Report on Municipal Load Aggregation and Renewable Resource Development

May 1, 2023
Draft for Stakeholder Feedback

1. Introduction

Public Act 102-0662 directs the Illinois Power Agency ("IPA") to produce a report assessing the role that municipal electrical load aggregation can play in meeting Illinois' renewable energy goals and how municipal aggregation programs can provide support for the development of new renewable resources. P.A. 102-0662 introduced new subsection (i) to Section 1-92 of the IPA Act (20 ILCS 3855) that provides the scope for this and report:

> *(i) No later than June 1, 2023, the Illinois Power Agency shall produce a report assessing how aggregation of electrical load by municipalities, townships, and counties can be used to help meet the renewable energy goals outlined in this Act. This report shall contain, at a minimum, an assessment of other states' utilization of load aggregation in meeting renewable energy goals, any known or expected barriers in utilizing load aggregation for meeting renewable energy goals, and recommendations for possible changes in State law necessary for electrical load aggregation to be a driver of new renewable energy project development. This report shall be published on the Agency's website and delivered to the Governor and General Assembly. To assist with developing this report, the Agency may retain the services of its expert consulting firm used to develop its procurement plans as provided in paragraph (1) of subsection (a) of Section 1-75.*

This assessment includes a review of municipal aggregation programs in other states, including the successes achieved and challenges other programs have faced in effectively supporting the transition to clean energy through increased utilization of renewable resources.[1]

Municipal electric load aggregation has been authorized in ten states: Massachusetts, New Hampshire, Rhode Island, New York, New Jersey, Maryland, Virginia, Ohio, Illinois, and California. The municipal aggregation program structure varies from state to state, programs are at varying levels of maturity, and are at different levels of success in meeting clean energy goals and advancing the transition to zero carbon generation. In states such as New Hampshire, Rhode Island, Maryland and Virginia, the municipal aggregation programs are in the early stages of implementation with limited operating history. Consequently, these states' municipal aggregation programs do not

[1] Municipal load aggregation and related terms used throughout this Report refer to the concept of a municipality providing an electric supply service option to customers within that municipality in situations where that municipality is served by an investor-owned distribution utility. It is distinct from the concept of a municipal utility where the municipality is also the distribution utility.

provide useful information regarding how their aggregation approaches impact the achievement of that state's renewable energy goals or the development of new renewable energy resources. The states that have well established municipal aggregation programs are discussed in detail in this Report. This Report aims to analyze how the structure of these municipal aggregation programs have contributed to renewable resource development for their respective state. How the mechanisms employed in each program achieves each state's renewable energy goals, and how the risks associated with the development of renewable resources through municipal aggregation are being mitigated by those programs.

Municipal aggregation programs in five states are reviewed in detail in this report, with a comparative analysis to municipal load aggregation in Illinois. The structure of municipal aggregation and the process through which these entities procure renewable electricity is largely determined by whether the aggregator operates in a state with a restructured electricity market. In California, which does not have a restructured competitive electricity market,[2] most of the state's Community Choice Aggregation programs ("CCAs") have evolved into providing active support for the development of new renewable resources and related storage projects through direct long-term contract commitments. Municipal aggregation programs operating in restructured electricity markets generally procure electricity through competitive electricity suppliers and do not typically enter into long-term contracts directly with renewable energy projects.[3]

This Report was prepared by Levitan & Associates, Inc., the Illinois Power Agency's procurement planning consultant, in consultation with the Illinois Power Agency.

2. Status of Municipal Aggregation in Illinois

Following the restructuring of the Illinois electricity market in 1997, Public Act 96-0176, effective January 1, 2010, amended Illinois Power Agency Act by adding Section 1-92[4] to allow municipal aggregation in Illinois. This impetus for allowing municipal aggregation was likely the high default service rates resulting from swap contracts for energy that were part of a settlement in 2007 that also led to the establishment of the Illinois Power Agency, the Renewable Portfolio Standard, and energy efficiency standards through Public Act 95-0481. As energy prices declined after 2007, these swap contracts were priced higher than the market price of electricity, making it possible for Alternative Retail Electric Suppliers ("ARES") to offer more competitive rates.[5] However, one key policy challenge was how to enroll large numbers of individual residential and small commercial customers in competitive supply service, and the model of municipal aggregation was designed to overcome those costs and barriers.

[2] The California electricity market was originally restructured in 1996 but following the 2000 statewide energy crisis the market was mostly re-regulated. See: "California customer choice: an evaluation of regulatory framework options for an evolving electricity market." CPUC Staff August 2018. Available at http://www.cpuc.ca.gov/customer choice/.

[3] Many states with deregulated markets have restrictions on the ability of municipal aggregation programs to enter into long-term contracts. See "Community Choice Aggregation: Challenges, Opportunities and Impacts on Renewable Energy Markets." NREL February 2019. Available at www.nrel.gov/publications.

[4] 20 ILCS 3855/1-92.

[5] See for example the discussion of customer switching in Section 3.3.1 of the IPA's 2013 Electricity Procurement Plan. https://ipa.illinois.gov/content/dam/soi/en/web/ipa/documents/ipa-plan_complying_with_12-0544-order.pdf.

Section 1-92(a) of the Illinois Power Agency Act requires that to initiate an aggregation program, the municipality must first submit a referendum to its residents. This referendum determines whether the program can operate as an opt-out program, under which eligible customers are switched to the supply offer negotiated with a municipality unless they "opt-out" by an established date. Municipal aggregation programs in Illinois are limited to municipalities within the Ameren Illinois and ComEd service territories. Under Section 1-92's authority, municipalities are permitted to aggregate electrical loads within their jurisdiction for only residential and small commercial customers featuring total annual electricity consumption less than or equal to 15,000 kWh. Through aggregation, municipalities negotiate electric supply and pricing with an ARES on behalf of participating customers. Upon expiration of agreements with ARES, the municipality can renew the electric supply contract with the incumbent ARES, sign with a different ARES, or allow the program to expire.

Electricity supply contracts with ARES in Illinois are generally one to three years in length.[6] As reported by the Illinois Commerce Commission's Office of Retail Market Development as of May 2022, 725 municipal aggregation programs had been implemented in the state with 514 programs active.[7] In ComEd's service territory, 359 municipalities had passed a referendum, 344 programs were implemented, 216 were active and 128 expired. In the Ameren Illinois service territory, 387 referendums were passed, 381 municipal aggregation programs were implemented, 298 were active and 83 expired.

Electricity price volatility during 2022, primarily caused by geopolitical events, created increased pricing uncertainty for municipal aggregation programs in Illinois; this likely led to the reduction in active programs from 514 at the end of May 2022 to 441 programs as of January 2023. As of January 2023, ARES served 587,466 residential customers in the Ameren Illinois territory with 83 percent of these customers participating in a municipal aggregation program. ARES served 747,535 customers in ComEd's territory with 33 percent of these customers participating in a municipal aggregation program.[8]

Municipal aggregation in Illinois is similar to municipal aggregation programs in other states with restructured electricity markets. Illinois also shares similar challenges to these restructured states when it comes to incentivizing the development of new renewable energy projects. In Illinois, municipalities utilizing municipal aggregation programs generally do not execute long-term Power Purchase Agreements ("PPAs") directly with renewable projects. Therefore, revenue streams for new renewable generation projects would generally need to be augmented by the sale of Renewable Energy Credits ("RECs") from those projects to make projects economically viable. Customer migration is a concern for municipal aggregation programs success. A goal for aggregation programs is generally providing customer savings greater than the incumbent utility servicing the municipality, and when that savings cannot be offered, programs may be suspended or terminated.

In Illinois, green products can be offered through ARES that use RECs to support the environmental attributes of the product. For example, MC Squared Services LLC ("MC Squared") offers "green" retail

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[6] Plug In Illinois Municipal and County Electric Aggregation: Frequently Asked Questions, https://plugin.illinois.gov/municipalaggregation.

[7] Illinois Commerce Commission, Office of Retail Market Development, 2022 Annual Report, Section 20-110 of the Public Utilities Act. https://www.icc.illinois.gov/icc-reports/report/AnnualReportOfficeOfRetailMarketDevelopment.

[8] The largest aggregation program in the ComEd service territory, the City of Chicago, ended in 2015.

supply products backed by wind and hydro generation sources.[9] In 2020-2021 MC Squared procured and retired 2,182,257 RECs from wind and hydro sources in Illinois, Iowa, Indiana, Arkansas, Oklahoma, Wisconsin, Minnesota and North Dakota.[10]

To expand the buying power of municipal aggregation, municipal aggregation programs in Illinois can jointly negotiate electric supply agreements with ARES. For example, seven municipalities in Illinois—the villages of Deerfield, Glencoe, Lake Bluff, Northbrook and Skokie along with the cities of Highland Park and Lake Forest—formed the North Shore Electricity Aggregation Consortium ("NSEAC").[11] NSEAC selected MC Squared as its electric service provider and MC Squared's offer includes "green power" backed by wind RECs from sources in Iowa.[12] However, MC Squared does not report on if the RECs are from new resources, or if that this offer has spurred the development of new facilities.

Given the nature of the state's restructured electricity market, the impact of municipal aggregation on the development of new renewable energy generation in Illinois will likely require the ability to create a robust market for RECs from new resources and this would need to include innovative approaches to addressing the barriers posed by challenges related to securing long-term PPAs.

