ILLINOIS POWER AGENCY

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Large Customer Self-Direct RPS Compliance Program
Proposed 2023 Delivery Year Program Size
January 20, 2023

Introduction

The Climate and Equitable Jobs Act (Public Act 102-0662) was enacted on September 15, 2021. Section 1-75(c)(1)(R) of the IPA Act, established through Public Act 102-0662, directs the Illinois Power Agency ("Agency") to "establish a self-direct renewable portfolio standard compliance program for eligible self-direct customers that purchase renewable energy credits from utility-scale wind and solar projects through long-term agreements." As part of the self-direct renewable portfolio standard compliance program, the Agency is required to "annually determine the amount of utility-scale renewable energy credits it will include each year from the self-direct renewable portfolio standard compliance program, subject to receiving qualifying applications."[1] In making this determination, "the Agency shall evaluate publicly available analyses and studies of the potential market size for utility-scale renewable energy long-term purchase agreements by commercial and industrial energy customers…"[2] In late 2022 the Agency reached out to potential participants in the program and other interested stakeholder through a series of requests for information ("RFIs") to solicit additional information that would be relevant in developing this size determination.

As discussed further below, the Agency has evaluated publicly available analyses and studies of the potential market, as well as responses to the RFIs. **Based upon this evaluation, the IPA proposes that the program size for the 2023 delivery year be set at 3 million Renewable Energy Credits ("RECs").** As explained in the Agency's Long-Term Plan and in accordance with the IPA Act, the Agency will evaluate applications for participation in the self-direct program in the 2023 delivery year during the application window of February 15 to March 15, 2023, and will approve applications which meet participation requirements up to the 3 million REC threshold in accordance with the provisions of Section 1-75(c)(1)(R) of the IPA Act.

Stakeholders who wish to comment on the proposed program size should provide comments by email to IPA.Contactus@illinois.gov by January 27, 2023. The final program size for the 2023 delivery year will be published on February 1, 2023, along with program application forms.

[1] 20 ILCS 3855/1-75(c)(1)(R)(3).
[2] Id.

Corporate Renewable Energy Contracting Background

Establishing the size of this self-direct program is based on an assessment of the potential utility-scale renewable energy long-term purchase agreements that would be executed by commercial and industrial energy customers in Illinois. These agreements involve large commercial and industrial ("C&I") customer purchases of RECs or bundled renewable energy and RECs from utility-scale renewable resources through power purchase agreements ("PPAs") or virtual power purchase agreements ("VPPAs"). PPAs require the delivery of electricity sold under the agreement to the buyer while VPPAs are financial transactions. VPPAs provide corporate buyers with flexibility in terms of the location of the renewable resource in that the renewable energy is not necessarily delivered to the buyer's specific location and allows the buyer to hedge exposure to wholesale market prices through a bundled financial transaction. RECs contracted by C&I buyers under PPAs as well as VPPAs are eligible for retirement for a large customer's participation in the Self-Direct Program. Those RECs that are obtained from eligible utility-scale wind and utility-scale solar resources must be located in Illinois or the states adjacent to Illinois, involve contracts of at least 10 years in length and meet at least 40% of the eligible self-direct customer's usage during the previous delivery year.

Data Sources

Data regarding the capacity and generation associated with large C&I PPAs and VPPAs announced or executed with utility-scale wind and solar projects are available from a number of sources.[3] None of these data sources offer a comprehensive assessment of the potential size of the C&I self-direct market in Illinois. However, the Agency reviewed and analyzed the available data to identify C&I capacity and generation trends in Illinois. Based on this analysis, the Agency developed its estimate of the amount of the RECs that should be utilized for establishing the Self-Direct RPS Compliance Program size for the initial year.

The Agency reviewed the available studies and data sources to obtain information regarding the capacities, timing and location of utility-scale wind and utility-scale solar facilities associated with corporate renewable energy purchases. Several relevant studies conducted by third parties are currently available.[4] The Agency utilized the latest C&I consumption and utility scale renewable generation data available from the U.S. Energy Information Administration ("EIA") to define the

[3] The relevant data sources include S&P Global Market Intelligence, https://www.spglobal.com/marketintelligence/en/ , Clean Energy Buyers Association (CEBA), "CEBA Deal Tracker", "CEBA State of the Market Report.", Green Biz Clean Energy Deal Tracker, RE Surety, State of the Renewables Market, BNEF Corporate Energy Market Outlook, and Edison Energy Quarterly Renewables Market Update.

