved competitive market access) are a major benefit of GEA programs, and could be a reason why they see growing adoption.
- 6) Even the NJ towns that have fully implemented their GEA program are still in the early stages of market experience.
- 7) Most of the programs under consideration have been focused exclusively on residential customers. This is likely due to provisions in the enabling legislation that favor ease of implementation for residential customers, as covered in more detail below.
- 8) To date, most of the NJ towns that have implemented GEA have done so primarily for economic reasons, with the goal of saving residents money. In addition, township conversations indicate that with a few notable exceptions, there is little awareness that renewable energy can be included in a GEA program, and no operating experience or market example regarding how renewable energy content could or should be incorporated. Other than a few notable towns that historically have been at the sustainable energy forefront, this limited market awareness makes it difficult to objectively assess whether there is municipal interest in NJ for renewable content. When informed that a GEA program could include renewable content in addition to cost savings, there was generally receptiveness to learning more about that option.
- 9) Several active GEA program participants confirmed that **under current NJ market conditions, carefully designed GEA programs can deliver BOTH cost savings and significantly increased renewable content (above the NJ Renewable Portfolio Standard (RPS))**. There appears to be significant market mis-perception about this fact. See the section below on market offerings for more information about this finding. The cost-renewable balance is significantly affected by the source of renewable supply, as covered in more detail below.
- 10) A variety of advocacy and support organizations have been created in NJ, focused on encouraging and supporting the use of municipal GEA. This is another early, but positive sign of GEA market development. There are also some national efforts of note. Some of these resources are relatively independent, while others are essentially marketing programs for consultants or aggregators involved in GEA. Some key examples include: Go Clean Go Local,, LEAN (Local Energy Aggregation Network), NJCCEA (New Jersey Community Clean Energy Aggregation), NJGEA (New Jersey Government Energy Aggregation), CALL (Cooling America through Local Leadership), and the World Wildlife

Fund (WWF). In addition, the New Jersey State League of Municipalities has been striving to better educate their members on GEA.

- 11) One point was made repeatedly in all the interviews and anecdotal conversations: the success of the GEA program depends heavily on securing the services of a knowledgeable and experienced consultant/aggregator/contractor to manage all aspects of the program implementation. This is an extremely technical initiative that demands intimate working knowledge of the energy markets, municipal practice, and both procurement and GEA-specific legislation and rules. Best practice essentially reduces to hiring the right consultant to manage that entire process, and to engage that consultant through open and transparent procurement practices. The knowledge and expertise of the supporting consultant, combined with diligence in public communications and fair notice, appear to be the most important success factors for GEA implementation.
- 12) Given the recent growth of the GEA opportunity in NJ, both the NJ Board of Public Utilities (BPU) and Division of Community Affairs (DCA) have become more active in supporting townships in GEA program implementation. Particular focus is on ensuring process transparency, protecting consumer rights, and compliance with both GEA and procurement law. The BPU, in particular, has become particularly focused on helping towns implement GEA programs effectively.

Taken together, these qualitative indicators suggest that GEA adoption has started growing rapidly in NJ, but that the market is still in an early stage of development. The lack of awareness and implementation knowledge regarding renewable energy options is a striking weakness in the current market, especially regarding the potential to achieve both cost reductions and increased renewable energy content. There is a substantial opportunity for developing best practice and support systems that ensure municipalities avoid pitfalls and benefit from the experience of others.

GEA Renewable Energy Options, And Other Market Examples

The second question of the study examines whether there are GEA renewable energy options available in the market, and whether there are examples from elsewhere in the country that might inform the potential for renewable GEA programs in NJ. Much of the following information was obtained from a national survey just completed by the World Wildlife Fund (2).

National Examples:

- 1) As of this writing, six states have adopted GEA-style programs: Illinois, Ohio, Massachusetts, Rhode Island, New Jersey, and California.
- 2) In all of these states there has been at least some inclusion of renewable content in the GEA programs offered. Several hundred cities in OH have aggregated, and two of them (Cincinnati and Cleveland) have procured 100% renewable energy via Renewable Energy Certificate (REC) purchases. In CA, Marin & Sonoma County are using GEA for 50% renewable energy via a combination of locally built renewable supply and REC purchases

that will be phased out over time. Other California cities have expressed interest in renewable GEA programs, especially since in California communities only utilizes GEA to gain access to renewable energy, not for cost decreases as seen in other markets. In MA, only Cape Cod has utilized GEA for renewable content. Despite the lack of renewable use in NJ (possibly driven by the widespread lack of awareness), evidence from other GEA-enabled states suggests that renewable content can be a successful part of the program.

