Erie County Low-Income Program for Sustainable Energy (ECLIPSE)

Program Feasibility Report

December 7, 2023

Erie County, NY

Pace University

Sustainable Westchester

Table of Contents

List of Tables

List of Figures

1 Foreword and Executive Summary

With support from the New York State Energy Research & Development Authority (NYSERDA), Erie County launched the Erie County Low-Income Program for Sustainable Energy (ECLIPSE) to provide low- to moderate-income (LMI) households access to renewable energy.

ECLIPSE will feature the establishment of a community energy program to promote delivery of the benefits of renewable energy to LMI households, including savings on the monthly electricity bills of LMI customers. Through ECLIPSE, Erie County aims to reduce household energy burden while curtailing greenhouse gas emissions, consequently alleviating poverty and improving human and environmental health.

This report assesses the feasibility of ECLIPSE to design a community energy program that may incorporate **Community Choice Aggregation** (CCA) offering renewable electricity supply, and **Community Solar**, commonly known as **Community Distributed Generation** (CDG). These programs are subject to different requirements and constraints under New York State Public Service Commission ("Commission" or "PSC") orders.

Considering regulatory and market considerations, this assessment examines Erie County's ECLIPSE design options based on three program variations:

- CCA opt-out electricity supply
- CCA opt-out CDG
- Opt-in CDG

A companion report, *LMI Existing Programs and Opportunities Report: Addressing Energy Burden in Erie County* (LMI Report), evaluated energy burden in Erie County. **Energy burden** describes the percentage of income a household spends on its energy bills. A household is rent-burdened (for renters), or owner cost-burdened (for owners) when residents pay between 30% to 49% of their monthly income towards gross rent or monthly owner costs. Any household that pays more than 50% of their income towards rent or owner costs is considered severely rent-burdened or severely owner cost-burdened.

The LMI Report confirmed that ECLIPSE addresses a pressing issue in Erie County, as utility bills, particularly for electricity and home heating, consume a significant portion of household income, increasing financial hardship, and potentially contributing to poverty. **On average, electricity and gas bills account for an estimated 9.23% of Erie County household budget, compared to only 3.23% nationwide**.[1] At the time of writing of this report, inflation of the price of fuels, electricity, food, and other essentials are further straining low- and middle-income households.

The LMI Report also serves to guide Erie County leadership, staff, and community stakeholders to shape the program's design and integration with other government services. To achieve this, the LMI Report addresses four key objectives in accordance with NYSERDA's requirements:

[1] Erie County Energy Burden — Erie County ECLIPSE Project Utility Burden Maps. Available at: https://storymaps.arcgis.com/stories/6843e812d45e49ddb187c5fa1e7ca1db (accessed December 1, 2022).

- **Defining "low-income" criteria**: The LMI Report outlines eligibility criteria for ECLIPSE and recommends the adoption of a primary eligibility dataset based on household income, aligned with established government program criteria.

- **Review of existing energy and health-related programs**: The LMI Report assesses local, state, and federal energy and health programs serving LMI communities and identifies gaps and opportunities for integration with ECLIPSE.

- **Integration of energy efficiency and renewable energy**: The LMI Report provides recommendations on integrating energy efficiency and renewable energy strategies, such as community solar, into existing programs.

- **Benchmarking ECLIPSE outcomes**: The LMI Report proposes benchmark metrics for greenhouse gas emissions, poverty reduction, and health to assess program effectiveness.

The LMI Report offers several recommendations for ECLIPSE, including:

- **Program Eligibility**: ECLIPSE should initially determine eligibility based on household income, and it may consider adopting New York State's definition of "Disadvantaged Communities" as part of its criteria as the state refines this definition.

- **Primary Eligibility Dataset**: To identify eligible households based on income, the LMI Report recommends adopting a single, comprehensive government dataset. Specifically, the LMI Report recommends adoption of the Energy Assistance Program (EAP) as the primary dataset, or alternatively, the Home Energy Assistance Program (HEAP) should be used as the primary dataset. Supplementary datasets can be used to validate results.

- **Benchmarking ECLIPSE Outcomes**: The report recommends assessing ECLIPSE's impact based on three primary benchmarks: greenhouse gas emissions, poverty reduction, and health. Specific metrics aligned with these goals are suggested and additional benchmark selection through community consultation is encouraged.

This report builds on the companion LMI Report by evaluating the three possible community energy program types that could be offered by ECLIPSE and conducts a functional analysis of the roles and tasks required to implement each. The report is intended to be used by Erie County leadership and staff to evaluate the feasibility of three program options for ECLIPSE based on practical, market and regulatory considerations.

This executive summary is organized as follows:

- Program selection based on regulatory considerations
- Functional analysis of roles and responsibilities
- ECLIPSE program financial performance and market considerations
- Implementation steps and timeline
  Impact metrics for greenhouse gas reductions, energy burden and public health

Program Selection

ECLIPSE should select its initial program offerings as a threshold decision. Program selection is influenced by community needs, market conditions, and regulatory requirements.

The Public Service Commission regulates community energy programs with particular focus on consumer protection, especially those programs offered on an opt-out basis. Importantly, the Commission issued a 2021 order pausing the further approval of opt-out CDG programs, and in 2022 issued a straw proposal that presents opt-out CDG recommendations to help shape future program rules and requirements, including that utility energy assistance program participants (APPs) be prioritized for enrollment, and that opt-out CDG programs provide APPs a minimum 10% bill discount.

Given the regulatory uncertainties resulting from the Commission's pause of further opt-out CDG development, ECLIPSE may proceed with opt-in offering at the present time and may later launch opt-out programs when the Commission clarifies the rules concerning them. Opt-in CDG programs do not require Commission prior approval, however they are subject to reporting requirements.

The traditional community energy program originally approved by the Commission is opt-out electricity supply. At the time of this report, price volatility in the energy futures markets and the cost of Renewable Energy Credits (RECs) that are outside the control of administrators or participating municipalities create significant uncertainties that have frustrated further CCA supply program development. These market dynamics and their impact on CCA expansion are described in section 3.1 of this report.

Until the Commission approves opt-out CDG, developing an opt-out electricity supply product could diversify ECLIPSE offerings beyond opt-in CDG. If implemented, an opt-out supply offering could expand ECLIPSE to benefit non-APP customers, as well as additional APP households if the product guarantees cost savings, as required by the Commission.

Chapter 1 of this report describes the evolution of community energy program regulation in New York, providing further context for understanding the current regulatory constraints.

Functional Analysis of Roles and Responsibilities

For all program types, implementing ECLIPSE program will require building an organizational structure that will carry out its program.

This report analyzes the required organizational structure by identifying specific functions comprising the tasks and roles required to implement ECLIPSE across all possible program types. It then identifies parties that are available to serve in these key roles. The functional analysis allows for different roles to be played by existing government, community, and/or private sector entities, as well as the creation of new entities to support ECLIPSE.

Across program types, the functional roles are largely identical, with only slight variations based on program type. The similarities of roles among program offerings enables ECLIPSE to develop an institutional structure that can accommodate all three program offering types, adapting to changing regulation and opportunities.

The following are the functional roles analyzed in this report for each program offering:

- Administrator
- Outreach Coordinator
- Customer Management/Service
- Data Services

- Auction Platforms
- Technical and Operational Support

Chapter 2 evaluates these functional roles and existing entities by type that could support each role. The chapter details each function's tasks and estimates the staffing requirements for each function. A summary of the functional roles and potential entities by type is summarized in the table below.

Generally, matching an organizational type to each function depends on various factors including core competencies and strengths, specialization, economies for scale, ability to attract and retain staff, and other factors outlined in the report.

The integration of government, community and private sector entities in partnership will define the nature, perception and ultimately acceptance of ECLIPSE by the public it serves.

Roles Matrix

Role	Erie County	Community Organizations	Specialized Providers
Administrator	✓	✓	✓
Hiring/Oversight	✓		
Promoter	✓	✓	✓
Outreach Coordinator	✓	✓	✓
Customer Service Provider			✓
Data Service Provider			✓
Auction Platform Provider			✓

Source: Authors

Program Financial Performance and Market Considerations

Chapter 4 of this report analyzes the financial performance of a potential ECLIPSE program and the market conditions that can affect the program's performance. This analysis adopts high, medium, and low customer participation and retention assumptions for each offering type which in turn inform financial performance projections.

For ECLIPSE programs to be self-sustaining, an opt-in CDG program requires about 1,100 customers to be added each year. An opt-out electricity supply offering would require maintaining a minimum of approximately 80,000 households in the program, and an opt-out CDG program would require maintaining a minimum of 15,000 to 20,000 households. A detailed analysis of ECLIPSE's projected market conditions and financial performance, including household uptake, is located in section 4.4. of this report.

Various market factors will affect the performance of ECLIPSE programs for electricity supply and CDG offerings, including:

Electricity Supply

- For all programs that set electricity rates, the key driver of consumer participation is the difference between past electricity rates and expected future fixed-rate bids.

- A CCA opt-out electricity supply administrator collects an administration fee to cover costs associated with running the CCA. As the number of customers increases, the program will enjoy greater efficiencies of scale. The goal is to develop a fund balance capable of maintaining the fiscal stability of ECLIPSE's CCA programs. For more detail, see section 4.4.1 of the report.

CDG Offerings

- An opt-in CDG requires collecting individually executed agreements, while any opt-out program will potentially allow automatic enrollment of customer groups through participating municipalities authorizing the opt-out offering. To achieve a high-participation scenario, an opt-in CDG program should expect to actively engage in customer acquisition for several years.

- Erie County should seek to leverage its existing interactions with LMI households to subscribe larger quantities of APP customers and/or DAC residents to cost-effectively scale the ECLIPSE program. The 10 municipalities in Erie County that have the largest number of Home Energy Assistance Program (HEAP) participants have a combined 114,600 residential APP household accounts. For more detail, see section 4.1.1, Table 5.

- To serve these 114,600 APP households, ECLIPSE will require about 760MWdc of CDG capacity, generating new demand for solar in and around Erie County.

- Factors that influence CDG supply and influence CDG credit value include federal and state incentives, material and labor supply, utility interconnection approval, and availability of suitable host sites.

- Factors that might influence demand for CDG include the need to contract for CDG capacity one project at a time and, for opt-in CDG, lack of formal municipal involvement in enrollment campaigns and higher cost of opt-in customer acquisition for administrators.

Program Implementation Steps and Timeline

Chapter 5 of this report describes the implementation timeline for possible program offerings.

Establishment of an opt-in CDG program requires at least 3 to 6 months. After the program is established, the lead time from program inception to serving customers is approximately 12 to 14 months for opt-in programs. See section 5.3 of this report.

Opt-out programs require Commission approval, extending the timeline to establish the program from one to two years. Once established and approved, the lead time from program inception to serving customers is an additional approximately 12 to 14 months for opt-out electricity supply and 16 to 20 months for opt-out CDG. See sections 5.1 and 5.2 of this report.

The program establishment should begin with the selection of an ECLIPSE administrator.

For all offerings, key steps include:

- Complete selection of functional roles, including a service platform for customer onboarding and monthly management
- Execute Data Security Agreement with utility
- Engage in outreach and education to eligible customers on an ongoing basis
- Procure CDG or electricity supply through competitive auction or targeted solicitation
- Execute agreements with CDG or electricity suppliers
- Enroll customers
- Provide customer service via call-in and email service

For opt-out offerings, additional key steps (most of which precede operation) include:

- Prepare application to Commission for authorization to act as a CCA administrator
- Prepare and submit a Master Implementation Plan that describes the CCA program
- As part of approval process, Commission publishes State Administrative Procedure Act (SAPA) notice and holds public comment period (3 months)
- Municipalities adopt local CCA enabling law to enable participation
- Once approved as a CCA administrator, execute agreements to serve municipalities
- Submit periodic municipality filings to the Commission

Chapter 5 details the steps required to establish each type of offering.

Performance Metrics

Chapter 6 of this report evaluates ECLIPSE's potential impact in reducing greenhouse gas emissions, alleviating energy burden, and improving public health.

Greenhouse Gas Reductions

Depending on program participation utilizing the high, medium, and low participation scenarios, the table below estimates greenhouse gas emissions reductions in the range of 27 thousand to 130 thousand metric tons of CO_2-eq.

Projected Greenhouse Gas Reductions

Market Scenario	Percentage of Usage Backed By 100% Renewable Energy Certificates (RECs)	Estimated Annual Electricity Usage Backed By 100% RECs (MWh)	Carbon Dioxide Equivalent (Metric Ton Per MWh)	Estimated Annual Carbon Dioxide Equivalent Offset (Metric Ton/year)
High Participation	100%	1,236,261	0.1057	130,713
Medium Participation	75%	659,892	0.1057	69,772
Low Participation	50%	256,781	0.1057	27,150

*Data uses EPA Power profiler data - https://www.epa.gov/egrid/power-profiler#/ which gives CO2 content in a given subregion. The New York State Upstate subregion, NYUP, for 2021 is used for to calculate Carbon Dioxide Equivalent Offset (Metric Ton).

Energy Burden Reduction

To date, the market has not been able to provide opt-out electricity supply that guarantees financial savings for program participants.

Opt-out and opt-in CDG do offer guaranteed financial savings for program participants (customers or subscribers).

For both opt-out and opt-in CDG, this report study models one year of savings that program participants receive for each market scenario analyzed in chapter 4. The study assumes a 10% savings rate on the CDG credits, that is, program participants receive 10% of the CDG credits generated as a monetary savings on their electric bills. It also assumes an estimated customer's total electricity bill rate of $0.15/kWh (covers supply, delivery, and other charges), which was estimated as average for Erie County for 2022-2023.[2] The analysis also assumes a Value of Distributed Energy Resources rate (VDER rate) of $0.09/kWh for the energy produced by the CDG project.[3]

Opt-in CDG offering will provide all program participants with about $400,000 in combined annual savings in a high participation market scenario. The medium participation market

[2] The electricity rate was estimated using National Grid delivery and other charges data, https://www.nationalgridus.com/Upstate-NY-Home/Rates/Service-Rates, and supply data https://www.nationalgridus.com/media/pdfs/billing-payments/electric-rates/upstate-ny/average_prices_ending_march_31_2023.pdf)

[3] The Value of Distributed Energy Resources rate was estimated using the NYSERDA VDER calculator.

scenario will provide all program participants with about $200,000 in combined annual savings, and the low participation market scenario will provide all program participants with about $80,000 in combined savings.

Opt-out CDG savings are speculative at the present time due to Commission reconsideration of rules governing opt-out CDG.

Health Impacts

While the specific public health impacts of a CCA program, with either an electricity supply or CDG offering, may vary depending on the local conditions, several potential benefits that could have positive impacts on public health:

- **Reduced air pollution** using clean and renewable energy sources and reduced reliance on carbon-based energy sources.
- **Lower energy costs** could free up household income for other necessities such as healthcare, which could help promote better overall health and well-being.
- **Improved local economies** by creating jobs in the renewable energy sector and keeping energy dollars within the community. This economic growth could lead to better access to healthcare and other public services, which could have positive impacts on public health.

The companion to this report — *LMI Existing Programs and Opportunities Report: Addressing Energy Burden in Erie County* — provides further analysis of potential metrics that a CCA could adopt to measure its potential impact in improving public health.

Abbreviations

AC	Alternating Current
APP	Assistance Program Participant
CCA	Community Choice Aggregation
CDG	Community Distributed Generation
DC	Direct Current
DER	Distributed Energy Resource
GW	Gigawatt
DPS	Department of Public Service
ESCO	Energy Service Company
HEAP	Home Energy Assistance Program
kW	Kilowatt
kWh	Kilowatt hours
LMI	Low to Moderate Income
MW	Megawatt
MWh	Megawatt hours
NYISO	New York Independent System Operator
PSC	Public Service Commission
REC	Renewable Energy Certificate
REV	Reforming the Energy Vision
VDER	Value of Distributed Energy Resources

2 Evolution of Community Choice Aggregation in New York

Community Choice Aggregation (CCA) in New York State is a municipal energy program authorized under the New York State Public Service Commission CCA Framework Order that allows New York's 1,600 cities, towns, and villages to procure electricity and/or natural gas supply service and distributed energy resources (DERs) for eligible customers within their municipality. To implement a CCA program, a municipality must exercise its Municipal Home Rule Law authority by enacting a local law to act as an aggregator and procure energy services for residents on an opt-out basis. CCA programs are also able to offer energy services on an opt-in basis.

Under New York's Reforming the Energy Vision (REV) (Case 14-M-0101, issued April 25, 2014), the primary vehicle for reforming New York's energy markets, the Commission launched a series of proceedings, among them Community Choice Aggregation, which allows local governments to procure energy supply services for residents."[4]

In 2022 the New York State Department of Public Service staff summarized Community Choice Aggregation in the Straw Proposal as follows:

> Community Choice Aggregation (CCA) is a strategy that allows participating local governments to procure energy supply service and distributed energy resources (DER) for eligible energy customers in the community. It is a municipal model for procuring energy that replaces the utility as the default supplier of electricity and/or natural gas for virtually all homes and small businesses within a jurisdiction. A well-designed CCA program can create benefits for participating communities and their residents, while supporting New York State's clean energy policies and the Public Service Commission's (Commission) efforts to build a cleaner, smarter, and more distributed electric system through the Reforming the Energy Vision (REV) initiative … Access to CCA programs offers residential and small non-residential customers, generally described as "mass market customers," an opportunity to receive benefits that have not been readily available to them in the past, including more affordable or cleaner energy choices through an opt-out enrollment process.
>
> CCA programs have the potential to create opportunities for local, community, and individual engagement on topics related to energy needs, such as innovative energy programs, products, and services that promote and advance local and statewide clean energy goals. Under a CCA program, each municipality intending to implement a CCA program must exercise its Municipal Home Rule Law authority by enacting a local law, after holding a public hearing on notice, giving itself the requisite legal authority to act as an aggregator and broker for the sale of energy and other services to residents via an opt-out enrollment process. CCA Administrators then work with the municipality to procure energy supply services and, for the purpose of this straw proposal, distributed energy resources (DER) for eligible customers within their community… CCA Administrators coordinate and manage the CCA program and are

[4] NYS DPS, *Reforming the Energy Vision, Order Instituting Proceeding* (Case 14-M-0101, issued April 25, 2014) ("REV order" or "REV initiative").

responsible to conduct outreach and education within the community to ensure that customers are aware and informed of their CCA choices."[5]

One feature of the deregulated electricity market in New York State is that investor-owned utilities may not offer fixed-rate (stable) electricity prices. The generation charges for supply incurred by the utilities fluctuate widely across months and are passed on to the customers with a small merchant function mark up. One motivation for CCA was to seek fixed-rate longer term supply contracts to insulate consumer from the monthly volatility of utility supply rates.

Next, we examine briefly how CCA has evolved in New York State to offer historical context.

2.1 Phase 1 — Pilot

Leading up to the REV, over a two-year period from 2012 to 2014, a nonprofit now known as Sustainable Westchester Inc. supported New York State Assembly and Senate passage of enabling legislation for a Westchester County demonstration project of a "Municipal energy aggregation program" (A7896/S05500D). In December 2014, then Governor Cuomo vetoed the legislation, directing the group to instead petition the New York State Public Service Commission for approval.[6]

In December 2014, Sustainable Westchester petitioned the Commission to expedite approval of a pilot program for Community Choice Aggregation (Case 14-M-0564). Two months later, on February 26, 2015, the Commission granted Sustainable Westchester permission to create and administer New York's first Community Choice (Energy) Aggregation program with the issuance of the Order Granting Petition in Part (Case 14-M-0564, *Petition of Sustainable Westchester for Expedited Approval for the Implementation of a Pilot Community Choice Aggregation Program within the County of Westchester*) ("CCA Pilot Order").[7]

Throughout 2015, Sustainable Westchester conducted over 130 meetings with 31 municipalities, of which 25 adopted the local enabling legislation by year's end, representing a market of about175,000 households and small businesses. The steps included asking municipalities to adopt resolutions supporting CCA, seeking a New York State Attorney General opinion that local law is indeed the proper authority to enact CCA, and then circulating the template local law enabling CCA to municipalities for feedback and adoption. The group issued a request to the Commission that it authorize the utilities to release energy data for participating municipalities. Both ConEdison and NYSEG delivered unprecedented consumption data upon request to the pilot to enable the energy supply procurement for the eligible municipalities. Ten suppliers, including four of the most experienced national CCA suppliers, submitted qualifications to bid on the projected energy blocks for the pilot. By end of 2015, the pilot issued a request for proposals to suppliers with a draft electric supply service agreement.

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[5] NY DPS, *Proceeding on Motion of the Commission to Enable Community Choice Aggregation Programs, Straw Proposal on Opt-Out Community Distributed Generation* at 1, 2 (Case 14-M-0224, filed March 29, 2022) ("CCA Straw Proposal").

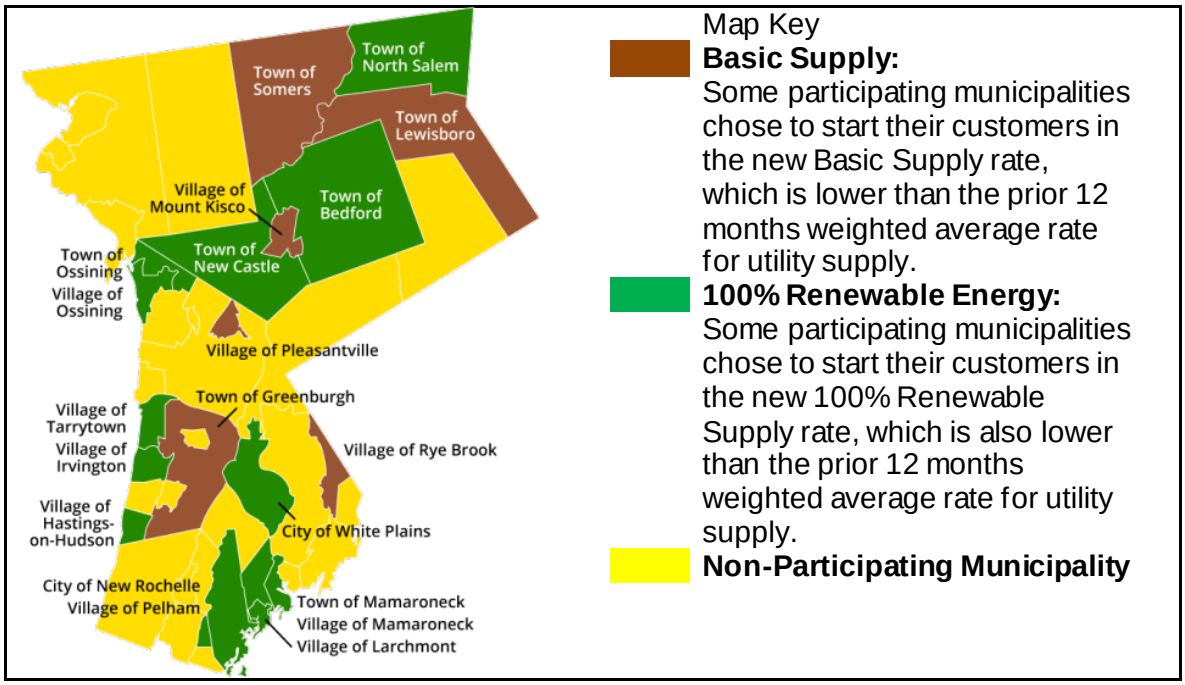
[6] NYS Senate, 2013, Bill A7896, accessed 28 December 2022.