3. Review of Other State Municipal Load Aggregation Programs

In outlining the relevant state municipal aggregation programs below, the analysis provides a general description of each program followed by a discussion focused on:

- A review of how these programs have evolved with regard to impacting state renewable resource goals.
- The applicable mechanisms that can affect the development of new, ideally in-state, renewable energy projects.
- The challenges and barriers encountered in effectively implementing load aggregation programs that meet or exceed the state's renewable energy goals and the steps taken to mitigate various financial, contract performance and opt-out risks associated with approaches designed to support the development of new renewable resources.
- Load aggregation approaches taken by other states that could be applicable to Illinois.

When referring to a municipality in this report the term generally includes municipalities, townships and counties.

a. Ohio

Similar to Illinois, Ohio restructured its electricity market beginning with Senate Bill 3, The Ohio Electric Restructuring Act ("SB 3"),[13] enacted in 1999 and effective as of January 2001. This law established the development of governmental electric aggregation programs and enabled

[9] www.mc2energy services.com/Resource/Environmental-Disclosures
[10] MC Squared Green Power Program. Available at www.mc2energyservices.com.
[11] City of Highland Park, Municipal Aggregation Program. Available at https://www.cityhpil.com/utilities/municipal_aggregation_program.php
[12] MC Squared 2022 Historical Product Content Label. Available at https://www.mc2energyservices.com/Content/PDF/2022-Historical-Product-Content-Label.pdf?v=10
[13] Title 49 Public Utilities, Chapter 4928 Competitive Retail Electric Service, Section 4928.20 Local Aggregation of Retail Electric Loads, of the Ohio Revised Code.

municipalities to combine to form larger aggregation programs. Customers who participate in these aggregation programs can buy electricity from a competitive retail electric service ("CRES") provider rather than their local utility.[14] This legislation enabled CRES providers to sell electricity directly to municipal aggregators. SB 3 also instituted a freeze on retail rates for a competitive market development period that ran from 2001 through 2005 which was followed by a three-year rate stabilization period in which retail rates were essentially held constant.

Ohio's market restructuring legislation specified that governmental aggregators providing CRES to retail customers in Ohio must be certified by the Public Utilities Commission of Ohio ("PUCO").[15] Governmental aggregators must be recertified every two years. Certified governmental aggregators may either offer an opt-in or opt-out program, and most governmental aggregators have chosen an opt-out program structure. Governmental aggregation programs must be approved through a local ballot measure. They must develop an operation and governance plan which includes selecting an electric supplier. Additionally, governmental aggregators must provide public notice of the electric rates as well as the opt-out process for customers enrolled. Most aggregation services are offered through regional councils of governments[16] such as the Northeast Ohio Public Energy Council ("NOPEC"), and Southeast Ohio Public Energy Council DBA Sustainable Ohio Public Energy Council ("SOPEC"). These regional councils manage the aggregation programs for multiple municipalities. In addition to the regional councils, individual cities including Columbus and Cincinnati have formed electric aggregation programs. Ohio aggregators are allowed to offer both electric and natural gas aggregation programs to municipalities.

As in Illinois, the initial years of electric market deregulation in Ohio did not develop as envisioned by legislators under SB 3 following the January 1, 2001, 5 percent residential rate reduction and rate freeze through 2005. In response to low participation rates in the competitive market, PUCO implemented rate stabilization plans in 2008. These plans extended the market development for retail rates an additional three years, to transition more customers to market-based rates. The Rate Stabilization Plans were in response to concerns that a shift to market based rates would result in a sudden increase in retail rates for customers.[17] SB 3 did not result in significant customer switching in Ohio. The inability of CRES suppliers and municipal aggregation plans to offer meaningful cost savings for customers compared to the incumbent utilities' rates was the reason for this lack of customer switching. Senate Bill 221,[18] enacted in 2008, updated the restructured electric industry in Ohio. Electric utilities operating in the state are required to provide a Standard Service Offer ("SSO") to customers that do not select a CRES as their electricity supplier.[19] SB 221 also set Ohio's initial clean energy standards and required the utilities to transfer generation assets to an affiliate.

Aggregators participating in governmental aggregation programs must arrange for electricity to be supplied from CRES providers. Governmental aggregators do not take title to (nor do they buy or sell)

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[14] Ohio General Assembly, Senate Bill Number 3. Available at http://archives.legislature.state.oh.us/BillText123/123_SB_3_ENR.html

[15] Ohio R.C. 4928.08

[16] The legal basis for establishing a regional council of governments can be found in Chapter 167 of the Ohio Revised Code.

[17] National Association of Regulatory Utility Commissioners, H. Choueiki, Ohio Public Utilities Commission, "Ohio's History of Regulation," October 2014. Available at https://pubs.naruc.org/pub.cfm?id=537DA758-2354-51DA-9CEC2371B6EF

[18] Ohio R.C. 4928.20

[19] Ohio General Assembly, Senate Bill 221. Available at http://archives.legislature.state.oh.us/bills.cfm?ID=127_SB_221

electricity; instead, suppliers are selected through a competitive bidding process. Typically, only one supplier is selected. As of December 2021, 8 CRES suppliers, out of a total of 106 CRES marketers are active in the state, serving every governmental aggregation program.[20]

SB 221 provided benefits to governmental aggregation programs operating in Ohio. As of March 2022, there are 4.9 million eligible choice customers i[21]n Ohio. 61 percent of eligible choice customers are taking service from CRES providers, while 39 percent of eligible choice customers are taking service through the utilities' SSO service.[22] PUCO's market monitoring report indicated that 73 percent of residential customers supplied by CRES providers were taking service through governmental aggregation programs, while 43.6% of commercial customers supplied by CRES providers were taking service through governmental aggregation programs. By December 2022, the rate of eligible choice customers taking service from CRES providers dropped to 45 percent, while the rate of eligible customers being served by utility SSO's increased to 55 percent. This is the result of one of the largest governmental aggregators' (NOPEC) announcement in August 2022 that it would transition 550,000 residential and small commercial customer accounts from its governmental aggregation program back to utility SSO service.[23]

NOPEC's aggregation program serves approximately 240 municipalities in Northern Ohio. NOPEC has an executed supply agreement with NESO which allows NESO to be the sole supplier of retail electric generation services to customers participating in NOPEC's opt-out aggregation program. The agreement is scheduled to run to January 2027. Under this supply agreement, for which new customer enrollment has been temporarily halted, NESO supplies electricity to participants in NOPEC's aggregation program. NESO also supplies the RECs necessary to meet Ohio's RPS requirements for NOPECs customers.[24]

An example of the challenges to long-term contracting for renewables a municipal aggregation program can face is illustrated by NOPEC's temporary transition of customers back to SSO service ass the result of unfavorable electricity prices secured for the municipal aggregation service compared to SSO service rates.[25] A temporary transition of this nature could have a significant negative impact on a long-term contract, potentially leading to stranded costs. The SSO rates were significantly lower than the municipal aggregation service rates due to the SSO supplies procured in a competitive solicitation prior to the 2022 price spike in wholesale electricity prices. Further complicating NOPEC's service issues were hedges held by its CRES supplier, NextEra Energy Services Ohio, LLC ("NESO"). NESO only partially hedged electric load requirements, and these hedges were then liquidated as part of the modifications to NOPEC's Master Energy Supply Agreement with NESO to

[20] Public Utilities Commission of Ohio Market Monitoring Report

[21] Eligible choice customers are those customers that have the option of choosing a competitive supplier either on their own or through a municipal aggregation program. https://puco.ohio.gov/utilities/electricity/ohio-customers-chioce-activity.

[22]Public Utilities Commission of Ohio, Market Monitoring. Available at https://puco.ohio.gov/utilities/electricity/resources/market-monitoring

[23] Northeast Ohio Public Energy Council, NOPEC Electric Customers to See Savings After Pro-Consumer Action, August 24, 2022. Available at https://www.nopec.org

[24] Ohio's RPS requirements for 2023 are 7 percent with increases of 0.5 percent annually to reach the final target in 2026 of 8.5 percent. See R.C. 4928.64 and "Renewable Portfolio Standard Report to the General Assembly by the Staff of the Public Utilities Commission of Ohio for the 2021 Compliance Year," filed with the PUCO Docketing Information System March 22, 2023.