- 3) By far, Illinois has had the deepest experience with GEA in the country – and the results from that state are compelling.
 - a. Over 600 towns in Illinois have implemented GEA-style programs, with the result that over **75% of all residential volume in Illinois comes through an aggregated purchase channel.**
 - b. Of these, 91 have implemented 100% renewable programs via REC purchase, and several towns have provided some renewable content (less than 100%, but higher than the RPS requirement). Some towns have offered 50% renewable portfolios as a default, or 100% renewable offers that could be selected (opt in) by the consumer. **In all cases, the renewable programs still provided cost savings compared with traditional (non-aggregated) supply.** Note: these results are based on market conditions possible in Illinois, and actual market conditions in NJ will differ. As noted in more detail below, the cost-renewable content balance achievable will depend on the type of renewable energy included in the program.
 - c. In general, GEA legislation is relatively flexible about GEA program design, as long as certain cost boundaries, disclosure requirements, and opt-out rights are respected. Some towns have demonstrated innovative approaches that advance sustainable energy goals while reflecting local preferences: for example, Chicago implemented a GEA program where the supply was required to not use coal and to increase the content of in-state provided wind. Some towns have explored purchase of locally generated supply as part of the aggregation arrangement. This development could be particularly powerful long term when combined with local wholesale renewable energy asset development. Such innovative flexibility appears to be feasible in NJ as well.
 - d. Current evidence suggests that the adoption of GEA-style programs in Illinois were relatively un-controversial. Even towns known to be more conservative were able to implement GEA style programs with minimal objection noted. The Illinois experience suggests that GEA adoption, even with renewable content, becomes significantly easier (and less controversial) once a critical threshold of adoption has been achieved.
 - e. In Illinois, communities are required to hold a referendum before moving forward with aggregation. While this is an additional step, and not a requirement in the NJ GEA legislation, it may help community decision makers more comfortable moving forward with a GEA program.
 - f. The de-regulation trajectory in Illinois, and the current state of market pricing, probably had a lot to do with the high levels of adoption observed. In particular,

tariff pricing is currently very high, which created significant head-room for cost savings through aggregation. This created opportunities to deliver a strong combination of cost and renewable content. Given the heavy dependence of GEA program results on energy market conditions (which are very state-specific), it is unclear how the Illinois experience will translate to other states.

- g. That said, there are several data points from the early Illinois experience that should be relevant. First, in some cases the price of 100% renewable supply was virtually at parity with the cost of more traditional supply (at RPS renewable content levels) purchased through aggregation. That suggests that even as the market conditions that create pricing headroom for aggregation ease, renewable content could continue to be a viable option longer term (especially as renewable power prices continue to fall). Second, there is some evidence that GEA programs with renewable content are “more sticky” than pure cost-driven programs. In several cases where initial terms expired, and even though pricing headroom had reduced, towns chose to continue their participation in the program because of the renewable content. The WWF experience suggests that renewal (or extension) of a GEA program is more likely if the community receives recognition for promotion of renewable energy.
 - h. Towns in Illinois have indicated that a GEA provides additional value beyond cost savings. GEA’s can contribute to price certainty, which is especially important for low-income and fixed-income residents. This can stem from longer term contracts, as well as the relatively stable cost of renewable energy (especially compared with more volatile sources like coal or natural gas). A municipal GEA can also provide an element of consumer protection, especially in communities that are suffering from abusive or predatory TPS practices. In essence, the municipality is serving in the public’s interest by providing a “well run” GEA program that gives consumers “facilitated access” to the benefits of deregulated markets (especially lower cost and access to renewable supply) with minimal risk or hassle.
- 4) The approach taken to REC sourcing in GEA programs varied widely. In many cases, renewable content was based on RECs purchased in the national market, as long as they were eligible for local RPS compliance. This approach maximized access to the most cost effective renewable supply regardless of where it originated, maximized cost savings, but may not encourage local renewable energy generation or result in local environmental impact. Other communities opted to specify more local sources of the renewable energy (and RECs), which frequently implies potentially higher costs but with substantial improvements in local renewable energy impacts. There is not yet clear consensus on best practice on this dimension of GEA design nationally, and in fact it may vary by location given details of local market factors and community preferences. WWF suggests that national best practice on this question is to assemble GEA supply based on a combination of REC purchases and directed use of local renewable supply. As noted in more detail below, consensus has not yet emerged on this issue in NJ, and in fact this is a point of significant disagreement.