[7] NYS DPS, Order Granting Petition in Part (Case 14-M-0564, issued February 26, 2015) *Petition of Sustainable Westchester for Expedited Approval for the Implementation of a Pilot Community Choice Aggregation Program within the County of Westchester* ("CCA Pilot Order")

Known as Westchester Power, the pilot program completed the bidding process, running parallel bids for both ConEdison and NYSEG utility service territories in early 2016. The pilot program launched in April 2016 with 20 participating municipalities with two-year term fixed-rate supply offerings for both utility territories. Ultimately, 14 of the 20 municipalities chose the 100% renewable energy credit backed supply rate as the default opt-out option for their eligible customers. This launch represents over 71,000 homes and businesses instantly "going green."[8] The required notifications and opt-out period, together with the verifications of participating customers with the utilities took place between April and June.

By year's end, the pilot had successfully launched New York State's very first municipal energy aggregation, serving over 95,000 residential and small commercial customers with 339 gigawatt hours of renewable supply and 66 gigawatt hours of standard supply.[9]

Figure 1: Map of Sustainable Westchester's Pilot CCA Program June 2016



Source: Sustainable Westchester

2.2 Phase 2 — Expansion

In April 2016, just as Westchester Power launched its pilot, the Commission issued the *Order Authorizing Framework for Community Choice Aggregation Opt-Out Program* ("CCA Framework Order").[10] This order encouraged the state-wide formation of community choice aggregations by individual cities, towns and villages or by groups of those municipalities. However, due to Home Rule considerations, the order barred counties from forming such aggregations in the place of its municipalities. As the Local Energy Aggregation Network

[8] Sustainable Westchester's description of Westchester Power as presented to the Westchester Municipal Officials Association, June 17, 2016.
[9] Westchester Power annual reports, Sustainable Westchester website (accessed January 10, 2023)
[10] NYS DPS, *Order Authorizing Framework for Community Choice Aggregation Opt-Out Program* (Case 14-M-0224, issued April 21, 2016) ("CCA Framework Order")

noted, “In New York, a concept called “home rule” gives cities, towns and villages a kind of sovereignty that does not allow counties to make decisions that bind municipalities.”[11]

Under the Framework Order, eligible residential or small business customers may be enrolled on an opt-out basis provided they have not affirmatively elected to be served by either their local utility or another energy supplier. Large institutional, commercial or industrial accounts may be enrolled on an opt-in basis.

Later in October 2016 after receiving petitions seeking clarifications on the Framework Order, the Commission issued the *Order on Request for Reconsideration and Petition for Rehearing* (Case 14-M-0224) (“Reconsideration Order”)[12] which clarified the steps required to form CCAs. The order allows a gradual roll out in larger cities rather than requiring enrollment of all opt-out eligible customers at once. Specifically, the order states, “Municipalities are permitted to run Community Choice Aggregation (CCA) programs in only a portion of their jurisdiction.”[13] In addition, the order adopts certain data protection provisions amending the Framework Order: removal of phone numbers from customer-specific data and removal of the low-income status information from the transfer of customer-specific data after enrollment. Both data sets were deemed unnecessary to the implementation of an aggregation.

Debate over customer protections continued throughout 2017. The Municipal Electric and Gas Alliance (MEGA), a local development corporation supplying energy products and services to more than 30 county governments and more than 250 municipalities and school districts, viewed recent developments as an opportunity to expand their services to households and small businesses in its municipalities directly on an opt–out basis.[14] In response to MEGA’s petition, in October 2017, the Commission issued an order approving MEGA to serve as an administrator for the submitted municipal programs and clarified that a CCA program may serve customers enrolled in the Utilities’ low-income assistance programs provided those customers are provided guaranteed savings.[15] Specifically, the MEGA Order requires:

- Outreach and education in municipalities after contract award and before opt-out enrollment;
- Removal of customer account numbers from customer contact information data sets;
- Compliance filings for CCAs serving Assistance Program Participants (APP) customers;
- Modifications to the Data Security Agreement (DSA) used for CCA program data; and
- Filing of any requests for proposal (RFP) or similar solicitation seeking Energy Service Companies (ESCOs) or other suppliers for commodity supply or any other services.

[11] Local Energy Aggregation Network website, accessed 28 December 2022.
[12] NYS DPS, *Order on Request for Reconsideration and Petition for Rehearing* (Case 14-M-0224, issued October 13, 2016) (“Reconsideration Order”).
[13] NYS DPS, Reconsideration Order at 17.
[14] MEGA website (accessed January 9, 2023).
[15] NYS DPS, *Order Approving Community Choice Aggregation Program and Utility Data Security Agreement with Modifications* (Case 14-M-0224 and 16-M-0015, issued October 19. 2017) (“MEGA Order”)

Concurrently, by early 2018, Good Energy LP sought and obtained Commission approval to expand into New York as a CCA administrator, conditioned on Good Energy adhering to the same customer eligibility and data security provisions contained in the earlier MEGA Order.[16]

In late 2017, Joule Assets petitioned the Commission to serve as a CCA Administrator for municipalities throughout New York, specifically requesting to integrate Community Distributed Generation (CDG) credits — a new credit enabled by New York State solar pricing — and other Distributed Energy Resources into its CCA program offering on an opt-out basis, and in a single utility bill format.[17] In response, in March 2018, the Commission issued an order approving Joule's CCA program with modifications, allowing the administrator to enroll residents and small businesses within approved participating municipalities for CDG subscriptions "without affirmative consent" from individual opt-out Eligible Customers, unless such customers choose to opt-out and not receive CDG credits.

New York State spurred expansion of solar supply by introducing its Value of Distributed Energy Resources (VDER) methodology to price solar electricity from installations under 5 MW AC starting in 2017. VDER provided predictable performance-based payments over the twenty-five-year life of the solar facility.[18] While Community Solar incentive funds lasted, developers also qualified for a NY-SUN adder calculated on an installed capacity size up to 5 MWdc for community solar generation. The CDG VDER credits to be applied to CCA customer bills would be funded from the amount negotiated by the developer and CCA, subject to the State mandated minimum 5% discount.

Beyond the discount to customers, opt-out CDG would offer the additional advantages of providing CCAs with greater pricing certainty and streamline administration by enabling long-term contracts with community solar projects, eliminating the short-term contract renewals of ordinary supply. Further, opt-out CDG could be expanded to offer VDER credits earned by energy storage facilities whether integrated with solar photovoltaic capacity or not, a resource that a supply offering could not access.

Specifically, the Joule Order mandated:

- The ability to integrate an opt-out CDG component into a CCA supply program;
- Quarterly and annual reporting by CDG programs;
- Complying with Uniform Business Practices (UBP) for DER registration; and
- Offering green energy products that meet PSC's Environmental Disclosure Program standards.

In sum, by 2018, the Commission had issued a series of orders responding to individual petitions that authorized a total of four CCA Administrators, each adopting a Master Implementation Plan (MIP), and confirming that the necessary cybersecurity and data privacy requirements will be in place to allow for the safe transfer of data needed to facilitate the CCA program. The Commission had approved service offerings to include opt-out municipal energy supply and opt-out CDG credits.

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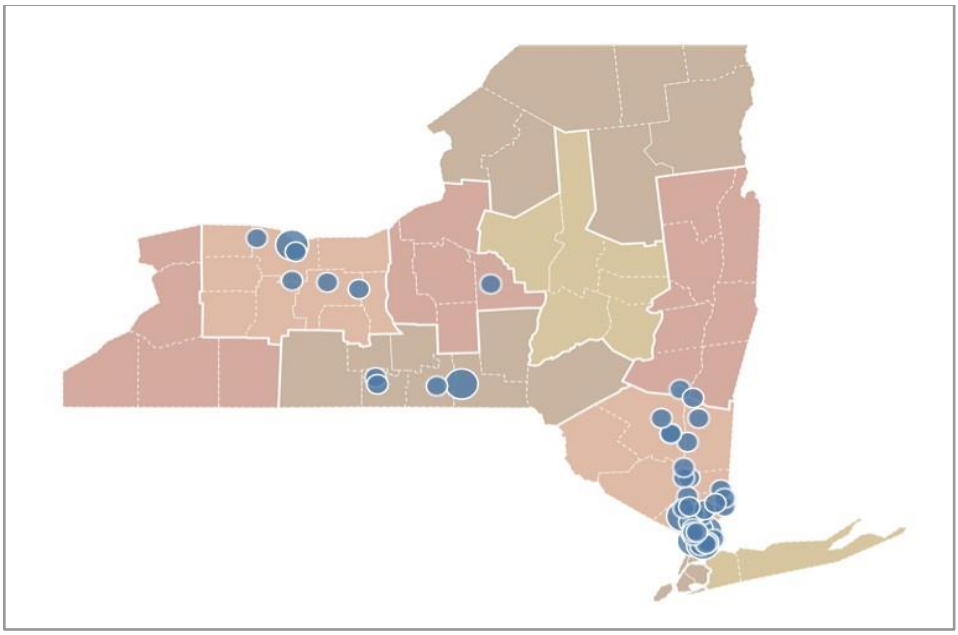
[16] NYS DPS, *Order Approving Community Choice Aggregation Programs With Modifications* (Case 14-M-0224, issued January 18, 2018) ("Good Energy Order").
[17] NYS DPS, Joule Assets cover letter and draft implementation plan (Case 14-0224, filed November 17, 2017)
[18] NYSERDA Value of Distributed Energy Resources website (accessed January 24, 2023)

During this period, New York State enacted forward-looking policies that would further enhance the potential for CCA to expand. The new VDER methodology provided predictable performance-based payments over the twenty-five-year life of solar facilities that developers could leverage to secure financing for new projects.[19]

NYSERDA further encouraged expansion of CCA by publishing a CCA Toolkit for municipalities[20] and awarding points in the Clean Energy Community Program for participating in a 100% renewable default supply and bonus points for opt-out community distributed generation.

The combination of CCA's delivery of a ready market for the electricity through opt-out subscription of households, VDER-driven debt-financing enabling new solar projects, and promotion to municipalities through NYSERDA's Clean Energy Community Program positioned CCAs for growth.

Figure 2 NYSERDA's Clean Energy Communities CCA Participants



Source: NYSERDA Clean Energy Communities Map (accessed February 2, 2023)

By end of 2021, CCAs were operating in 70 participating cities, towns and villages, serving almost 230,000 customers. These municipal programs were administered by one of the four Administrators approved to date by the Commission. See *Table 1*.

[19] NYSERDA Value of Distributed Energy Resources website (accessed January 24, 2023)
[20] NYSERDA Community Choice Aggregation Toolkit website (accessed January 5, 2023)

Table 1 New York Community Choice Programs 2021

	Municipalities with active programs	Customer accounts participating
Total number of participants	70	229,512
Participants in Electricity Standard Supply	21	23,507
Participants in Electricity REC backed Supply	48	205,523
Total participants in Electricity Supply	69	229,030
Participants in Gas Supply	1	466
Participants with CDG Credits	2	1,597
Source: Adapted from the 2021 Annual Reports from Sustainable Westchester, Joule Assets, MEGA CCA and Good Energy, filed with NYS DPS under Case *14-M-0224*.		

For a list of all the approved CCA Administrators and their aggregations and product offerings, see Appendix 3 CCA Administrators and Aggregations in New York (2022).

2.3 Phase 3 — Variations

As interest grew, the Commission began receiving an increasing number of inquiries and requests for clarifications concerning CCA. In response, the Department of Public Services staff prepared a White Paper assessing the state of CCA, reviewing both challenges and successes, and recommending potential future development options. Issued on April 2021, Staff White Paper made several recommendations, principally:

- Standardize CCA program filing requirements;
- Streamline the filing process;
- Modify existing requirements eliminating the data access fees charged by utilities to CCA programs;
- If a CCA intends to provide a new rate structure, the CCA Administrator must submit a filing to Staff, for approval showing how it will benefit the customer;[21] and
- Integrate opt-out Community Distributed Generation into Community Choice Aggregation.[22]

The same month the Staff issued the White Paper, the Commission received petitions from Ampion and Upstate Power (an affiliate of Delaware River Solar) for approval to offer opt-out

[21] NYS DPS, *Department of Public Service Staff White Paper on Community Choice Aggregation Programs* (Case 14-M-0224, filed April 14, 2021) ("Staff White Paper")
[22] NYS DPS, Staff White Paper, at 7.

Community Distributed Generation within proposed Community Choice Aggregation programs.

Ampion's petition requested approval "for a Community Choice Aggregation ("CCA") program featuring opt-out Community Distributed Generation ("CDG") as the sole initial offering of the program to participating municipalities."[23] Ampion did not contemplate offering supply, which had been the product solely permitted in the original CCA Framework Order of 2016. While the 2018 Joule Order allows a municipality to offer opt-out supply with opt-out CDG, Ampion requested a stand-alone CDG-only offering, a program path not yet authorized in any prior Commission order.

The Upstate Power petition requested approval for "a CCA Program which primarily features opt-out Community Distributed Generation ("CDG") and which maintains a particular focus on increasing participation by low- and moderate income ("LMI") customers in CDG." Upstate Power would "offer a more traditional opt-out ESCO commodity supply product, and other value-added products, if desired by participating municipalities."[24] Where the Joule Order authorized a CCA to offer supply with a potential for CDG, the Upstate Power request reversed the relationship: opt-out CDG with potential for supply "if desired".

In August 2021, in response to interest by Westchester municipalities, Sustainable Westchester petitioned to expand Westchester Power by adding an opt-out CDG offering to its existing supply offerings. The opt-out CDG offering would prioritize serving Westchester County's very sizable low- to moderate income population for guaranteed savings, who were otherwise ineligible for the program's fixed-rate supply offering.[25]

In these petitions, the Commission was asked to approve very different models of aggregation: one using a stand-alone CDG-only offering (Ampion), a second that started with CDG but may potentially add a traditional supply offering (Upstate Power), and a third that already offered traditional supply and proposed to add a CDG offering (Westchester Power).

2.4 Phase 4 — Pause

In November 2021, with three pending petitions and others preparing to petition, the Commission announced a pause in its review process "to properly develop the appropriate program operation, oversight, and enforcement rules to ensure a successful opt-out CDG program." The Commission would not approve opt-out CDG offerings within CCA programs "until these programmatic rules are established."[26]

The Commission explained in essence that opt-out CDG required further development before launch:

> "[I]t has become apparent that the CDG specific requirements, previously mentioned and established in the Joule Order, were minimal and that additional program requirements and rules, as well as such things as technical functionality related to the

[23] NYS DPS, Ampion Petition, at 1.
[24] NYS DPS, Upstate Power Petition, at 3.
[25] NYS DPS, *Petition for Approval* (Case 14-M-0224, et al., filed August 11, 2021) (Sustainable Westchester Petition).
[26] NYS DPS, *Order Identifying Further Procedural Steps Regarding the Development of Opt-Out Community Distributed Generation* (Case 14-M-0224, issued November 22, 2021) (CDG Procedural Order, commonly known as the "Pause Order").

transfer of data, require further development prior to the establishment of a statewide opt-out CDG program."[27]

The Commission concluded by ruling that: "neither the Commission nor Staff will approve additional opt-out CDG implementation plans, whether integrated with a CCA program or standalone, until further Commission action is taken."[28]

To guide CDG rulemaking, the Commission ordered the Staff to prepare a proposal for opt-out CDG program operation, oversight, and enforcement within 120 days.

Also, in March 2022, after extensive stakeholder engagement, the Staff responded, as directed by the Commission, by issuing the *Straw Proposal on Opt-Out Community Distributed Generation* (Straw Proposal) that consolidated recommendations based on its experience across three related case matters before the Commission: [29]

- Case 14-M-0224 providing the underlying CCA Framework Order fostering municipal energy aggregations;
- Case 15-E-0082 seeking to develop the net metering innovations and requirements needed to accelerate the sharing of distributed energy resources; and
- Case 19-M-0463 recognizes the urgency of consolidated billing to encourage participation and achieve economies of scale with customer enrollments.

The Straw Proposal recommended that CCAs enroll CDG eligible customers into CDG aggregation on an opt-out basis. Specifically, these CDG eligible customers would include current electricity customers served by CCA electricity suppliers, the utility or other ESCOs, including those with ESCO blocks on their utility accounts, time-of-use rate customers and the utility's Assistance Program Participant (APP) customers.

The Staff's analysis further recommended that APP customers receive priority for enrollment within a municipality's opt-out CDG offering. The proposal recommends a minimum discount of 5% for non-APP customers be maintained with a minimum of 10% for APP customers. The proposal made additional recommendations regarding CCA administrator fees and reporting, recognizing differences between supply and opt-out CDG offerings.

In January 2023, the Commission issued its *Order Modifying Community Choice Aggregation Programs and Establishing Further Process* that adopted in revised and clarified form many of the proposed changes discussed in the Staff White Paper of April 2021.[30] The January 2023 order provided standardized templates and reporting forms, and required quarterly reporting, among other requirements. It did not, however, resolve issues concerning opt-out CDG raised in the Commission's November 2021 Pause Order or lift its stay on CDG petitions and approvals.

One of the most significant outstanding challenges to scaling CCA has been the failure to achieve consolidated billing. Several years after consolidated billing was required by the

[27] NYS DPS, Pause Order, at 9-10.
[28] NYS DPS, Pause Order, at 14.
[29] NYS DPS, *Department Of Public Service Staff Straw Proposal On Opt-Out Community Distributed Generation* (Case 14-M-0224, issued March 29, 2022) ("Straw Proposal")
[30] NY DPS Case 14-M-0224, Proceeding on Motion of the Commission to Enable Community Choice Aggregation Programs, *Order Modifying Community Choice Aggregation Programs And Establishing Further Process* (filed January 19, 2023) ("Modifying CCA Order").

Commission, CCAs still operate requiring each customer and the solar farm to enter into a separate transaction from the customer's monthly utility bill payment, even though the utilities process the initial VDER payment that creates the customer's savings. In December 2019, the Commission adopted procedures mandating community distributed generation credits be reflected on customer bills using a net crediting model for all utilities in New York,[31] and ordered the utilities to prepare implementation plans for the consolidation of the community solar credits and collection onto their existing bills, a move widely praised by the solar development community. Yet, while consolidated billing is authorized for both opt-in and opt-out aggregation programs, the utilities have still not fully implemented consolidating billing, having experienced myriad problems upgrading their accounting and billing systems or other barriers.

Notwithstanding these issues that the Commission correctly recognizes require urgent resolution, since the Pause Order of November 2021, no new aggregations have been launched. Without regulatory certainty about any expansion beyond the supply offering, the existing and prospective CCA administrators and their CDG developers have been in an uneasy holding pattern to maintain their organizations and commercial relationships. Those few CCAs that did receive the Commission's approval for implementation of an opt-out CDG offering prior to the Pause Order needed a year or more for the pre-launch preparatory groundwork.

At the time of the issuance of this report, the Commission has not yet issued the revised CCA Framework Order to include opt-out CDG based on its incorporation of recommendations from the Straw Proposal and subsequent stakeholder engagement. Potential CDG capacity requires a relatively long lead time for all the stages of project development, often two to three years. The longer that the status of opt-out CDG remains uncertain, the further into the future any new CDG development will be pushed.

The Commission's CCA Framework Order and other significant orders authorizing and regulating CCA programs in New York State are listed in Appendix 1 New York State Community Choice Aggregation Orders 2015-2022.

[31] NYS DPS, *Order Regarding Consolidated Billing For Community Distributed Generation* (Case 19-M-0463, issued December 12, 2019) ("Bill Consolidation Order")

3 Program Paths and Roles

This chapter analyzes potential ECLIPSE program paths and roles. It also identifies the specific functions common to community energy programs and evaluates how those functions might be organized and allocated among different potential stakeholders.

A community energy program is defined broadly to include an opt-in or out-out community choice aggregation for delivery of energy supply, distributed energy resources, or an opt-in community distributed program outside of a community choice aggregation.

Accordingly, the analysis in this chapter uses "community energy program" as an umbrella term referring to any combination of the opt-in or opt-out energy offerings. An opt-out offering can only be hosted by an approved community choice aggregation (CCA) program within an enabled municipality. An opt-in offering may be hosted either by a community choice aggregation program or other program without any municipal enablement or involvement.

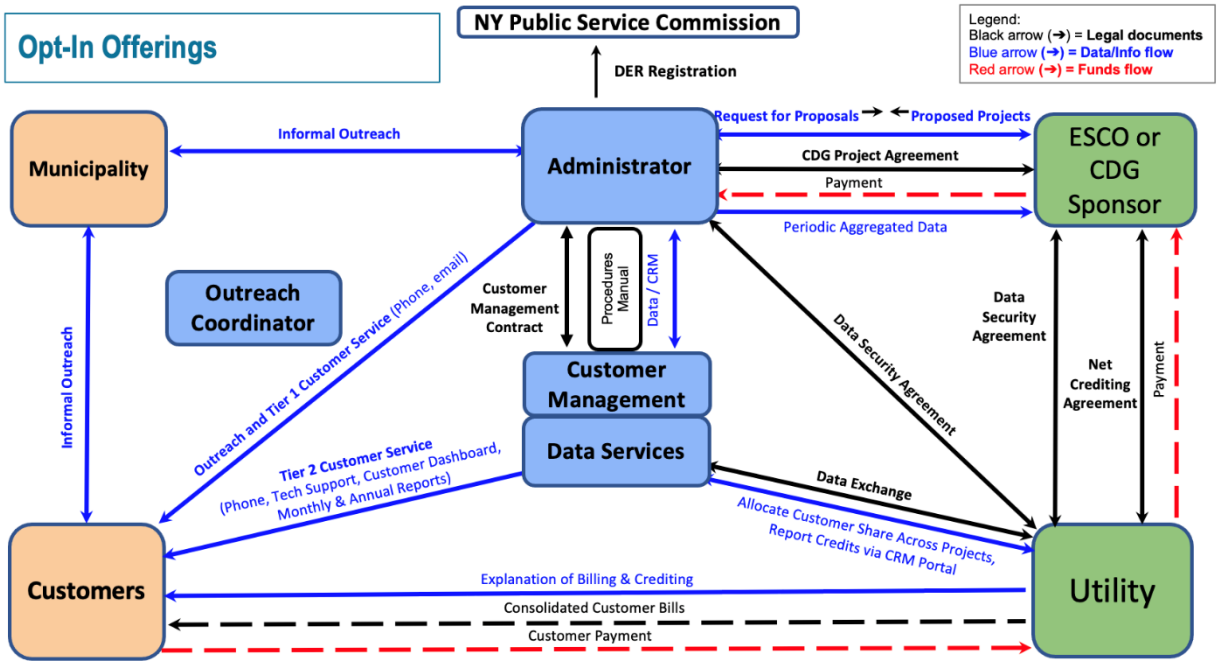
Where differences exist in functional roles or key processes between either opt-out and opt-in offerings or between energy supply and community distributed generation offerings, we explain those differences in the analysis below.

The stakeholders in a community energy program include local governments, community organizations, and service providers, encompassing both commercial and non-profit service providers, as well the customers as the end users.

