Environmental Defense Fund and Citizens Utility Board's Responses to
Illinois Power Agency's Long-Term Renewable Resources Procurement Draft Plan

Introduction

Environmental Defense Fund ("EDF") and Citizens Utility Board ("CUB") provide the following comments in response to the Illinois Power Agency's ("IPA") Draft Long-Term Renewable Resources Procurement Plan. EDF is a national nonprofit organization whose mission is to preserve the natural systems on which all life depends. Guided by science and economics, EDF finds practical and lasting solutions to the most serious environmental problems. EDF has a strong interest in minimizing the electric industry's significant contribution to climate change and other environmental problems. CUB is a statewide organization which advocates for the rights and interests of utility residential and small business customers. Focused on promoting affordable, safe and reliable utility services, CUB is interested in finding ways to integrate new distributed energy resources to lower customer bills.

In these comments, EDF/CUB propose market-based, consumer-oriented solutions to advance the goals of the Illinois General Assembly and guide the IPA in drafting its Long-Term Renewable Resources Procurement Plan ("LTRRPP"). We commend the IPA for its diligent work educating stakeholders and considering stakeholder views in the May 17, 18, and 24 workshops on designing the procurements and programs required under the Future Energy Jobs Act (P.A. 99-0906) ("FEJA") and for its thorough review of written stakeholder comments of June. The IPA's Draft Plan is highly reflective of stakeholder input and thoughtful analysis. We appreciate the opportunity to offer additional feedback to ensure a successful Long-Term Renewable Resources Procurement Plan and associated programs and procurements under FEJA.

The success of this initial LTRRPP will depend on its ability to kick-start a new solar industry, develop strong community solar and Solar for All programs that provide equitable access to solar for new participants, and create a long-term, sustainable procurement strategy to help achieve the state's renewable energy resource, health, environmental, economic development, and community goals.

These comments are guided by the mandated approach for the LTRRPP and the policy goals set forth in FEJA. The General Assembly stated that:

> *The [Illinois Power] Agency shall develop a long-term renewable resources plan that shall include procurement programs and competitive procurement events necessary to meet the goals set forth... The [Illinois Power] Agency shall review, and may revise on an expedited basis, the long-term renewable resources procurement plan at least every 2 years… The long-term renewable resources procurement plans shall be subject to review and approval by the Commission under Section 16-111.5 of the Public Utilities Act.*

20 ILCS 3855/1-75(C)(1)(A). The General Assembly directed that the LTRRPP should be designed to maximize Illinois's interest in the health, safety, and welfare of its residents, including: minimizing pollutants that affect public health; increasing fuel and resource diversity; enhancing the reliability and resiliency of the electric grid; limiting carbon dioxide emissions; and "contributing to a cleaner and healthier environment for the citizens of this State." 20 ILCS 3855/1-75(c)(1)(I).

With the goals set forth by the General Assembly in mind, EDF/CUB focus on the importance of incentivizing residential and small commercial and industrial participation in renewable programs (in the Adjustable Block Program and Community Solar program) in the LTRRPP.

5.7 Spot Procuremennts

Balancing spot procurements with long term procurements

The Draft Plan acknowledges the challenges of balancing spot procurements with new long-term procurements. In their Draft Plan, the IPA proposes to dedicate a significant portion of its budget to meeting immediate percentage-based targets to the detriment of meeting the IPA's long-term goals. That approach could create difficulty in meeting the long-term objectives of FEJA.

Because of the well-documented history of the state's broken RPS, the state has fallen significantly behind in meeting its percentage-based RPS targets. Due to the creation of the "long-term" planning process that the IPA is now obligated to take under FEJA, the IPA is authorized to look into the future to determine how to best meet its obligations through 2030. The statute is clear that the IPA must procure renewable resources for a minimum of 25% of each utility's load by June 1, 2025 *and each year thereafter*. The use of spot procurements will make it impossible for the IPA to meet its targets in future years.

While the percentage-based targets continue, the IPA's authority to conduct new procurements could end in 2030. Thus, any spot procurements to meet annual targets should be prioritized only if that procurement mechanism is able to lead to independent development of renewable energy that meets the statutory requirements, including the requirement that the resource be located in Illinois or in adjacent states. If such a spot procurement market does not lead to the development

of sufficient resources to enable the IPA to cost-effectively meet percentage-based targets after 2025, the IPA should instead prioritize long-term contracts that allow the state to meet its "thereafter" statutory requirement.

Further, EDF/CUB are concerned that the IPA has not sufficiently taken into account the risks associated with the reliance on spot procurements over the long-term. Risks the IPA should evaluate include: the availability of resources that meet the in-state and adjacent-state criteria, the regulated recovery criteria, and budget limitations.

Given these concerns, EDF/CUB makes the following recommendations:

1. *Additional Procurements.* The IPA has the authority to prioritize procurements for new-build wind and solar projects, with all statutory language referencing a "minimum," plus an obligation to conduct additional long-term procurements to meet the "thereafter" language in the statute. EDF/CUB strongly suggest additional procurements.
2. *Catch-Up.* EDF/CUB strongly suggest the IPA create an alternative plan to catch up to the RPS targets through new long-term procurements, as opposed to expending less cost-effective budget resources on spot procurements in the early and later years.
3. *Spot Procurements are risky.* EDF/CUB strongly suggest the IPA consider the likely deficiencies and risks of relying on a spot market that will require in-state and adjacent state resources, that are not regulated, and that can be procured cost-effectively.