[25] See Public Utilities Commission of Ohio Case No. 00-2317-EL-GAG

allow NOPEC to return its customers to utility SSO service.[26] NOPEC's rationale for transitioning customers to SSO service was to provide cost savings for customers impacted in the short-term, while SSO supply arrangements are under contract. The utilities will be seeking new supply arrangements after the current SSO contracts expire in early 2023, the utilities are anticipating of significantly higher prices. NOPEC in reaction to the utilities analysis, anticipates that aggregation service prices will be lower than the SSO prices if true, NOPEC intends to re-enroll customers into its aggregation program by June 2023.[27]

On November 22, 2022, NOPEC filed an application to renew its CRES governmental aggregator certificate which it needed to continue to provide aggregation services to its customers that were not transitioned to SSO service and to re-enroll the customers that were transitioned, on March 8, 2023 PUCO issued a Finding and Order that approved the renewal of NOPEC's certification.[28]

NOPEC has lagged behind SOPEC and other individual municipal programs in offering green product options. This has caused some of municipal participants, notably Shaker Heights, to seek opting out of NOPEC to form an individual aggregation program.[29] NOPEC is responding to these market concerns and is set to offer more green products through its Green Community Choice program. This program originally scheduled to take effect in January 2023instead is beginning in June 2023. This opt-out program will offer NOPEC's municipal members the option to select 100 percent renewable energy at an initial price of 6.875 cents/kWh. This premium is 0.425 cents/kWh more than its standard electricity product. Wind and solar RECs for the Green Community Choice Program will be from national sources.[30] NESO is using EarthEra RECs paired with the electricity supplied to NOPEC's standard program customers to meet the Ohio RPS requirement (which, in 2023, is 7.0 percent). EarthEra is a trust fund created by NextEra in 2009 to fund the development and construction of renewable energy projects.[31] To date, none of these projects have been built in Ohio.

SOPEC began in February 2015 and currently manages opt-out aggregation programs for 20 municipalities located in Southeast Ohio. AEP Energy, Inc. provides electricity supply and related services for all of the participating municipalities. Starting in 2022, all eligible retail customers within SOPEC's member municipalities are receiving 100 percent renewable energy in an opt-out program supplied by AEP Energy's ECO-Advantage product. ECO-Advantage includes RECs procured by AEP Energy from national supply sources. These RECs are primarily wind projects located in states outside of Ohio, including Texas, Iowa, Illinois and Minnesota.[32]

[26] Public Utilities Commission of Ohio, Staff Review and Recommendation for Northeast Ohio Public Energy Council (NOPEC), February 21, 2023, Case No. 00-2317-EL-GAG. Available at https://dis.puc.state.oh.us/

[27] Public Utilities Commission of Ohio, Finding and Order, Case No. 00-2317-EL-GAG, p.9.

[28] Public Utilities Commission of Ohio, Finding and Order, March 8, 2023, Case No. 00-2317-EL-GAG

[29] See Mayor David E. Weiss, Jeri E. Chaikin, CAO, Shaker Heights Memorandum to Members of Council, "Resolution Supporting City Operated Electric Aggregation Program Providing 100% Renewable Energy Supply," June 27, 2022.

[30] NESO's NOPEC Environmental Disclosure Information indicates that the sources of generation used to supply NOPEC in 2022 includes 40 percent natural gas, 33 percent nuclear, 20 percent coal and 7 percent renewables including hydro, solar, wind and biomass. See www.nopec.org/green-choice. www.nexteraenergyservices.com/aggregations/ohio.

[31] EarthEra Renewable Energy Trust https://www.nexteraenergyresources.com/what-we-do/energy-marketing/recs.html.

[32] AEP Energy Residential & Small Commercial Terms & Conditions, 2022 Prospective Product Content Label. AEPenergy.com.

AEP Energy's supply is based on REC availability/costs. Nationally supplied RECs are generally less expensive than RECs obtained from sources in Ohio for AEP. The average REC cost in 2021 for CRES providers was $8.47/REC and while the average REC cost was $26.30/REC for the Electric Distribution Utilities ("EDUs").[33] The EDUs commonly use RECs from sources in Ohio, including PPAs with renewable projects.[34] The state's CRES providers in 2021 were responsible for meeting 79 percent of the RPS compliance obligations, compared to 21 percent by the EDUs. In 2021, the RECs retired for RPS compliance by both EDUs and CRES providers included 44 percent from wind generation, 31 percent from hydro, 10 percent from biomass, 10 percent from waste heat, and 5 percent from solar sources. Of the total RECs retired in Ohio in 2021,15.4 percent of RECs were from sources located in Ohio, and 17.5 percent of wind RECs are sourced in Ohio.

Municipalities participating in the SOPEC aggregation program can structure their ECO-Advantage products to have RECs supplied by AEP Energy sources from specific renewable energy technologies. For example, in 2022 and 2023, City of Dayton aggregation program RECs are supplied from conventional hydro sources in Oregon, Montana and Idaho. The City of Athens program is supplied by wind RECs sourced from wind generating facilities in Texas, Iowa, Illinois and Minnesota, and the city includes an opt-out carbon fee of 0.2 cents per kWh for participating customers. The carbon fee funds collected are allocated to support the development of solar PV projects for city facilities and distributed at SOPECs discretion. The carbon fee was approved by voters on May 8, 2018; to date, no funds have been disbursed from the fund which had a balance as of April 15, 2023, of $172,042.01.[35]

The City of Columbus formed an opt-out governmental electric aggregation program, Clean Energy Columbus, which launched in June 2021. Clean Energy Columbus provides 100 percent clean energy from Ohio-based wind and solar generating facilities through selected bidder AEP Energy.[36] AEP Energy is to supply Columbus's aggregation program from June 2021 through May 2034. Under the contract, AEP is scheduled supply 100 percent of clean energy sourced from Ohio based wind and solar projects by 2024. This approach consists of three phases: In Phase 1 for June 2021 through May 2022, AEP Energy procured and retired RECs equivalent to 100 percent of the aggregation program's retail electric supply usage; Phase 2 from June 2022 through May 2024 involves a mix of RECs and purchases from wind and solar generating facilities; Phase 3, to run from June 2024 through May 2035, will involve 100 percent of the program's electricity supply sourced from wind and solar projects in Ohio that began operation on or after March 18, 2021. As part of this supply strategy, AEP Energy executed long-term PPAs with the 200 MW, Atlanta Farms Solar project in Pickway County Ohio, and the 300 MW Emerson Creek Wind Farm in Huron County Ohio. The Atlanta Farms Solar project is under construction with a commercial operation date of December 2023.[37] The Emerson Creek Wind Farm is scheduled to start construction in 2024 upon resolution of permitting issues.

The City of Cincinnati started operating an opt-out governmental aggregation program in June 2012, serving eligible customers of Duke Energy – Ohio within the city. Dynegy Energy Services is the electricity supplier for the program until May 2029. Electric supply for the aggregation program is to

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[33] PUCO Renewable Portfolio Standard Report for the 2021 Compliance Year.

[34] PUCO Electric Distribution Utilities Annual RPS Compliance Reports for 2021. https://puco.ohio.gov/utilities/electricity/resource/ohio-renewable-portfolio-standard/edu-cres-rps-compliance-reports.

[35] SOPEC, Sustainable Energy, Athens Public Solar Fund. https://www.sopec-oh.gov/athens-public-solar-fund.

[36] Potential suppliers bidding to supply the Columbus program were required to be able to supply 100 percent renewable energy to qualify for consideration to be the city's preferred supplier.

[37] Solar Builder June 9, 2022. https://solarbuildermag.com/news/

consist of 100 percent renewable energy, from RECs sourced from national wind generation projects. To supplement the RECs needed and to contribute to independent electricity procurements for city facilities, the city is supporting the development of the 100 MW New Market Solar project located in Highland County Ohio. The city executed a 20-year PPA with the project that will supply 35 MW to meet approximately 25 percent of the city's annual electricity requirements. The remaining 65 MW will supply the aggregation program through a PPA with Dynegy Energy Services that will cover 8 percent of the aggregation program electricity requirements.

Green products offered to municipal aggregation customers are often backed by RECs procured from renewable energy facilities located outside of Ohio. Cincinnati and Columbus are supporting the development of new renewable resource projects involving recent project specific arrangements through their CRES suppliers for long-term contracts with new renewable resource projects located in Ohio.

Governmental electric aggregators in Ohio operate in a restructured electricity market somewhat similar to the market in Illinois. Barriers to supporting the development of new renewable energy projects include limitations around aggregators' ability to execute long-term contracts with developers in addition to the risk of customer migration back to the EDUs for SSO service. The Ohio aggregation program has attempted to address these barriers through the use of a primary CRES provider under contracts of 5 to 15 years. Contracts require that CRES supplier provide renewable energy for up to 100 percent of the aggregation customers generation service needs in the form of RECs. Individual governmental aggregation programs can require the CRES provider to sign a long-term contract with renewable generation resources in order to qualify as a bidder for the aggregation program supply contract. Other governmental aggregation programs in Ohio support renewable energy development by using funds from a carbon fee or designated REC purchases beyond the state's RPS requirements. These collected funds are to help finance renewable energy projects.

Significant differences in the Ohio electricity market and regulatory environment as compared to Illinois act as major barriers to the development of new renewable energy projects. Due to low RPS targets in Ohio, (current target is 7 percent with a target cap of 8.5 percent by 2026) the demand for RECs and thus revenue available to fund new projects is limited. NOPEC's transition of customers back to EDU SSO service in 2022 was designed to benefit customers in the short-term. This transition has created uncertainty regarding the reliability of longer-term contracts obtained through CRES supplier. Finally, SB 52, amended several sections of R.C. 4906, allowing county boards to overrule the Ohio Power Siting Board's ("OPSB") approval of utility-scale wind and solar projects. As of August 2022, 10 counties had passed resolutions banning the development of utility-scale wind and solar projects with several more counties considering similar resolutions.[38]

b. Massachusetts

The Massachusetts Municipal Aggregation Program is statutorily authorized by Chapter 164 of Section 134 of the Massachusetts General Laws, which provides the Massachusetts Department of Public Utilities ("DPU") the legal jurisdiction for authorizing Municipal Aggregation.[39] Municipal Aggregation has existed in Massachusetts since the state decided to restructure in 1997. In Massachusetts, a municipality may purchase electricity on behalf of its residents and businesses

[38] See Ohio Capital Journal, August 23, 2022.