Based on the requirements of each program function, we evaluate how different stakeholders might support specific functions most effectively. For each function, the report inventories required skills, and evaluates general categories of stakeholders based on their characteristics to identify potential matches between required skills and stakeholder characteristics. Because our analysis is generalized by type of stakeholder, we do not analyze specific candidates from among community organizations, community organizations, or commercial or nonprofit service providers.

The functions analyzed in this chapter are illustrated in Figure 3 below, showing the roles common to community energy programs, e.g. offering electrical supply and/or community distributed generation credits, on an opt-in basis.

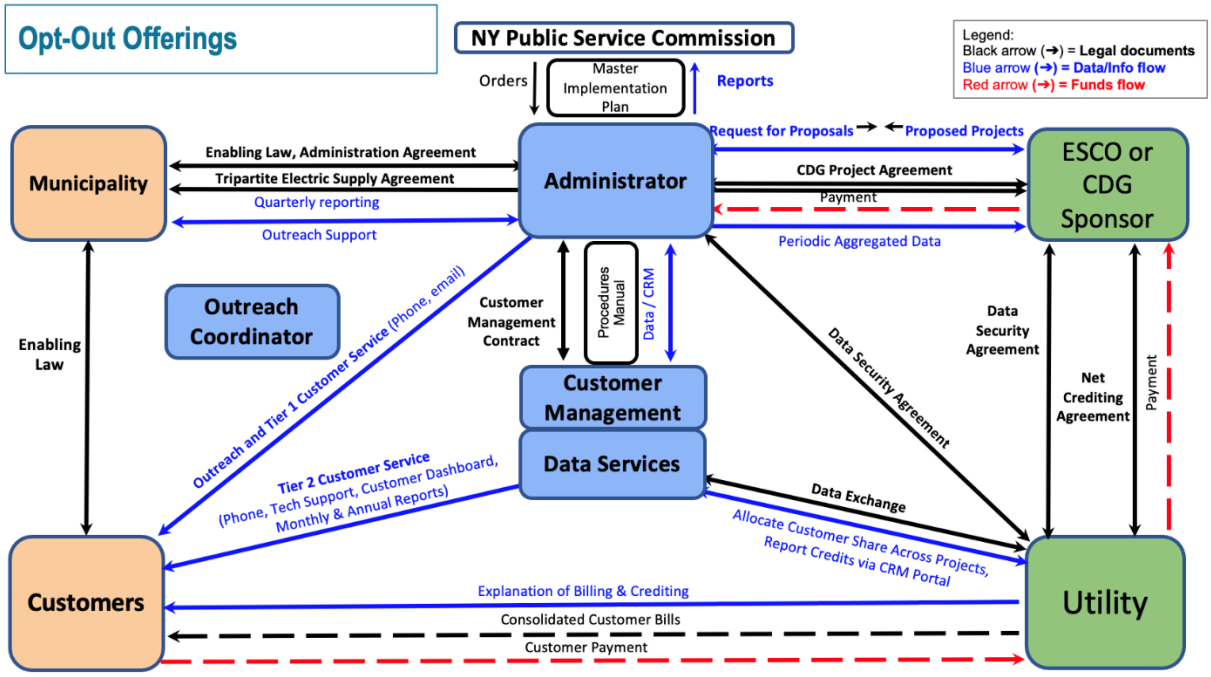
Figure 3: Community Energy Program Roles for an Opt-in Basis



In Figure 4 below, the functional roles are depicted for a community energy program that offers an opt-out product under a community choice aggregation model. The engagement with the Public Service Commission and Department of Public Service is more rigorous, requiring approval of a detailed implementation plan, as well as with the local municipalities, requiring adoption of a local law enabling the opt-out aggregation as a default setting for all eligible customers. In the figures in this chapter, ESCO or CDG Sponsor refer to energy service suppliers as well as community distributed generation sponsors such as community solar developers.

Both models assume a consolidated utility bill as ordered by the Commission.

Figure 4: Community Choice Aggregation Roles on an Opt-out Basis



As reflected in the diagrams above the majority of the functions are similar or identical for opt-in and opt-out community energy programs, provided, however that only eligible, CCA approved municipalities will have the ability to offer opt-out programs. As a result, the same staff members can support both opt-in and opt-out programs with appropriate training. This enables economies of scale and diversity of community energy offerings.

3.1 Community Energy Program Functions

This section summarizes the functional roles required to operate a community energy program and evaluates the requirements for carrying out these roles, including an inventory of required skills.

These roles are as follows:

- Administrator
- Outreach Coordinator
- Customer Service
- Data Service
- Auction Platform (for community choice aggregation of energy supply)
- Technical and Operational Support

3.1.1 Administrator

The Administrator serves as the coordinator and party with overall accountability to the Commission for the operation of the community energy program.

The Administrator plays a number of important roles requiring a broad skill set. Given its centrality, it must be institutionally robust as it shoulders legal responsibility to the State and consumers.

The Administrator manages the community energy program, engages with municipalities, procures energy services, oversees customer fulfillment, manages suppliers, and performs responsibilities outlined in Commission orders and other Department of Public Service requirements.

Additionally, the Administrator is responsible for complying with Data Security Agreements executed with the utility and the suppliers.

For an opt-in community solar program, the Administrator also serves as coordinator between developers and communities and is accountable for compliance with Commission rules. For an opt-out community choice aggregation program, the Administrator prepares and submits a petition to act as an administrator with an accompanying Master Implementation Plan to the Public Service Commission, a subsequent municipal filing for each participating municipality to the Department of Public Service, and adheres to the approved Plan throughout the life of the program.

To administer any program offering (opt-in or opt-out) community distributed generation (CDG) benefits, the Administrator must register as a Distributed Energy Resource (DER) provider with the Public Service Commission and submit annual and triannual reports.

For opt-out offerings, the Administrator submits quarterly and annual reports for each community energy program offering to the Department of Public Service to comply with applicable orders using approved templates.

The Administrator's outreach, customer, and data services may be performed by itself or by one or more subcontractors, each of which is a specific function analyzed separately further below.

In summary, the Administrator function involves the following duties:

- Manage relationships with participating municipalities, including onboarding
- Conduct transparent and equitable solicitation for the desired energy services
- Negotiate and conclude contracts with municipalities, suppliers and service providers
- Monitor performance of contracts with municipalities, suppliers and service providers
- Ensure community outreach and customer service functions are fulfilled
- Submit required reports and compliance documentation to New York State

The Administrator should possess the following attributes:

- Strong financials to ensure continued operations under varying market conditions
- Capacity to evaluate risks and negotiate contracts with counterparties
- Strong accounting and compliance systems
- Strong understanding of Department of Public Service and Public Service Commission practice and requirements
- Strong relationships with municipalities throughout Erie County

- Personnel devoted to monitoring and analyzing electricity and solar developments, procurement of energy services, customer service and municipality relations management

To carry out its core duties, excluding functions that can be separately subcontracted to third parties, the Administrator could maintain a staff of 1 to 4 dedicated full-time staff with deep subject matter expertise. If the Administrator is supported by a technical and operational service provider that provides administrative functions as further described below in Section 3.1.6, a single employee can staff Administrator functions and supervise the service provider. Should a program offer more than one product, such as opt-out electricity supply and opt-out community distributed generation, the Administrator would likely require 2 to 4 staff. As these programs expand in quantity of customers served, staffing would also need to be scaled appropriately to workload.

3.1.2 Outreach Coordinator

Community energy programs typically employ an Outreach Coordinator who engages with municipal officials and community-based organizations to accomplish this work.

Multiple forms of outreach and education are recommended, and for opt-out offerings, must include in-person meetings per DPS CCA Program Rules.[32] Forms of outreach and education may include:

- Webinars enabling participants to ask questions
- Tabling at community events
- Media advertisement about the product, via local radio, television, or newspaper
- Posters or print media placed in public locations, such as community centers

Community solar offered on an opt-in basis is not subject to the same outreach and education requirements as an opt-out offering, which has implications for program costs described further in Section 5.4 of this report. Nonetheless, the opt-in offerings often require active and time-consuming marketing and outreach efforts to successfully enroll the needed customers.

For opt-out offerings, after the initial program approval, subsequent outreach steps are also subject to review and approval by DPS Staff. For example, the Outreach Coordinator must document the outreach and education activities using approved templates and provide these with the municipal filing submitted to the Department of Public Service to request opt-out enrollment of eligible customers. For opt-out offerings, the Administrator must perform outreach and education for a specified duration to inform opt-out eligible customers about the program, products offered, contract terms, rates or savings generated, and how to opt out.

In summary, the Outreach Coordinator involves the following duties:

- Perform outreach and education within municipalities
- Assist municipalities to adopt local law enabling Community Choice Aggregation
- For opt-out offerings, prepare and submit filing for each participating municipality

[32] NYS DPS Community Choice Aggregation Program Rules, March 2023 (Case 14-M-0224, Accessed August 1, 2023)

The Outreach Coordinator should possess the following skills:

- Ability to communicate with multiple stakeholders, principally municipal officials, community-based organizations, and eligible customers
- Ability to understand community energy products, process, and timeline and be able to explain this to eligible customers
- Ability to coordinate public meetings and other events
- Ability to track and record outreach and education efforts

The Outreach Coordinator may be part of the Administrator's internal team or may be subcontracted. For example, Sustainable Westchester has primarily employed in-house staff to fulfill the outreach coordinator role, but has also leveraged assistance from municipal officials and community-based organizations to disseminate information. Other Administrators have subcontracted the work to external organizations, including community-based organizations. The ECLIPSE Administrator would need to decide whether to have in-house staff to fulfill this role, outsource the role, or operate using a hybrid model. This decision would consider staff availability and other resources available to the Administrator.

Regardless of whether the outreach coordination is performed by the Administrator or subcontracted to a third party such as a community organization, the duties require seasonal support by either a part-time or full-time employee(s) that can assist with outreach activities. The time required to support outreach will depend on the number of municipalities and number of participating customers.

3.1.3 Customer Service

A customer service function is essential to the community energy program's operation. Either the Administrator or a subcontractor must provide effective and timely responses to inbound calls and messages from community members.

For opt-in programs, customer service is an ongoing steady responsibility that may increase during enrollment campaigns.

For opt-out offerings, opt-out eligible customers will have questions after hearing about the program from public meetings or other outreach activities. During the opt-out period, the customer service provider must process opt-out or opt-in requests from customers who received notification letters. Customers may require help with product selection during this period. The provider should be prepared for a high volume of calls and emails during this period. After the opt-out period, the provider will continue to process product participation requests or answer questions from community members. The provider will respond or direct the customer to the appropriate entity for assistance, e.g., the data service provider, the supplier, or the utility.

In summary, the Customer Service function involves the following duties:

- Managing phone and emails
- Communicating customer changes to Administrator
- Tracking and troubleshooting opt-out and opt-in requests, and documenting complaints
- Fulfilling ongoing customer requests, reallocations, and replacement

The Customer Service function should possess the following skills:

- Ability to procure on a continuous or phased basis electricity supply or community distributed generation credits
- Ability to manage data for customers participating in multi-supplier offerings
- Ability to respond to high volumes of customer inquiries occurring periodically
- Ability to understand the community energy product and processes, and communicate with customers about the offering

Regardless of whether the Customer Service function is performed by the Administrator or subcontracted to a third party, the duties require an estimated 0.5 to 1 full-time or seasonal employee solely dedicated to customer service. As context, for opt-in offerings, a single employee can support a program of several thousand customers. For opt-out offerings, a single employee can service a program of 30,000 to 50,000 customers. During the opt-out periods when the Administrator experiences unusually high customer inquiry volumes, Sustainable Westchester has temporarily reassigned staff from other programs to assist with customer service.

3.1.4 Data Service

Community energy programs handle large volumes of sensitive data, including customer names, addresses, electricity account numbers, and energy usage information. The data must be securely managed and used only to operate the program. The community energy program will require data security infrastructure and protocols that protect the program's databases.

The program will need a database and platform to manage customer data and perform its operations, including:

- Process opt-out, opt-in, and change in product requests
- Track customer and matched suppliers for community distributed generation
- Manage customer replacement for community distributed generation projects

In the case where the Administrator contracts with data service providers with specialized technology capabilities to provide a secure platform for the storage and handling of data, both the Administrator and data service provider must enter into a Data Security Agreement with the utility. Any data service providers must follow all required data security measures of both the utility and Administrator. All data exchanges between the Administrator, the utility, and data service providers should be encrypted and securely transferred. All reporting information made available to the public must meet privacy standards established by the Public Service Commission.

The data service providers will handle data exchanges with utilities and suppliers as necessary for customer enrollment and management. A program with both supply and community distributed generation offerings may choose different providers for the data service for each offering but the data security compliance standards remain the same for any provider.

Access to the data platforms should be limited to appropriate staff of the Administrator and data service provider with secure, unique user accounts. The data platforms may also feed information to a password- protected customer dashboard, accessed through a program

webpage, which provides verified participating customers with access to their account information.

The Data Service function involves the following duties:

- Provide data security infrastructure and compliant protocols to protect data
- Provide web-based database and platform to manage customer data

The Data Service provider should possess the following skills:

- Ability to provide data security infrastructure and protocols to protect data
- Ability to handle large volumes of data securely
- Ability to handle all operations in an efficient time-sensitive manner, e.g. customer status change, compliance reporting, etc.

3.1.5 Auction Platform for Electricity Supply

For electricity supply contracts, the acquisition of electricity supply is typically sourced through the invitation of bids from qualified companies. The employment of an auction platform greatly reduces the time required to conduct auctions.

Auction platform providers leverage their technology across multiple customers and service territories enabling delivery of these services on a cost-competitive fee basis.

Given the potentially volatile nature of energy supply markets, the Administrator is greatly advantaged by engaging an auction platform provider to support the acquisition of electricity supply from wholesale markets. Online platforms provide real-time pricing for multiple contract lengths, e.g. 12, 18, 24, or 36 months, and for different supply products, e.g. such as standard grid mix and 50% or 100% renewable energy credit-backed supply.

The Auction Platform function for sourcing supply involves the following duties:

- Providing and maintaining a software-based auction platform
- Providing IT support and training for end users
- Reporting for management and compliance purposes

The Auction Platform provider should possess the following capabilities and characteristics:

- Maintaining a state-of-art real-time pricing platform that is intuitive to use for both buyers and sellers and performs without disruption or data loss
- Ability to handle large volumes of data securely
- Possessing a widely used platform, offering network advantages, and ensuring greater participation by sellers

While an auction platform is essential for electricity supply, conversely, the Administrator does not need an auction platform for the solicitation of community distributed generation asset capacity from project sponsors. For community distributed generation, the solicitation of capacity typically remains open on an ongoing basis, inviting community distributed generation sponsors to submit projects that need to enroll customers as those projects are developed. The sponsors typically will submit projects to the Administrator after reaching interconnection agreement with the local utility, which defines the maximum project size, and after executing a contract with the site host, securing access to the project site.

For community distributed generation, the existing Administrator's staff should be able to manage the ongoing solicitation and negotiation of service agreements. Accordingly, outsourced auction platform and the in-house community distribution generation solicitations function both require no additional staff positions.

3.1.6 Technical and Operational Support

With the growth in the community energy market, certain specialized service providers are expanding their services to include technical and operational support that is customized to the needs of an Administrator, supporting and even training the Administrator in their role, eventually resulting in the Administrator expanding its capability and scope, and the technical and operational support provider's role reducing. The flexibility of technical and operational support services makes it both unique and capable of customization.

Technical and operational support providers maintain staff with specialized skills that will be engaged in the provision of a range of community energy program services, which could include discrete functional roles like data services and range to full-service administrator services. Because the technical and operational support consultant will be providing these services to multiple community energy programs, it can maintain and leverage its staff cost-effectively for small programs, including those that are at inception.

Technical and operational support services are presently offered on a negotiated basis. Compensation may be structured on a fee-splitting basis, which allows for the costs to scale with program size and revenues, or possibly on a fixed-fee basis.

The evolution of these service providers makes it possible to secure a technical and operational support service provider to augment an Administrator who maintains a small staff of 1 or more persons. The technical and operational support services can be tailored to the specific staffing of the Administrator, and, importantly, can be adjusted over time as the Administrator's staff develops capacity and expands or reduces.

The function should be evaluated in relation to its potential to launch and operate a community energy program within budget parameters established by expected program revenues, which may start small at the beginning and increase as additional municipalities and residents embrace ECLIPSE.

The potential advantages of introducing a technical and operational support function include:

- Custom support tailored to the specific needs of the community energy program
- Train and develop capacity experientially with ECLIPSE Administrator's staff

Possible risks of technical and operational service providers could include:

- Limited experience with this approach due to its recent appearance in the market
- Potential for a technical and operational service provider to become entrenched in its role, making a desired transition difficult to achieve, due to dependence or the service provider not cooperating as planned in transition and diminution of their role
- Dependence on the technical and operational service provider, which could impact a community energy program adversely if the service provider were to go out of business, discontinue services, increase the cost of services, or lose key employees

- Loss of technical and operational service provider in that role could impact working relationships for other separate services provided, such as data service and customer management

Additional considerations in evaluating technical and operational support service providers should include:

- Financial stability of the service providers
- Business model and strategy of the service provider and how that aligns with the proposed business model and ECLIPSE objectives
- Fee arrangements relative to the community energy program budget

3.2 Stakeholder Candidates for Functions

This section evaluates the potential for government organizations, community organizations and commercial service providers to serve the functional roles comprising a community energy programs program. The discussion below applies to both opt-in and opt-out scenarios, except where specified otherwise.

3.2.1 Government Entities

Government entities could play a role in organizing a community energy program, either on a county-wide basis or on a municipality-wide basis, and on either an opt-in and/or opt-out basis.

Because ECLIPSE is a county-wide program, this analysis evaluates Erie County as the appropriate county-wide organization that could organize a community energy program. The county-wide program proposed by ECLIPSE offers economies of scale, whereas individual municipalities organizing their own programs would be duplicating effort and resources. In addition, economies of scale play an important role in attracting favorable bids; larger energy blocks tend to attract better rates.

Erie County is both a logical choice and the only government agency that can act county-wide. There are several variations in which Erie County may play a role in organizing the program:

- Erie County serves as Administrator of the community energy program and collects administration fees
- Erie County hires an existing third-party Administrator to administer the ECLIPSE community energy program
- Erie County creates or promotes the creation of a new independent legal entity to serve as Administrator to administer the ECLIPSE community energy program
- Erie County creates or promotes the creation of a new independent legal entity to subcontract or partner with an existing Administrator

Focusing our analysis on Erie County's role, these variations can be further simplified as Erie County either (A) acting as the administrator, or (B) outsourcing the role, remaining engaged as the hiring and oversight body, and (C) promoting creation of an independent body to act as an Administrator or outsource and oversee a third party in that role.

The sections that follow analyze each of these three roles.

3.2.1.1 Erie County as Administrator

Erie County acting as the Administrator offers the advantages and possibly disadvantages of a government agency seeking to promote a common county-wide structure among municipal governments to promote clean energy programs.

The advantages of Erie County playing the role of the Administrator could include:

- A strong financial and organizational structure
- Established relationships with municipal governments to promote the program
- Being local — full intuitional integration within the Erie County community
- An opportunity to advance mission to enhance the well-being of Erie residents
- Potential synergy of ECLIPSE community energy program activities with other County programs

Possible disadvantages of Erie County playing the role of the Administrator could include:

- Potential constraints imposed by a government agency entering into market transactions on behalf of municipalities and residents
- Changes in policy driven by politics or budgets considerations

Additional considerations in evaluating Erie County's playing the role of the Administrator should include:

- Ability to attract, retain and allocate 1 to 4 full-time staff to perform administrative functions, with the number of staff scaling based on product offerings and size of customer base
- Erie County's willingness to bear risks associated with entering into market transactions with all the attendant risks for non-performance and litigation

3.2.1.2 Erie County as Hiring and Oversight Agency

Erie County acting as hiring and oversight agency would provide the county with a level of insulation between itself and market transactions with households and suppliers. It would, however, replace that role with a different role of selecting, engaging, and monitoring a third party to play the role of Administrator. This potentially establishes the legal relationship of principal-agent relationship between Erie County and the Administrator. As a principal, Erie County can still be held liable for actions of an agent and has the duty to properly monitor and supervise that agent in undertaking their duties. Monitoring the actions of a third party can be inherently difficult and would require staff time and protocols to supervise.

The advantages of Erie County playing the role as hiring and oversight agency could include:

- Minimal staffing requirements

Possible disadvantages of Erie County playing the role as hiring and oversight agency could include:

- Ongoing responsibilities associated with selecting, hiring and monitoring third parties as Administrator

- Potential liability for actions of Administrator if deemed an agent of Erie County or if Erie County were determined to be negligent in carrying out selection, hiring or monitoring duties
- Fees of a third-party Administrator could reduce the amount of economic benefits available to participating households, and Erie County's negotiating leverage erodes significantly after the selection of an initial Administrator as the transaction costs of terminating and replacing an administer are high

Additional considerations in evaluating Erie County's playing the role as hiring and oversight agency could include:

- Erie County's willingness to bear legal and reputational risks associated with entering into a long-term relationship with a third party with all the attendant risks for non-performance and litigation
- Outcome of this approach depends on the availability of qualified third parties to serve as Administrator and Erie County's ability to properly identify, select and monitor the performance of the Administrator

3.2.1.3 Erie County as Promoter

In promoting the development of a community energy program for Erie County through ECLIPSE, one approach Erie County might take is to promote and facilitate the creation of an independent organization to undertake the program, at which point Erie County's role would terminate in terms of implementation from a legal perspective.

As a promoter, Erie County could continue to play a supportive role, even serving on a board of advisors. If such board is a board of directors, Erie County would have fiduciary responsibilities of monitoring the independent organization's conduct, which could add potential liability if it were deemed to have negligently carried out its duties for monitoring and compliance.

The advantages of Erie County promoting the creation of an independent organization to operate a community energy program:

- No staffing requirements after creation of entity
- No legal obligations or risks unless Erie County accepted a board of director role
- Reputational benefits of founding a new organization

Possible disadvantages of Erie County promoting the creation of an independent organization to operate a community energy program:

- High up-front costs of establishing a new community organization
- An independent organization could fail to establish or maintain itself, or be unable to attract and retain qualified staff, for diverse reasons including weak financial or human capacity

Additional considerations in evaluating Erie County promoting the creation of an independent organization to operate a community energy program:

- Outcome of this approach depends on the availability of qualified individuals and community stakeholders to help build a new organization

3.2.2 Community Organizations as Functional Providers

Erie County is home to diverse and numerous community organizations, each possessing distinct subject matter, geographic focus, and capabilities.

This section evaluates community organizations as a general category to serve the following functional roles:

- Administrator
- Outreach Coordinator
- Customer Service

Community organizations or any other organization with local geographic scope would not be candidates for providing data services or auction platform services, and therefore these roles are not evaluated here.