<u>EDF/CUB-suggested revisions to relevant IPA Language:</u>

> *Section 1-75(c)(1)(F) creates a prioritization order for REC procurements, to the extent that the "budget" of utility-collected funds, pursuant to Sections 1-75(c)(1)(E) and 1-75(c)(6) of the Act and Section 16-108(k) of the Public Utilities Act, becomes a binding constraint: 1. RECs under existing contractual obligations; 2. RECs procured through funding for the Illinois Solar for All Program; 3. RECs necessary to comply with the new wind and new photovoltaic procurement requirements described in items (i) through (iii) of subparagraph (C) of this paragraph (1) [of Section 1-75 of the IPA Act];210 4. RECs necessary to meet the remaining requirements of this subsection (c). Chapter 3 describes a substantial gap between the quantity of RECs needed to meet annual percentage RPS goals and the RECs from prior procurements that are already under contract or will be brought under contract through the Initial Forward Procurement. Taking into consideration the REC procurement priorities discussed above, to meet the annual RPS percentage goals, the Agency proposes to first satisfy the new wind and photovoltaic requirements. Then the Agency will seek to meet the remaining requirements of Section 1-75(c) (which the IPA understands to refer primarily, if not exclusively, to the percentage-based goals found in Section 1-75(c)(1)(B)). Within the proposals to meet the remaining requirements of Section 1-75(c) (after the procurement of RECs from new wind and*

photovoltaic projects), the Agency will prioritize Forward Procurements for RECs from new projects over Spot Procurements. The IPA will prioritize procurements that best enable the state to meet the goal of 25% "for each year thereafter" 2025, favoring new Forward Procurements that ensure the state does not go backwards on its commitments once the ability to do Spot Procurements may no longer exist after 2030. The IPA will utilize Spot Procurements only when a strong annual REC market is sufficient to develop new resources at the same level as a Forward Procurement. While at least 75% of RECs come must from wind and solar projects, such procurements would solicit RECs from other renewable generating technologies as well.

5.8.2 Second Subsequent Forward Procurement

EDF/CUB support the recommendation of ELPC that, in the event the IPA's projected quantity of solar REC contracts is lacking, rather than not hold the Second Forward Procurement, the IPA should expand the Second Subsequent Forward Procurement to include a solar REC procurement.

6.3 Block Structure

As explained in initial comments, EDF/CUB suggest that there should be an additional block category created in the Large DG category for projects 10 kW-25 kW. There is significant price difference in installed cost between an 11 kW system and a 99 kW system. An additional block category and adder to account for this higher installation cost would incentivize these systems to be developed and built.

Beyond just a higher installed cost for systems 10 kW-25 kW, there is a statutory obligation to ensure robust participation from residential and small commercial customers, especially prior to hitting the 5% Net Metering cap. It is expected that there will be a great deal of pent up demand for community solar and very large DG projects once the program opens. This pent up demand will expedite reaching the 5% Net Metering Cap. The IPA should incent smaller systems (under 25 kW), which are typically residential and small commercial, to be built before the cap is hit so that those projects qualify for net metering. Offering a higher incentive value for projects 10 kW- 25 kW will help to ensure these smaller projects are developed and properly compensated, in turn helping to meet the statutory obligation.

6.3.1 Transition Between Blocks

In an attempt to create a smooth transition between blocks in the Adjustable Block Incentive, the IPA has proposed the concept of a "soft close." The soft close would essentially hold open the

block for an additional 14 days after the MW size of the block has been reached. Further, for the initial block, the IPA has proposed an extended open that requires that the block be held open for a minimum of 60 days, regardless of the number, size, or total projects submitted to the program.

EDF/CUB believe the soft close concept may be appropriate in the future, but have concerns about the implementation of the soft close and the 60-day open in the early years of the program -- particularly for larger systems. The concern draws from experience in other states, where pent-up demand and a rush to build large-scale community solar projects resulted in 1 GW of community solar applications immediately upon program opening. If Illinois were to see similar levels of initial applications, with no adjustment in block prices, applications within the periods held open could exceed the MW block limits by 1000%. The IPA could be faced with a shortage of budget, all without sufficient opportunity for residential and commercial customers to participate in the program. Additional issues would result from a boom-and-bust cycle of renewable development, limiting the long-term impact of new investments on economic development, and creating interconnection and permitting delays and queues that could derail an efficient start to project development.

Further, EDF/CUB are concerned about the process for the opening of blocks, due to the same issue of pent-up demand. For example, in California, a well-covered flaw in the opening of the SGIP program allowed aggressive developers/aggregators to use programmed bots to register projects in the online platform, filling up available spots within seconds. Eventually, those reservations were scrapped, and the remaining projects that were submitted in that initial day were entered into a lottery.

Alternative Proposal

EDF/CUB support the IPA's soft-close proposal and 60-day hold open proposal for small systems, if paired with close monitoring and protections against a gaming of block sizes. For large systems and community solar, however, EDF/CUB propose an alternative:

a. When the MW limit for a large system block or community solar block is reached, new applications submitted within 14 days (the "soft close" period) will be entered into a weighted lottery, with projects scored and weighted. Scoring criteria should include progress toward development (closer to energization gets a higher score), use of a standard contract, and other criteria the IPA deems appropriate to incentivize.
b. The Program Administrator will have an additional 14 business days to vet and score all projects submitted during the soft close period.
c. The IPA will then, at its discretion, determine a reasonable budget amount to be available to the block's soft close projects, based on broader pace of project development, the total RPS resources available, and other priorities. The IPA will then work with the Project

Administrator to select projects based on their weighted score, up to the additional budget made available by the IPA.

d. By the end of the additional 14 days, the IPA will communicate to projects whether they have been allocated to the block (or if they must resubmit for the next block).

EDF/CUB-suggested revisions to relevant IPA Language:

For Small Systems, when a block's capacity is filled, the next block for that category (with a different price) will open at a price expected to be 4% lower than the previous block. In order to smooth the transition between blocks, and to avoid unnecessary rushes in the application process, the closing of each block will be a soft closing, as explained below. The Agency anticipates that there will be strong pent-up demand for participation in the Adjustable Block Program. Therefore, the treatment of block closing will be different for each Block 1 than for subsequent blocks.