- 5) As a related issue, product certification should also be taken into account when considering renewably supply sources. Preferably, the product (usually RECs) would either be eligible for inclusion in local RPS requirements (especially if the local RPS is tightly managed) or certified by an independent trusted party (such as Green-E). This is particularly important for a GEA since it protects the municipality from risks associated with increased renewable content, and can help ensure that consumers know what they are really getting in their supply.

New Jersey Conditions:

- 1) Renewable content was indicated as being available from a variety of suppliers active in NJ, and there appears to be considerable market flexibility regarding inclusion of renewable supply. Most suppliers we contacted, when asked about the feasibility of including renewable content in a GEA program, replied “Sure, just tell us how much and what kind”.
- 2) Current market conditions in NJ allow for BOTH higher levels of renewable content (above the RPS) AND significant cost savings. Contrary to conventional wisdom, including more renewable energy does not need to cost more than what consumers are paying today for traditional supply (through the utility tariff). In other words, aggregated supply with higher levels of renewable energy may cost slightly more than an aggregated purchase of non-renewable energy (RPS levels only), but will typically still be less than what consumers are paying today for traditional energy purchased without the benefit of GEA (depending on the type of renewable supply specified). This creates a favorable economic and political climate for adding renewable content to GEAs.
- 3) There are three recent examples of the potential for renewable content in the NJ market.
 - a. Lambertville (in conjunction with West Amwell) offered a GEA that provided a default option focused on “best price” (at RPS content), and a parallel “opt in” program that contained 100% renewable. The “best price” plan offered savings approximately 13% below current utility tariff, and is expected to deliver about 10% savings for the 15 month term of the agreement. The 100% renewable plan was only a tenth of a cent (about 1%) over current tariff. This is almost grid parity.
 - b. The NJ Sustainable Energy Meeting (NJSEM) program included additional renewable content for their municipal aggregation pool of over 100 municipal entities at the end of 2013. This program provided 21% renewable content and approximately 13% savings compared with current tariff. This program is not a GEA offer, but it is indicative of achievable NJ market conditions, especially regarding the achievable balance between cost savings and renewable supply content.
 - c. The Essex-Hudson Regional Cooperative Pricing System, comprised of the Counties of Essex and Hudson, as well as several dozen participating municipal entities, included an added renewable energy component requirement to its

specifications for both its 2012 and its 2013 bids. Members currently receive power with approximately 20% renewable energy content.

- 4) Current market data in NJ, as well as in other states (especially Illinois) indicates that even though renewable content might be slightly more expensive than an RPS-level supply option, it is still less expensive than a renewable solution purchased individually. In other words, **a consumer will have more cost effective access to renewable energy through a GEA program than if they attempted to purchase renewable energy themselves through a Third Party Supplier.** Providing more cost effective access to renewable content, compared with what an individual consumer can access on their own, can be a valuable benefit provided to the community by the municipality.
- 5) Several market participants expressed the opinion during the interviews that longer term, renewable content might be the primary motivation for, and differentiator for, GEA adoption. As the current “down market” in the BGS supply bottoms out, and the pricing difference between default supply and aggregated supply contracts, it is possible that renewable content would be the primary reason to pursue a GEA. One active market participant expressed it this way: “If GEA continues at all long term, after the decline of pricing headroom, it will because of the availability of renewable content”. Another interviewee expressed the opinion that medium term, renewable supply might actually be the lowest cost supply option, and that it would be most easily accessed through GEA-style aggregation programs (rather than through TPSs based on individual consumer actions). As one interviewee expressed it, **“towns may begin their GEA program because of cost savings, but will probably stay in it long term because of the availability of renewable content”.** WWF reports that this is consistent with the experience they have been tracking in Illinois.
- 6) Just as the experience in other states has varied widely regarding the source of RECs used in a renewable GEA, NJ communities are currently wrestling with this same question. Some towns are focused on achieving the best possible cost savings (along with an increase in renewable content), regardless of where the RECs come from. This approach provides the greatest bid flexibility and stronger savings for a given level of renewable content, but may not encourage local renewable energy generation or result in local environmental impact. Conversely, some towns are considering more stringent requirements under which the renewable GEA will specify more local REC sources, but probably at the expense of potential cost savings. There does not yet appear to be consensus (within NJ) on the best approach to take on this issue, although it is likely that over-restriction of the GEA could reduce (or even eliminate) cost savings and/or make the supply bid less competitive. It also appears likely that the market factors that drive this issue (REC cost as a function of source) will change over time, particularly as more local sources of RECs become more cost effective. The issue of REC sourcing is currently a point of significant disagreement in the emerging NJ market.
- 7) One lesson is clear across all markets where GEA has been implemented: most consumers will accept the default element of program design (i.e. won't bother to opt-out of the standard offer decided upon by the municipality), and there is frequently little adoption of solutions that require an “opt in” action by the consumer. As covered in more detail below, this dynamic has a large impact on design of the GEA offer and