[4] The Agency reviewed the currently available or updated studies including (i) S&P Global Market Intelligence, RRA Regulatory Focus, 2021 Corporate Renewables Outlook, April 21, 2021., (ii) J.Kobus, A.I. Nasrallah, J. Guidera, Columbia, SIPA, Center on Global Energy Policy, "The Role of Corporate Renewable Power Purchase Agreements in Supporting U.S. Wind and Solar Deployment, March 2021.", and (iii) Retail Industry Leaders Association, "Corporate Clean Electricity Procurement Index 2020: State Leadership & Rankings.", March 2020.

overall size of the commercial and industrial electricity markets as well as the amount of utility-scale wind and utility-scale solar capacity and generation in Illinois.[5]

Market and Size Analysis

The EIA reported that for 2021, sales of electricity to ultimate customers in Illinois for the Commercial Sector amounted to 46,962,000 MWh, up from 45,486,000 MWh in 2020, and for the Industrial Sector 41,490,000 MWh in 2021, up from 40,364,000 MWh in 2020.[6] Table 1 below summarizes the historical electricity sales to commercial and industrial customers since 2018.

Table 1: Electricity Sales to Illinois Commercial and Industrial Customers (MWh)

Year	Commercial	Industrial
2018	50,763,000	44,115,000
2019	49,277,000	43,252,000
2020	45,486,000	40,364,000
2021	46,962,000	41,490,000

Generation from utility-scale wind and utility-scale solar projects for 2021 was reported as 18,689,000 MWh and 528,000 MWh, respectively based on totaled utility-scale wind capacity of 6,275 MW and utility-scale solar capacity of 251 MW. Most of this generation and the associated capacity were not supplied directly to large C&I customers under PPAs or VPPAs. With regard to adjacent states, utility scale solar and wind generation are provided in the Table below.

Table 2: Utility Scale Wind and Solar Generation (GWh)

Year	IL Wind	IL Solar	IN Wind	IN Solar	MI Wind	MI Solar	MO Wind	MO Solar	WI Wind	WI Solar	IA Wind	IA Solar	KY Solar
2018	11,899	65	5,438	290	5,456	119	1,751	120	1,638	39	21,334	11	39
2019	14,460	63	6,217	322	5,825	143	2,044	142	1,877	37	26,305	16	46
2020	16,226	79	6,287	358	6,734	155	2,287	164	1,764	93	34,182	23	42
2021	18,689	528	7,902	669	7,808	458	2,598	656	1,615	393	36,577	228	42
2022	13,784	877	5,948	729	5,473	568	1,978	585	1,129	510	26,481	202	29

[5] For example, see U.S. Energy Information Administration Electric Power Monthly, November 2021, Tables 5.4.A. and 5..4.B. --- Sales of Electricity to Ultimate Customers by End-Use Sectors by State. https://www.eia.gov/electricity/monthly/current_month/november2021.pdf

[6] U.S. EIA, Electric Power Monthly, February 2021. www.eia.gov/electricity/monthly/.

Table 3: Utility Scale Wind and Solar Capacity (MW)

Year	IL Wind	IL Solar	IN Wind	IN Solar	MI Wind	MI Solar	MO Wind	MO Solar	WI Wind	WI Solar	IA Wind	IA Solar	KY Solar
2018	3,995	31	1,826	138	1,832	57	588	57	550	19	7,163	5	19
2019	4,855	30	2,087	153	1,956	68	686	68	630	18	8,832	8	22
2020	5,448	38	2,111	170	2,261	74	768	78	592	44	11,477	11	20
2021	6,275	251	2,653	318	2,622	218	872	312	542	187	12,281	108	20
2022	4,628	417	1,997	347	1,838	270	664	278	379	243	8,891	96	14

The EIA reported that in 2020 total wind and solar energy consumption by commercial and industrial end-users amounted to 34,569,198 MWh in the U.S. and 639,000 MWh in Illinois. This would mean that Illinois represents about 1.85% of the total solar and wind energy consumption in the U.S. The Clean Energy Buyers Association ("CEBA") reported corporate renewable energy deals amounted to 11,600 MW in 2021 and 10,600 MW through the third quarter of 2022.[7] CEBA claims that its deal tracker data represent 85% of the corporate deals reported in the U.S. Applying the percentage of commercial and industrial renewable energy consumption in Illinois to the total C&I consumption of renewable energy in the U.S., adjusting the CEBA number to reflect the full corporate renewable energy market, and applying an average capacity factor for wind and solar generation, the estimated quantity of RECs available in Illinois based on this data is 456,116 for 2021 and 416,796 for the first three quarters of 2022.