- *For each Block 1, all projects submitted within 60 days of the program opening will be included in that Block 1 regardless of if the block volume is used up.*
- *For subsequent blocks (and for each Block 1 if it is not filled in the first 60 days), the block will be held open for 14 days after the block volume is used up. The Agency will announce when a block has been filled and when the closing date will be.*

For Large Systems and Community Solar Systems, when a block's capacity is filled, the next block for that category (with a different price) will open at a price expected to be 10% lower than the previous block. In order to avoid a rush in the blocks that creates unsustainable budget pressure, the closing of each block will be a soft closing lottery, as explained below. The Agency anticipates that there will be strong pent-up demand for participation in the Adjustable Block Program. Therefore, the treatment of block closing may be different for each Block 1 than for subsequent blocks.

- *For each Block ~~1~~, all projects submitted on the first day will be entered into a lottery if the total MW of projects submitted exceeds the block volume.*
- *When the MW block size is reached, a block soft close lottery ~~For subsequent blocks (and for each Block 1 if it is not filled in the first 60 days), the block~~ will be held open for 14 days after the block volume is used up. For projects submitted during the soft close lottery, the Agency will score projects based on how close the projects are to completion, and in meeting Agency requirements.*
- *The Agency will then, at its discretion, determine a reasonable budget amount to be available to the block's soft close projects, based on broader pace of project development, the total RPS resources available, and other priorities. The Agency will work with the Project Administrator to select projects based on their weighted score, up to the additional budget made available by the Agency.*

- *By the end of the additional 14 days, the Agency will communicate to projects whether they have been allocated to the block (or if they must resubmit for the next block).*

6.4 REC Pricing Model

The Draft Plan proposes to vary prices for blocks in the Large and Community Solar categories based on the size of the system, taking into account the fact that installation costs necessary to build projects of different sizes vary significantly. The IPA proposes size block categories of <= 10 kW, >10 - 100 kW, >100 - 200 kW, >200 - 500 kW, and >500 - 2,000 kW. EDF/CUB comment generally on the REC Pricing Model here, and offer more technical comments on the Appendix E supplemental workbooks later in this document. EDF/CUB identified significant errors in the workbook calculations that should be addressed and are happy to work with the IPA to address these.

Table 6-2: Block Group REC Prices ($/REC)[266]

Block Group	Block Category		Block 1	Block 2	Block 3
Group A (Ameren Illinois, Mt. Carmel, Rural Electric Cooperatives)	Small	<=10 kW	$82.35	$79.06	$75.89
	Large	>10 - 100 kW	$61.85	$59.38	$57.00
		>100 - 200 kW	$41.35	$39.70	$38.11
		>200 - 500 kW	$35.85	$34.42	$33.04
		>500 - 2,000 kW	$33.35	$32.02	$30.74
	Community Solar	<=10 kW	$102.56	$98.46	$94.52
		>10 - 100 kW	$82.06	$78.78	$75.63
		>100 - 200 kW	$61.56	$59.10	$56.73
		>200 - 500 kW	$56.06	$53.82	$51.66
		>500 - 2,000 kW	$53.56	$51.42	$49.36
Group B (ComEd, Mid-American, Municipal Utilities)	Small	<=10 kW	$68.11	$65.39	$62.77
	Large	>10 - 100 kW	$47.61	$45.71	$43.88
		>100 - 200 kW	$27.11	$26.03	$24.99
		>200 - 500 kW	$21.61	$20.75	$19.92
		>500 - 2,000 kW	$19.11	$18.35	$17.62
	Community Solar	<=10 kW	$91.23	$87.58	$84.07
		>10 - 100 kW	$70.73	$67.90	$65.18
		>100 - 200 kW	$50.23	$48.22	$46.29
		>200 - 500 kW	$44.73	$42.94	$41.22
		>500 - 2,000 kW	$42.23	$40.54	$38.92

In the Large Distributed and Community Solar Categories, a base price was set for systems between 500 kW and 2,000 kW, with Size Category Adjustment Adders added for smaller sized systems, as discussed in the next Section.

After Block 1, prices are expected to decline by 4% with each transition between Blocks. The Agency will monitor performance during the initial Blocks and may elect to modify the price change between blocks based upon the speed that each Block is filled. The process for making changes is described in Section 6.8.

Figure 6-1 and 6-2 illustrate block prices for Group A and Group B, incorporating the various adders.

Sliding Scale vs. Size Category. As stated in earlier comments, EDF/CUB believe the best way to account for variability in installed cost, and to entice accurately sized systems, is to offer a pure sliding scale model, formula-based and tracked to installation cost at each kW. EDF/CUB understand that approach poses some challenges as well, including that it could be administratively difficult, tough to project and plan, and hard to understand, even if it more accurately incentivized projects.

In earlier comments, EDF/CUB noted that the size category approach that IPA is taking could be an acceptable alternative, but expressed concern that this approach creates cliffs where projects are built slightly smaller so that the project qualifies for a higher incentive. For instance, in the example below, projects will be incentivized to be built at 99 kW instead of 101 kW because that project will collect a larger total incentive. Not until the system reaches 140 kW will the total incentive become more valuable than building a smaller system. While simple in presentation, this could create odd economic impacts that lead to inconsistent project development.

System Size (kW)	Production, Year 1 (kWh)	Production, Year 1 (MWh)	Year 1 # of REC's	Proposed Block 1 REC Price ($/REC)	Year 1 REC payment ($)
99	147430.8	147.4308	147	70.75	$ 10,430.67
100	148920	148.92	149	50.23	$ 7,480.25
101	150409.2	150.4092	150	50.23	$ 7,555.04
140	208488	208.488	208	50.23	$ 10,472.35

EDF/CUB therefore continue to recommend that the IPA implement a pure sliding scale model to avoid these market distortions. However, if the IPA does plan to implement a size category approach, it should carefully monitor the projects being developed to determine if the model is creating market distortions, and it should alter the block structure to accommodate a pure sliding scale if necessary.

Small Project Size Category. Additionally, EDF/CUB are concerned that the size category model does not properly incentivize small projects between 10 kW - 25 kW. This model provides for a

common price for a block that includes systems of significantly varying costs. For example, there is significant price difference in installed cost between an 11 kW system and a 99 kW system.