[39] Massachusetts General Laws, Chapter 164, Section 134, Load Aggregation Programs. Available at https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXXII/Chapter164/Section134

(supply portion). However, the distribution portion of electric service lies with the designated electric distribution company in the service territory.[40] The Massachusetts DPU defines Municipal Aggregation as a "process by which a municipality (meaning a town or city) purchases electricity in bulk from a competitive supplier on behalf of the residents and businesses within the community."[41] Furthermore, a municipality may join with other municipalities to procure competitive supply.[42] Customer participation is voluntary, but the municipality can enroll customers but they must be provided an opportunity to opt-out of participating. Customers who do not opt out will be automatically enrolled in the aggregation program but may opt-out at any time after that.. The MDPU requires that a municipality must go through a public proceeding/process through its town governing officials and residents before seeking authorization from the MDPU.[43]

Massachusetts Municipal Aggregation programs have possibly indirectly supported the development of renewable energy through the purchase of RECs. However, those projects may not be located in the state since the Municipal Aggregation Program can purchase RECs sourced from out of state so long as those RECs meet the State's RPS standard. There are locational requirements that some RECs must be from sources located in New England. For example, Class 1 RECs must come from generation facilities are located anywhere in New England, as well as in the adjacent control areas (northern Maine, New York, Quebec, or the Canadian Maritime Provinces), provided that they transmit their power into New England. Furthermore, for these generation facilities to qualify as Class 1 REC generation facilities, they must be built on or after January 1, 1998.[44] As of 2022, the MDPU reported that 176 cities and towns in Massachusetts have been approved for Municipal Aggregation. Massachusetts has 351 cities and towns and therefore[45] about 50% of municipalities in Massachusetts have chosen to go forward with Municipal Aggregation at one point. The 176 Municipal Aggregation municipalities represent a population of 4,073,109 or about 58% of the Massachusetts population.[46,47]In 2022,the Massachusetts Department of Energy Resources ("DOER") reported on the 2022 Municipal Aggregation Manual and Best Practices Guide that in 2021, 156 municipalities have operating and active Municipal Aggregation programs in the state. In addition, 10 were still in the process of implementing their Municipal Aggregation programs but had not yet become operational or active. It is also important to note that some municipalities have chosen to terminate their Municipal Aggregation program (7 municipalities as of 2021), with some citing

[40] Massachusetts General Laws, Acts of 1997, Chapter 164. Available at https://malegislature.gov/Laws/SessionLaws/Acts/1997/Chapter164

[41] Massachusetts DPU, Municipal Aggregation. Available at https://www.mass.gov/info-details/municipal-aggregation#overview-

[42] Massachusetts DPU,susta Municipal Aggregation. Available at https://www.mass.gov/info-details/municipal-aggregation#overview-

[43] Massachusetts DPU, Municipal Aggregation. Available at https://www.mass.gov/info-details/municipal-aggregation#overview-

[44] Massachusetts Department of Energy Resources, List of Qualified Generation Units. Available at https://www.mass.gov/service-details/lists-of-qualified-generation-units

[45] Massachusetts DPU, Municipal Aggregation. Available at https://www.mass.gov/info-details/municipal-aggregation#overview-

[46] Massachusetts Legislature, Census Data. Available at https://malegislature.gov/Redistricting/MassachusettsCensusData/CityTown

[47] The Massachusetts Legislature reported the total state population as 7,029,917.

pricing issues.[48] Prior estimates in 2020 anticipated Municipal Aggregation programs to add about 500,000 MWh of Class 1 [49]renewable energy demand in 2022, however, the actual amount in 2022 is double that at about 1 million MWh of Class 1 renewable energy demand in the state.[50]

Municipal Aggregation in Massachusetts also operates in a restructured electricity market similar to the market in Illinois. Although Municipal Aggregation programs are only required to meet the minimum RPS requirements, at least 51 municipalities have chosen to establish RPS requirements that exceed the State's RPS requirements by 5 percent or more. Municipal Aggregation programs with larger RPS requirements increase the State's RPS demand by about 11%.[51]

Massachusetts statute and guidance allow municipalities to engage in short term contracts with competitive suppliers within the state.[52] Municipal aggregation in Massachusetts aims to empower municipalities to use bulk purchasing power to purchase energy cheaper than the basic service rate offered by their local electric distribution company. These contracts are generally 1 to 3 years in length.[53]

The Cape Light Compact operates under a Joint Powers Agreement [54] with 22 municipal participants serving 205,000 customers on Cape Cod and Martha's Vineyard in Massachusetts. Cape Light Compact developed an opt-out 100 percent renewable energy program that seeks to support the development of renewable energy projects.[55] Cape Light Compact's supplier, NextEra Energy Services, procures the RECs necessary to meet the Massachusetts RPS and procures additional RECs to bring the supply to 100 percent renewable. In 2022, Massachusetts required that 51.3 percent of

[48] Massachusetts Department of Energy Resources, Municipal Aggregation Manual and Best Practices Guide, November 15, 2022. Available at https://www.mass.gov/doc/municipal-aggregation-manual-best-practices-guide-draft-for-public-comment/download

[49] Massachusetts defines Class 1 RECs as energy generated from qualified new renewable energy facilities in New England. Eligible technologies include solar PV, wind, small hydro, aerobic digestion, marine or hydrokinetic energy, geothermal, and eligible biomass fuel. See Massachusetts Department of Energy Resource, Program Summaries – Summaries of all the Renewable and Alternative Energy Portfolio Standard Programs. Available at https://www.mass.gov/service-details/program-summaries#:~:text=RPS%20Class%20I,-The%20RPS%20Class&text=New%20renewable%20energy%20facilities%20are,Wind%20energy

[50] Green Energy Consumer Alliance, Green Municipal Aggregation in Massachusetts, February 2020, Page 5. Available at https://cdn2.hubspot.net/hubfs/260434/State%20of%20GMA%20Report%202020.pdf. Also see Green Energy Consumer Alliance, Green Power At Lower Cost: Municipal Aggregation Is A Huge Success In Massachusetts, July 2, 2022. Available at https://blog.greenenergyconsumers.org/blog/green-power-at-lower-cost-municipal-aggregation-is-a-huge-success-in-massachusetts

[51] Green Energy Consumer Alliance, Spring 2022 Update, Pages 6-7. Available at https://260434.fs1.hubspotusercontent-na1.net/hubfs/260434/GMA%20Report%202022%20-%20Final.pdf

[52] Massachusetts General Laws, Chapter 164, Section 134, Load Aggregation Programs. Available at https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXXII/Chapter164/Section134. Also see Massachusetts Department of Energy Resources, Municipal Aggregation Manual and Best Practices Guide, November 15, 2022. Available at https://www.mass.gov/doc/municipal-aggregation-manual-best-practices-guide-draft-for-public-comment/download

[53] Massachusetts Department of Energy Resources, Municipal Aggregation Manual and Best Practices Guide, November 15, 2022. Available at https://www.mass.gov/doc/municipal-aggregation-manual-best-practices-guide-draft-for-public-comment/download

[54] A Joint Power Agreement allows a group of municipalities in Massachusetts to establish a Joint Powers Entity which is an independent agency to operate their joint municipal aggregation program.

[55] Cape Light Compact Green Aggregation. www.capelightcompact.org/green-aggregation/.

retail sales be met with clean energy resources that are located in New England with 20 percent being Class I RECs. [56] NextEra also procures RECs from EarthEra to meet all but 1 percent of the 48.7 percent of load not covered by the RPS mandate. In addition, NextEra procures an additional Massachusetts RPS-qualified Class I RECs to cover the remaining 1 percent of load each year. NextEra deposits funds from the last 1 percent of RECs purchased on behalf of Cape Light Compact into an EarthEra fund to support the development of new renewable energy projects in the U.S. [57]

Cape Light Compact is also exposed to risks from volatility in capacity market prices. Cape Light Compact manages that risk by negotiating new rates every three or six months, depending on customer class, to align with the timing of the utility rate changes. This is done to avoid locking into longer term contracts for supply during periods of high electricity costs. [58]

Massachusetts municipal aggregators utilize approaches to support the development of new renewable energy projects similar to the approaches used in other states with restructured electricity markets. Massachusetts seeks to increase the demand for RECs which adds to revenues available to new projects. Some of these programs have experimented with participating in separate funds that use revenue from excess RECs from procurements to provide financial support to the aid in the development of new projects. Since the Massachusetts statute and guidance documents do not explicitly allow Municipal Aggregation programs to enter into longer term contracts for renewable energy,[59] some Municipal Aggregation programs such as, Cape Light Compact, have tried innovative approaches achieve support for renewables without using long term contracts. Each municipal aggregation must balance the needs of keeping rates reasonably low while also continuing to operate its Municipal Aggregation program as clean energy sourced programs.

c. New Jersey

Municipal aggregation was authorized in New Jersey by The Government Energy Aggregation ("GEA") Act of 2003 (L. 2003, c. 24, "GEA Act"). This act allows municipalities and/or counties to establish a GEA program. A GEA program allows municipalities, working alone or in a group, to aggregate the energy requirements of residential, commercial and municipal customers from Third Party Suppliers ("TPS") at prices lower than the average utility price. The added flexibility or benefit is sourcing power from more renewable energy generation.[60] All residential customers within the municipality who are not already served by a TPS are automatically included in the GEA program unless they submitted an opt-out response within 30 calendar-days after the postmark on the notice. Municipal and Commercial/Industrial customers must be opt-in, therefore are not automatically enrolled in the GEA program.[61]

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[56] Cape Light Compact Green Aggregation. www.capelightcompact.org/green-aggregation/.