associated adoption rates. It is particularly important for municipalities that are considering renewable content, since this element of program design will directly determine actual renewable energy adoption rates.

- 8) Given that a) inclusion of cost savings is important in the initial stages of GEA deployment, b) but that once GEA is in place, consumers may be open to continuing GEA use even after cost benefits have reduced, especially if renewable content is included, but that c) the opportunity for cost benefits through GEA may decline over time as the BGS market “bottoms out”, there may be a rare window of opportunity short term for the inclusion of renewable supply through GEA. In other words, current market conditions may be highly conducive to strong market adoption of GEA offers that combine both cost savings and increased renewable content short term, which could transition into significant increased renewable energy content long term, but that opportunity may diminish as cost headroom in the market contracts.
- 9) Several interviewees noted that NJ is in the early stages of GEA program implementation, and that a Sustainable Jersey action could have a significant positive impact on both approach and adoption levels – particularly regarding the use of renewable content. A Sustainable Jersey action could address current market issues related to a) widespread lack of awareness about renewable content options, b) the general absence of best practice information or supporting resources, c) significant municipal risks if good procurement practice and/or implementation process is not followed.

Although NJ is at the leading edge of the GEA opportunity (one of only six states in the country), experience from the other states (especially Illinois) suggest that adoption could become widespread. Current evidence suggests that the inclusion of renewable energy in the aggregated supply, in combination with cost savings, is highly feasible. In addition, the inclusion of renewable content may make the GEA offer more sustainable long term. An important trend is that renewable content will typically be more cost effective for consumers if purchased through a GEA-style program than if they attempt to purchase it on their own (from a TPS). This approach has particular significance if linked to local renewable asset development over time, but short term renewable supply may need to be sourced from a broader market to ensure cost savings.

Relevant Implementation Issues

The third question of the study focused on identifying key issues, and where possible, examples of best practice that should be considered in NJ GEA market development.

- 1) **Importance of clear public communication and opt-out process:** a common theme across many interviews was the importance of both strong public communication throughout the process, and clear articulation of the opt-out options for consumers. Several consultants involved with the deployment of these programs emphasized how important this process is, and that a significant part of the work associated with implementation is related to public communication and management of the opt-out

process. Without open and transparent efforts on this front, a municipal GEA initiative can become highly politicized, which is a risk for implementing municipalities. The current GEA process in NJ could benefit from refinements, particularly regarding the utility communication aspects of the program, which currently are confusing (and in some cases harmful) for consumers.