EDF/CUB strongly suggest that the IPA, if it implements the size category model, should create an additional size category for systems 10 kW - 25 kW. Such a size category would help the IPA meet its obligations to have robust participation from residential and small commercial customers, especially prior to hitting the 5% Net Metering cap.

6.5 Adders

EDF/CUB recognize great value in putting the "community" back into community solar. We encourage the IPA to incentivize, either through an upfront or ongoing adder, projects that are developed to realize these benefits.

Encouraging proximity to subscribers through an incentive, such as an adder, also advances the policy goal described above of encouraging the greatest possible amount of residential participation as early in the project as possible. The amount of the adder should be enough to compensate for the higher costs of being located in a more populated area, but should not be so high as to dis-incentivize projects in less densely populated areas. Rather, projects in less urban areas may require less of an incentive, as the costs of developing in those areas are lower (less expensive and greater availability of land, etc.). At present, solar projects in Illinois have largely been developed in more rural areas of the state. As such, it is clear that additional incentive may be needed to encourage projects closer to subscribers living in city centers.

EDF/CUB suggest the IPA use the City of Chicago Solar Permitting and Business Process Study being done by Elevate Energy and ISEA (https://www.surveymonkey.com/r/ChicagoSolar) to research whether installed costs are higher in the Chicago metropolitan area as compared to the the NREL data that was used in the CREST model. If the IPA sees a significant cost difference, they should consider creating an adder for community solar located in more densely populated areas.

EDF/CUB recognize that there is inherent geographic diversity built into the Adjustable Block Program based on the division between Block Groups A and B. The IPA should evaluate whether this method creates enough geographic diversity during the plan review in 2019.

EDF/CUB Proposed Edits to IPA Language:

> *The following set of Adders are intended to adjust the base REC price to meet specific additional purposes. These include adjusting for system size, adjusting for the additional costs of community solar, and potentially accounting for the changes to net metering, smart inverter rebates and federal tax credits.*

While the Act seeks to encourage projects "in diverse locations…not concentrated in a few geographic areas,"267 at this time the Agency is not proposing any specific geographic adders. The split of the blocks between utility service territories should help address geographic diversity, and the Agency notes that for the Supplemental Photovoltaic Procurements (which featured no geographic preferences), resulting new photovoltaic systems have been well distributed across the state.

Nevertheless, the Agency will review this determination as part of the Plan update, beginning in 2019, and if geographic diversity is not being sufficiently achieved, the Agency may propose a geographic adder in the future to encourage projects in underrepresented areas.

6.5.1 Size Category Adjustments

Again, EDF/CUB strongly suggest that the IPA, if it implements the size category model, should create an additional size category for systems 10 kW - 25 kW. Such a size category would help account for the significant difference in system installation costs between 10 kW and 100 kW, and help the IPA meet its obligations to have robust participation from residential and small commercial customers, especially prior to hitting the 5% Net Metering cap.

EDF/CUB Proposed Edits to IPA Language:

Adders will only be available for systems over 10 kW in size in both the Large and Community Solar categories. The Agency does not believe there will be significant cost differences for systems in the up to 10 kW category that would require Adders within that category; therefore, the up to 10 kW category is a single calculated price. The Agency recommends setting a base price for systems larger than 500 kW, with the following schedule of adders for smaller systems.

Table 6-3: Size Category Adjustment Adders

Size	$/REC
Over 10 kW to ~~100~~ 25 kW	-
Over 25 kW to 100 kW	-
Over 100 kW to 200 kW	-
Over 200 kW to 500 kW	-

Over 500 kW to 2000 kW	-

6.5.2 Community Solar

In general, EDF/CUB believe there is a strong need to put "community" in Community Solar, focusing on the benefits of local shared systems and residential participation. FEJA defines Community Renewable Generation Project as an electric generating facility that: 1) is powered by a renewable resource, such as wind, photovoltaic cells or panels, etc., and 2) is interconnected at the distribution system level of an electric public utility. 20 ILCS 3855/1-10. FEJA requires the development of a Community Solar Program, noting "[d]eveloping Community solar projects in Illinois will help to expand access to renewable energy resources to more Illinois residents." 20 ILCS 3855/1-5(7). The General Assembly explicitly required that the community solar program should expand access to renewable energy to a "broader group of energy consumers," including residential and small commercial customers and those who cannot install renewable energy on their own properties. 20 ILCS 3855/1-75(c)(1)(N).

For these reasons, EDF/CUB believe it is important that any Community Solar Program developed by the IPA should be focused on meeting the intent of the statute See 20 ILCS 3855/1-75(c)(1)(N) ("...to ensure robust participation opportunities for residential and small commercial customers and those who cannot install renewable energy on their own properties").

The IPA has outlined a plan which offers an ongoing adder at 50% and 75% on top of the general block incentive to entice residential participation. EDF/CUB believe that the IPA should extend that participation to include small commercial subscribers in an effort to meet the policy goal. The IPA should require 25% subscription from residential *and* small commercial customer. It will be nearly impossible to reach the statutory obligation without this requirement. The IPA should account for the added cost of having this subscriber mix in their base price offer for community solar blocks.

If the IPA does not impose a 25% residential requirement, IPA should, at a minimum, offer a residential and small subscription adder for a projects that meet a 25% subscriber requirement. The current threshold to receive an adder at 50% residential and small commercial subscription may be too onerous and not incent developers to engage with these customers. By offering an adder at 25% subscription level, the upfront work will be less burdensome and entice more residential and small commercial subscribers, helping to achieve the outlined policy goal.

On a final note in this section, EDF/CUB note some confusion as to whether the percentage adders in the table were "additive" or the category value. IPA should clarify whether its model outputs in Table 6-4 add to each other, or become the value.

EDF/CUB Proposed Edits to IPA Language with 25% Requirement:

To ensure that the benefits of solar energy are widely shared by Illinois residents, the Adjustable Block Program will require a minimum percentage of residential and small commercial subscribers of 25%, offer an additional incentive for community solar projects with a higher level of residential subscribers. To account for additional costs related to residential subscribers, the following schedule of adders will be available to community solar projects that have minimum levels of residential subscribers. For more discussion of issues related to residential subscribers, see Section 7.6.2.