3.2.2.1 Community Organization as Administrator

As described above in Section 3.1.1, the Administrator function involves the following duties:

- Manage relationships with municipalities, including onboarding
- Conduct transparent and equitable solicitation for the desired energy services
- Negotiate and conclude opt-out supply or CDG contracts with municipalities, suppliers and service providers
- Monitor performance of contracts with municipalities, suppliers and service providers
- Ensure community outreach and customer service functions are fulfilled
- Submit required reports and compliance documentation to New York State and municipalities participating in opt-out supply or CDG in compliance with Commission and Staff requirements

The Administrator should possess the following attributes:

- Strong financials to ensure continued operations through varying market conditions
- Capacity to evaluate risks and negotiate contracts with counterparties
- Strong accounting and compliance systems
- Strong understanding of Department of Public Service and Public Service Commission practice and requirements
- Strong relationships with municipalities throughout Erie County
- Personnel devoted to monitoring and analyzing electricity and solar developments, procurement of energy services, customer service and municipality relations management

The advantages of a community organization acting as Administrator include:

- Close to the Erie communities being served
- Embedding the role within a community organization will establish the program as an organic, locally-driven initiative
- Investing in a community organization is an investment in the community

The disadvantages of a community organization acting as Administer include:

- Operation of the program could be impacted by financial or capacity weaknesses of the particular group
- Few community organizations have the geographic range to cover the entirety of Erie County, most having either an urban or rural focus
- Many of the capabilities required of the Administrator do not exist within a community organization at present, requiring these skills to be developed, requiring a sustained effort with supporting budget

Considerations in evaluating a community organization acting as Administer should include:

- Ability of community organization to recruit, retain and train staff dedicated to supporting program functions
- Overall financial stability and employee stability of the community organization
- Ability to perform legal and compliance functions
- Commitment to learning the required skills and develop industry relationships

3.2.2.2 Community Organization as Outreach Coordinator

As described in Section 3.1.2, the Outreach Coordinator is responsible for performing various forms of outreach and education with community members and municipalities. This outreach must include in-person meetings, so an Outreach Coordinator located within the community is highly preferable.

The Outreach Coordinator plays a compliance function with New York State regulations. The Outreach Coordinator must document the outreach and education activities using DPS templates.

The Outreach Coordinator's performance is easily monitored based on records of events, direct observation and feedback, and replacement would be relatively easy if an Outreach Coordinator was not performing adequately.

The advantages of a community organization acting as Outreach Coordinator include:

- The capabilities required of the Outreach Coordinator are abundant among community organizations as outreach is one of their core activities
- Embedding the role within a community organization will establish the program as an organic, locally-driven initiative
- Investing in a community organization is an investment in the community

Potential concerns of a community organization acting as Outreach Coordinator include:

- Few community organizations have the geographic range to cover the entirety of Erie County, most having either an urban or rural focus, which could be addressed by engaging more than a single organization to provide outreach support

3.2.2.3 Community organization as Customer Service Provider

As described in Section 3.1.3, the Customer Service function is responsible for responding to calls and emails from the community. The Customer Service function must report any changes in service or products to the Administrator promptly and accurately. Customer

service must maintain accurate records, especially when responding to customer requests for changes to services.

The Customer Service function should possess the following skills:

- Ability to support customer onboarding on a continuous or phased basis
- Ability to manage customer data for customers participating in multi-supplier offerings
- Ability to respond to high volumes of customer inquiries, especially during contract renewal periods
- Ability to understand the program's product[s] and processes, and communicate with clients about the offering

The Customer Service function involves a high degree of familiarity with the specific product offerings and, in responding to questions from customers, knowledge of the community choice aggregation and community distributed generation procedure and regulations.

There are synergies between the Customer Service functions and other functions, suggesting that it could be performed by the Administrator or the Outreach Coordinator. The Customer Service function may also be performed by a dedicated provider solely performing customer service if proper training is made available and third parties can dedicate staff to learning the subject matter in great detail.

The Customer Service function is easily monitored based on records, direct observation (spot checking recorded lines) and feedback, and replacement would be possible with temporary support provided by the Administrator if the Customer Service function was not performing adequately.

The advantages of a community organization acting as Customer Service function include:

- The capabilities required of the Customer Service provider can be learned relatively rapidly when proper training is provided
- Embedding the role within a community organization will establish the program as an organic, locally driven initiative
- Investing in a community organization is an investment in the community itself

Potential concerns of a community organization acting as Community Service include:

- The ability of the community organization to provide staff dedicated to acquiring specialized knowledge
- Under the direction of the Administrator, the community organization must be capable of supporting the compliance requirements required by the Commission.

3.2.3 Specialized Service Providers

A number of organizations specialize in providing services to community energy programs. At least three types of specialized firms support community energy programs:

- Administrators providing integrated functions of Outreach Coordination and Customer Service Management
- Data Service providers
- Auction Platform providers

It would be possible to engage a single commercial Administrator who would also provide Outreach Coordination and Customer Service Management function in-house, and engage a Data Service provider and Auction Platform provider, enabling the program to be operated on a turn-key basis from the perspective of Erie County and its municipalities. The advantages and disadvantages of this option is evaluated further below in Section 3.3.

This section analyzes commercial providers of these three services, assuming these functions are implemented by separate firms. Separating these functions enables diversification of risks associated with implementation of the community energy program. If one service provider fails to perform their duties, it is easier to replace it, as opposed to replacing multiple functions.

3.2.3.1 Administrator

Several commercial firms provide community choice aggregation services in New York State. As the Commission continues to update the Community Choice Aggregation Framework Order, additional commercial firms operating in other states will be entering the New York market.

Engaging a commercial provider to serve as Administrator has both advantages and disadvantages. The advantages of engaging a commercial provider to serve as Administrator include:

- No staffing requirements and a limited oversight burden for Erie County if the commercial administrator performs well
- Commercial service providers exist that possess experience in administering community choice aggregation and community distributed generation mechanics, and familiarity with Commission and Staff rulings, suppliers and other stakeholders
- Commercial service providers possess supplier relationships for sourcing products, however these relationships may not be deployed exclusively for Erie County

The disadvantages of engaging a commercial provider to serve as Administrator include:

- The commercial provider must run the program for profit, and its own commercial considerations may influence fees and economics for Erie County residents
- A commercial provider as the “public face” of the program may undermine public trust in ECLIPSE or lead to the view that ECLIPSE is not a local, organic program
- The risks associated with community energy programs in New York State may impact the Administrator’s performance in Erie County, whereas other organizations such as a government organization or even a diversified community organization could be more insulated
- Potential conflict of interest in sourcing supply if the Commission allows a service provider to also serve as a supplier

The community perception issues identified as disadvantages can potentially be mitigated by requiring the commercial service provider to hire and train local employees and community groups to carry out discrete functions, such as outreach. However, the non-perceptual risks of profit-driven motivation influencing economics and the commercial risks impacting their performance are not merely perceptual, but are actual risks that may not be possible to mitigate.

These advantages and disadvantages should be evaluated carefully in determining whether to entrust administrative functions to a commercial service provider. The Administrator role is the least easy to monitor their performance and to replace if performance falters.

3.2.3.2 Data Service and Auction Platform Providers

All community energy programs operating in New York State use specialized commercial firms for data services (and auction platform support if needed). These functions are technology-intensive and have stringent compliance burdens. The firms that provide these services invest heavily in technology to remain competitive.

The benefits of outsourcing these functions is suggested by the fact that all of the opt-out CCA programs have engaged outside specialty firms for these services. For opt-in CDG, some larger firms may have enough scale or expertise to provide their own data services cost effectively.

The alternative path of attempting to build and maintain these software-as-a-service capacities within an organization with local scope would not be economically feasible. The commercial providers can provide cost-effective services because they leverage the required investment over a wide geography in New York and other states.

Further, these functions are fairly easily bid, rebid and monitorable for performance. If the auction platform does not function well, the most likely outcome is that the Administrator will need to issue a new solicitation for the energy supply bids, either with an improved platform or with a new platform provider.

3.3 Turn Key Versus Functional Approaches

This chapter has evaluated community energy programs by disaggregating these programs into their functions, thereby enabling consideration of various stakeholders to play roles in supporting ECLIPSE.

The functional approach offers the advantage of building a team that brings together local government, community organizations, and private or nonprofit sector service providers with specialized skills in community energy programs. This combination of stakeholders ensures ECLIPSE is connected to the Erie County community while supported by experienced organizations.

A functional approach might allocate program roles as follows:

Administrator	County, Community Organization, or Specialized Provider
Outreach	Community Organization
Customer Service	Community Organization or Specialized Provider
Data Services	Specialized Provider
Technical/Operations	Specialized Provider

As an alternative to the functional approach, Erie County could engage a turn-key provider who carries out the functions on a contractual basis. Approximately half a dozen firms provide these services in New York State, and more are entering the industry.

The turn-key approach offers the advantage of a single organization assuming responsibility for all aspects of the program. This may offer greater efficiencies than a multi-stakeholder functional approach.

Disadvantages of the turn-key approach are that the success of the program becomes entirely dependent on the performance of that commercial service provider. Public perceptions may view a commercial provider to be less connected to the community than a combination of government and community organizations.

The community perception issue can potentially be mitigated by requiring the commercial service provider to hire and train local employees and community groups to carry out discrete functions, such as outreach. However, the turn key approach will remain to some extent an opaque structure that will be difficult to monitor, which could also have implications for the economics offered to consumers.

As ECLIPSE aims to serve the Erie County community, we recommend that the community play a role in its operation, and that community views be solicited and considered in evaluating the structure of ECLIPSE.

We also recommend that specialized service providers be employed in a manner that ensures ECLIPSE is technically supported and financially sustainable.

The functional approach can enable achieving both outcomes if designed and structured for that purpose.

4 Market Dynamics and Product Opportunities

This chapter evaluates community energy program market dynamics in New York State, focusing on current macroeconomic and regulatory drivers. The chapter then evaluates existing product offerings for electricity supply, CDG credits, and explores the development of innovative product offerings that respond to both customer and challenging market dynamics.

4.1 Macroeconomic and Regulatory Factors

The evolution of community energy programs and the expansion of offerings present opportunities for the market.

Electricity Supply

While electricity supply offerings are expanding, CCAs have experienced low ESCO participation in recent electricity supply solicitations, for both standard and renewable offerings. Fewer ESCOs are choosing to bid on energy blocks for aggregation programs in New York, compared to a few years ago. Increasingly volatile energy prices, due to macroeconomic conditions, and the scarcity and high price of Renewable Energy Certificates in NY, have led to difficulty in securing compliant bids for electricity supply programs.

While electricity supply has been available under community choice aggregation in New York State since 2016, the upward trajectory of growth in participation is periodically disrupted by state policy changes and high volatility in long-term energy prices. For example, in 2022, renewals of energy supply contracts for existing CCA programs were impacted by a sudden price spike in long-term energy contracts particularly for more congested service territories with higher loads. As a result of these market conditions, some supply offerings were paused, while administrators waited for more favorable market pricing. During such pauses, customers shift back to utilities until better long-term pricing is secured and the CCA supply offerings resumed. This process causes customer disruption and potential customer attrition.

Opt-Out CDG

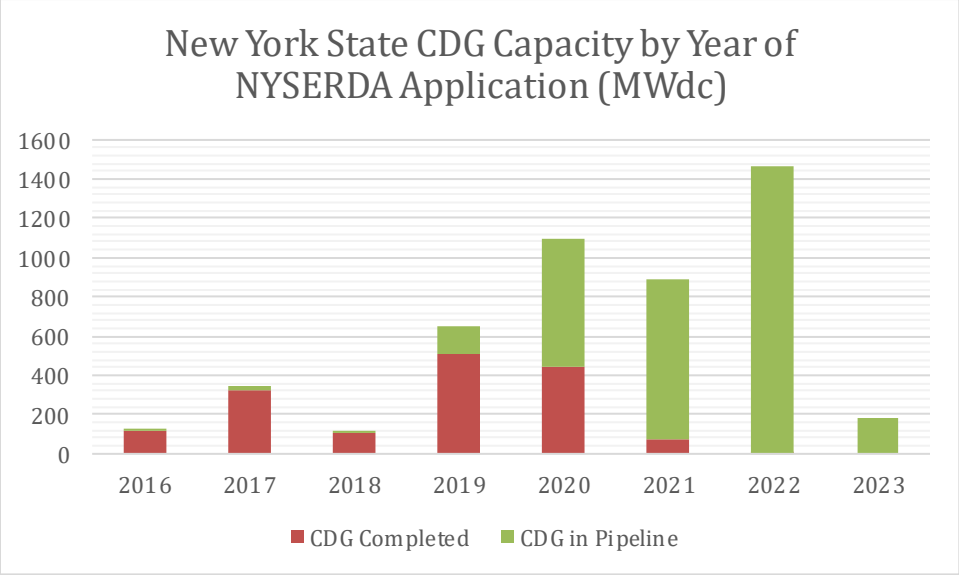
Community generated distribution is also heavily influenced by state policies, principally through access to various incentives. Notwithstanding the Public Service Commission's November 2021 order halting review and approval of any new community choice aggregation offerings or programs that proposed to offer opt-out CDG, the capacity of community distributed generation projects since 2016 shows a robust market with 1,666 projects registered with the state as of April 2023. Of these projects, just under half have been completed to date and represent approximately 1,600 MWdc. Just over 850 projects in the pipeline still await completion and represent about 3,200 MWdc of capacity in the pipeline.[33]

The pipeline of statewide projects that will be completed in 2023 and 2024 is also sizeable. Two times as much CDG capacity is in the pipeline today than has been completed and put into service since community solar was first enabled in New York in 2014. See Figure 5.

[33] Source CDG project date in Figure 4 and Table __ and elsewhere: Solar Electric Programs Reported by NYSERDA (https://data.ny.gov/Energy-Environment/Solar-Electric-Programs-Reported-by-NYSERDA-Beginn/3x8r-34rs) accessed March 23, 2023.

Additional value stack and NYSERDA incentives spurred an increase in new projects in 2019, 2020 and 2021 spurred a steep uptake of the program.

Figure 5. New York State Community Distributed Generation Capacity 2016-2023



Source: Solar Electric Programs Reported by NYSERDA, https://data.ny.gov/Energy-Environment/Solar-Electric-Programs-Reported-by-NYSERDA-Beginn/3x8r-34rs (accessed March 1, 2023)

Statewide, the universe of CDG projects available to local community energy programs is likely to grow in 2023 and 2024 under the positive influence of the federal Inflation Reduction Act financial incentives, regardless of how the state's own policies react to the federal changes.

By Q1 2023, the CDG capacity shown in Figure 5 above reflects the 1,666 projects registered with NYSERDA. The majority of these CDG projects have applied and reserved the base megawatt block incentives that applies to their location.

However, a significant number of CDG projects have been able to secure added NYSERDA incentives as shown in

Table 2, including the Community Adder available to community solar projects. Some projects are able to stack adders thereby gaining access to two incentives, e.g. a project using a canopy over a parking lot earning the Canopy Adder and the Community Adder. As of May 2023, only 275 MW of Community Adder incentives remained available in the Upstate Region, which would include Erie County.[34]

[34] NY-Sun Dashboard and Incentives webpage (Accessed March 3, 2023)

Table 2: CDG pipeline capacity reserved by NYSERDA adder incentives (2016- Q1 2023)

NY-SUN adder incentive reserved	Project count	Capacity (MWdc)	Average size (MWdc)	Incentive type
Community Adder	418	2086.0	4.99	$/kWdc
Inclusive Community Solar Adder*	90	418.6	4.65	$/kWdc
Expanded Solar For All Adder**	19	113.5	5.97	$/kWdc
Brownfield/Landfill Adder	37	175.1	4.73	$/kWdc
Canopy Adder	97	61.9	0.64	$/kWdc
Affordable Multifamily Housing Incentive	204	11.6	0.06	$/kWdc
Notes:				
*ICSA currently under revision.				
**E-SFA order due in April 2023				
Source: Solar Electric Programs Reported by NYSERDA, https://data.ny.gov/Energy-Environment/Solar-Electric-Programs-Reported-by-NYSERDA-Beginn/3x8r-34rs (accessed March 1, 2023).				

Of relevance to ECLIPSE, there is a large pipeline of community distributed generation projects in the National Grid and NYS Electric and Gas (NYSEG) that might be available to a community energy program based in Erie County. Pipeline projects in NYSERDA's parlance are those for which the developer has not yet submitted an approved final incentive invoice upon completion of the entire project.

In Table 3, the pipeline of CDG projects for the National Grid territory contains over 350 projects representing over 2,100 megawatts of cumulative capacity. For NYSEG, the pipeline has over 110 projects with almost 700 megawatts of capacity. Of course, many of these projects may already be under contract for customers. Yet, they do represent a sizeable potential access for CDG capacity to serve an ECLIPSE CDG offering. For more on the CDG pipeline of projects in New York State, see Appendix 5 New York State CDG Supply Pipeline (2021-2021).

Table 3: Pipeline of CDG projects in National Grid and NYS Electric & Gas Territories

Project pipeline by year of NYSERDA application	CDG projects (count)	Total nameplate capacity (MWdc)
National Grid		
2019	18	101.5
2020	81	488.8
2021	84	501.2
2022	158	911.2
2023	20	128.2
Total	**361**	**2,130.9**
NYSEG		
2019	2	11.0
2020	6	33.8
2021	29	189.1
2022	70	426.5
2023	6	37.7
Total	**113**	**698.2**

Source: Solar Electric Programs Reported by NYSERDA, available at https://data.ny.gov/Energy-Environment/Solar-Electric-Programs-Reported-by-NYSERDA-Beginn/3x8r-34rs (accessed March 23, 2023).

4.1.1 Macroeconomic Factors

In addition to policy interventions, the market for electric supply and CDG credits has been shaped by macroeconomic challenges, resulting in historic inflation, supply chain shortages, and rising labor costs.

More recently, CCA electricity supply solicitations have been adversely impacted by market constraints resulting from volatility in wholesale energy markets, the rising cost of Renewable Energy Credits, and uncertainty in Commission regulation. Unfortunately, a declining number of ESCOs have chosen to participate in recent electricity supply solicitations from CCAs in New York. CCAs are also exposed to drastic fluctuations in the energy market, due to external factors such as the surge in electricity prices due to COVID and the Russia-Ukraine war's impact on energy supply and demand dynamics. Such upheavals prompt the need for evolving other structures to access the wholesale energy markets beyond reliance on the traditional ESCO-as-middle-man approach.

CCA administrators are now actively exploring new procurement mechanisms, such as directly participating in the wholesale electricity market, bypassing the need to contract with ESCOs. Other options being explored include entering into longer-term contracts, e.g., 10-year contracts, with renewable electricity facilities. While none of these new models have been implemented yet in New York, the evolution of CCA electricity supply may diversify future offerings and methods of acquiring supply.

4.1.2 REC Markets

When the Commission first enabled CCA with a pilot in Westchester County in 2015, it placed no restrictions on the sources for 100% renewable energy credit-backed supply. When that program went out to bid in early Spring 2016, that solicitation fortuitously overlapped with the arrival of a large volume of wind energy RECs, yielding a low fixed rate for that supply offering. Over time, the Commission has restricted the sources of RECs that CCAs may procure to generators located in New York State, such as hydroelectric, solar or wind sources.[35]

This narrowing of the available supply in the market has driven up the cost of clean energy supply to CCA programs and their consumers. In Sustainable Westchester's experience, the price of the REC component of a 100% renewable energy backed CCA supply has doubled in New York between 2016 and 2023.New York State established multiple tiers of RECS. Tier 1 includes new clean energy generation capacity being brought online. Tier 1 RECs are generally too expensive for CCAs to procure. Tier 2 is meant to ensure the continued operation of New York's existing renewable resources, such as legacy hydropower facilities. CCAs are currently bulk purchasers of more than 30% of the Tier 2 RECs. It remains uncertain how a revised Clean Energy Standard approved in April 2023 by the Commission, which the State infers will provide CCA programs access to Tier 1 RECs, will affect the market capacity and pricing in the future. Federal Inflation Reduction Act

In August 2022, President Biden signed the Inflation Reduction Act, one of the most consequential acts for the deployment of clean energy, which will promote solar and energy storage development, including CDG projects. While more guidance on the implementation of credits and programs is expected to be released during the third quarter of 2023, the Act expands opportunities for CDG developers and programs such as Community Choice Aggregation.

As a strong incentive for renewable energy deployment, the Inflation Reduction Act extends the 30% renewable energy Investment Tax Credit (ITC), which may be claimed in the first year of the project based on the capital costs of the project through 2024. The Act also made available a Production Tax Credit (PTC) of $0.025/kWh for solar projects, which may be collected over 10 years based on the actual energy production of the system. For projects placed in service in 2025 or later, both of these current tax credits would be replaced by a new Clean Electricity Investment Credit (CEIC) of 6% to 30% and a Clean Electricity Production Credit (CEPC) of $0.015/kWh for any new resource with an emission rate at or below zero, which very likely includes solar projects.[36]

These new investment and production credits will phase out when electricity sector emissions reduce by 75% below 2022 levels or December 31, 2031, whichever is later. Interconnection costs may be included in tax credit cost basis for projects less than or equal to 5 MWac.[37]

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[35] NYS DPS, *Order Adopting Modifications to the Clean Energy Standard*, Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and Clean Energy Standard (Case 15-E-0302, issued October 15, 2020) ("2020 CES Order")

[36] Projects over 1 MW would need to meet prevailing wage and apprenticeship requirements to meet full ITC, PTC, CEIC, and CEPC credit.

[37] US EPA Green Power Markets (accessed March 29, 2023)

The Inflation Reduction Act also extended eligibility for investment and production tax credits to energy storage projects systems, a significant boost to the clean energy sector. Under both tax credit periods, CDG projects receive additional bonus credits for achieving any of the following characteristics:

- Minimum domestic content requirements
- Brownfields developments
- Low-income communities' developments
- Low-income residential building projects
- Direct at least half of the benefits from the electricity, including community solar, to households that are either below 200% of the Federal Poverty Line or have less than 80% of area median income
- Facilities located on Native American land

The last four bonus credits dedicated to low-income and Native American communities are only available for the first 1,800 MWdc each year, and must be placed into service in 2023 and, after that, through the respective phase-out year.[38]

4.1.3 New York State policies

In November 2022, New York voters passed the Environmental Bond Act, which aims to direct $1.5 Billion to climate change mitigation, with no less than $400 Million to green building projects, including projects to increase renewable energy.[39] While the guidance on how funds will be distributed has not been set, the focus on New York State in clean energy projects is strong, presenting a potential opportunity for CDG projects to capture some of these benefits.

Additionally, NYSERDA released a new energy storage roadmap targeting 6 MW of Energy Storage by 2030.[40] The roadmap proposed to allocate funds and set incentive programs that promote the development of energy storage systems. Development under the new energy storage megawatt block incentive structure will include future CDG projects, either as standalone storage systems or paired with solar systems, and thereby accessible to CDG offerings.