[57] Cape Light Compact Green Aggregation. www.capelightcompact.org/green-aggregation/.

[58] National Renewable Energy Laboratory, Community Choice Aggregation: Challenges, Opportunities, and Impacts on Renewable Energy Market, February 2019, page 2. Available at https://www.nrel.gov/docs/fy19osti/72195.pdf

[59] Massachusetts General Laws, Chapter 164, Section 134, Load Aggregation Programs. Available at https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXXII/Chapter164/Section134. Also see Massachusetts Department of Energy Resources, Municipal Aggregation Manual and Best Practices Guide, November 15, 2022. Available at https://www.mass.gov/doc/municipal-aggregation-manual-best-practices-guide-draft-for-public-comment/download

[60] New Jersey BPU, Government Energy Aggregation. Available at https://nj.gov/njpowerswitch/gea/

[61] New Jersey BPU, Government Energy Aggregation. Available at https://nj.gov/njpowerswitch/gea/

As of 2022, at least 109 towns and cities in New Jersey have implemented a GEA program.[62] The most recent estimate from 2017 shows that GEA sales in that year were about 1.7 million MWh.[63] From research, it is unclear whether any GEA program has engaged directly in a long-term contract with a renewable energy generation facility for energy supply, and that contracts generally run on average between 12 and 24 months.[64]

Filings from the New Jersey Board of Public Utilities ("BPU") indicate that the GEA Program is targeted mostly to short-term contracting with an energy supplier rather than long-term contracting with a renewable energy generation facility. The New Jersey BPU states that "a GEA program allows municipalities, working alone or in a group, to aggregate the energy requirements of residential, commercial and municipal accounts so that the GEA program can purchase energy supply from non-utility sellers of electricity…(Third Party Suppliers or TPS) at prices lower than the average utility price, with the possibility of added benefits such as higher renewable energy content."[65] Moreover, the GEA Act of 2003 also implies that contracting for energy supply by the municipality will generally come from a TPS. In addition, the GEA Act of 2003 allows the municipality to enter into multiple contracts with no specific term limitations, however, the duration of those contracts need to be disclosed, although it does not state the method for how it should be disclosed.[66] In practice none of the municipalities analyzed appear to have entered into long-term contracts to supply their GEA programs.

According the New Jersey BPU, with regard to a GEA Program supply contract, a "contract providing for electric generation service and/or gas supply service to residential customers shall not be set at a rate for such service that at the time of the contract award, exceeds the benchmark price as described at N.J.A.C. 14:4-6.9(d), unless 1) it exceeds the renewable energy portfolio standards described at N.J.A.C. 14:4-6.9 (d) and 2) the residential customers are notified that the government

[62] BGS Auction, New Jersey Municipalities with Government Energy Aggregation Programs, January 2017. Available at https://www.bgs-auction.com/documents/EDC_Municipal_Aggregation_Programs_January_2017.pdf; New Jersey Aggregation, Client List, Enrolled Towns. Available at https://www.njaggregation.us/client_list.html

[63] National Renewable Energy Laboratory, Community Choice Aggregation: Challenges, Opportunities, and Impacts on Renewable Energy Market, February 2019, page 7. Available at https://www.nrel.gov/docs/fy19osti/72195.pdf

[64] New Jersey BPU, NJ Power Switch, Government Energy Aggregation. Available at https://nj.gov/njpowerswitch/gea/#:~:text=A%20GEA%20program%20allows%20municipalities,lower%20than%20the%20average%20utility. Also see New Jersey Aggregation. Available at https://www.njaggregation.us/.

[64] New Jersey Class 1 RECs are generated from renewable sources, which include solar, wind, fuel cells powered by renewable fuels, geothermal, wave or tidal, methane gas from landfills, biomass facility, provided that the biomass is cultivated and harvested in a sustainable manner, and hydroelectric facilities of 3 MW or less that are located in NJ and placed in service after July 23, 2012. See PJM EIS, Program Information - New Jersey. Available at https://www.pjm-eis.com/program-information/new-jersey. Also see Sustainability Institute at The College of New Jersey, Sustainable Jersey How-To Guide: Renewable Government Energy Aggregation, August 2019.
Available at https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/SJ_Guidebook_RGEA_V2.pdf.

[65] New Jersey BPU, NJ Government Energy Aggregation - Program Summary. Available at https://www.state.nj.us/bpu/pdf/energy/NJ_Gov_Energy_Aggregation_Summary.pdf

[66] New Jersey GEA Act of 2003 (L. 2003, c. 24). Available at https://pub.njleg.gov/bills/2002/PL03/24_.HTM

aggregator is considering a rate that is higher than the benchmark."[67] Therefore, similar to the rules governing aggregation programs in other states, New Jersey also imposes pricing provisions on GEA Programs so that their pricing remains competitive with basic service prices that utilities provide for default electric supply customers. These restrictions pose risks that municipalities may not want, given that prices are encouraged to remain competitive and typically settle out lower than the basic service rates. Many GEA programs find it easier to remain compliant with these standards if contracts are set to shorter duration terms (e.g., 1 to 3 years).

In the GEA programs reviewed for this report, we have not found evidence of New Jersey municipalities engaging in long-term contracting.[68] New Jersey prioritizes keeping GEA Program prices comparable to or lower than existing basic service prices, similar to Massachusetts. Therefore, GEA Programs may not want to take on the risk long-term contracts if it is the expectation of regulators to maintain prices comparable to market rates. New Jersey's RPS requires 50% of Class 1[69] renewable energy by 2030, these programs may assist the RPS goal by inducing an indirect demand increase for renewable energy in the state. This demand will likely come from short term contracts, which range from one to three years. It is unlikely that GEA Programs will move towards long-term contracting without any significant changes to the regulatory or legislative requirements for GEA Programs.

d. New York

Municipal aggregation in New York is known as the Community Choice Aggregation ("CCA") Program which was established by statute in 2014.[70] New York defines a CCA as "an inter-municipal agreement or a municipal resolution for the purpose of coordinating or initiating efforts by a municipality or by community choice aggregators to request bids for and potentially select an Energy Service Company(ies) ("ESCO") to provide electric…services to participating residential, commercial and government customers." In 2016, the New York Public Service Commission ("NY PSC") released

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[67] New Jersey BPU, NJ Government Energy Aggregation - Program Summary. Available at https://www.state.nj.us/bpu/pdf/energy/NJ_Gov_Energy_Aggregation_Summary.pdf

[68] New Jersey BPU, NJ Power Switch, Government Energy Aggregation. Available at https://nj.gov/njpowerswitch/gea/#:~:text=A%20GEA%20program%20allows%20municipalities,lower%20than%20the%20average%20utility. Also see New Jersey Aggregation. Available at https://www.njaggregation.us/.

[69] New Jersey Class 1 RECs are generated from renewable sources, which include solar, wind, fuel cells powered by renewable fuels, geothermal, wave or tidal, methane gas from landfills, biomass facility, provided that the biomass is cultivated and harvested in a sustainable manner, and hydroelectric facilities of 3 MW or less that are located in NJ and placed in service after July 23, 2012. See PJM EIS, Program Information - New Jersey. Available at https://www.pjm-eis.com/program-information/new-jersey. Also see Sustainability Institute at The College of New Jersey, Sustainable Jersey How-To Guide: Renewable Government Energy Aggregation, August 2019.
Available at https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Energy/SJ_Guidebook_RGEA_V2.pdf.

[70] New York Assembly Bill No. A08883. Available at https://nyassembly.gov/leg/?default_fld=&bn=A08883&term=2013&Summary=Y&Actions=Y&Text=Y&Votes=Y

an Order providing the framework for municipalities seeking to establish a CCA ("NY PSC Order").[71] The NY PSC Order allows municipalities the option to choose one of four CCA administrators to assist them in establishing their own community choice aggregation program.[72] The municipality can forego using the established CCA Administrators and instead use its own resources to comply with CCA requirements. CCA Administrators can charge municipalities for their services through the supply charge. New York CCA customers are enrolled in a CCA on an opt-out basis.[73]

As of December 2021, 100 municipalities and 200,000 residents were participating in municipal aggregation programs in New York State.[74] Similar to other states, New York municipalities engage with electricity suppliers and contract on a short-term basis for electricity supply, rather than engage in a long-term contracts with a renewable energy facility. As opposed to the use of long-term contracts that procure renewable energy directly and therefore support new renewable projects directly, this short-term contracting approach helps renewable project development by indirectly increasing the demand for renewable energy in the short-term by offering products that meet or exceed New York RPS requirements which are met by RECs, but as discussed below Municipal Aggregation programs in New York are not actively engaging in long-term contracts.