EDF/CUB Proposed Edits to IPA Language with 25% Adder Level:

To ensure that the benefits of solar energy are widely shared by Illinois residents, the Adjustable Block Program will offer an additional incentive for community solar projects with a higher level of residential subscribers. To account for additional costs related to residential subscribers, the following schedule of adders will be available to community solar projects that have minimum levels of residential subscribers. For more discussion of issues related to residential subscribers, see Section 7.6.2.

Table 6-4: Community Solar Adders

Size	$/REC
Less than 25% residential energy demand	No Adder
>25% - 50% residential energy demand	-
>50% -75% residential energy demand	-
>75% residential energy demand	-

6.8.4 Tariffs on Foreign Photovoltaic Modules and Cells

A decision on the Suniva trade case should be made in December 2017. At that time, if a price floor is applied to photovoltaic panels, the IPA should update this cost in the CREST model and recalculate REC prices.

6.9 Approved Vendors

EDF/CUB support the terms outlined by the IPA to become an Approved Vendor as helpful ensure that "bad actors" are not submitting and managing projects. EDF/CUB believe, though, that the terms may unfairly require the use of aggregators, or favor certain developers.

The requirements to be an Approved Vendor may preclude other entities from serving this role, such as independent system owners. An independent system owner can be any consumer who chooses to own their system. Independent owners should not be forced to outsource Approved Vendor services to an aggregator or developer, adding unnecessary costs. Therefore, EDF/CUB recommend a separate category of vendors, named as independent system owners, who have slightly different terms to follow.

Independent System Owners would be required to:

- Participate in registration and complete any training developed by the Agency
- Abide by ongoing program terms and conditions
- Be registered to do business in Illinois, *or* provide proof that they are a resident of Illinois and the system is located at their residence
- Document that all installers and other subcontractors comply with applicable local, state, and federal laws and regulations, including, for example, maintaining Distribution Generation Installer Certification
- Provide a copy of the contract that was executed for installation services
- Register in GATS or M-RETS and demonstrate the ability to manage project application and REC management functions
- Pay applicable application fees
- Provide and maintain credit and collateral requirements for systems over 250 kW
- Submit Annual Reports on a timely basis

Unlike an "Approved Vendor," an Independent System Owner would not be required to renew their approval once a year. The training for an Independent System Owner should be available to complete online and be focused on using the program portal.

<u>EDF/CUB Proposed Revisions to IPA Language:</u>

> *Participation in the Adjustable Block Program will take place through, and conditional upon, an Approved Vendor process proposed by the Agency. The Approved Vendor model is based upon the experiences the Agency gained through the development and implementation of the Supplemental Photovoltaic Procurement as well as observations of programs in other states. While arguably there could be more flexibility available to consumers through a program under which any entity may receive a contract, by having Approved Vendors—i.e., ensuring that any entity receiving a REC delivery contract is*

registered with and vetted by the Agency and has met conditions predicate—the Agency will be better able to monitor compliance with program terms and conditions, ensure the accuracy and quality of information submitted, and reduce the administrative burden on the contractual counterparties. The model will benefit consumers because they will be able to verify that an entity that proposes to develop a photovoltaic system for them (or sell them a subscription to a community solar project) is a legitimate entity participating in the program. An Approved Vendor that fails to live up to the requirements of the Adjustable Block Program and is a "bad actor" could have a significant negative impact on the entire renewable energy market in Illinois that would extend beyond just its own actions. It is important for the Agency to have the ability to monitor the program and ensure high quality performance by the Approved Vendors.

Independent system owners, such as commercial and industrial customers who would like to participate in the Program and may have staff or consultants dedicated to energy issues, may do so without qualifying as an "Approved Vendor." These owners must, however, meet a different set of requirements.

The Agency does not anticipate restricting Approved Vendors by the entity type; as such, the types of Approved Vendors could include a company that specializes in the aggregation and management of RECs; a for-profit developer or installer of photovoltaic systems; or a municipality or non-profit serving a specific sector of the community, among others.

Approved Vendors will have to agree to the following terms:
. . .

Independent System Owners will have to agree to the following terms:

- *Participate in registration and complete any training developed by the Agency*
- *Abide by ongoing program terms and conditions*
- *Be registered to do business in Illinois, or provide proof that they are a resident of Illinois and the system is located at their residence*
- *Document that all installers and other subcontractors comply with applicable local, state, and federal laws and regulations, including, for example, maintaining Distribution Generation Installer Certification*
- *Provide a copy of the contract that was executed for installation services*
- *Register in GATS or M-RETS and demonstrate the ability to manage project application and REC management functions*
- *Pay applicable application fees*
- *Provide and maintain credit and collateral requirements for systems over 250 kW*
- *Submit Annual Reports on a timely basis*

Independent system owners will not be required to submit an annual renewal.

6.11 Program Launch

The IPA should take all steps necessary to have a portal and contracts in place by the time the Adjustable Block Program would be expected to launch. Plenty of time exists for the work to be complete for these efforts if the IPA were to start working today to prepare.

If the IPA does not wish to enter into a long-term, final contract for Program Administrators prior to the plan being approved, the IPA could still take several initial steps to prevent delays in program launch. The language of the IPA Act, 20 ILCS 3855/1-75, does not specify that the Request For Qualifications ("RFQ") required by Section 1-75(M) must not occur until after the Commission approves the Plan. Therefore, the IPA could begin the pre-work of finding the best possible providers of those services by issuing a RFQ for a Program Administrator as soon as possible. The IPA should require that respondents include in their RFQ response examples of the respondents' vision for a portal, technical experience in developing program portals and platforms, examples of how they will implement the weighted lottery system for project submissions, and examples of how they have managed any previous program.