4.1.4 NY SUN Incentives

In 2022, the Commission expanded NY-SUN targets required to meet the aggressive goals of the New York's Climate Act of 2019. The target increased from the original 6 gigawatts of solar photovoltaic capacity by 2030 to 10 gigawatts. The Commission also expanded the Solar Energy Equity Framework (SEEF), which directs 40% of the incremental 4 GW distributed solar toward LMI residents, regulated affordable housing, and disadvantaged communities (DACs).[41]

The new Community Adders under the expanded NYSERDA NY-Sun program opened for applications in June 2022. However, in the upstate region, the adder was fully allocated within a few months, reflecting a large backlog of CDG projects that were waiting for the new

[38] US EPA Green Power Markets (accessed March 29, 2023)
[39] New York State 2022 Environmental Bond Act, (accessed March 29, 2023)
[40] NYSERDA, Energy Storage Road Map (accessed March 29, 2023)
[41] NYS DPS, 10GW Order at 41.

incentive. By mid-fall 2022, NYSERDA temporarily suspended the remaining adder capacity for the downstate ConEdison region. NYSERDA explained the reason for the suspension as assessing market conditions and evaluating the impact of the Inflation Reduction Act (IRA) on community solar project economics.[42] Thus, New York State is waiting on US Treasury Department guidance on implementing the 2022 Inflation Reduction Act–to avoid using state funds to either over- or under-incentivize community solar development. In April 2023, the Community Adder was re-started for the upstate and ConEdison regions.

As of early 2023, the incentives set aside in the 10GW Solar Roadmap were 50% allocated, triggering a midpoint review of the megawatt block program. The resulting comment and revisions will include recommendations and adjustments that will impact the CDG market.[43]

The latest NY-SUN incentives under the 10-Gigawatt solar roadmap offer access to a number of adder incentives over the base megawatt block funds. For example, NYSERDA has adders for solar canopies, floating solar, and other designs that New York specifically wishes to promote.

4.2 Electricity Supply

Since the initial pilot program launched in 2016, community aggregation of electricity supply in New York has steadily grown, serving about 269,000 households statewide in 2022. See Appendix 3 CCA Administrators and Aggregations in New York (2022)

The CCA Framework Order enables authorized CCAs to procure both electric and gas supply. Within electricity supply, multiple options for a municipality's mix of electricity supply are possible, depending on the preferences of the municipality and the products offered by the energy marketplace to the CCA.

CCA administrators typically conduct competitive auctions with ESCOs to procure the standard supply and renewable supply at fixed rates for long-term contracts to provide price security, and may offer variable rates in the future. The renewable supply auctions include the provision of RECs.

For example, the following two options are typical and are offered by Westchester Power:

- Standard supply comprising grid electricity mixed with mostly non-renewable energy
- 100% renewable supply with RECs procured on a competitive basis

Depending on the preferences of participating municipalities, the CCA could offer an intermediate product of 50% renewable supply, in which half the supply would be backed by RECs and half by the standard supply. Contracts are entered into with winning suppliers immediately upon the close of the auction and identification of a compliant and awarded bid.

CCA programs rely largely on the procurement of renewable energy to fulfill their mandate to promote New York's Reforming the Energy Vision (REV) and Climate Leadership and Community Protection Act (CLCPA) goals. Any electricity supply contract in NY must comply with NY's Renewable Portfolio Standards, including those entered into by a CCA. CCA

[42] NYSERDA, Community Adder - NYSERDA, accessed on January 25, 2022.
[43] NYS DPS, *NY-Sun Mid Point Review*, (Case 21-E-0629, issued January 17, 2023) ("NY-SUN Mid Point Review").

programs are also encouraged to find other creative ways to advance such emission reduction goals, such as encouraging building decarbonization and energy conservation measures.

4.3 Opt-out CDG

Opt-out CDG within CCA programs is a nascent product offering that has been vulnerable to regulatory changes. At present, opt-out CDG market is on hold due to the Commission's Pause Order, further described in Chapter 1 of this report.

Because the CDG market has undergone and continues to undergo multiple and rapid policy changes, uncertainty exists at the time of this writing about if or when the opt-out approach to CDG will be able to proceed as an offering of locally authorized CCA programs.

At the time of this writing, the local governments throughout New York State that would like to explore community energy programs that feature an opt-out enrollment to community distributed generation must wait for the Public Service Commission to lift the Pause Order imposed in November 2021.

4.4 CCA Product Offering Innovation

New entrants to the CCA market and existing market participants may also pioneer models that will lead to the evolution of CCAs in New York while pushing forward the State's climate goals.

In developing innovative offerings, CCA programs are allowed to support opt-in offerings with few or no limitations. For example, commercial accounts may opt-in to a CCA supply offering, or eligible customers may be enrolled in opt-in CDG offerings.

Similarly, Commission rules do not place restrictions on CCA programs offering opt-in solutions, such as:

- Community Solar and Demand Response
- Clean Transportation
- Building Decarbonization.

This section discusses potential expansion and innovation in community solar, clean transportation and building decarbonization in turn.

4.4.1 Community Solar and Demand Response

Technological advances in the area of distributed energy resources, in particular storage, expand the options for CCA program design.

Beyond traditional community solar, and possibly opt-out Community Distributed Generation credits, CCAs can expand into demand response and the provision of solar and battery storage. Further to the discussion below of clean transportation, DERs offer the potential for electric vehicles to be used as energy storage.

Demand response is a tool that allows utilities and grid operators to balance electricity supply and demand by incentivizing customers to reduce or shift their electricity use during times of

peak demand. CCAs can integrate demand response measures into their product offerings by working with customers to identify opportunities for load shifting or load shedding. For example, customers could be incentivized to shift their energy use to off-peak hours by offering reduced rates during those times. CCAs could also work with customers to identify opportunities for load shedding, such as turning off non-essential appliances during times of peak demand. By promoting demand response measures, CCAs can help reduce peak demand, avoid the need for expensive new power plants, and ultimately reduce electricity costs for customers.

CCAs can integrate outreach and education into their programs in order to decrease energy consumption among households. Monetizing educational activities, however, is extremely difficult. Although utility decoupling does compensate utility efforts to promote energy efficiency and conservation among consumers, through programs such as demand response and education, no such business model has been proposed or approved for a CCA. However, with the growth of CCAs, this is a logical, and perhaps even necessary next step to achieving CLCPA goals.

Distributed energy resources (DERs) are small-scale energy generation or storage facilities. These include technologies such as rooftop solar panels, energy storage systems, and electric vehicle charging stations. CCAs can integrate DERs into their product offerings by incentivizing customers to install these technologies and generate their own power. For example, CCAs could aggregate customers who install rooftop solar panels or energy storage systems to access state and federal incentives. By promoting DERs, CCAs can help increase the adoption of renewable energy sources, reduce energy consumption from the grid, and improve grid reliability. Beyond group buying programs, CCAs have not generally engaged in rooftop solar as a product offering due to their economics. However, rooftop solar is widely seen as a highly desirable step in meeting New York State renewable energy goals for solar adoption because it has no adverse land use impacts.

4.4.2 Clean Transportation

These same technological advances could expand opportunities for CCAs in the clean transportation area. By incorporating clean transportation as a product offering, CCAs can help communities reduce their carbon footprint and improve air quality while also providing economic benefits to their residents.

One of the key advantages of CCAs is that they can leverage the collective buying power of their communities to negotiate better pricing on clean transportation, where CCAs can work with local governments and transit agencies to procure electric vehicles (EVs) and charging infrastructure at a lower cost. By purchasing these assets in bulk, CCAs can pass on the savings to their customers, making EVs a more affordable option for residents.

In addition to cost savings, CCAs can also help overcome some of the barriers that have historically hindered the adoption of EVs. One of the main concerns for consumers has been range anxiety, or the fear that their EV won't be able to travel long distances without needing a charge. CCAs can address this concern by working with local governments to install charging infrastructure throughout the community, making it easier for residents to charge their vehicles when they need to.

Another important advantage of CCAs is that they are locally controlled, which means that they can tailor their clean transportation offerings to the unique needs of their communities. For example, some communities may have a higher demand for electric buses, while others may prioritize the installation of public charging stations. By engaging with residents and local stakeholders, CCAs can identify the clean transportation solutions that will have the greatest impact on their community and design programs accordingly.

4.4.3 Building Decarbonization

Building decarbonization, in particular, offers a wide range of innovative program opportunities, including energy efficiency upgrades, such as weatherization, insulation and heat pumps, and could involve community thermal energy networks (district geothermal).

Where upgrades are fairly uniform, such as multi-unit buildings in which units are individually owned, or tract homes that are similar or identical, aggregation may be possible. By aggregating these upgrades and retrofits in bulk, CCAs can pass on the savings to their customers, making it more affordable for homeowners and businesses to reduce their carbon footprint.

In addition to cost savings, CCAs can also help overcome the financial barriers that have historically hindered the adoption of building decarbonization measures. One of the main concerns for homeowners and businesses has been the upfront cost of energy-efficient upgrades and retrofits. By making building decarbonization more affordable to an aggregation of customers for solution providers, CCAs can encourage more widespread adoption of these measures.

Because CCAs are locally controlled, they can tailor New York State building decarbonization offerings to the unique needs of their communities. For example, some communities may have a higher demand for energy-efficient heating and cooling systems, while others may prioritize the installation of solar panels or energy-efficient lighting.

Finally, CCAs can help create new economic opportunities for residents by enabling homeowners and businesses to invest in energy-efficient upgrades and retrofits, creating growing demand for contractors and tradespeople with the skills and expertise to perform these services.

Building decarbonization is an area of innovation among CCAs in New York State. For example, the City of Kingston is preparing a CCA program that aims to "develop home efficiency loans and other wealth-building programs to ensure equitable distribution of clean energy resources."[44] The Kingston program is exploring the possibility of integration of clean heating technologies such as community thermal energy networks.

[44] City of Kingston, New York, News Release and EngageKingston (accessed March 29, 2023)

5 Erie County Market Projections

This chapter analyzes ECLIPSE participation scenarios, resulting demand for electricity supply and CDG credits, and the potential available supply of electricity supply and CDG credits.

5.1 Market Scenarios and Assumptions

The analysis presented in this chapter is based on market scenarios and certain assumptions concerning cost components, and service territories set out in this section.

This assessment focuses on residential electricity accounts to estimate the market size for three scenarios of offerings: opt-out electricity supply, opt-out CDG, and opt-in CDG offerings. While small commercial electricity accounts are eligible for CCA products and opt-in CDG, these accounts are not analyzed in this report as they fall outside the ECLIPSE program objectives.

While these scenarios analyze each product individually, there could be scenarios that combine products creating operational synergies and cost efficiencies for the program. For the sake of clarity, the analyses below only modeled single product scenarios.

5.1.1 Erie County Program Rollout and Household Uptake

For all community energy program products, municipalities may show interest but need time to evaluate joining the program.

Not all municipalities may join the CCA program at launch. An opt-in CDG program does not require any local government involvement. However, working with local governments on opt-in CDG offerings may increase customer participation. The projections that follow analyze community energy products scenarios limited to the 10 largest municipalities in Erie County based on the number of households in the Home Energy Assistance Program (HEAP) in

Table 4. The number of HEAP households is used to represent Assistance Program Participants (APPs).

These ten municipalities have about 294,000 households in total, about 73% of all households in Erie County. Of that total, approximately 114,600 are HEAP households, about 86% of all HEAP households in the County, and 22,800 are non-HEAP households that live in designated Disadvantaged Communities (DACs) within these ten municipalities. The non-HEAP, DAC households are referred to as “DAC households” in the report and represent about 91%t of all DAC households in the County.

Table 4: Selected Erie County Municipalities For Market Projections for all Community Energy Products

Selected Towns and Villages	Utility	Estimated Total Number of Households	Estimated Number of HEAP Households	Estimated Number of DAC Households (Non-HEAP)	Estimated Number of Other Residential Households (Non-HEAP, Non-DAC)
City of Buffalo	NG	118,071	74,163	12,500	31,408
Town of Cheektowaga	NG / NYSEG	31,750	10,319	4,034	17,397
Town of Amherst	NG	50,558	7,655	0	42,903
Town of Tonawanda	NG	24,709	5,858	644	18,207
City of Lackawanna	NG	8,475	5,187	431	2,857
Town of Hamburg	NG	19,912	3,293	0	16,619
Town of West Seneca	NG/ NYSEG	19,863	3,027	2,879	13,957
City of Tonawanda	NG	6,947	2,021	2,299	2,627
Village of Kenmore	NG	7,157	1,592	0	5,565
Village of Depew	NG/NYSEG	6,538	1,471	0	5,067
Total Count		293,980	114,586	22,787	156,607
% of Total Count		100%	39%	8%	53%

5.1.2 Customer Participation Market Scenarios

Customer participation rates are critical to determining the revenues, costs, and profit or loss of a CCA operation. This chapter analyzes opt-out electricity supply, opt-out CDG, and opt-in CDG offerings based on high, medium and low customer participation rates.

A variety of factors can influence participation rates, including the rules governing recruitment of customers for opt-in CDG, opt-out CDG, and electricity supply offerings; the organizational abilities of the CCA administrator; and market conditions.

The high, medium and low participation scenarios are to evaluate all three product offerings — electricity supply, opt-out CDG and opt-in CDG. However, due to differences in market factors and the rules governing these products, the specific scenarios differ.

For electricity, the key driver of participation is the difference between past electricity rates and expected future fixed-rate bids, and the primary criteria is customer retention. For all CDG offerings, the key factor is not demand because this program offers a discount against electricity bills, but rather participation is constrained by the available supply of CDG credits. Further, for both opt-out and opt-in CDG, eligibility is assumed to be limited to HEAP customers, thus the universe of potential customers in this chapter's analysis is limited compared to electricity supply offerings. Finally, for opt-in CDG, in addition to CDG credit supply, the enrollment process mainly constrains participation rates.

There are other constraining factors across product offerings, however these are the primary factors, and further detail is provided in the analytical sections of this chapters.

Table 5 summarizes the three scenarios for the three types of product offerings. These assumptions are further explained in the sections analyzing these scenarios in this chapter.

Table 5 Summary of High, Medium and Low Participation Market Scenario Assumptions

	Electricity	Opt-out CDG	Opt-in CDG
High Participation	90% retention	45=% of HEAP customers	5% of HEAP customers
Medium Participation	85% retention	22.5% of HEAP customers	2.5% of HEAP customers
Low Participation	70% retention	9% of HEAP customers	1% of HEAP customers

5.1.3 Common Cost Component Assumptions

Electricity supply, opt-out and opt-in CDG involve similar activities and similar cost structures. Although similar, differences in costs among these product offerings are driven primarily by differences in the customer recruiting process. The following operating expenses are assumed for all three product offerings.

- **Data Services & Information Technology** expenses covers data security. This report assumes an annual estimated minimum fixed cost of $22,000, and an increase in expenses after 100,000 customers. As the program increases the number of customers it serves, the administrator must invest in higher capacity for data security.

- **Direct Program Expenses** covers costs for customer management services, web services, marketing, and outreach directly associated with a CCA program. Customer management services associated with the program include customer database platforms that allow the administrator to manage customers and online forms customers use to opt out, opt in, or switch between electricity supply options.

- **Operations** expenses relates to general and administrative costs (overhead). The projections set this value at 12% of revenues. Some organizations will require a higher percentage for this line item. The ECLIPSE program administrator should adjust this percentage to align with its general and administrative expenses. Any contingency the operator will need has not be included here as that varies widely depending on the structure of the program administration.

- **Outside Services** expense covers legal services, translation services, and minor consulting support services. Based on what services are outsourced, this line item and others should be adjusted accordingly.

- **Salaries and Benefits** covers wages and benefits expenses. Staff members covered by the funding will vary in number based on factors such as the skills and experience of staff, the level and complexity of role the staff is fulfilling, and the team the staff is being integrated into, e.g., are these staff the only members of the entity or are they being integrated into a larger entity that may support some of their general administrative work. For electricity supply, opt-out CDG and opt-in CDG offerings, the number of employees supported by the high, medium and low participation scenarios range from 7.5 to 1.5 employees, with specific detail provided in Section 5.4 describing financial performance projections. In this report, each full-time employee is assumed to dedicate 40 hours a week, and a part-time (0.5) employee would dedicate 20 hours a week to the program. For a typical staff of three, including a program director, program manager and program assistant, the projected total compensation per staff member would be about $187,000. As more program managers and assistants are added this average per staff total compensation would decrease. Some staff configurations may also include an executive director.

- **Net Excess Revenue** provides a reserve fund for contingency and risk mitigation.

Although some operating costs scale with program size, the amount and timing of costs are relatively inflexible, or in the case of staffing, may be difficult to adjust, with most staff and operating costs incurred in the first year devoted to customer acquisition. In contrast, revenues vary significantly depending on customer participation levels. Further, significant investment is required prior to the first year of operation before any revenue is earned. The cost of the startup work is probably in the $200,000 to $400,000 range.

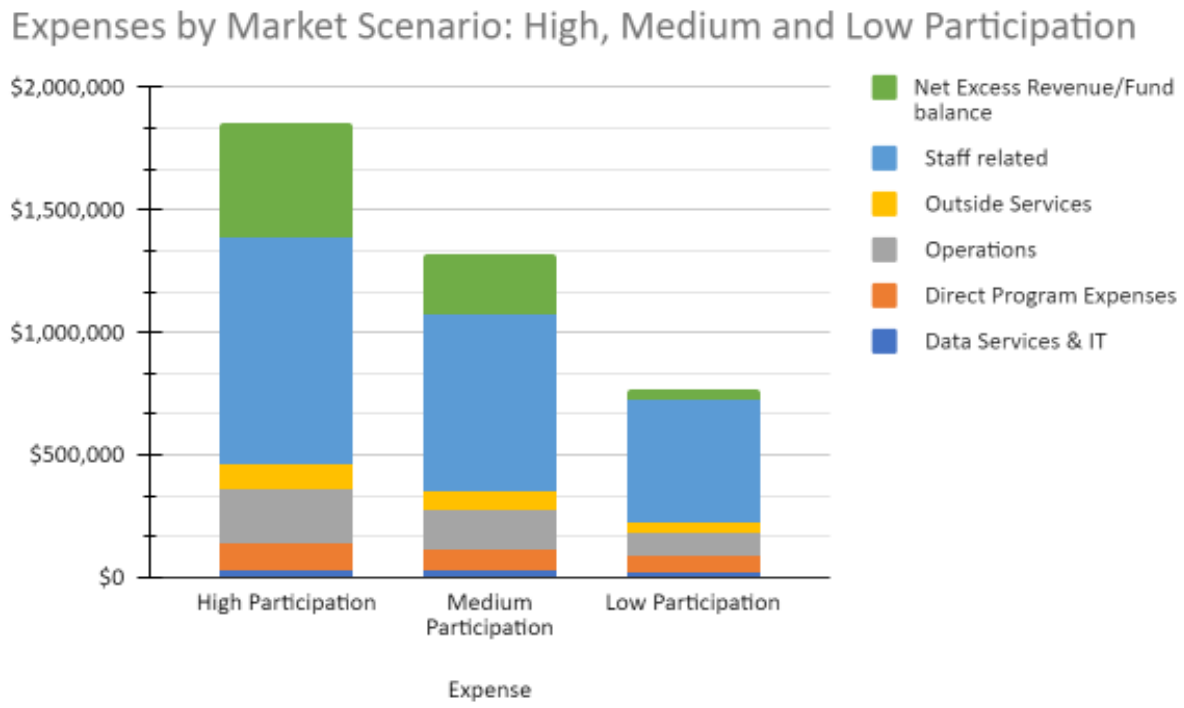
The financial projections in this chapter cover the first year of operation of a CCA program. Depending on participation levels and program growth, sustaining the program may require banking excess net revenues from the first year to support ongoing expenses in subsequent years. Further, given that volatility in energy prices can reduce participation rates, a new CCA should plan prudently to weather fluctuations in revenues.

Generally, the administrator should expect to see economies of scale as a program delivers an offering to more participants or when a program establishes multiple offerings — electricity supply and opt-out or opt-in CDG.

For comparison of costs,

Figure 6 estimates electricity supply program costs across the market scenarios in year one of operation. For more detail on the components of these financial scenarios, see Section 5.4 below. As the program participation changes, staffing and operations costs are assumed to scale using flexible arrangements such as part-time employees and contractors, whereas other costs remain fixed such as data services.

Figure 6 Opt-out Electricity Supply Estimate Costs by Market Scenario in year 1



5.1.4 Service Territories

Opt-out electricity supply and opt-out or opt-in CDG contracts are specific to a utility service territory. If the CCA in Erie County is to cover municipalities served by more than one utility, it will necessitate a contract for each utility territory.

Excluding the Cattaraugus and Tonawanda Reservations, Erie County has 44 municipalities that may be eligible to participate in county-wide CCA (See Appendix 4 Erie County Municipalities). Most municipalities are served by either National Grid and New York State Gas and Electric (NYSEG).

Several municipalities present exceptional cases, requiring special arrangements. The Village of Springville is serviced by Springville Electric, a municipal-owned electric company. The Village of Gowanda is partly located in Cattaraugus County and may fully or partly decline to participate in an Erie County-sponsored program. Gowanda as well as five other municipalities in Erie County are served by both National Grid and NYSEG.

This chapter analyzes the typical case in which a municipality is served by only one utility.

5.2 Opt-out Electricity Supply

The most common product offered by New York State CCA programs is the fixed-rate energy supply product. At present, thirteen different aggregations contract with approximately 50 different participating municipalities for long-term electricity supply. The typical term for electricity supply contracts is 24 months.

5.2.1 Market Factors in Contracting for Electricity Supply

The contract price for electricity supply rate influences participation rates in the market.

If a CCA supply rate is perceived as likely to be higher than the future variable utility rate, a municipality considering whether to participate may decline to participate, or, if the municipality does participate, customers may be more likely to opt-out.

When soliciting the energy bid for the aggregation, supply fixed rates produced by the bidding process are influenced by several factors described below, most of which are beyond the immediate control of the program administrator or municipalities.

- **General volatility in energy markets.** Natural gas futures drive the pricing of electricity supply. For example, natural gas prices spiked in 2022, resulting in bids for Westchester Power program renewals that were too high to comply with the terms its participating municipalities had set. As a result, the program was forced to pause its supply offering upon the termination of the expiring contract, waiting several months before it was able to procure compliant bids in a second auction. It relaunched the supply offering but lost any associated revenue during the three-month pause.

- **Timing of the solicitation.** The timing of the solicitation is controlled by the administrator in collaboration with the participating municipalities. Some existing aggregations have delayed an initial program launch until favorable energy supply rates appear in the market.

- **Contract duration.** In the energy commodity market, the longer the term of a fixed-rate contract, the greater uncertainty of future pricing to acquire the supply of electricity to fulfill that contract. This future risk may be reflected in higher rates for longer term durations. In practice, 24 months is probably the longest term that still produces a fixed supply rate acceptable to municipalities. The administrator usually sets the duration for a given solicitation with advice from an auction platform provider.

- **Cost of Renewable Energy Credits (RECs).** To support 100% renewable supply contracts, the winning bidder must purchase RECs. As New York State REC policy has evolved to generate greater demand for a limited supply of RECs, the cost of eligible RECs that are available to a CCA has risen steeply.

- **Size of the energy block being bid**. In general, the greater the volume of energy being contracted, the lower the price. Further, as aggregation volumes in New York vary widely in number of customers and total annual megawatt-hours, a very small aggregation may not attract any bidders.

- **Number of ESCOs bidding.** Westchester Power has observed that the number of participating ESCOs in electricity supply solicitations has declined, even as the size of energy blocks increased with more municipalities and customers participating. There may be several reasons that apply nationwide, such as the risk of higher than average potential opt-out rates and reluctance to support long-term fixed rates in a highly volatile market for a large customer pool. Further reasons for ESCO reluctance that are specific to New York may include uncertainty over the rules concerning bidding procedures issued by the Public Service Commission and Staff and the

requirement for procuring New York State based renewable energy certificates (RECs) where those are increasingly scarce and more expensive than in other states.