The 2016 NY PSC Order encourages CCAs to support the State's Clean Energy Standard ("CES") by engaging in PPAs. That NY PCS Order states that "the [CES], if adopted, will also offer CCA programs opportunities to support clean energy goals through self-initiated power purchase agreements with renewable energy generators or deployment of renewable energy resources."[75] No term length is specified in the NY PSC Order. The NY PSC's ability adopt such provisions stems from the enabling statute, which states that "in making a selection, community choice aggregators may contract with any number of contractors to design, build, operate, and/or maintain renewable energy facilities and energy efficiency measures that provide power or capacity to the community choice aggregation program."[76] Although direct contracting with renewable energy facilities is allowed and CCAs are

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[71] New York PSC, CASE 14-M-0224, Proceeding on Motion of the Commission to Enable Community Choice Aggregation Programs, Order Authorizing Framework for Community Choice Aggregation Opt-Out Program, April 21, 2016. Available at https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={38EFD3B0-48BC-400E-9795-98CB5EFAE0FA}

[72] The New York PSC has authorized the following CCA Administrators: (1) Sustainable Westchester, (2) Municipal Electric and Alliance, Inc., (3) Good Energy, L.P., and (4) Joule Assets, Inc. See New York PSC, Community Choice Aggregation. Available at https://dps.ny.gov/community-choice-aggregation

[73] New York PSC, CASE 14-M-0224, Proceeding on Motion of the Commission to Enable Community Choice Aggregation Programs, Order Authorizing Framework for Community Choice Aggregation Opt-Out Program, April 21, 2016. Available at https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={38EFD3B0-48BC-400E-9795-98CB5EFAE0FA}

[74] New York PSC, 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, January 19, 2023. Available at https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={46C00FCA-C70A-405A-9CB7-80A9498C1DD5}

[75] New York PSC, CASE 14-M-0224, Proceeding on Motion of the Commission to Enable Community Choice Aggregation Programs, Order Authorizing Framework for Community Choice Aggregation Opt-Out Program, April 21, 2016, page 37. Available at https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Programs/Clean-Energy-Communities/Public-Service-Commission-CCA-Order.pdf

encouraged to enter into long-term contracts by the NYPSC, After reviewing all relevant orders on CCA programs, publicly available information provided by New York's four CCA administrators, and the CCA webpages, we have not found any evidence that municipalities in New York have entered into long-term contracts.[77]

Barriers may be one reason why: New York has price requirements for CCAs, exacerbating the risks associated with customer migration under long-term contracts. Requirements for bid price reviews CCAs must consider when choosing contracts include the following:

> *[A]fter a review of bids submitted for energy supply services, community choice aggregators are authorized to select the ESCO or ESCOs that will offer the best service, price, environmental, greenhouse gas reductions, and local employment and local business benefits and other factors considered, provided that the per kWh supply rate for electricity and per Btu rate for gas supply services at the initiation of service is lower than the distribution utility's average monthly rate for supply services for the prior 12-month period, or lower than the distribution utility's rate at the time of a request for bids as provided for in this section and meet the requirements of subdivision one of this section, provided that community choice aggregator, may at their discretion, reject all bids or offers and re-advertise for new bids or offers in a manner provided by this act.*[78]

The imposition of such price requirements on municipal aggregation programs impose risks that municipalities may be unwilling to take if the price requirement must keep prices below the utility's average supply rate.

e. California

Community choice for California was authorized in 2002 through AB 117 which set the groundwork for CCAs to operate in the state in service territories under the jurisdiction of the California Public Utility Commission ("CPUC").[79] California's CCAs operate in a mostly regulated market which was re-regulated in response to the Enron driven electricity crisis of the early 2000s. Customers either take electricity service from the default utility, or take service from the CCA that serves the local municipality. The re-regulated market in California means that CCAs offer residential and most commercial customers a choice of service different from the state's investor owned utilities ("IOUs"). Certain large commercial and industrial end-users are allowed to buy electricity from independent electric service providers through the Direct Access program. The amount of electricity that can be supplied through the direct access program is limited to 17% of the CPUC jurisdictional load as of

[77] New York PSC, Proceeding on Motion of the Commission to Enable Community Choice Aggregation Programs. Available at https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=14-M-0224. Also see Sustainable Westchester CCA Program Administrator. Available at https://sustainablewestchester.org/. Also see Municipal Electric and Alliance, Inc. (MEGA) CCA Program Administrator. Available at https://megacca.org/. Also see Good Energy, L.P. CCA Program Administrator. Available at https://goodenergy.com. Also see Joule Assets, Inc. Available at https://www.joulecommunitypower.com/.

[78] New York Assembly Bill No. A08883. Available at https://nyassembly.gov/leg/?default_fld=&bn=A08883&term=2013&Summary=Y&Actions=Y&Text=Y&Votes=Y

[79] California Assembly Bill No. 117, Chapter 838, September 24, 2022, Electrical Restructuring: Aggregation. Available at http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0101-0150/ab_117_bill_20020924_chaptered.pdf

2021. This is compared to 52% of the 2021 jurisdictional load served by the IOUs and 31% served by CCAs. CCAs are not offered in cities that operate municipal utilities such as Los Angeles or Sacramento since these utilities are not under CPUC jurisdiction. In 2021, CCAs served 24.8 precent of the total load in the state while the 3 main IOUs served 41.4% of the total load in the state.[80] Currently 25 CCAs are operating in California.[81]

The state's CCAs are subject to the state Resource Adequacy ("RA") program and RPS requirements. However, unlike the IOUs for whom rates, portfolios, and long-term plans are subject to CPUC approval, CCAs' rates and energy portfolios are not subject to CPUC approval. CCAs are initially certified by the CPUC and CCAs must submit Integrated Resource Plans ("IRPs") to the CPUC to comply with CPUC's long-term planning process. The IRPs are part of the CCAs' responsibilities for tracking compliance with regulatory requirements involving RA and meeting GHG reduction targets.

The CCAs can be structured in one of two forms, either as a Joint Powers Authority ("JPA") or through a single jurisdiction enterprise fund. A JPA involves member municipalities establishing an independent agency, governed by representatives from each member municipality, which operates the CCA. A JPA creates a legal firewall between potential liabilities of the CCA and the assets of the member municipalities. Most of the CCAs in the state including several of the largest CCAs notably Marin Clean Energy, Central Coast Community Energy, Clean Power Alliance, and Peninsula Clean Energy are structured as JPAs. The single jurisdiction enterprise fund structure involves a CCA which is set up as a separate program or fund within an existing municipality's organization which allows the municipality to retain full control of the CCA. The largest single enterprise CCAs include Clean Power San Francisco and San Jose Clean Energy.

The CCAs in California are opt-out programs, which are typically established by an ordinance voted on by the municipality's governing body but do not require a public referendum. The CCAs are the default provider in their service communities and generally include a mix of residential, commercial, industrial, public service, and agricultural customers depending on the location of the CCA. CCA customers leaving their incumbent IOU are responsible for the Power Charge Indifference Adjustment ("PCIA") which is the charge that allows IOUs to recover the energy procurement costs that were incurred to supply the customers that are leaving to take service from a CCA.[82] The PCIA also varies by IOU service territory and customer class. It also varies by how it impacts the each CCA's rate competitiveness. To date the PCIA has not been a major barrier to CCAs expanding their customer base, however, it remains controversial with the applicable regulations for determining the PCIA in flux.[83] The CCAs seek to offer rates that are lower than the IOU that serves their market area primarily based on their ability to invest directly in generation facilities, eliminating some of the costs faced by IOUs with supply investments including return on equity requirements and certain taxes that must be recovered through the IOU's rates.

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[80] The total load in California in 2021 was 247,249,865 MWh. EIA State Electricity Profiles California 2021. https://www.eia.gov/electricity/state/California/

[81] CALCCA, What is Community Choice Aggregation?, March 13, 2023. Available at https://cal-cca.org/cca-impact/

[82] "Calculation of the Market Price Benchmarks for the Power Charge Indifference Adjustment Forecast and True Up," https://www.cpuc.ca.gov/

[83] Georgetown Law, "Power to the People: Community Choice Aggregation in California," January 16, 2020, https//www.georgetown.edu/environmental-law-review/blog/

An important part of the CCAs' approach is focused on the procurement of electricity from renewable resources with most having a goal to deliver a greater share of renewable electricity than the IOUs. An emphasis of CCA advertising to their current and potential customers is the role the CCAs play in advancing California's transition to a 100 percent carbon free electricity system. The California RPS program requires that retail electricity sellers in the state procure 60 percent of their total retail sales from renewable resources by 2030. The RPS requirement for the current 2021-2024 compliance period is 44 percent.[84] In addition, SB 350 requires that 65 percent of RPS procurement must be derived from long-term contracts of 10 years or longer.[85] Most of the CCAs have executed sufficient contracts to meet or exceed the 2021-2024 compliance and are on track to meet the 65 percent long-term contracts requirement.[86]

Given the structure of the California electricity market and the RPS compliance requirements, CCAs in the state have been very active in supporting the development of new renewable resource projects through direct long-term contracts. As of November 2022, the CCAs together have signed 243 long-term contracts, ranging from 10 year to 25 years in duration, for a combined 11,258 MW of new solar, wind, energy storage, geothermal, demand response and biogas projects.[87] These PPAs involve approximately $14 billion committed to new-build clean energy resources.[88]

The risks and barriers encountered by California CCAs include the potential opt-out of customers seeking to return to obtaining service from the local IOU, credit issues related to the typical portfolio of long-term power contracts, the PCIA charge, and developing the critical mass of customers sufficient to provide long-term sustainability for the CCA. Customer opt-out risk remains a concern, however, throughout the state the CCAs have experienced low opt-out rates of generally less than 10 percent.[89] Most of the established CCAs have opt-out rates of 1 to 3 percent.[90] As of April 2022 Central

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[84] California Public Utilities Commission, 2022 California Renewables Portfolio Standard Annual Report, November 2022. Available at https://www.cpuc.ca.gov/rps_reports_data/

[85] SB 350, The Clean Energy and Pollution Reduction Act of 2015, California Energy Commission, Renewable Energy, Clean Energy and Pollution Reduction Act-SB350, https://www.energy.ca.gov.