More specific data is available from various sources that typically report the amount of C&I renewable contract activity in terms of capacity, which can be converted to estimated generation using historical capacity factors relevant to each technology. However, total capacity in operation in any year does not provide an accurate indication of the likely size of the Self-Direct Customer market. Historical annual capacity additions are a better indicator of what can be expected for the number of RECs that might be included in annual applications to participate in the Self-Direct RPS Compliance Program. The Retail Industry Leaders Association, based on data obtained from the CEBA, the Solar Energy Industries Association, and the American Wind Energy Association, reported that the procurement of electricity from offsite third-party utility-scale wind and utility-scale solar projects in Illinois increased from 175 MW in 2017 to 988 MW in 2020 or an annual average increase of 271 MW during that period.[8] Assuming an average capacity factor of 30%, this would be equivalent to 712,188 RECs during each of those years.

[7] Clean Energy Buyers Association, 2021 Deal Tracker and Deal Tracker Q3 2022, www.ceba.org/deal-tracker.

[8] Retail Industry leaders Association, Corporate Clean Electricity Procurement Index 2020: State Leadership & Rankings.

S&P Global Market Intelligence indicated that as of 2022 there were at least 948 MW of corporate solar and wind power purchase agreements in place in Illinois,[9] which would reflect a total output of MWh or a total potential REC market quantity of 2,648,323.

Table 4: S&P Reported Contracted Solar and Wind Capacity and Generation

Corporate Entity	Operation Date	Technology	Capacity under Agreement (MW)	Estimated Full Output (MWh)
Amazon	2022	Solar	100	210,240
Amazon	2022	Wind	100	297,840
Amazon	2022	Solar	100	210,240
Facebook	2021	Wind	170	506,328
Microsoft	2015	Wind	175	521,220
Verizon	2020	Wind	130	387,1 92
Walmart	2019	Wind	123	366,343
Walmart	2019	Wind	50	148,920

Table 5 provides a summary of the specific C&I renewable agreements with utility-scale wind and utility-scale solar projects with operation dates of 2020 through 2023 in Illinois as reported by various sources including individual corporate public announcements, CEBA, GreenBiz, S&P Global Market Intelligence, and the U.S. Energy Information Administration.

Table 5: Corporate Agreements with Utility-Scale Wind and Utility-Scale Solar Projects in Illinois

Corporate Entity	Operation Date	Technology	Capacity under Agreement (MW)	Estimated Full Output (MWh)
Amazon	2022	Solar	100	210,240
Amazon	2023	Wind	54	159,706
Amazon	2023	Solar	90	189,216
Cargill	2020	Solar	200	420,480
Mars, Inc.	2021	Wind	121	357,829
McDonald's	2023	Wind	126	372,647
Meta	2021	Wind	175	517,565
St-Gobain	2021	Wind	120	354,902
T-Mobile	2020	Wind	158	467,287
Verizon	2020	Wind	130	387,192
Verizon	2022	Solar	152	319,985

[9] S&P Global Market Intelligence, "RRA Regulatory Focus, 2021 Corporate Renewables Outlook," April 21, 2021.

This is a summary of the publicly available information regarding recent C&I renewable resource agreements with utility-scale wind and utility-scale solar projects in Illinois. Deals that were not publicly reported are not included in the summary. The estimated full output for these contracts is based on an average capacity factor of 24% for solar capacity and 34% for wind capacity. The estimated full output in MWh reflects the total potential of 3,757,049 RECs that could be produced through this contracted capacity. It is unlikely that these contracts will produce RECs at the full output level and that all the RECs actually produced would be delivered to these corporate customers' facilities in Illinois or that all of the RECs delivered to Illinois would be available for retirement to enable participation in the Self-direct Program. However, the total estimated output provides a forecast that the Agency has taken into consideration, along with other forecasts, in making its determination of the number of RECs that could be retired by participants in the Agency's Self-Direct RPS Compliance Program.

IPA Outreach Requests for Information

In November 2022 the Agency developed and distributed three requests for information ("RFIs") targeted at the parties potentially interested in participating in the Self-Direct Program or that could provide information that would be useful to the Agency in determining the quantity of RECs that would be available to be retired by participants in the program. Potential Self-Direct Program participants include large commercial and industrial customers served by either Commonwealth Edison or Ameren Illinois that contracted for renewable energy from utility-scale solar and wind generation facilities. The Agency's RFIs solicited information from renewable energy project developers, project owners and project operators, large commercial and industrial customers, and renewable energy industry groups and business associations.