Of all the factors above, only timing of solicitation and duration of contract are fully within the control of the administrator and municipalities. The other factors are determined by market conditions.

5.2.2 Electricity Supply Bids as Determining Factor for Participation Rates

Generally, the past year's utility rates are the best available data to evaluate electricity supply bids. Using this data, with the support of market analysis, the CCA administrator forms a view of potential future utility's variable rates.

The following basic scenarios illustrate how this analysis translates into participation scenarios.

- **High participation**. If the bid fixed supply rate appears to be lower than expected utility future variable rate, municipalities with enabling legislation would be more likely to participate by accepting the rate as a compliant bid. The program should experience a low volume of opt-outs, retaining most of the original eligible customers for the duration of the offering's term. This assumes 100% of usage is backed by 100% RECs. In this scenario, one might expect 90% retention of original eligible customers.

- **Medium participation**. If the bid supply rate appears at or close to the expected utility future variable rate, fewer municipalities with enabling legislation would be likely to participate by accepting this rate as a compliant bid. The program should experience a modest volume of opt-outs, retaining fewer but still most of its original eligible customers in the participating municipalities for the duration of the offering's term. This assumes 75% of usage is backed by 100% RECs. In this scenario, one might expect 85% retention of original eligible customers.

- **Low participation**. If the bid supply rate appears higher than the expected utility future variable rate, a few or even none of the municipalities with enabling legislation may choose to participate. In the former case, the program may experience a high volume of opt-outs, retaining many original eligible customers for the duration of the offering's term, but with a significant reduction in participation. This assumes 50% of usage is backed by 100% RECs. In this scenario, one might expect 70% retention of original eligible customers.

From Sustainable Westchester's experience, the closer the rates are in price between the standard supply and the REC backed supply, the more customers are likely to stay with the higher REC-backed supply as default or to change to the renewable offer from the standard supply.

If, however, participating municipalities determine bids to be non-compliant with the terms they entered the CCA, the administrator may be required to suspend the process and may resolicit bids at a later date when market conditions become more favorable.

5.3 CDG Supply and Demand Market Factors

5.3.1 Supply Factors

Contracting for community distributed generation differs from electricity supply in certain important respects.

Unlike electricity supply, in serving CDG eligible customers, the generation capacity that is available for contract is a significant limiting factor in participation or benefits delivered under the program.

On the positive side, the initial term of a typical contract is typically 20 years in duration with annual automatic renewals thereafter.

Factors in contracting for both opt-in and opt-out CDG include the following:

- **Federal and state incentives.** Because CDG credits are created by government policy, federal and state incentives program determine CDG supply and influence the prices of CDG credits.
    - The federal Inflation Reduction Act's increased tax incentives for solar and energy storage will help increase the supply of CDG credits as more projects are implemented. The IRA provides a bonus for serving disadvantaged communities, adding to the motivation for developers to aggregate customers for sizeable projects from those communities.
    - New York State is realigning its incentives to federal tax credits, seeking to reduce its incentives for projects that the federal incentives are targeting. Notwithstanding the New York State realignment, the positive impact of the IRA on private sector investment in clean energy, including community distributed generation capacity, should become visible in the 2024 interconnection queue and NY-SUN applications.
- **Material and labor supply.** Both the materials and labor markets have bottlenecks exacerbated by the pandemic. Materials lead times have become more predictable in 2023 than in 2021 and 2022. Some larger components, such as transformers, continue to have very long lead times. Just as critical, the solar/energy storage industry is facing a severe shortage of experienced and qualified labor in all phases of project development and implementation. This shortage resulted from the rapid growth of potential projects outpacing the availability of staff to accomplish the work. The combined impact of material and labor shortages is longer project completion times.
- **Interconnection.** Every CDG project needs interconnection approval from the local utility. The Coordinated Electric System Interconnection Review (CESIR) process, monitored by the Department of Public Service Staff, results in a written plan detailing the investment to be made by the developer. If the interconnection cost is too high, a developer may abandon the project. If the cost is high but still bearable, it will have an impact on the project economics. In more rural areas, the interconnection costs may be dominated by the need to add overhead poles over considerable distances. In

urban and suburban areas, the interconnection costs may be dominated by the size of transformers required.

- **Availability of suitable host sites.** Every CDG project needs a host site. For suburban and urban areas, roof-mounted systems are one of the few cost-effective options, with the cost-effective option being large, flat commercial roofs. In rural areas, ground-mounted systems are more common, where 10 acres of ground can host 4 to 5 megawatts of solar. Parking lots are prime candidates for solar canopies that generate revenues to the host, however these are costly due to the construction of the canopy.

5.3.2 Demand Factors — Recruitment Processes Drive Participation

Under both the opt-out or opt-in CDG enrollment scenario, the CCA administrator contracts for CDG capacity, typically one project at a time as those projects receive final approvals.

To achieve a fully subscribed opt-in enrollment for a given project, the administrator will usually devote six months or longer to the enrollment campaign. Municipalities may assist in publicizing the opportunity, but do not play a formal role.

The time-consuming process of attracting individual opt-in subscribers will likely yield lower enrollment capacity relative to opt-out CDG. The administrator with effective customer outreach coupled with efficient contract execution process will be much more successful in completing enrollments than one that has neither.

In evaluating potential demand for CDG in Erie County, one megawatt dc (1 MWdc) of CDG generation capacity will require approximately 120-160 HEAP or LMI households. For opt-out, the enrollment may be accomplished with the mandatory opt-out outreach and education and notification delivered to the eligible households in a single neighborhood. For opt-in, achieving the same enrollment requires collecting applications of these households individually.

Due to the different recruitment processes, the high, medium and low participation market demand scenarios play out differently than in the opt-out CDG offering.

As a result, the scale of the subscriber base that ECLIPSE can enroll on an opt-in basis in a cost-effective manner will determine the level of market participation achieved.

5.3.3 Erie County CDG Demand by Household Type

In the 2022 Straw Proposal, the Department of Public Service staff recommended that the Commission mandate that APP customers be served first in each CCA municipality, and that Administrators prepare a prioritization plan for rolling out the offering to all APP customers as CDG capacity is available.[45]

For this analysis HEAP households are used to represent APP households. As shown in Table 7, Erie County has about 132,600 HEAP households (residential accounts) using about 702,600 MWh of electricity annually. Per Commission orders, the APP customer group would not be eligible for an electricity supply offering under a CCA program unless the program

[45] NYS DPS, Straw Proposal, at 11.

offered a guaranteed savings. However, these households would be eligible for an opt-out CDG offering under a CCA program or an opt-in CDG offering within or outside of a CCA program. Serving the entire HEAP customer group would require approximately 880 MWdc of CDG project capacity.

Depending on the amount of project capacity acquired before the launch of the CCA offering, enrollment of the customer group may need to be phased, requiring the CCA program to employ a prioritization method and maintain an enrollment queue. There are various prioritization methods. For example, Sustainable Westchester will serve APP customers across all municipalities participating in the CCA opt-out CDG offering in the following order:

- Earliest participating municipalities, regardless of size
- DAC census tracts[46]
- Lowest Area Median Household Income census tracts

Erie County has approximately 25,000 non-APP households using about 132,000MWh/year that reside in New York State designated Disadvantaged Communities (DAC).[47] The DAC household customer group would be eligible for both electricity supply and opt-out CDG offerings. Approximately 170 MWdc of CDG would be needed to serve this customer group through opt-out CDG, as shown in Table 7.

Other non-APP residential households outside DAC neighborhoods number about eleven times the DAC households, totaling about 283,000 households that use 2,267,000 MWh per year. This customer group would be eligible for both electricity supply and opt-out CDG offerings. Approximately 3,880MW dc of CDG would be needed to serve this customer group through opt-out CDG, as shown in

Table 6.

Table 6: Estimated Residential CCA Eligible Customers in Erie County

Type of Customer	Estimated Number of Accounts	Estimated Annual Electricity Usage per Household[1] (kWh/year)	Estimated Total Annual Electricity Usage (MWh/year)	CDG Project Capacity[2] (MWdc)
HEAP Households	132,572	5,300	702,632	878
DAC Households (Non-HEAP)	24,925	5,300	132,103	165
Non-HEAP, Non-DAC Households	283,379	8,000	2,267,032	2,834
Total	440,876		3,101,766	3,877

[1] HEAP and DAC household average usage was estimated using Sustainable Westchester's experience with this customer group. Source for Other Residential Household (average annual household electricity use) is the CURE100 REGGIE tool, https://cure100.org/carbon-tracker/, inputs included the Town of Tonawanda zip codes as a proxy, accessed January 25, 2023.

[46] DAC criteria (designates DAC census tracts) are developed and reviewed annually by the Climate Justice Working Group of the state's Climate Action Council.

[47] The study used draft designated Disadvantaged Communities, as identified by the Climate Justice Working Group in 2022.

[2] Capacity was estimated using a conversion factor of 1,200 kWh/kWp/year and a 90% allocation, i.e., 90% of the total annual electricity usage was matched with CDG Capacity. The values also assume an electricity rate of $0.15/kWh (estimated using National Grid website for delivery and other charges https://www.nationalgridus.com/Upstate-NY-Home/Rates/Service-Rates and supply data https://www.nationalgridus.com/media/pdfs/billing-payments/electric-rates/upstate-ny/average_prices_ending_march_31_2023.pdf) and a VDER rate of $0.09/kWh (estimated using VDER calculator).

5.4 Financial Performance Projections

5.4.1 Opt-out Electricity Supply

In this section, we apply household data for Erie County to the market scenarios presented in Section 5.2 of this report. Recall that APP households are not eligible to be served by a fixed-rate supply offering unless that offering can guarantee savings each month. Hence, the scenarios below do not include any APP households.

The high participation market scenario projection assumes all ten municipalities listed above in

Table 4, participate in the program and that DAC households and Other Residential households that are non-APP or Non-DAC are served (referred to as Other Residential households hereafter). The scenario assumes 10% customer attrition during the opt-out period. This results in about 161,000 households participating in the program with an estimated annual usage of 1,236,000 MWh.

In the middle participation scenario, six municipalities with the highest APP households are assumed to participate. The scenario assumes that the program does not serve DAC households, only non-DAC households, and 15% customer attrition during the opt-out period. This results in about 110,000 households participating in the program, with an estimated annual usage of 880,000 MWh.

The low participation market scenario assumes three municipalities with the highest number of APP households participate in the program and that only non-DAC households are served. The scenario assumes 30% customer attrition during the opt-out period, resulting in about 64,000 households participating in the program, with an estimated annual usage of 514,000 MWh.

Table 7 displays projections for the electricity supply requirements for each market scenario. Customer attrition over the reminder of the year is assumed to be zero for the sake of simplicity. In reality, there will be background turnover as customers move into and out of the participating municipalities. Hence, all the projection models assume customer attrition occurs only during the opt-out period.

Table 7: Summary of Requirements for Opt-out Electricity Supply for Selected Erie County Municipalities

Market Scenario	High Customer Participation	Medium Customer Participation	Low Customer Participation
Opt-out supply rate	better than past utility rate	about same as past utility rate, but lower than expected future utility rate	lower than past utility, but also lower than expected future utility rate
Participating municipalities	10	6	3
Customer Group	DAC and Other Residential	Other Residential	Other Residential
Estimated Number of Households	179,000	129,000	92,000
Percent Attrition during Opt-out Period	10%	15%	30%
Estimated Number of Households Post Attrition	161,000	110,000	64,000
Estimated Annual Electricity Usage (MWh)	1,236,000	880,000	514,000
Notes: Table assumes DAC households are only included in a high participation scenario. Number of participating municipalities with the highest number of APP households is drawn from Table 5.			

CCA administrators are permitted to collect administration fees for the costs associated with running a CCA program. This fee is negotiated as part of the contract with the energy service company and is a component of the supply rate ($/kWh) customers pay. Administration fees range from $0.0008/kWh to $0.001/kWh, with new market entrants contemplating rates as high as $0.002/kWh.

Sustainable Westchester has charged a $0.001/kWh fee since it launched the Westchester Power program in 2016. This static rate has not considered inflation in costs over time. After seven years of operation, Sustainable Westchester finds the original fee inadequate against the significant inflation in expenses, and frequent policy changes that result in additional unbudgeted expenses.

This report advises that ECLIPSE collect a minimum of $0.0015/kWh. If new market entrants successfully secure and operate with higher fees, the County should evaluate whether those fees would be better suited for the ECLIPSE program. An administration fee of $0.0015/kWh is used for the financial modeling shown in Table 8. The resulting revenue yields $1.9 Million, $1.3 Million and $800,000 dollars, respectively, for the high, middle and low participation scenarios.

Table 8 Revenue projections for electricity supply for Erie County's 10 largest municipalities

		Market Scenarios*		
Municipal participation:		**High Participation**	**Medium Participation**	**Low Participation**
City of Buffalo		Yes	Yes	Yes
Other participating municipalities*		9	5	2
Eligible customer groups:***				
City of Buffalo	**DAC**	$89,000	$0	$0
	Other Residential	$339,000	$320,000	$264,000
Other municipalities	**DAC**	$74,000	$0	$0
	Other Residential	$1,352,000	$999,000	$507,000
	Totals	$1,854,000	$1,319,000	$771,000

* All revenue is based on an administrative fee of $0.0015/kWh.

** Number of other participating municipalities with the highest count of APP households (See Table 5).

*** Assumes DACs are only included in a Positive Market Scenario

The operating expenses structure set out in Section 5.1.3 are assumed for this analysis, subject to the following specific assumption for salaries and benefits: The high participation scenario provides funding for 5 to 6 staff members, the middle market scenario for about 3.5 to 4 staff members, and the low participation scenario for 2 to 2.5 staff members. Here and below, the report assumes that a 0.5 staff member, would dedicate 20 hours a week to the program.

As the number of customers increases, the program enjoys efficiencies of scale. After expenses, ignoring interest and taxes, the program is estimated to have a net excess revenue of 6% to 25%. The high participation scenario has a net excess revenue of about 25%. The low participation scenario has a very modest net excess revenue.

Estimated expenses for opt-out electricity supply for year 1 are shown in Table 9. An electricity supply contract will continue to provide revenue to the CCA program in year 2 from the administration fee for energy supplied delivered in that year. This provides an opportunity to develop a fund balance that will help maintain the fiscal stability of the aggregation.

Table 9: Opt-out Electricity Supply Financial Projections in year 1

	Market Scenario					
	High Participation		**Medium Participation**		**Low Participation**	
	% of Total Revenue	**$**	**% of Total Revenue**	**$**	**% of Total Revenue**	**$**
Revenue components						
# of customer served		161,454		109,982		64,195
Energy block supplied (MWh/y)		1,236,261		879,855		513,562
Admin fee earned ($/kWh)		$0.0015		$0.0015		$0.0015
Total Revenue	100%	**$1,854,000**	100%	**$1,320,000**	100%	**$770,000**
Expense						
Data Services & IT	2%	$31,000	2%	$28,000	3%	$24,000
Direct Program Expenses	6%	$111,000	7%	$86,000	8%	$62,000
Operations	12%	$222,000	12%	$158,000	12%	$92,000
Outside Services	5%	$97,000	6%	$79,000	6%	$46,000
Staff related	50%	$927,000	55%	$726,000	65%	$501,000

Total Expense	**75%**	**$1,388,000**	**82%**	**$1,077,000**	**94%**	**$725,000**
Net Excess Revenue/Fund balance	**25%**	**$466,000**	**18%**	**$243,000**	**6%**	**$45,000**

5.4.2 Opt-out CDG

This section evaluates each participation market scenario, projecting CDG capacity requirements to serve 50% of all APP (i.e. HEAP) households in the ten municipalities with the highest number of HEAP households, which would be about 57,000 households. We limit the analysis to this number of households because it would be difficult during the first year of ECLIPSE to expand beyond this size.

For opt-out CDG programs, market demand is determined by the cumulative CDG capacity of compliant bid responses and the size of the eligible customer base in participating municipalities.

In each of our three market scenarios, all participating municipalities accept the CDG offering, but supply capacity limits the number of subscribers that may be served.

A solicitation for CDG should state the desired discount rate the program aims to provide its customers. While a discount up to 10% was common across CDG projects completed in 2019 and 2020, since the inflationary impacts of the pandemic on material and labor costs, some CDG project developers are modelling a lower discount rate, closer to New York State's minimum 5%. However, there are state and national efforts to encourage that the savings rate offered to APP and DAC households be set at 10% or higher. For simplicity, we assume a 10% savings rate for all scenarios.

Regardless of what the savings rate is for the program, since this is a guaranteed savings opportunity, many customers may choose not to opt-out of the offering. With this in mind and based on experience with enrollment of opt-out electricity supply, all projections assume that 10% customer attrition occurs during the opt-out period. Any subsequent customer attrition is ignored or assumed to be zero in our analysis.

- **High participation**: Ample CDG capacity is available for serving 50% of the targeted subscriber group. After customer attrition, 45% of the customer demand is served.
- **Medium participation**: Modest CDG capacity is available for serving a reduced target subscriber group, 25% of original target. With the 10% customer attrition during the opt-out period, this results in 22.5% of customer demand being served.
- **Low participation**: Limited CDG capacity is available for a further reduced subscriber group, 10% of original target. With the 10% customer attrition, this results in 9% of customer demand being served.

The projections assume that only 90% of aggregate customer estimated annual electricity usage is matched with CDG project capacity. Were each customer allocated 100% of annual usage each month, the program administrator would have no flexibility to accommodate any variability in usage. Additionally, the projections assume an electricity rate of $0.15/kWh[48] and a Value of Distributed Energy Resources (VDER) rate of $0.09/kWh.[49]

The high participation scenario projection assumes CDG project capacity of about 340 MWdc is contracted to serve about 52,000 APP households.

The middle participation scenario assumes CDG project capacity of 170 MWdc to serve about 26,000 of eligible APP households.

The low participation scenario projection assumes CDG project capacity of 70 MWdc to serve about 10,000 of the eligible APP households.

Assuming each project has 5 MWdc in capacity, a total of 68, 34, and 14 projects would be required under the high, middle and low market scenarios, respectively.

Table 10 reports the results of the market scenarios analysis.

Table 10: Summary CDG Requirements for Opt-out CDG for Selected Erie County Municipalities

Market Scenario	High Customer Participation	Medium Customer Participation	Low Customer Participation
Estimated Number of HEAP Households	114,586	114,586	114,586
Percent of Originally Targeted Customers Sent Notification Letters	50%	25%	10%
Estimated Number of Households Participating Post Attrition During Opt-out Period	51,564	25,782	10,313
90% of Estimated Annual Electricity Usage (MWh)	245,959	122,979	49,192
Matching Project Production (MWh)	409,931	204,966	81,986
CDG Project Capacity (MW dc)	342	171	68
Number of Projects	68	34	14

Note: The calculations assume a 10% customer attrition during opt-out period for all market scenarios, an electricity rate of $0.15/kWh (estimated using National Grid website for delivery and other charges https://www.nationalgridus.com/Upstate-NY-Home/Rates/Service-Rates and supply data https://www.nationalgridus.com/media/pdfs/billing-payments/electric-rates/upstate-ny/average_prices_ending_march_31_2023.pdf) and a VDER rate of $0.09/kWh (estimated using VDER calculator). Also, a project size of 5 MW DC is used to estimate the number of projects needed.

[48] The electricity rate was estimated using National Grid delivery and other charges data, https://www.nationalgridus.com/Upstate-NY-Home/Rates/Service-Rates, and supply data https://www.nationalgridus.com/media/pdfs/billing-payments/electric-rates/upstate-ny/average_prices_ending_march_31_2023.pdf)

[49] The Value of Distributed Energy Resources rate was estimated using the NYSERDA VDER calculator.

While contracting CDG capacity for each scenario may be achievable over one year, timelines for projects contracted will vary, resulting in complete enrollments for HEAP households over an estimated two- to four-year period.

The program may keep an open request for proposals for CDG projects, which is recommended, or may choose to stop adding new projects and discontinue acquisition at some point, for example, after it has served all APP/HEAP and DAC households. However, it is important to recognize that customer management, and CCA responsibilities, could continue over the life of a project, which could be about 25 years.

This report models a second year of opt-out CDG operation to help illustrate the financial impact of management services over time when customer acquisition is no longer taking place. For simplicity, the second year ignores the effects of having a revenue escalator, recommended to be 2%, and inflation. The model assumes that the second year only has customer management revenue.

According to the 2022 Straw Proposal, an administrator offering opt-out CDG would be able to collect an upfront customer acquisition fee and an ongoing customer management and program operations fee.

In comparing Westchester Power's experience with opt-in CDG with that of other similar service providers, opt-out CDG administration fees are estimated within the following fee ranges:

- Customer Acquisition: $0.035 to $0.045 per kWh production
- Customer Management: $0.005 to $0.008 per kWh production

Our revenue projections assume a customer acquisition fee of $0.035 per kWh production and a customer management fee of $0.008 per kWh production resulting in year-one total revenues of $17.6 Million, $8.8 Million, and $3.5 Million for the high, medium and low market scenarios, respectively, as shown in 11, 12 and 13 respectively, below.

In year two, total revenue would dramatically decrease to about $3.3 Million, $1.6 Million, and $660,000 for the high, middle, and low market scenarios, respectively, as shown in Table 11, 12 and 13, respectively, below.

This opt-out CDG assessment uses the low-end value of the customer acquisition fee range ($.0.035 per kWh production) and the high-end value of the customer management fee range ($0.008 per kWh production), because it places high importance on the customer management fee. According to our modeling, the costs of providing customer management beyond year 1 could lead to negative revenue unless the program serves about 25,000 customers. This means that in the years when there is no customer acquisition, the program could have a deficit.

The operating expenses structure set out in Section 5.1.3 are assumed for this analysis, subject to the following specific assumption for salaries and benefits: The high participation scenario provides funding for 6 to 7.5 staff members, where 5 to 5.5 would be considered permanent program staff (continue from customer acquisition to ongoing management years) and about 2 temporary staff would only support the program during the acquisition phase.

The medium participation scenario provides funding for about 4.5 to 5 staff members, with about 3 serving as permanent program staff, and 1.5 to 2 as temporary only during the program's customer acquisition phase. The low participation scenario would provide funding for about 2 to 2.5 members, with about 1.5 serving as permanent staff and 1 as temporary only during the customer acquisition period.

If a program offers both supply and CDG offerings, there will be synergies in administration, allowing for one program director plus individual managers for supply and CDG offerings.

Table 11 presents the financial performance for the high participation market scenario of an opt-out CDG product offering.

Table 11: Opt-out CDG Financial Projections for High Customer Participation Market Scenario

	Year 1		Year 2	
	% of Total Revenue	**$**	**% of Total Revenue**	**$**
Revenue Components				
Customer served		51,564		51,564
Annual Electricity Production (MWh)		409,931		409,931
Acquisition Fee ($/kWh production)		$0.0350		na
Management Fee ($/kWh production)		$0.0080		$0.0080
Total Revenue	100%	$17,627,000	100%	$3,279,000
Expenses				
Data Services & IT	0.2%	$22,000	0.7%	$22,000
Direct Program Expenses	13%	$2,274,000	34%	$1,105,000
Operations	12%	$2,115,000	12%	$393,000
Outside Services	2%	$363,000	1%	$41,000
Salaries and Related	8%	$1,322,000	30%	$984,000
Total Expenses	35%	$6,096,000	78%	$2,545,000
Net Excess Revenue/Fund Balance	65%	$11,531,000	22%	$734,000

Table 12 presents the financial performance for the medium participation market scenario of an opt-out CDG product offering.