[86] California Public Utilities Commission, 2022 California Renewables Portfolio Standard Annual Report

[87] CALCCA, California CCAs Exceed 11 Gigawatts in New-Build Clean Energy PPAs. November 10, 2022. https://cal-cca.org/cca-impact/

[88] CALCCA, California CCAs Exceed 11 Gigawatts in New-Build Clean Energy PPAs, November 10, 2022. Available at https://cal-cca.org/california-ccas-exceed-11-gigawatts-in-long-term-contracting-with-new-build-clean-energy-resources/

[89] University of Illinois, Urbana-Champaign, S. Kennedy, B. Rosen, The Rise of Community Choice Aggregation and its Implications for California's Energy Transition: A Preliminary Assessment, Energy & Environment, June 2020. Available at https://www.researchgate.net/profile/Sean-Kennedy-13/publication/341937575_The_rise_of_community_choice_aggregation_and_its_implications_for_California's_energy_transition_A_preliminary_assessment/links/6130ed522b40ec7d8bdf69de/The-rise-of-community-choice-aggregation-and-its-implications-for-Californias-energy-transition-A-preliminary-assessment.pdf; See also

K. Trumbull, J. Gattaciecca, and J.R. DeShazo, The Role of Community Choice Aggregators in Advancing Clean Energy Transitions: Lessons from California, UCLA Luskin Center for Innovation, October 2020. Available at https://innovation.luskin.ucla.edu/wp-content/uploads/2020/11/The_Role_of_CCAs_in_Advancing_Clean_Energy_Transitions.pdf. See also

Central Coast Community Energy, California Retail Electric, Central Coast Community Energy ICR, Standard and Poors, April 28, 2022. Available at www.standardandpoors.com/ratingsdirect.

[90] S.F. Kennedy and B. Rosen, "The rise of community choice aggregation and its implications for California's energy transition: A preliminary assessment. Energy & Environment June 2020. https://www.researchgate.net/publication/341937575.

Coast Community Energy had less than 6 percent of the CCA's total customers opt out since its inception in 2017.[91] Customers can opt-out during the initial 60 days of automatic enrollment without any penalty. After the 60-day initial period customers can be subject to exit charges, although not all CCAs charge these fees. Returning customers are generally required to give the IOUs six month's notice of their intent to return and are required to remain with the IOU's service for 12 months before switching back to the CCA. The load served by active CCAs in California increased 37 percent from 42,649 GWh in 2019 to 58,618 GWh in 2022.[92]

The CCAs have been successful in retaining customers by providing green product options that offer higher renewable energy percentages of up to 100 percent and more flexibility than the IOUs green power offerings. For example the Clean Power Alliance ("CPA"), the largest CCA and the fourth largest load serving entity in the state, offers three products: (1) Lean Power which is 40 percent carbon-free sourced from renewables, nuclear and hydro sources, (2) Clean Power which is 50 percent clean power sourced from a minimum of 40 percent renewables and 10 percent hydro, and (3) 100 percent Green Power which is sourced from wind, solar and geothermal generation.[93] In 2022, CPA, which supplies communities located in the Southern California Edison service territory, was expected to serve a load of 10,942 GWh.[94] As of November 2022, CPA had executed 1,806 MW of long-term contracts with renewable resource and storage projects with terms of from 15 to 20 years project online dates ranging from 2019 to 2028.[95] Out-of-state projects accounted for 383 MW of this total reflecting 55 MW of geothermal energy from Utah and 330 MW of wind energy from Arizona and New Mexico.

Credit issues with regard to supporting the purchase of electricity through long-term contracts are generally associated with newly formed CCAs which tend to use RECs to meet their clean energy needs until they have established a financial track record. Most of the established CCAs have credit capabilities and credit ratings that allow them to execute long-term contracts.

The PCIA has been a point of contention between CCAs and the IOUs, especially Pacific Gas & Electric and despite various attempts at negotiation between the CCAs and the IOUs, CPUC rulings and proposed legislation, will remain a risk to CCAs which they have been able to mitigate to date.[96] The PCIA is set annually by the IOUs using a vintaging concept where each CCA is assigned a vintage based on the month and year the CCA customers left the IOU's service with different rates for different vintages reflecting the difference between the IOU's portfolio supply cost in the target year and the market value of that supply portfolio. The PCIA can be reduced if the cost of the portfolio declines, or

[91] Central Coast Community Energy ICR, Long-Term Rating, S&P Global Ratings, April 28, 2022.
[92] CalCCA, CCA Power in Numbers, https://cal-cca.org/cca-impact/
[93] Clean Power Alliance. Available at www.cleanpoweralliance.org
[94] California Public Utilities Commission, Community Choice Aggregation and Energy Service Provider Formation Status Report, April 4, 2022. Available at https://www.cpuc.ca.gov/media/cpuc-website/divisions/documents/
[95] CalCCA, "CCA Long-Term Clean Energy Power Purchase Agreements", November 10, 2022. Available at https://cal-cca.org/cca-impact/
[96] Utility Dive, "Key regulatory decision leaves California reliability issues unresolved, aggravates tensions," September 8, 2021. Available at https://www.utilitydive.com/news/key-regulatory-decision-leaves-california-reliability-issues-unresolved-ag/605015/#:~:text=Deep%20Dive-,Key%20regulatory%20decision%20leaves%20California%20reliability%20issues%20unresolved%2C%20aggravates%20tensions,could%20weaken%20collaboration%20between%20LSEs.

the market value increases. The PCIA continues until the relevant IOU supply contracts in the specific vintage expire thus the PCIA is designed to decline for CCAs over time.

The experience of CCAs in California demonstrates that under the right market, regulatory, and legislative conditions municipal load aggregation can be a significant driver for the development of new renewable resources. In California, the regulatory framework fostering the use of long-term contracts is the re-regulated electricity market. In states with restructured electricity markets, municipal aggregation programs are challenged to find approaches that can involve long-term contracts with new projects. The keys to using municipal load aggregation to support renewable resource project development focus on the execution of long-term PPAs with developers which provide a basis for financing these projects. The ability to utilize long-term contracts depends on the credit capability of the CCA which to a significant extent is determined by the CCA maintaining and growing a sustainable

3. Summary of Approaches and Issues Regarding the Ability of Municipal Aggregation Programs to Contribute to Renewable Resource Goals and Drive the Development of New Renewable Energy Projects

a. Key considerations with regard to driving the development of new renewable energy projects

1. **The regulatory structure of the state and how that structure impacts the outcome of the state's municipal aggregation program**. In restructured markets, municipal aggregation programs operate more like large retail electricity buyers, while in regulated markets the municipal aggregators act more like utilities with responsibilities for system reliability, long-term resource planning, RPS compliance and ratemaking authority, as is the case in California. In restructured markets, the municipal aggregators have rate negotiating responsibilities rather than ratemaking authority; this difference in ratemaking abilities impacts the economic model of the municipal aggregation program in the state. In California, CCAs have been able to support the development of renewable energy projects through the execution of long-term PPAs, and long-term PPAs are viewed as a successful way to ensure municipal aggregation stability. As of November 2022, CCAs had signed long-term agreements with more than 7,941 MW of renewable energy projects. Long-term PPAs are a proven means for driving the development of new projects in California's regulated electricity market, as demonstrated by CCA long-term PPAs executed with more than 7,900 MWs of new renewable energy projects. However, the applicability of that model to Illinois' restructured market is limited since the CCAs in California operate in a mostly regulated market environment.

2. **The limited ability of municipal aggregators in restructured markets to arrange long-term power supply contracts with new renewable energy projects.** In states with restructured markets, municipal aggregators procure electricity through competitive suppliers and are generally unable to contract directly with renewable energy projects. This exclusion from direct involvement in the competitive procurement process often makes municipal aggregation less appealing to renewable project developers. In these markets, there may also

be limits to the length of contracts that municipal aggregators can sign with competitive suppliers. The inability to use long-term procurement contracts directly or indirectly with renewable energy projects eliminates the most successful means for aggregation programs to drive the development of new projects. Long-term contracts provide a consistent and bankable income stream for project financing. While long-term PPAs may not always be required for financing a new project, the developer holding a long-term PPA will have improved chances of obtaining project financing. The price stability that a long-term contract brings is not available in the short-term electricity market.