- 2) **Cost vs renewable energy content³**: for townships that want to consider renewable content, a primary design consideration is the balance between cost savings and renewable content fraction. In general, these aspects are inversely proportional, so that increasing renewable content often reduces potential cost savings. Setting GEA design goals regarding how these two factors are balanced is the single biggest question in a renewable GEA program. Several approaches to this design trade-off have been identified:
 - a. Single offer that sets renewable content, lets market set price (and cost savings),
 - b. Single offer that sets desired cost savings, lets market determine maximum renewable content possible at that level of savings,
 - c. Multiple offer design that lets consumers choose between cost-savings or renewable content bundles. As noted below, these “multiple offer” solutions may introduce some advantages (especially regarding political defensibility), but may also create significant challenges related to bid design and consumer simplicity and adoption.
- 3) **Other supply factors (REC source, geography)**: the way in which renewable content is included in the supply is a consideration for some municipalities, and will typically need to be part of renewable offer design. In general, renewable supply is provided through the purchase of RECs (typically class I), and the source of these RECs is a significant factor. Towns could specify a particular type of renewable (wind, for example, or any non-emissions source). The geographic source of the RECs may also be a consideration, with some towns preferring more local content (for examples, RECs generated within the PJM system, as opposed to more remote markets), or even specify use of RECs from a local generation asset. In general, increased specificity regarding these details will limit RFP participation and/or results, and could aggravate the trade-off between cost and renewable content fraction. Also it is expected that this issue will change over time: more remote RECs may offer the best flexibility today, but more local (PJM-connected) sources should increase in availability over time. The most practical approach may be to be relatively unconstrained about these factors in initial offerings, but to plan on tightening sourcing (especially regarding more local supply) as market conditions allow. This will favor broader participation in GEAs with elevated content over narrower participation with more stringent requirements, especially in early stages of program deployment when cost savings are particularly important.

³ Nationally, some communities consider *programs* that may be tied to GEA implementation (or other renewable energy initiatives). For example, offering energy efficiency services as part of the GEA solution, or contributing to a clean energy fund that is used to support local renewable asset development. There is little experience yet in NJ with these approaches.

- 4) **Bid participation impacts:** One of the most important findings from the interviews was how important the design of the offer is to a successful bid, and that if the procurement process is not successful (due to an unreasonably designed offer), the entire GEA program implementation could fail. Developing an offer that is feasible in the market, and which will attract multiple bidders within a competitive context, is one of the most important drivers in offer design. Conversely, if a poorly designed offer doesn't attract sufficient bidders, the competitive rigor of the process could be challenged. The best approach for solving this problem is to engage a knowledgeable and experienced consultant to implement the program.
- 5) **Simplicity vs choice, and impacts on participation (opt in/opt-out designs):** Municipalities can design how consumer choices are implemented within the program. For example, a town could offer a "multiple choice" design that provides a "cost savings only" product (with RPS renewable content levels) as the default (i.e., the offer provided if the consumer takes no action), and offer a parallel 100% renewable product as an opt-in option (as was done in Lambertville/West Amwell). Or the reverse. Or a town could potentially offer three tiers, with a blended cost/renewable offer as the default, and better-savings or higher-renewable-content bundles available as "opt in" options. These multiple-offer designs have the advantage that they allow the municipality to increase the political defensibility of the program through increased consumer choice. At the same time, these multiple-offer designs are more complicated, and early evidence suggests that simplicity is a critical factor in successful offer design. In addition, multi-offer designs can also affect bid viability and reduced competition levels that dilute potential cost savings. In addition, this aspect of the design can affect take-rates, and determine the actual impact a renewable GEA product might have. For example, **a 20% renewable product offered as a default solution (preferably with some savings) will probably have a much larger impact than a 100% renewable product that must be selected through an opt-in choice.** As noted above, market results to date indicate that most consumers will participate in the default option, and adoption is extremely limited for any "opt in" scenarios. Early experience with "opt in" designs in NJ has demonstrated extremely limited adoption, consistent with national experience to date.
- 6) **Political defensibility:** Whatever the offer design, it is critical that the municipality can demonstrate that a competitive process was used in the procurement, and that all consumers in the community have reasonable options. Conversely, being overly "heavy handed" (especially regarding renewable content, at the expense of cost savings) could open the municipality to criticism that could harm the GEA effort. As noted above, multiple-choice offers may increase political defensibility, but early experience indicates that it depends heavily on exactly what kind of multiple-choice offer is used. For example, an offer that provides increased renewable content (but less savings) as the default option, in parallel with a "cost savings plan" as an opt-in option, might be considered *less* politically defensible in some communities.
- 7) **Consumer Awareness:** early experience has demonstrated that public notice, marketing, and consumer awareness will have a critical impact on GEA program results. Several organizations have emerged that could assist with promotion (especially if renewable content is involved), and there may be "cluster impacts" where the results in

one community may influence nearby towns. Put another way, some interviewees expressed the opinion that without a strong public communications campaign, GEA programs could be difficult to implement, especially if an “opt in” choice is part of the consumer decision.