The IPA could, in the next month, also issue an RFI for language to be incorporated into the standard REC contracts. Respondents can work with lenders and underwriters to propose standard language that they believe allows for expedited approval of project financing, while also ensuring strong consumer protections.

This way, when the program gets approved in mid- 2018, the IPA has made large strides in the due diligence on the Program Administrator requirements and in crafting a draft REC contract.

EDF/CUB Proposed Revisions to IPA Language:

> *This Plan is expected to be approved by the Commission by early April 2018. At that time, assuming the Agency's program administrator RFP process proceeds on its expected timeline, the Agency will also seek approval from the Commission for the selection of the Program Administrator. With these two elements in place, implementation of this Plan will then commence. Due to the scope and complexity of the Adjustable Block Program, and the need to develop standard contracts, a Program Manual, an online portal, and other tasks, it is reasonable to assume that it will take several months for the Program to launch. The Agency will work with the Program Administrator to find ways to expedite program opening. Until the Agency has received bids from potential Program Administrators, it is premature for the Agency to commit to a set schedule for Program Launch. To the extent possible, the Agency will prepare the application process for potential vendors to be Approved Vendors on an expedited*

schedule so that Approved Vendors will be in place prior to program launch. In theory, it may be possible to phase in certain aspects more quickly, like the community solar portion of the Adjustable Block program, because it is expected to have fewer, larger projects proposed than would distributed generation. Another option could be for the Adjustable Block to launch prior to all predicate elements being ready: for instance, without having the online portal for project submittals fully in place, instead relying on manual submittal of documents by Approved Vendors. ~~*For this draft Plan, the Agency seeks comments from interested parties on if the various program categories should launch concurrently, or start at different times.*~~ *As the Agency works to streamline the process of hiring a Program Administrator(s), and implementing several key strategies, it will begin to execute two information solicitation strategies to gather input prior to the Program Administrator coming on board:*

a) *Program Administrator RFQ: When the Agency submits its Final Plan to the Commission, it will concurrently issue a Request for Qualifications for potential Program Administrators, and include in that solicitation specific questions regarding the Administrator's capability and perspective on portal development.*
b) *Standard Contract RFI: When the Agency submits its Final Plan to the Commission, it will concurrently issue a Request for Information from interested parties to submit language or requirements for any possible standard contracts the Agency will implement.*

6.13 Consumer Protections

EDF/CUB support the proposal by the IPA to implement a standard set of disclosures. If the IPA chooses to mandate a standard contract as well, then EDF/CUB recommends that the IPA establish an accessible stakeholder group that can meet as needed to revise contract terms within a one- or two-month timeframe to respond to market needs.

6.14.1 Batches

The 100 kW minimum batch application requirement proposed by IPA could significantly disadvantage many small installers, entrepreneurs, installer training programs, or developers in more rural communities. Many of these small project developers may take months, or even years, to reach 100 kW of installed projects. Preventing them from obtaining an adjustable block incentive directly for their projects until they reached 100 kW of installed projects would unfairly disadvantage many of the businesses and communities that Act is attempting to support.

For example, a small installer focusing on residential systems is building ten 5 kW systems per year. That installer has met all the obligations of an Approved Vendor. That installer should be allowed to submit those projects individually as they are eligible, or in aggregate equalling 50

kW total for approval and contract execution. The IPA should not force the installer to contract with and pay for an aggregator.

EDF/CUB are not aware of any statutory requirement for the submission of adjustable block incentive applications in batches, only a requirement that the contracts be submitted to the Illinois Commerce Commission in batches, ostensibly to reduce the administrative burden on the utilities and the Commission for a perfunctory exercise. The entire premise of an adjustable block incentive is that it is administratively simple, provides direct access for consumers to obtain incentives, and expands opportunity to new business types.

We recognize that there is value in "batching" together projects for Approved Vendors who are building many projects and who want to contract REC obligations over a portfolio of projects. But, the Program should not deter smaller entities and Independent System Owners from being able to submit their projects for contract and payment. Thus, EDF/CUB believe that an Approved Vendor or Independent System Owner should be able to choose the size of the "batches" that they want to submit for contract.

The Approved Vendor or Independent System Owner will be in tune with the projects that are in their pipeline and responsibility. There should be an option in the portal to "batch" together projects for contract approval and execution if they chose to do so. They should also be allowed to submit individual projects of any size based on their pipeline and management obligations.

EDF/CUB Proposed Edits to IPA Language:

> *Approved Vendors have the option of sending in applications for the Adjustable Block Incentive in batches. If the Approved Vendors chooses that option, then each batch must contain at least 100 kW of proposed projects, and may be as large as 2 MW. A batch could contain a single 100 kW or larger project. ~~In order to minimize contractual volume as the program expands, once an Approved Vendor has successfully submitted five batches, the minimum size of a batch for that Approved Vendor will increase to 250 kW.~~ To provide employment opportunities for minority-owned and female-owned business enterprises as specified in Section 1- 75(c)(7) of the Act, a minority-owned or female-owned business may request to submit ~~an initial~~ a batch of only 50 kW, with any subsequent batches subject to the standard 100 kW (or more) requirement. For each project, there will be a non-refundable application fee of $10 per kW, not to exceed $5,000.*

6.16.1 Credit Requirements

EDF/CUB proposes specific adjustments to the IPA's proposed collateral requirements and clawbacks.

Small systems. The IPA has proposed creating a collateral requirement for projects in the small (<10 kW) size category. In no other program throughout the country is there a collateral requirement on small projects. This collateral requirement would create difficulty for developers and installers working in the residential or small commercial space in obtaining financing due to the high upfront requirement. EDF/CUB emphasize the importance of encouraging as much residential and small commercial system development as possible prior to hitting the 5% net metering cap. This collateral requirement would likely amount to a significant barrier to entry for smaller systems in particular. EDF/CUB understand that the IPA is concerned with project performance over the 15-year life of the REC, but do not believe that, based on the small size of projects in this category, any negative impact of project underperformance will be as large as the negative impact on project development and goal achievement. Thus, EDF/CUB propose no collateral requirement for systems less than 10 kW, but are open to IPA reviewing this requirement after the first 4 years to determine whether a problem exists.