3. **The ability to continue to maintain and grow the municipal aggregator's customer base with a key focus on minimizing customer migration back to utility service.** Municipal aggregation programs seek to minimize customer migration through the provision of lower rates and specific green products. Maintaining or increasing customer count is a key to the long-term viability of a municipal aggregator which in turn provides the stability necessary to support the longer-term development of new renewable energy projects. Municipal aggregation programs, particularly opt out programs, typically experience lower customer acquisition costs during the initial stages of program development as customers are added in large numbers. A key consideration in maintaining and expanding the customer base of existing programs will be holding down the cost of acquiring new customers.

4. **The development and maintenance of a robust market for REC from new resources with aggregators procuring RECs beyond the minimum level required by the state's RPS.** A robust market provides demand for the production, sale, and retirement of large quantities of RECs. This market structure expands the revenue options available to new projects to promote their development. In order to provide sufficient incentives to increase the rate of development of new renewable energy projects, having municipal aggregation programs with renewable energy requirements will increase demand.

5. **For some municipal aggregation programs, the goals of providing green energy to customers from renewable energy generation include supporting the development of local renewable resources**. Some government aggregation programs in Ohio, notably the cities of Columbus and Cincinnati, several CCAs in California and the Cape Light Compact have stated goals of developing local projects. In most of these cases, local is generally defined as within the municipality or the state. The support for local projects is addressed through establishing minimum percentages of local RECs. This minimum portion of the RECs procured is put towards RPS requirements and supports green product offerings. Other means to support local projects include establishing a local priority for any new contracts and developing a trust fund that is specifically earmarked to support local projects.

6. **Other options to support new project development including developing community solar projects through aggregation programs, establishing a third-party administered trust fund or establishing a separate carbon fee**. An aggregation community solar project would automatically enroll all the program's customers. Marin Clean Energy in California offers the CCAs customers the option to subscribe to shares in a 1 MW PV solar project. Several programs in New York have been exploring how to integrate community solar into municipal aggregation supply portfolios. These programs would still face the risk associated with

customers opting out of the project. A number of municipal aggregation programs have considered dedicating a portion of the customer savings to a fund which could be used to support the development of new renewable energy projects. Another option is to set up an additional revenue stream for a project development fund. The city of Athens, Ohio implemented a carbon fee to be paid by customers participating in the aggregation program into a development fund that operates under the SOPEC aggregation umbrella.

b. The primary barriers to the ability of municipal aggregation programs to drive the development of new renewable energy projects

1. **The difficulty in arranging long-term power supply contracts directly with renewable energy projects.** The absence of long-term contracting opportunities in most restructured electricity markets is a barrier to the development of new renewable energy projects. Project financing is often more difficult without the revenue stream provided by long-term PPAs, which can prevent the financing of a new project.

2. **The risk of customer migration, including the mass transition of customers back to utility service such as NOPEC implemented in Ohio**. Customer migration risk creates uncertainties regarding the long-term viability of the municipal aggregation program and its reliability as a market for renewable energy projects, as the customer needs must be met through electric procurement.

3. **Changing regulatory and legislative conditions that affect the on-going performance of municipal aggregation**. For example, SB 52 in Ohio—allowing local county boards to overrule the OPSB approval of renewable energy projects—in effect ban new utility-scale projects. In some states, the reduction of RPS targets by legislation subsequent to the original implementation of RPS legislation affect municipal aggregation programs by reducing the demand for renewable energy and limiting the need for the development of new projects. Legislative changes in response to utility concerns regarding stranded power supply costs which increase the charges such as the PCIA in California to a municipal aggregation program undermine the cost savings for ratepayers. This provides customers of municipal aggregation programs with the incentive to switch back to the default incumbent utility.

4. **RPS requirements that inadequately incentivize development of a robust REC market.** For example, the 8.5% 2026 RPS target in Ohio, limits demand for RECs. Having a low goal has a negative impact on the demand for renewable energy. However, if there is robust market for REC from new resources, municipal aggregation programs might have procurement requirements that are locational and can impede the success of municipal aggregation programs. If development of renewable resources does not meet the current customer demand for electricity, the municipal aggregator will fail to secure RECs from local sources and could be barred from procuring outside of its geographic location.

5. **Insufficient funding of trust funds dedicated to supporting renewable project development.** Inadequate earmarking of collected funds allocated to the procurement of RECs sourced from new projects reduces the ability of a municipal aggregation program to support new project development. In addition, the failure to earmark funds for local project development reduces the impact that a municipal aggregation program can have on achieving

local renewable energy goals. Note that while the largest trust fund, EarthEra, will consider providing support for projects local to the municipal aggregation programs contributing funds to the EarthEra fund, EarthEra does not prioritize the funding of local projects. In Ohio, some municipal aggregation programs have stated goals focusing on the development of local renewable energy projects; but to date, EarthEra has not provided funding to the development of any renewable energy projects in the state.

c. Conclusions

The primary challenges facing municipal aggregation programs in restructured markets that want to expand usage of renewable energy is the focus on maintaining greater cost savings relative to the cost of service from the incumbent IOU. In order for municipal aggregators to maintain and grow their customer base, and to increase the procurement of new renewable electricity they must prioritize customer retention. While maintaining a cost advantage is a continuing challenge, the benefit to the aggregator is the flexibility compared to the IOU to supply various green products to customers that involves delivering more RECs or renewable energy than the incumbent utility can, or is, able to provide. This green energy focus is often promoted as an advertising point to attract municipal aggregation customers, and to help keep current customers enrolled in the municipal aggregation program.

What remains a significant challenge to supporting the procurements of renewable electricity as well as the development of new renewable projects is the absence of the use of direct long-term contracts by municipal aggregation programs. Devising a plan to work through a competitive electricity supplier that can offer longer term support to new projects has shown promise in some states. As an example of support for new renewable energy projects, the supplier to the Columbus aggregation program, AEP Energy, has entered into long-term arrangements with local wind and solar projects in a phased approach that will result in 100 percent of the aggregation programs electricity requirements being served by renewable energy. Cincinnati's supplier Dynegy Energy Services reportedly executed a PPA with the New Market Solar project that the city had been supporting through planned electricity purchases to meet the city's needs outside of the aggregation program. Long-term REC procurement contracts can be used to provide some of revenue stream security offered to new renewable energy projects by long-term PPAs. In Ohio, the Columbus and Cincinnati aggregation programs required competitive energy supplier to work with local developers to support new renewable energy projects in order to qualify to bid for an aggregation program's supply contract. These municipal aggregation programs are using requirements for suppliers to execute long-term contracts with new renewable energy projects as an approach to address the limits associated with restrictions on the aggregation programs ability to sign long-term PPAs with these projects.

d. Recommendations

Based upon observations on municipal aggregation programs in other states and given the restructured nature of the Illinois electric market, there is not one clear statutory change that would create the right set of incentives for municipal aggregation program to be a key driver of the development of new renewable resources. However, the following recommendations are intended to spur conversation on possible changes to Illinois law that could achieve this goal.

1. Develop risk-sharing mechanisms to encourage direct long-term supply arrangements with new renewable energy projects. For example, this could be achieved through statutory changes to allow for cost reallocation of RECs and/or energy from renewable energy procured by a municipal aggregation to the rest of the Illinois RPS through the shifting of contractual obligations. This would mitigate risks between amongst customers that migrate back to default service from the utility, and the customers participating in municipal aggregation programs. However, any such provisions should consider the cost of renewable resources procured through a municipal aggregation program compared to similar resources procured through IPA procurements and insure that should such costs be reallocated that they are not at a levelized cost higher than the resources procured by the IPA.
2. Expand the REC market through updated RPS requirements that incorporate requirements specific to municipal aggregation. For example, the model used for the Large Customer Self-direct program established in Section 1-75(c)(1)(R) of the IPA Act provides bill credits to large customers who procure and retire RECs for at least a ten-year term.[97] This credit comes in the form of a lower RPS tariff rate for those customers. While this model could provide the right financial incentives to the municipal aggregation, care would be needed to craft the model in such a way that it does not create negative impacts on the RPS budget used to support the IPA's programs and procurements for RECs to comply with the Illinois RPS, and that it ensures that new projects that would not otherwise be developed are incented by any such bill reductions.
3. Mandating increased REC location and vintage transparency and awareness across any green or renewable municipal aggregation contracts could potentially spur efforts at change. If residents of a municipality under a "green" municipal aggregation contact utilizing RECs from Iowa wind projects were uniformly aware that those RECs were from already built and financed projects in another state, they may instead push municipal leadership to demand those RECs be sourced from new Illinois wind or solar projects instead, including local project with a greater tangible connection and more compelling origin story
4. The Climate and Equitable Jobs Act created robust labor and equity standards for the programs and procurements conducted by the IPA to support the Illinois RPS as well as for the Large Customer Self-direct program. Any statutory change to facilitate municipal aggregation support of the development of renewable energy projects should be designed to ensure those standards are also applicable.

[97] For more information on this program see: https://ipa.illinois.gov/renewable-resources/self-direct-program.html.