- 8) **Process:** Several interviewees during the study expressed concerns about GEA implementation process, and how important it was for communities to conform with good procurement practice. A GEA program could become a liability for the municipality, or a point of political jeopardy, if not implemented properly. These risks can be proactively addressed as long as good process is employed, and this issue highlights the need for communication of best practice and supporting resources.
- 9) **Longevity:** GEA thrives in the current market because it is possible to offer cost savings compared with existing utility tariff pricing, even when renewable content is included. Given current market trends, it is likely that the pricing headroom between an aggregation offer and utility tariff pricing will shrink, and possibly disappear. There was significant discussion during the study about whether the GEA mechanism had long term viability, and whether changing market factors could affect its adoption in NJ. Ultimately, it became clear that like most other energy related mechanisms, GEA is sensitive to market conditions. It may be more or less attractive at any point in time, and similar cyclical issues apply to other Sustainable Jersey actions as well. As noted elsewhere, there is the possibility that despite reductions in pricing headroom, there are significant other advantages to a GEA beyond just pricing (access to renewable content, consumer protection), and there appears to be significant value in addressing the lack of market support or best practice sharing associated with GEA in NJ.

Summarizing design trade-offs: GEA offer design represents a delicate balance between a) maximizing adoption of renewable content, preferably combined with cost savings, b) ensuring a product that is politically defensible by the municipality, c) ensuring consumer simplicity, and facilitation of strong communication and opt-in/opt-out management, and d) bid viability and assurance of a competitive environment. Two approaches are under consideration by towns in NJ to achieve this balance:

- Single choice solutions, with a single default offer that combines strong renewable content with cost savings. This is probably best achieved by specifying a specific renewable content level (with the fewest restrictions possible) and letting the market set the price so long as it is below current tariff. This is strongly defensible by the municipality since all consumers are realizing cost savings, and the fact that any consumer may opt out.
- If the preferred “single choice” solution is not feasible, then the next best option is a multi-choice solution. In this case, a town could offer a “strong renewable content” product, along with a separate “cost saving only” product. One offering is set as the default, and the other may be opted-in, although realistically, as noted above, the secondary option for which consumers must “opt in” is unlikely to achieve significant adoption. Compared with the “single choice” approach outlined above, this design is far less effective – it is more complicated for the consumer, may be very difficult to

implement through a competitive RFP, and (if the renewable option requires an opt-in) may not result in an actual increase in renewable adoption.

Note that potential “three tier” models, under which consumers are offered a broader array of choices, are not considered a realistic option at this time. Given current market conditions, a solution with more choices becomes extremely difficult to implement through a competitive bid process, since a) pricing depends heavily on volume and adoption assumptions, and b) with multi-tier, multi-choice solutions it is extremely difficult to make reasonable adoption assumptions as part of the supply bidding process.

Summary Of Key Conclusions

The findings of this survey study suggest the following conclusions:

- 1) GEA adoption is emerging in NJ, but there is strong evidence of a sharp increase in municipal interest in the program. The NJ market appears to be in the early stages of rapid growth.
- 2) Evidence from more mature markets outside NJ indicate that significant GEA adoption is possible, and that it could have a significant impact on the energy markets through both cost savings and (potentially) as a mechanism for increasing the use of renewable energy. GEA also offers significant consumer protection benefits (when done well), especially in communities that have fallen victim to aggressive TPS practices targeting individual consumers. Some states, such as Illinois, have experienced such widespread adoption such that the majority of electricity consumption in the residential sector is sold through GEA arrangements.
- 3) There is little experience with renewable energy in the NJ GEA program, as driven by minimal awareness of renewable energy opportunities or knowledge of implementation best practice. There are potentially significant risks from poor implementation, which further highlights the need for better municipal support in this area.
- 4) Despite that lack of market awareness, there is a robust supplier market willing to provide renewable energy products, and a wide range of renewable energy mixes (with varying sources and price points) are possible. Given that supply options are available, and if widespread adoption is accomplished, a renewably sourced GEA program can be a significant market-based enhancement of the existing RPS framework.
- 5) Market data indicates that, depending on product design, BOTH cost savings and increased renewable energy content can be realized in NJ at the current time. While renewable content may cost somewhat more than traditional content when aggregated, in many cases a balanced mix that includes a higher fraction of renewable content (over the RPS) can still be less expensive than default (utility tariff) supply prices. Other markets have demonstrated conditions where renewable content is nearly at cost-parity with non-renewable supply sources.
- 6) A Sustainable Jersey action pertaining to GEA should focus on the renewable energy opportunity, and could have a significant positive impact on the emerging NJ GEA

market. This Sustainable Jersey action, with its supporting education and resource components, could help ensure that municipalities implementing a GEA program with increased renewable energy content would benefit from best current practice and the experience of others.