Large Systems and Community Solar. It will be clear in the first few years of a project's deployment if it will produce less than expected over the remainder of its REC value life. For Large System and Community Solar, EDF/CUB propose that the IPA should not require collateral for systems between 10-250 kW, but instead evaluate a system's output over years 2 and 3 of production and determine whether the system is likely to be significantly below the assumed production over the 15 year REC delivery timeline. Any appropriate clawback could be done prospectively by reducing the remaining adjustable block incentive payments in years 4 and 5 (the last two, of four, adjustable block incentive payments.) This performance-based adjustment in the upfront payments will help mitigate the risks to IPA of projects receiving compensation for underperformance. Again, for 10-250 kW-sized projects, EDF/CUB believe that any negative impact of project underperformance, especially after a performance-based adjustment for significantly under-performing projects, is far less than the negative impact on project development and goal achievement that the high collateral requirement will have.

For systems >250 kW, EDF/CUB propose that the IPA use the same performance-based adjustments as those proposed for systems <250 kW. However, since these systems produce a greater proportion of overall RECs, there is a greater risk that a single or small handful of projects can have an outsized impact on reaching the Act's goals. Thus, there may be a need to have a collateral requirement for systems >250 kW. For these systems, EDF/CUB propose that, instead of requiring contracts to post collateral based on the 10% of the total contract value, collateral should only be required to be posted for 1% of the contract value, consistent with the actual risk of failure over time. If the performance-based adjustments in years 4 and 5 address the risks of a project being improperly built, the collateral requirement can be limited to the risks of a project failing in later years. Based on the NREL study, less than 1% of panels fail, and recent experience shows there is steadily decreasing degradation of panel output for new

systems. Further, in both GATs and M-RETS, there is an opportunity to auto-transfer minted REC's for a system to a counterparty, minimizing the risk of a project where RECs are minted but not being transferred. The collateral requirement should be aligned with the risk it is trying to address. Thus, it only makes sense to minimize the upfront financial burden on these larger systems over 250 kW, and benchmark the collateral requirement to the studied failure rate of 1%.

EDF/CUB Proposed Edits to IPA Language

IN A NEW SECTION

The Agency will not require collateral for systems between less than 250 kW, but instead will evaluate a system's output over the first 24-36 months of production to determine whether the system is likely to produce a quantity of RECs significantly below the assumed production over the 15 year REC delivery timeline. The Agency will calculate whether it is appropriate to claw back a portion of the Adjustable Block Incentive for the system and, if appropriate after communication with the Approved Vendor and after the Approved Vendor or system owner has had an opportunity to remedy the shortfall, the Agency could reduce the remaining adjustable block incentive payments in years 4 and 5 (the last two, of four, adjustable block incentive payments) up to the extent of the modeled shortfall. This performance-based adjustment in the upfront payments will help mitigate the risks to the Agency of projects receiving compensation for underperformance, and allow for a lower collateral requirement for all projects.

6.16.1. Credit Requirements

For large systems and community solar systems greater than 250 kW, an Approved Vendor is required to post collateral equivalent to 1~~0~~% of the total contract value when each ~~Batch's~~ contract is approved. As systems are energized, this collateral amount will be maintained through the life of the contract, and can be reduced in the later years of the contract when the collateral requirement exceeds the remaining value of the contract. This requirement will be maintained at the portfolio level, not the individual system level.

By maintaining collateral requirements at the portfolio level, the Agency is allowing Approved Vendors to manage the risk that some systems may underperform (or have other problems), and others will not, or even overperform. This allows the collateral level to be lower than it would be if maintained at the system level.

Nonetheless, an Approved Vendor will be responsible for delivering the RECs under its contracts (subject to the reduction options described in the following Section). Failure to deliver RECs will result in the utility drawing on the collateral to be compensated for undelivered RECs that were paid for. After any such drawing the Approved Vendor will need to increase its collateral to bring it back up to the 1~~0~~% of remaining value within 90

days. If the amount of collateral is insufficient to compensate the utility, the Approved Vendor will be required to make an additional payment to the utility for the remaining balance. Failure to make payment and/or maintain the collateral requirement will result in the Approved Vendor's suspension from participating in the Program.

Reconciliation of REC deliveries and collateral requirements will be conducted on an annual basis based on the Annual Reports filed by the Approved Vendors as described in Section 6.17.

7.3 Co-Location of Projects

EDF/CUB support the IPA's Co-location Standard presented in section 7.3.1 of the draft plan. Per FEJA's description of community renewable project as being limited to 2 MW nameplate capacity, projects should not be allowed to co-locate. If the intention of a developer is to build a project greater than 2 MW's on one site, they should be required to participate in the utility scale procurement.

APPENDIX E: Renewable Energy Credit Pricing Models

EDF/CUB have reviewed the pricing model developed by the IPA in the draft plan. EDF/CUB agree with the general approach of the IPA to "calculate the revenue and incentive levels required for a typical distributed solar or community solar project to meet its threshold investment requirements and the associated price in $/REC" (Appendix D at 1). Further, EDF/CUB strongly support the IPA's formula for calculating the REC price, as described: "The calculated REC price is net of (i) revenues received through net metering, (ii) any assumed incentives such as federal tax credits, and (iii) the Distributed Generation Rebate value ("Smart Inverter Rebate"), if applicable" (Appendix D at 1). Further, EDF/CUB support the use of adders or formula adjustments to address areas where REC pricing may change due to underlying formula discrepancies (e.g. net metering value in community solar), or where there is a state policy objective (e.g. to ensure robust residential and small commercial participation in community solar projects).