Table 12: Opt-out CDG Financial Projections for Medium Customer Participation Scenario

	Year 1		Year 2	
	% of Total Revenue	**$**	**% of Total Revenue**	**$**
Revenue Components				
Customer served		25,782		25,782
Annual Electricity Production (MWh)		122,979		122,979
Acquisition Fee ($/kWh production)		$0.0350		na
Management Fee ($/kWh production)		$0.0080		$0.0080
Total Revenue	100%	$8,814,000	100%	$1,640,000
Expenses				
Data Services & IT	0.3%	$22,000	1.4%	$22,000
Direct Program Expenses	14%	$1,234,000	35%	$574,000
Operations	12%	$1,058,000	12%	$197,000
Outside Services	4%	$331,000	1%	$21,000
Salaries and Related	11%	$996,000	38%	$615,000
Total Expenses	41%	$3,641,000	87%	$1,429,000
Net Excess Revenue/Fund Balance	59%	$5,173,000	13%	$211,000

Table 13 presents the financial performance for the low participation market scenario of an opt-out CDG product offering.

Table 13: Opt-out CDG Financial Projections for Low Customer Participation Market Scenario

	Year 1		Year 2	
	% of Total Revenue	**$**	**% of Total Revenue**	**$**
Revenue Components				
Customer served		10,313		10,313
Assumed Annual Electricity Production (MWh)		49,192		49,192
Acquisition Fee ($/kWh production)		$0.0350		na
Management Fee ($/kWh production)		$0.0080		$0.0080
Total Revenue	100%	$3,525,000	100%	$656,000
Expenses				
Data Services & IT	0.6%	$22,000	3.3%	$22,000
Direct Program Expenses	16%	$546,000	38%	$249,000
Operations	12%	$423,000	12%	$79,000
Outside Services	4%	$134,000	2%	$10,000
Salaries and Related	15%	$529,000	55%	$361,000
Total Expenses	47%	$1,654,000	110%	$721,000
Net Excess Revenue/Fund Balance	53%	$1,871,000	-10%	-$65,000

As the number of customers increases, the impact of the costs on the revenue decreases, showcasing efficiencies of scale. However, as shown by Tables 11, 12, and 13, only the high and medium customer participation scenario for monthly customer management has positive net revenue. Monthly customer management activities increase with scale, which include allocation of each customers' share of monthly production for CDG credits, and handing any customers who opt out, leaving the program, or who opt in. joining the program. For more detail on customer management activities, see Section 3.1of this report.

To consider the implications of the ongoing customer management, the net present value of 25 years of operation is analyzed, and the results are displayed in Table 14 below. Years one and two ignore an annual revenue escalator of 2% and an annual inflation rate of 3%, while other years assume these values.

At about 10,000 customers the profit margin or net excess revenue (ignoring taxes and interest deductions) is 5%. The administrator could evaluate decreasing the customer acquisition fee when the program reaches a healthier profit margin, which may be about 15,000-20,000 in customer size.

Table 14 Net present value calculations of 25 years of operation of all three market scenarios

Market Scenario	Higher Customer Participation	Medium Customer Participation	Lower Customer Participation
Customer served	51,564	25,782	10,313
Annual Electricity Production (MWh)	409,931	122,979	49,192
Total Revenue Year 1	$17,627,000	$8,814,000	$3,525,000
Net Revenue Year 1	$11,531,000	$5,173,000	$1,871,000
Total Revenue Net Present Value of 25 Years of Operation	$47,201,000	$23,606,000	$9,442,000
Net Revenue Net Present Value of 25 Years of Operation	$15,429,000	$5,567,000	$507,000
Profit Margin Net Present Value of 25 Years of Operation	33%	24%	5%
Note: Profit Margin (a.k.a. Net Excess Revenue) does not include deductions from taxes or interest due to loans. Also, the analysis uses a discount rate of 10% to discount all future cash flows to derive its net present value.			

5.4.3 Opt-in CDG

For each market scenario, Table 15 below displays projections for the CDG capacity requirements to serve portions of all HEAP households in the ten municipalities with the highest number of APP households, which would be about 115,000.

The assumptions for opt-in CDG are identical to those for opt-out CDG described in Section 5.4.2, except that opt-in CDG scenarios assume serving a much smaller portion of the customer base due to the time required to subscribe customers on an opt-in basis. Since Erie County interacts with low- to moderate-income households, it may be able to subscribe larger quantities than those assumed below for each market scenario over the year modeled.

All scenarios assume there is no customer attrition over the year modeled. The projections assume only 90% of the customers' estimated annual electricity usage is matched with CDG project capacity. The projections also assume an electricity rate of $0.15/kWh and a Value of Distributed Energy Resources (VDER) rate of $0.09/kWh.

The high participation scenario projection assumes about 5% of the APP households are subscribed. Approximately 5,700 households participate in the program and are matched to about 38 MWdc of CDG project capacity.

The middle participation scenario projection assumes about 2.5% of the APP households are subscribed. About 3,000 households participate in the program and are matched to about 20 MWdc of CDG Project Capacity.

The low participation scenario projection assumes 1% of the households are subscribed. Approximately 1,100 households participate in the program and are matched to about 8 MWdc of CDG Project Capacity.

Assuming each project has a 5 MWdc capacity, the number of projects that would be required under the high, middle, and low participation scenarios, respectively, is 8, 4, and 2.

Table 15: Selected Erie County Municipality Summary CDG Requirements for Opt-in CDG

Market Scenario	High Customer Participation	Medium Customer Participation	Low Customer Participation
Number of Households	114,586	114,586	114,586
Percent Customer Participation	5%	2.5%	1%
Number of Households Participating	5,729	3,067	1,146
90% of Estimated Annual Electricity Usage (MWh)	27,329	14,628	5,466
Matching Project Production (MWh)	45,548	24,381	9,110
CDG Project Capacity (MW dc)	38	20	8
Number of Projects	8	4	2

Note: The calculations assume there is no customer attrition during the modeled year for all market scenarios, an electricity rate of $0.15/kWh (estimated using National Grid website for delivery and other charges https://www.nationalgridus.com/Upstate-NY-Home/Rates/Service-Rates and supply data https://www.nationalgridus.com/media/pdfs/billing-payments/electric-rates/upstate-ny/average_prices_ending_march_31_2023.pdf) and a VDER rate of $0.09/kWh (estimated using VDER calculator). Also, a project size of 5 MW DC is used to estimate the number of projects needed.

An opt-in CDG program will likely be actively acquiring customers over several years to achieve a high participation scenario. This reflects the likelihood that the program would keep the solicitation for CDG capacity open for a long period to continue attracting new CDG projects.

This means that the program would continue to earn acquisition revenue over these years. The program could reach a healthy number of acquired customers, e.g.,15,000, while continuing to collect acquisition fees for newly acquired customers.

The opt-in CDG program may choose to outsource customer management services. However, keeping management services within the program generates revenue that will help cover program costs. We describe these options in the discussion of functional roles in Chapter 2.

In comparing Sustainable Westchester's experience with opt-in CDG to that of other similar service providers, opt-in CDG is estimated to have the following fee ranges:

- Customer Acquisition: $0.045 to $0.06 per kWh production
- Customer Management: $0.005 to $0.007 per kWh production

This analysis assumes a customer acquisition fee of $0.058 per kWh production, and customer management fee of $0.005 per kWh production resulting in a year-one total revenue of $2.9 Million, $1.5 Million, and $570,000 for the high, middle and low participation scenarios, respectively, as shown in Table 16 below.

The operating expense structure set out in Section 5.1.3 is assumed for this analysis, subject to the following specific assumption for salaries and benefits: The high participation scenario provides funding for 5 to 5.5 staff (continue from customer acquisition to ongoing management years), the middle participation scenario for about 2.5 to 3 staff members, and the low participation scenario for about 1.5 staff.

As the number of customers increase, efficiencies of scale improve. After expenses, ignoring interest and taxes, the program is estimated to have a net profit margin of 13% to 44%. The high participation scenario has a healthier net profit margin of about 44%, resulting in about $1,600,000 in net revenue. While the low participation scenario has a net profit margin of 13%, resulting in about $76,000 in net profit. It would be necessary to acquire about 1,100 households a year to maintain good financials over the course of the program until management fees provide enough revenues to sustain the program, which may occur at a customer size of 15000 to 25,000 households.

Table 16: Opt-in CDG Financial Projections for Year 1 Covering Customer Acquisition, Customer Management and Other Program Expenses

	Market Scenarios					
	High Participation		**Medium Participation**		**Low Participation**	
	% of Total Revenue	**$**	**% of Total Revenue**	**$**	**% of Total Revenue**	**$**
Revenue Components						
Assumed # of customer served		5,729		3,067		1,146
Assumed Annual Electricity Production (MWh)		45,548		24,381		9,110
Acquisition Fee Earned ($/kW production)		$0.0580		$0.0580		$0.0580
Management Fee Earned ($/kWh production)		$0.0050		$0.0050		$0.0050
Total Revenue	**100%**	**$2,870,000**	**100%**	**$1,536,000**	**100%**	**$574,000**
Expenses						
Data Services & IT	1%	$22,000	1%	$22,000	4%	$22,000
Direct Program Expenses	10%	$287,000	10%	$154,000	10%	$57,000

Operations	12%	$344,000	12%	$184,000	12%	$69,000
Outside Services	1%	$34,000	1%	$18,000	1%	$6,000
Salaries and Related	32%	$918,000	37%	$568,000	60%	$344,000
Total Expense	56%	$1,605,000	62%	$946,000	87%	$498,000
Net Excess Revenue/Fund Balance	44%	$1,265,000	38%	$590,000	13%	$76,000

Implementing Community Choice Aggregation – Steps and Timeline

The sequential steps required for program implementation are outlined below for the initial establishment of a community energy program that offers each of the three market offerings individually: opt-out electricity supply (Table 17), opt-out CDG (Timeline for Opt-out Community Distributed Generation

Table 18below outlines the typical sequence of tasks for establishing an offering of community distributed generation within an authorized CCA.

Table 18), and opt-in CDG (Table 19), respectively. The durations of each step are approximations, except where noted as minimum periods required by the CCA Framework Order.

The tables that follow assume that the Administrator of the community energy program is already approved to offer the product discussed. This pre-launch phase can take a year or longer. Further, significant investment is required prior to the first year of operation before any revenue is earned. The cost of the startup work is probably in the $200,000 to $400,000 range. For more details on the pre-launch activities, see Section5.1.3. For community choice aggregation opt-out offerings, this entails submitting a petition to the PSC to be authorized to act as a CCA Administrator with a Master Implementation Plan that describes the CCA program and lists the products offered. The Administrator will also self-attest to the acknowledgment of CCA program rules outlined by the DPS. Once the Administrator's petition has been accepted and the State Administrative Procedure Act (SAPA) notice has been published, the petition will undergo a three-month public comment period. Once the comment period is closed, the PSC can issue a ruling on the petition, which may occur a few weeks to several months after the end of the comment period.

For opt-in and opt-out CDG, the Administrator must also file a DER Provider Registration form which may take a few months to be reviewed and approved.

Additionally, the tables assume that the Administrator has set up the technology, data, and service provider infrastructure to deliver the community energy program products. The time to set up this infrastructure may vary based on resources available to Erie County, solicitation requirements, etc. The costs involved for this work is largely administrative and legal in nature, such as issuing and reviewing procurement solicitations, evaluation responses and reaching contracts with the selected providers.

5.5 Timeline for Opt-out Electricity Supply

Table 18 below outlines the typical sequence of tasks for establishing an electricity supply offering within an authorized CCA.

Table 17 Steps and Timeline for CCA offering of Electricity Supply[50]

	Task	Duration
1	Municipal preparation (i.e., calling for public hearing on the CCA enabling local law, selecting a program model, submitting implementation plan, etc.)	Varies
2*	Municipalities adopt Enabling Law for CCA Electric Supply *	30 – 60 days
3a*	Outreach & Education Period (may begin only after adoption of local law)*	60 days minimum
3b**	Sign Memorandum of Understanding between Municipality and CCA Administrator (e.g. to authorize the Administrator to conduct energy supply bid process on behalf of Municipality).**	28 – 60 days
4**	Administrator submits Aggregate Data Request to Utility for Approved Municipalities to build the Energy Supply solicitation.**	10-14 days
5	Administrator conducts electricity supply solicitation/auction to reach compliant bids.**	1 day
6	Execute Electric Service Agreement for winning compliant bid/s between Municipality and ESCO (and/or CCA Administrator).**	1 month
7	Municipality Filing Submitted to DPS (Enabling Law, Outreach & Education record, etc.)*	1 day
8	Approval of Municipality Filing by DPS*	14 – 28 days
9	Customer-level Data Request(s) submitted to Utility (for all accounts eligible for this offering)	10 days
10	Post-Contract Outreach Meeting*	1 day
11	Submit Proof of Post-Contract Meeting to PSC*	1 day
12	Notification Letter Filed with DPS at Least 5 Days Prior to Mailing*	5 days
13	Notification Letter Mailed*	1 – 3 days

[50] Recent DPS filings will impact timelines and steps outlined in Table 17 and Table 18, including "Proposed CCA Outreach and Education Modifications" (issued 5/19/2023),"Department Of Public Service Staff Proposal Regarding Community Choice Aggregation Program Requests For Proposals And Energy Service Agreements" (issued 5/19/2023), which would change timelines and steps listed here. (Case 14-M-0224).

14	30-Day opt-Out Period*	30 days
15	Enrollments Sent to Utilities	10 days
16	Service Begins: CCA electricity supply rate begins to appear on Participating Customer bills (duration depends on meter-read date of customers)	Up to 60 days
17	Ongoing Customer Enrollment/Management Services	Ongoing
Key	*Text indicates a mandatory task under PSC requirements. **Text indicates a task that is unique to this CCA program offering.	
Typical times to implement opt-out electricity supply vary and may range from 12 to 14 months.		

5.6 Timeline for Opt-out Community Distributed Generation

Table 18below outlines the typical sequence of tasks for establishing an offering of community distributed generation within an authorized CCA.

Table 18 Steps and Timeline for CCA offering of Opt-out Community Distributed Generation

	Task	Duration
1	Municipal preparation (i.e., calling for public hearing on the CCA enabling local law, selecting a program model, submitting implementation plan, etc.)	Varies
2a	Municipalities adopt Enabling Law for CCA opt-out CDG.*[51]	14 – 28 days
2b	Execute Administration Agreements between Municipality and CCA Administrator for opt-out CDG offering (This task may be concurrent with adoption of the Enabling Law or take place at a different time depending on program/contract structure.)	28 – 60 days
3	Outreach & Education Period (may begin only after adoption of local law)*	60 days minimum
4	Administrator solicits CDG Project capacity from CDG Sponsors and reaches agreements with them to provide Project Services, i.e., Customer Acquisition and Management.** (This and the next task may be concurrent with the Outreach & Education period.)	Ongoing
5	Administrator and CDG Sponsor execute Service Agreements with project-level work scopes.**	Ongoing
	NOTE: At this point in opt-out CDG, the next steps of customer	(tbd) e.g. 9 months

[51] As noted earlier, out CDG is currently on hold, but this was the process for the projects that were previously approved.

	Task	Duration
	enrollment will depend upon the dates utilities grant the permission to operate (PTO) for each of the respective CDG projects. Typically, CDG Sponsors will want customer acquisition completed a few months prior to targeted PTO date. This sample timeline assumes a typical elapsed time between execution of Service Agreement and construction and PTO for a CDG project of 12 months, leaving circa 9 months for customer acquisition.	
6	Municipality Filing Submitted to DPS (Enabling Law, Outreach & Education record, etc.)*	1 day
7	Approval of Municipality Filing by DPS*	14 – 28 days
8	Customer-level Data Request(s) submitted to Utility (for all accounts eligible for this offering) typically 3 months prior to CDG Project reaching PTO date.	10 days
9	Post-Contract Outreach Meeting.*	1 day
10	Submit Proof of Post-Contract Meeting to PSC.*	1 day
11	Notification Letter Filed with DPS At Least 5 Days Prior to Mailing*	5 days
12	Notification Letter Mailed.*	1 day
13	30-Day opt-Out Period.*	30 days
14	Enrollments Sent to Utilities.	10 days
15	Customer enrollment in net crediting by the Utilities**	Up to 60 days
16	Service Begins: opt-out CDG credits begins to appear on Participating Customer bills (duration depends on meter-read date of customers)	Up to 60 days
17	Ongoing Customer Enrollment/Management Services	Ongoing
Key:	*Text indicates a mandatory task under PSC requirements. **Text indicates a task that is unique to this CCA program offering.	
Typical times to implement opt-out CDG vary and may range from 16 to 20 months.		

5.7 Timeline for Opt-in Community Distributed Generation

It is important to note that an opt-in CDG offering in New York State does not require a Community Choice Aggregation be established. A CCA program may offer opt-in CDG but the table below assumes that the establishment of a CCA is not included.

Table 19 Steps and Timeline for Opt-in Community Distributed Generation

	Task	Duration
1	Administrator solicits CDG Project capacity from CDG Sponsors and reaches agreements with them to provide Project Services, i.e., Customer Acquisition (Program could also offer Customer Management services).**	Ongoing
2	Administrator and CDG Sponsor execute Service Agreements with project-level work scopes.**	Ongoing
3	Outreach & Education*	90 days - ongoing
	NOTE: At this point in CDG, the next steps of customer enrollment will depend upon the dates utilities grant the permission to operate (PTO) for each of the respective CDG projects. Typically, CDG Sponsors will want customer acquisition completed a few months prior to targeted PTO date. This sample timeline assumes a typical elapsed time between execution of Service Agreement and construction and PTO for a CDG project of 12 months, leaving circa 9 months for customer acquisition.	(tbd) e.g. 9 months
4	Enrollments Sent to Utilities.	10 days
5	Customer enrollment in net crediting by the Utilities**	Up to 60 days
6	Service Begins: CDG credits begins to appear on Participating Customer bills (duration depends on meter-read date of customers)	Up to 60 days
7	Ongoing Customer Enrollment/Management Services	Ongoing
Key:	*Text indicates a mandatory task under PSC requirements. **Text indicates a task that is unique to CDG product offering.	
Typical times to implement opt-out CDG vary and may range from 12 to 14 months.		

6 Impact Analysis

The environmental, financial, and health benefits for each community energy program are described in this chapter.

6.1 Greenhouse Gas Emissions

Out of the three community energy products evaluated in this report, opt-out electricity supply is the only product with the potential to provide direct greenhouse gas mitigation benefits. Municipalities may choose to have all or a portion of the electricity usage in the program backed with 100% Renewable Energy Certificates (RECs). These RECs are paid for by program participants purchasing the program's REC-backed electricity supply option, connecting these program participants directly to supporting greenhouse offsets.

This report study models the year one carbon dioxide equivalent offset for each market scenario described in Chapter 4 — high, medium and low customer participation. The modeling assumes that the program offers a 100% REC backed electricity supply and a standard electricity supply that is not backed by 100% RECs, and that as market conditions worsen, more program participants opt to use the standard supply option because it is less expensive. 100%, 75%, and 50% of the annual electricity usage of the program is assumed to be backed by 100% RECs for the high, medium and low participation market scenarios, respectively.

The model uses the New York State upstate subregion, NYUP, for 2021 to calculate the carbon dioxide equivalent offset.[52] As shown in Table 20 below, the high participation market scenario offsets approximately 131,000 metric tons of carbon dioxide equivalent in year one. The medium and low participation market scenarios avoid about 70,000 and 27,000 metric tons of carbon dioxide equivalent, respectively.

Table 20 Estimated Annual Carbon Dioxide Avoided for Opt-out Electricity Supply Market Scenarios

Market Scenario	Percentage of Usage Backed By 100% Renewable Energy Certificates (RECs)	Estimated Annual Electricity Usage Backed By 100% RECs (MWh)	Carbon Dioxide Equivalent (Metric Ton Per MWh)	Estimated Annual Carbon Dioxide Equivalent Offset (Metric Ton/year)
High Participation	100%	1,236,261	0.1057	130,713
Medium Participation	75%	659,892	0.1057	69,772
Low Participation	50%	256,781	0.1057	27,150

*Data uses EPA Power profiler data - https://www.epa.gov/egrid/power-profiler#/ which gives CO2 content in each subregion. The New York State Upstate sub grid, NYUP, for 2021 is used for to calculate Carbon Dioxide Equivalent Offset (Metric Ton).

[52] Source: https://www.epa.gov/egrid (accessed March 1, 2023)

Opt-out CDG and opt-in CDG have environmental benefits, RECs, that accrue to the entity that purchases and retires them, which is typically the utility or the project funder. Neither the CDG site host nor the CDG subscriber as customer is typically a direct recipient or owner of the RECs generated by the CDG project's carbon offset.

However, both opt-out and opt-in CDG programs encourage the development of CDG projects that have environmental benefits and accompanying RECs, even when held by others. In the future, CCA programs may be able to buy these RECs directly through their opt-out electricity supply product offerings.

6.2 Poverty Alleviation Through Reducing Energy Burden

To date, the market has not been able to provide opt-out electricity supply that guarantees financial savings for program participants. The product is usually offered at a fixed rate set by the current market and future predictions for electricity supply pricing. Although it is not possible to guarantee savings via opt-out electricity supply, electricity supply rates could be compared to past utility electricity supply rates. Further, the utility rates are variable rates affected by the volatility in the energy market, whereas the electricity supply rates are fixed rates.

In Sustainable Westchester's experience, Westchester Power program participants have had savings when the fixed rate was lower than utility rates that were canceled out at times when the fixed rate was higher than utility rates.

Opt-out and opt-in CDG do offer guaranteed financial savings for program participants (customers or subscribers). Each program participant is assigned a portion of the CDG project that matches about 90% of the participant's annual electricity usage. Each portion of the project generates monthly CDG credits (financial credits). A New York State mandated minimum of 5% of these credits are applied to the program participant's monthly electricity bill as a guaranteed savings. Throughout this analysis, CDG projects are assumed to provide 10% of the CDG credits as savings to participants.

For both opt-out and opt-in CDG, this report study models one year of savings that program participants receive for each market scenario analyzed in chapter 4. The study assumes a 10% savings rate on the CDG credits, that is, program participants receive 10% of the CDG credits generated as a monetary savings on their electric bills. It also assumes an estimated customer's total electricity bill rate of $0.15/kWh (covers supply, delivery, and other charges), which was estimated as average for Erie County for 2022-2023[53]. The analysis also assumes a Value of Distributed Energy Resources (VDER) rate of $0.09/kWh for the energy produced by the CDG project.[54]

Table 21 shows that in a high participation market scenario, the opt-out CDG offering will provide all program participants with about $3.7 million in savings in year one. Similar savings will be provided to the group annually for the project's life. The medium participation market scenario will provide all program participants with about $1.8 million in annual

[53] The electricity rate was estimated using National Grid delivery and other charges data, https://www.nationalgridus.com/Upstate-NY-Home/Rates/Service-Rates, and supply data https://www.nationalgridus.com/media/pdfs/billing-payments/electric-rates/upstate-ny/average_prices_ending_march_31_2023.pdf)

[54] The Value of Distributed Energy Resources rate was estimated using the NYSERDA VDER calculator.

savings, and the low participation scenario will provide all program participants with about $700,000.