Recommendations

Based on these findings, we offer the following recommendations:

1. A Sustainable Jersey action, with supporting outreach, education, and resources, should be developed to support towns that want to implement a GEA program with renewable content. This advances sustainable energy goals by growing demand for renewable supply (above the NJ RPS), making renewable energy more accessible and “hassle free” to consumers, and supporting municipalities with best practice guidelines that help avoid pitfalls. GEA programs also offer considerable “consumer protection” benefits, and give consumers access to renewable supply at lower cost, and with lower risk, than they could achieve with a TPS independently.
2. The goal of the Sustainable Jersey effort should be to a) increase awareness of the potential to include renewable content in a GEA program, and encourage the inclusion of renewable energy in municipal GEA offers, b) provide supporting resources to make GEA programs effective, and c) emphasize deployment of best practice and the sharing of learning across communities. Only those GEA implementations that feature elevated renewable content should be recognized by the Sustainable Jersey program. Particular emphasis should be on good procurement practice and implementation processes.
3. Although market adoption of GEA in NJ is in the early stage, there are several trends that can help guide municipal implementation:
 - Strive for a combination of increased renewable content AND cost savings, since this balances both clean energy goals with political defensibility,
 - Sustainable Jersey should strongly encourage the use of a “single choice” design in which a simple default offer includes both renewable content (above the RPS) and savings. If this is not possible, multi-choice designs could be considered but they are far less preferable: they are more complicated, could harm both political defensibility and bid results, and may not result in significant “opt in” adoption.
 - Strong emphasis should be placed on procurement practice, transparency, and public communication. Municipalities will typically benefit from engaging an appropriate contractor/consultant/aggregator to manage the process, and also working with relevant state agencies (BPU, DCA) to avoid pitfalls. Given the early stage of market development, there is a significant opportunity for the development and dissemination of best practice.
 - During initial implementation, offer design should be kept as simple as possible, with minimal constraints that might reduce the renewable content/cost savings

trade-offs. In particular, unless a community is already strongly supportive of renewable energy, use of un-constrained market RECs could be considered, with an emphasis on more local content (or more stringent renewable qualification requirements) introduced over time as the market matures. Decisions about this aspect of design may be driven by very local factors at each municipality.

- This action should be developed as a top priority, and rolled out as quickly as possible. Numerous municipalities are asking for support in this area, and there may be a window of opportunity within which the maximum impact (especially regarding renewable content) may be made.
 - There should be a continued focus on development of best practice related to offer design, including research on alternative designs that provide the maximum adoption of renewable content.
 - Medium term, there is the opportunity to link this new GEA action with a separate action focused on development of local renewable energy assets. These linkages have already started to emerge in Illinois and other states, and market conditions are in place (especially wholesale renewable asset opportunities) for this to emerge in NJ as well.
4. We received significant feedback during this study that a Sustainable Jersey action could significantly impact market use of the GEA program, improve access to, and use of renewable content, and help support effective municipal implementation (particularly regarding process).

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Appendix A: List Of NJ Municipalities Considering GEA

The following NJ municipalities, as evidenced by online articles and notices, have expressed some interest in implementing a GEA program:

1. Barnegat
2. Bayonne
3. Closter
4. Colts Neck
5. Commercial Township
6. Dumont
7. East Windsor
8. Eatontown
9. Glassboro
10. Gloucester Township
11. Haledon
12. Howell
13. Jackson
14. Jersey City
15. Linwood
16. Little Ferry
17. Margate
18. Middle Township
19. Monroe Township
20. Montclair
21. Montgomery Township
22. Newark
23. Newtown
24. Parsippany
25. Paterson
26. Pennsauken
27. Point Pleasant
28. Rockaway Township
29. Stafford
30. Stone Harbor
31. Tenafly
32. Union Township (Union County)
33. Wanaque Borough
34. West Amwell
35. West Orange
36. Willingboro
37. Woodbridge
38. Woodcliff Lake

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