The RFI that was sent to large commercial and industrial customers located in Illinois that have or planned to execute contracts for renewable energy with utility-scale wind and solar projects solicited information regarding the interest of these customers in participating in the program and specific information relating to planned or executed contracts for renewable energy including contact capacity, contract terms, locations of the customer's consuming facilities, sources of renewable energy, and other information that would aid the Agency in determining the quantity of RECs that would be available through the Program. The RFI that was sent to renewable project developers requested information relating to renewable energy purchases from the developers' utility-scale wind and solar generating facilities by commercial and industrial customers located in Illinois that included project technology, contact capacities and generation, project locations and contract terms. The third RFI was sent to renewable energy industry organizations and business associations, including renewable energy data providers focused on publicly releasable information on corporate renewable energy contracting trends and developments.

RFIs were sent to 66 potentially interested corporate end-users, and additionally shared with renewable energy developers and trade industry groups. Based on the responses received to the RFIs, 353.5 MW of renewable energy contract capacity representing a total of 826,491 RECs could be included for retirement by potentially interested participants.

In comments submitted by TechNet on the 2022 Long-Term Renewable Resources Procurement Plan, TechNet recommended that the Agency set a delivery-year 2023 program size of 14,000,000 RECs.[10] This recommendation was based on estimated corporate renewable energy capacity contracts in Illinois of 4,000 MW and a blended solar/wind capacity factor of 40 percent. Separate comments on the Long-Term Renewable Resources Procurement Plan provided by Advanced Energy Economy and Advanced Energy Buyers Group supported a Self-Direct Program cap of 4,000 MW for the 2023 delivery-year.[11]

Self-Direct Program Size Analysis Summary and Determination

The Agency has reviewed publicly available information and studies regarding the size of the corporate renewable energy market in Illinois. Additional information based on stakeholder comments to the 2022 Long-Term Plan as well as responses to the Agency's outreach through RFIs sent to potentially interested participants was taken into consideration in the analysis to determine the size of the Self-Direct Program for the 2023 delivery-year.

A top-down analysis based on U.S. EIA data comparing the total amount of renewable energy consumed by commercial and industrial customers in the U.S. to the renewable energy consumed by commercial and industrial customers in Illinois provides a percentage factor that could be applied to national corporate contract data developed by CEBA. This analytical approach resulted in estimates of the REC quantities that could be available for retirement to count toward compliance with the Self-direct Program of 416,796 through the third quarter of 2022 and 456,116 for 2021. Extrapolating these estimates for a three-year period of deliveries for the 2023 delivery-year results in a potential range of RECs that could be available for retirement as compliance with the Self-Direct Program in the range of 1,250,390 to 1,368,350.

REC quantities potentially available based on a review of reported corporate renewable energy contracts executed by Illinois corporate entities, shown in Table 5 for the period of 2020 through 2023, amounted to a total of 3,757,049 RECs. Since not all of these contacts would produce the full contracted number of RECs and while the contracts are listed as executed by corporate entities located in Illinois not all of the potential contract renewable energy would be targeted to consuming facilities in Illinois, a reasonable estimate of program size based on this data would be less than the total contracted quantity.

The responses to the Agency's RFIs by end-users interested in participating in the program indicate that a total of 826,491 RECs could be retired in compliance with the program. Since it is likely that more customers than responded to the RFIs could participate in the program, the Agency considers this quantity to be a lower bound for the Self-Direct Program Size. It should be noted that the

[10] https://ipa.illinois.gov/content/dam/soi/en/web/ipa/documents/2022-ltp-comments/technet.pdf.
[11] https://ipa.illinois.gov/content/dam/soi/en/web/ipa/documents/2022-ltp-comments/aeeandaebg.pdf.

recommendation for the program size made by TechNet of 14,000,000 RECs is significantly higher than any of the estimates of program size based on the analysis of other available data.

Based on the analysis of information from various public sources the Agency has determined that 3,000,000 RECs is a reasonable size for the Self-Direct Program for the 2023 delivery year.

The Agency welcomes feedback from stakeholders on the size of the Self-Direct for the 2023 delivery year. Comments should be sent to IPA.Contactus@illinois.gov and are due by Friday, January 27, 2023. The IPA will announce the final program size for the 2023 delivery year on February 1, 2023.