Table 21 Estimated Annual Financial Savings for Opt-out CDG

Market Scenario	Assumed Annual Electricity Usage (MWh)	Estimated Annual Savings ($)
Higher Customer Participation	245,959	$3,689,383
Medium Customer Participation	122,979	$1,844,691
Lower Customer Participation	49,192	$737,877

Note: The table assumes an electricity rate of $0.15/kWh (estimated using National Grid website for delivery and other charges https://www.nationalgridus.com/Upstate-NY-Home/Rates/Service-Rates and supply data https://www.nationalgridus.com/media/pdfs/billing-payments/electric-rates/upstate-ny/average_prices_ending_march_31_2023.pdf) and a VDER rate of $0.09/kWh (estimated using VDER calculator)

In Table 21 above, the effective savings per megawatt-hour of energy use is $15.00 in each market scenario for opt-out CDG participants.

Table 22 shows that the opt-in CDG offering will provide all program participants with about $400,000 in annual savings in a high participation market scenario. The medium participation market scenario will provide all program participants with about $200,000 in annual savings, and the low participation market scenario will provide all program participants with about $80,000.

Table 22 Estimated Annual Financial Savings for Opt-in CDG

Market Scenario	Assumed Annual Electricity Usage (MWh)	Estimated Annual Savings ($)
High Customer Participation	27,329	409,931
Medium Customer Participation	14,628	219,427
Low Customer Participation	5,466	81,986

Note: The table assumes an electricity rate of $0.15/kWh (estimated using National Grid website for delivery and other charges https://www.nationalgridus.com/Upstate-NY-Home/Rates/Service-Rates and supply data https://www.nationalgridus.com/media/pdfs/billing-payments/electric-rates/upstate-ny/average_prices_ending_march_31_2023.pdf) and a VDER rate of $0.09/kWh (estimated using VDER calculator)

In Table 22 above, the effective savings per megawatt-hour of energy use is $15.00 in each market scenario for opt-in CDG participants. A household using 5 MWh would save about $75 in annual savings regardless of high, medium, low customer participation.

6.3 Public Health

While the specific public health impacts of a CCA program, with either an electricity supply or CDG offering, may vary depending on the local conditions, several potential benefits that could have positive impacts on public health:

- **Reduced air pollution:** One of the primary benefits of CCA is that it can promote the use of clean and renewable energy sources such as wind and solar power. This shift away from fossil fuels could help reduce air pollution and improve air quality, which could have positive impacts on respiratory health and reduce the incidence of respiratory diseases such as asthma.

- **Increased access to renewable energy:** CCA also helps increase access to renewable energy for residents and businesses in a community, which could lead to reduced reliance on carbon-based energy sources. This shift could help reduce greenhouse gas emissions and mitigate the impacts of climate change, which could have numerous positive impacts on public health.

- **Lower energy costs:** CCA can also provide residents and businesses with lower energy costs than they might otherwise incur under traditional utility models. These savings could free up household income for other necessities such as healthcare, which could help promote better overall health and well-being.

- **Improved local economies:** CCA can help stimulate local economies by creating jobs in the renewable energy sector and keeping energy dollars within the community. This economic growth could lead to better access to healthcare and other public services, which could have positive impacts on public health.

The companion to this report — *LMI Existing Programs and Opportunities Report: Addressing Energy Burden in Erie County* — provides further analysis of potential metrics that a CCA could adopt to measure its potential impact in improving public health.

Appendix 1 New York State Community Choice Aggregation Orders 2015-2022

Reforming the Energy Vision, Order Instituting Proceeding (REV) [Issued April 25, 2014]
Under Case 14-M-0101, New York State issued a quadrennial state-wide energy plan called The Reforming the Energy Vision ("REV") that embraced a decentralization of energy infrastructure, a radical departure from the prior State Energy Plans, and laid out both ambitious clean energy targets and policy options for shifting the state away from its reliance on large, centralized power generation capacity.
Order Granting Petition In Part (SW Pilot Order) [Issued February 26, 2015]
Sustainable Westchester was granted permission by the Public Service Commission (PSC) to create and administer New York's first Community Choice Aggregation program with the issuance of the Order Granting Petition in Part (Case 14-M-0564) within Westchester County.
Order establishing a community distributed generation program and making other findings (CDG Order) [Issued July 17, 2015]
Under Case 15-E-0082, Proceeding on Motion of the Commission as to the Policies, Requirements and Conditions for Implementing a Community Net Metering Program, the Commission issues this order to enable "shared solar" and other community distributed generation opportunities.
Order Authorizing Framework for Community Choice Aggregation Opt-Out Program (CCA Framework Order) [Issued April 21, 2016]
Through Community Choice Aggregation Framework Order (Case 14-M-0224), the PSC extended CCA eligibility to the rest of New York State.
Order on Request for Reconsideration and Petition for Rehearing (Reconsideration Order) [Issued October 13, 2016]
Under Case 14-M-0244, the PSC clarifies steps that make it easier to form CCAs, e.g. allowing gradual roll out in larger cities rather than enrollment of all opt-out eligible customers at once and requiring greater information sharing between utilities and CCAs.
Order Approving Community Choice Aggregation Program and Utility Data Security Agreement with Modifications (MEGA Order) [October 19, 2017]
The MEGA order clarified that, under Case 14-M-0244, if a CCA intends to serve Assistance Program Participants (APPs) (customers enrolled in the Utilities' low-income assistance programs), it must ensure that those customers are enrolled in a product that provides guaranteed savings. It also outlines processes that must be followed to serve APPs.
Order Approving Community Choice Aggregation Programs With Modifications (Good Energy Order) [January 18, 2018]

Under Case 14-M-0244, the Good Energy Order authorizes this administrator to proceed with CCA with modifications that make its implementation requirements equal to the MEGA Order.
Order Approving Joule Assets' Community Choice Aggregation Program With Modifications (Joule Order) [March 16, 2018]
Under Case 14-M-0224, this PSC order approves Joule Assets' Community Choice Aggregation program with modifications, allowing the administrator to work with approved participating municipalities to implement an opt-out Community Distributed Generation (CDG, community solar) offering, to enroll its residents and small businesses for CDG subscriptions "without affirmative consent" from individual opt-out Eligible Customers, unless customers choose to opt-out and not receive CDG credits. The order outlines requirements needed for opt-out CDG to be offered within CCA programs.
Order Regarding Consolidated Billing for Community Distributed Generation (Consolidated Billing Order) [December 19, 2019]
Under Case 19-M-0463, this PSC order mandates the implementation of consolidated billing, through the net crediting model, for all the utilities, which "will significantly reduce costs for CDG projects in New York State while also increasing benefits and clarity for CDG members and the potential for low-income customers to participate in and benefit from the CDG program."
Department of Public Service Staff White Paper on Community Choice Aggregation Programs (Staff White Paper) [Issued April 14, 2021]
Under Case 14-M-0224, The Staff White Paper describes the current status of New York's CCA programs, details the successes and challenges faced since the initiation of these programs, identifies potential program improvements, and presents recommendations based upon the experience of DPS Staff in conducting oversight and monitoring of the CCA programs.
Order Identifying Further Procedural Steps Regarding the Development of Opt-Out Community Distributed Generation (CDG Procedural Order, a.k.a. "Pause Order") [Issued November 22, 2021]
The Commission needs additional time "to properly develop the appropriate program operation, oversight, and enforcement rules to ensure a successful opt-out CDG program." Under Case 14-M-0224, this order pauses the approval of opt-out CDG offerings within CCA programs "until these programmatic rules are established." It orders the Staff to prepare a "proposal for opt-out CDG program operation, oversight, and enforcement" of CCA programs that include opt-out CDG.
Department of Public Service Staff Straw Proposal on Opt-Out Community Distributed Generation (Straw Proposal) [Issued March 29, 2022]
The staff responds to the Pause Order with a Straw Proposal that combines concepts from and experiences with three related cases: CASE 14-M-0224, *Proceeding on Motion of the Commission to Enable Community Choice Aggregation Programs*; CASE 15-E-0082,

Proceeding on Motion of the Commission as to the Policies, Requirements and Conditions For Implementing a Community Net Metering Program; and CASE 19-M-0463, *In the Matter of Consolidated Billing for Distributed Energy Resources*. After extensive stakeholder engagement, the Proposal identifies proposed opt-out CDG program recommendations that could shape potential program rules and requirements going forward.
Order Expanding NY-SUN Program ("10GW Order") [issued April 14, 2022]
In response to a petition filed by NYSERDA, *10 GW Distributed Solar Roadmap* (December 17, 2021), the Commission starts a new Case, 21-E-0629, and issues an order that will revise and expand the NY-SUN solar program incentives to meet the expanded solar capacity of 10 GW needed to meet New York's Climate Act goal of 40% renewable energy resources by 2030. The implementation of new incentives occurs just months after many of the prior NY-SUN incentives had exhausted their allocated funds.
Order Modifying Community Choice Aggregation Programs and Establishing Further Process ("Modifying CCA Order"). [Issued January 19, 2023]
Under Case 14-M-0224, the Commission responds to the proposals put forward in the 2021 Staff White Paper with modifications to expedite Administrator submittals, clarify the reporting requirements and standardize program structures.
Note: All documents above may be retrieved at https://www.dps.ny.gov/ under "Commission Files" by searching by Case Number, e.g., 14-M-0224, and date of document.

Appendix 2 Community Choice Aggregation Resources

NYSERDA CCA Toolkit

NYSERDA publishes a helpful CCA Toolkit as part of the Clean Energy Community program.[55] It includes the following: (a) Fact Sheet; (b) Step-by-Step Guidance; (c) Links to Commission documents and Orders; (d) Frequently Asked Questions; (e) Link to Community Energy Usage Data; and (f) Templates for: Requests for Proposals, Implementation Plans, Authorizing Legislation, Inter-Municipal Agreements, Opt-out Letters, and Memorandums of Understanding.

NYSERDA Clean Energy Communities

The Clean Energy Communities program rewards cities, towns and villages that adopt community choice aggregation offerings of 100% renewable energy backed supply and/or opt-out CDG credits.[56]

DPS Community Choice Aggregation

The Department of Public Service Staff created the CCA Program Rules that is periodically updated with any changes or modifications to CCA program requirements. When changes are made, the updated version is filed with the Secretary in Case 14-M-0224 and is posted on the CCA webpage.[57]

US EPA Community Choice Aggregation

The US EPA Green Power Markets program tracks CCA programs throughout the country.[58]

Local Energy Aggregation Network

LEAN Energy US provides information resources and market expertise to a national network of local governments, commercial and non-profit organizations, advocacy groups and individuals wishing to pursue CCA in their state and/or community.[59]

[55] https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Communities/How-It-Works/Toolkits/Community-Choice-Aggregation
[56] https://www.nyserda.ny.gov/All-Programs/Clean-Energy-Communities/Tracking-Progress/CEC-Map
[57] https://dps.ny.gov/community-choice-aggregation
[58] https://www.epa.gov/green-power-markets/community-choice-aggregation
[59] https://www.leanenergyus.org/

Appendix 3 CCA Administrators and Aggregations in New York (2022)

In

Table 23 below, the list of approved Administrators indicates the aggregations each has and the product offerings of these aggregations. This information is adapted from the DPS website and reflects data during 2022. Note, this data differs from that shown in *Table 1* in Chapter 1 as the data below represents a cutoff point later in 2022 than the end of 2021 cutoff for data in Table 1.

Further, throughout 2022, several aggregations had to pause their supply offerings for a number of months due to receiving non-compliant bids for renewal of supply contract during the year. The main reason for non-compliant bids was the extreme volatility in energy supply markets leading to higher than desired fixed-rate prices.

The number of municipalities and of accounts participating in these aggregations may have fallen by the end of 2022.

Table 23 New York State approved CCA Administrators and Aggregation Offerings (2022)

CCA Administrator	Aggregation	Offerings
Sustainable Westchester, Inc. Associated Case: 14-M-0564 Commission Approval: 02/26/2015 Program Launch: June 2016.	Westchester Power 29 municipalities, 144,000 accounts	Electricity Supply: REC backed and Standard. Opt-out CDG (proposed)
Municipal Electric and Alliance, Inc. (MEGA) Associated Case: 16-M-0015 Commission Approval: 10/19/2017 Program Launch: 2019	Capital Region Aggregation Southern Tier Aggregation - National Grid Southern Tier Aggregation - NYSEG Western NY Aggregation 13 municipalities, 9,000 accounts	Electricity and Gas Supply
Good Energy, L.P. Associated Case: 14-M-0224 Commission Approval: 1/18/2018 Program Launch: 2019	Clinton Community Choice Greene County Community Energy Wesley Hills Choice 6 municipalities, 4,100 accounts	Electricity Supply
Joule Assets, Inc. Associated Case: 15-E-0082 Commission Approval: 3/16/2018 Program Launch: 2019	Finger Lakes Community Choice Hudson Valley Community Power Monroe Community Power Gateway Community Power Rockland Community Power 23 municipalities, 112,000 accounts	Electricity Supply: REC backed and Standard. Opt-out CDG (active in Lima and Brockport).

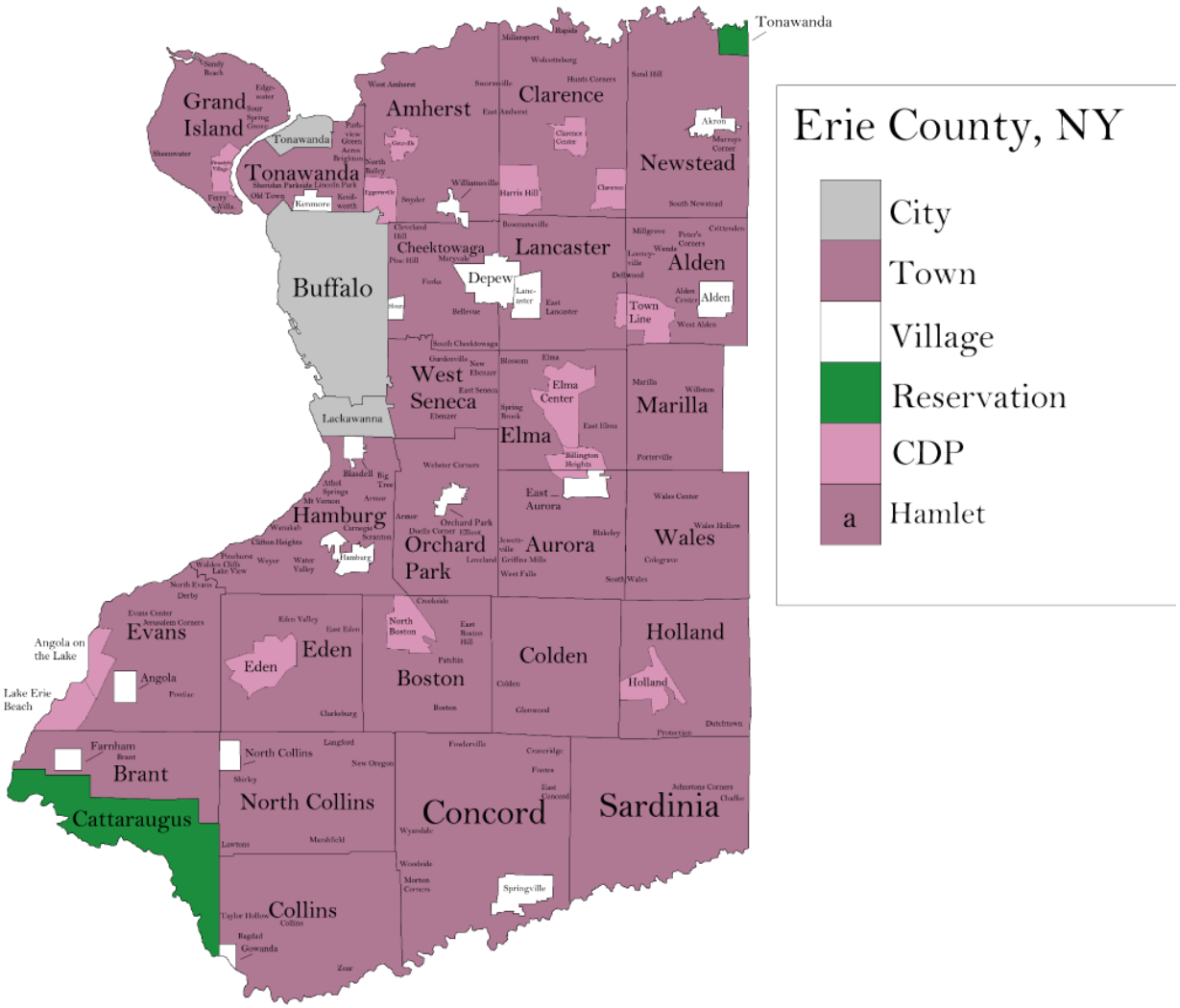
Source: Adapted from DPS CCA website, reflecting 2022 calendar data, accessed January 9, 2023

Appendix 4 Erie County Municipalities[60]

List of Cities, Towns, Villages and Reservations in Erie County	Town location of Villages	Utility 1	Utility 2	Estimated Total Number of Households	Estimated Number of Home Energy Assistance Program (HEAP) Households
City of Buffalo		NG		118,071	74,163
Town of Cheektowaga		NG	NYSEG	31,750	10,319
Town of Amherst		NG		50,558	7,655
Town of Tonawanda		NG		24,709	5,858
City of Lackawanna		NG		8,475	5,187
Town of Hamburg		NG		19,912	3,293
Town of West Seneca		NG	NYSEG	19,863	3,027
City of Tonawanda		NG		6,947	2,021
Village of Kenmore	Tonawanda (T)	NG		7,157	1,592
Village of Depew	Cheektowaga (T), Lancaster (T)	NG	NYSEG	6,538	1,471
Town of Evans		NG		1,763	1,340
Town of Lancaster		NYSEG		18,079	1,064
Town of Orchard Park		NYSEG		6,729	987
Village of Lancaster	Lancaster (T)	NYSEG	NG	4,964	946
Town of Grand Island		NG		8,800	842
Town of Clarence		NYSEG		12,605	728
Village of Sloan	Cheektowaga (T)	NYSEG		1,647	687
Village of Hamburg	Hamburg (T)	NYSEG		4,324	466
Town of Elma		NYSEG		4,665	445
Village of Springville	Concord (T)	Springville Electric		1,809	427
Village of Blasdell	Hamburg (T)	NG		1,208	421
Town of Eden		NG		3,054	419
Town of Newstead		NG		2,783	406
Town of North Collins		NG		1,351	356

[60] This list is presented in descending order of Food Stamp/SNAP recipients (final column on right) as a proxy for the number of APP household in each municipality.

Town of Boston		NYSEG		3,753	340
Village of Angola	Evans (T)	NG		1,034	271
Village of Akron	Newstead (T)	NG		1,372	263
Village of Alden	Alden (T)	NYSEG		1,133	256
Town of Alden		NG	NYSEG	3,043	251
Town of Concord		NYSEG	NG	2,279	243
Village of Williamsville	Amherst (T)	NG		2,502	234
Town of Colden		NYSEG		1,208	222
Town of Marilla		NYSEG		2,051	216
Town of Collins		NG		1,976	195
Village of East Aurora	Aurora (T)	NYSEG		2,448	189
Town of Sardinia		NYSEG		1,103	175
Town of Holland		NYSEG		1,407	173
Village of Gowanda	Collins (T) and partly in Cattaraugus (County)	NG	NYSEG	1,152	159
Town of Wales		NYSEG		1,285	135
Town of Aurora		NYSEG		5,466	125
Town of Brant		NG		898	106
Village of Orchard Park	Orchard Park (T)	NYSEG		1,394	53
Village of North Collins	North Collins (T)	NG		450	
Village of Farnham	Brant (T)	NG		174	
Cattaraugus Reservation	Partly in Erie County			722	434
Tonawanda Reservation	Partly in Erie County			3	0
Null					4412



Source: https://en.wikipedia.org/wiki/Erie_County,_New_York# (CC) CC BY-SA 4.0

Appendix 5 New York State Community Distributed Generation (CDG) Pipeline (2021-2021)

An ECLIPSE CCA program would be targeting the pipeline of CDG projects within the National Grid and NYSEG territories.

Many CDG projects take longer than two years to complete. For example, of all the CDG projects that reserved incentives with NYSERDA in 2021 about 389 MW of that capacity were completed in 2022, with 669 MW still in development and not yet complete as of July 2023. [61]

Table 24 Incomplete CDG projects reserving NYSERDA incentives displays data for CDG projects that have not been completed that reserved NYSERDA incentives in the National Grid and NYSEG service territories since 2016 when NYSERDA began tracking CDG as a category of project type. The projects are arranged by year of their initial application to NYSERDA, which typically occurs immediately after securing a preliminary interconnection approval from the utility and before any local land use and building permits are submitted for review and approval.

Table 24 Incomplete CDG projects reserving NYSERDA incentives in Nat Grid and NYSEG territories

Pipeline of CDG projects not yet completed (by year of NYSERDA application)		
Utility	**Count of CDG projects**	**Sum of Total Nameplate kW DC**
National Grid		
2016	1	3,503
2019	14	80,310
2020	71	429,206
2021	81	480,705
2022	160	924,233
2023	32	204,367
Subtotal	**359**	**2,122,324**
NYS Electric and Gas	**119**	**736,150**
2019	1	6,773
2020	5	26,313
2021	29	189,153
2022	69	419,601
2023	15	94,310
Subtotal	**119**	**736,150**
Grand Total	**478**	**2,858,474**

The big takeaway from Table 24 is that there are almost 2,900 megawatts across almost 480 CDG projects still in some stage of development and not yet complete. While many of these

[61] Source: https://data.ny.gov/Energy-Environment/Solar-Electric-Programs-Reported-by-NYSERDA-Beginn/3x8r-34rs, accessed July 27, 2023.

projects will have already reached commitments for customer offtake arrangements, there are surely large projects in the earlier stages of permitting review that still need to secure their customers.

Utility Interconnection Queue Data includes projects that have not reserved NYSERDA incentives and shows that 77% of uncompleted CDG project capacity with interconnection applications that started in 2021 and 2022 are in National Grid and NYSEG. This capacity represents 3,652 MWs and includes photovoltaic and energy storage system CDG projects.[62]

Interconnection applications for 2,678 MWs (1,779 MW in National Grid and 899 MW in NYSEG) were submitted in 2022. Applications to reserve NYSERDA incentives for 1,263 MWs (862 MW in National Grid and 401 MW in NYSEG) were submitted in 2022. Out of the second set of projects, 5 projects representing 31 MW are in Erie County in the National Grid territory.

CDG capacity will grow over time. The most recent six to twelve months of interconnection queue data or NYSERDA projects that reserved incentives represents ECLIPSE's potential pipeline.

[62] For more information about New York State's Distributed Generation interconnection queues, see https://dps.ny.gov/distributed-generation-information.