With that in mind, EDF/CUB offer the following comments to improve the execution of those strategies to fix errors in calculations or to ensure alignment with other Long-Term Plan objectives:

A. A payback model for residential. Adoption of the CREST model assumes a certain type of project finance on the cost side of the equation. That project finance approach is likely acceptable for the large system and community solar system projects that would be applying for the adjustable block incentive, because that approach is overwhelmingly common in these types

of projects. However, the project finance approach for small (residential and small business) systems is exceedingly different. For small systems, the IPA should look at how systems are marketed and sold to residential and small commercial customers, and the impact that the up-front REC value structure, plus available tax credits, and even the future up-front DG Rebate value structure will have on how installers expect these customers to pay for systems. Because of these upfront values, the cash required to purchase a system will be significantly less - up to 75% could be covered by upfront payments, according to EDF/CUB's preliminary calculations. In such an environment, it is likely that residential customers would pursue a debt-based transaction (through a bank loan or on-bill financing), or even a cash transaction for the remaining cost, rather than a lease, PPA, or other financing approach. It is likely that residential and small commercial customers would calculate the value of their system through a simple, or NPV, payback model, accounting for the value of their cost of cash or debt otherwise. For these reasons, it is likely appropriate for the IPA to calculate the REC pricing for residential and small commercial customers - the small system category - using a revised approach. The IPA should evaluate whether a 5-, 7-, or 10-year payback model, or similar time frame debt-model, would be a more appropriate calculation for the cost and the benefit of the system over time.

B. Net Metering value. EDF/CUB have identified a couple of issues and errors in the model that should be corrected or refined in the version of the REC Pricing Model included in the plan the IPA files with the Commission. This is not an exclusive list and EDF/CUB believe more errors may come to light upon closer review of the spreadsheets.

1. The Distribution charge in the ComEd Residential model is calculated using the Residential Single Family with Electric Space Heat customer class -- a tiny percentage of overall residential customers. This produces a significantly lower c/kWh price compared to that more appropriate class for a residential net metering calculation. The Single Family without Electric Space Heat class should be used for purposes of the calculation. *See e.g.*:

ILL. C.C. No. 10

Commonwealth Edison Company

ELECTRICITY 9th Revised Informational Sheet No. 24
(Canceling 8th Revised Informational Sheet No. 24)

DELIVERY SERVICE CHARGES

Supplement to Rate DSPP (1)

RESIDENTIAL DELIVERY SERVICE CHARGES.

	For Service Provided Beginning with the January 2017 Monthly Billing Period and Extending Through the March 2017 Monthly Billing Period (2) (5)	For Service Provided Beginning with the April 2017 Monthly Billing Period and Extending Through the December 2017 Monthly Billing Period (2) (6)
Residential Single Family Without Electric Space Heat Delivery Class		
Customer Charge (CC)	$10.52 x $IDUF_R$	$10.43 x $IDUF_R$
Standard Metering Service Charge (SMSC)	$4.65 x $IDUF_R$	$4.61 x $IDUF_R$
Distribution Facilities Charge (DFC) ($/kWh)	$0.03464 x $IDUF_R$	$0.03432 x $IDUF_R$
Illinois Electricity Distribution Tax Charge (IEDT) ($/kWh)	$0.00116 x $IDUF_R$	$0.00116 x $IDUF_R$
Residential Multi Family Without Electric Space Heat Delivery Class		
CC	$7.47 x $IDUF_R$	$7.40 x $IDUF_R$
SMSC	$4.65 x $IDUF_R$	$4.61 x $IDUF_R$
DFC ($/kWh)	$0.02765 x $IDUF_R$	$0.02740 x $IDUF_R$
IEDT ($/kWh)	$0.00116 x $IDUF_R$	$0.00116 x $IDUF_R$
Residential Single Family With Electric Space Heat Delivery Class		
CC	$12.15 x $IDUF_R$	$12.04 x $IDUF_R$
SMSC	$4.65 x $IDUF_R$	$4.61 x $IDUF_R$
DFC ($/kWh)	$0.01741 x $IDUF_R$	$0.01724 x $IDUF_R$
IEDT ($/kWh)	$0.00116 x $IDUF_R$	$0.00116 x $IDUF_R$
Residential Multi Family With Electric Space Heat Delivery Class		
CC	$8.04 x $IDUF_R$	$7.98 x $IDUF_R$
SMSC	$4.65 x $IDUF_R$	$4.61 x $IDUF_R$
DFC ($/kWh)	$0.01747 x $IDUF_R$	$0.01731 x $IDUF_R$
IEDT ($/kWh)	$0.00116 x $IDUF_R$	$0.00116 x $IDUF_R$

(Continued on Informational Sheet No. 25)

2. On the Dashboard tab in Appendix E-1, the IPA Modified CREST Base Adder for small system (< 10kW) is added to the base REC price of a 2,000 kW system. However, that 2,000 kW system price was based on the C&I net metering value. The small system REC prices should be calculated based on the residential net metering calculation separately, not on the C&I calculation.
3. It does not appear that, in the Cash Flow tab, that the tariff escalates correctly. It appears as though the net metering tariff offset is actually showing as flat for 15 years. This should be fixed. EDF/CUB also urge IPA to review estimates of tariff price increases to determine what increase it costs is appropriate (beyond the 1% used as an input in the CREST model).

4. IPA's Table shown below in Appendix D lists Levelized Cost of Energy different for residential, but that is not reflected in the general models that follow.

Table D-6 - 15 year Levelized Net Metering Credit ($/MWh)[30]

Customer Class	Ameren Illinois	ComEd
Non-Residential	$80.94	$92.27
Residential	$98.53	$108.15

C. System Cost adjustments. While EDF/CUB suggested the use of a market survey to determine gross installed system costs for a variety of systems, IPA has chosen to use NREL's CREST model to estimate system costs for the formula inputs due to its concern about the reliability of market data in a new market such as Illinois. If IPA is to use the CREST model to determine system costs, it should spend a significant amount of time making sure the inputs to the model are correct. While EDF/CUB are not documenting all of the errors they encountered in review the CREST model inputs, and believe other industry commenters will have their own observations, a few major suggested revisions include:

1. EDF/CUB question how the NPV of the CREST value is being modeled, and are unclear on some of the calculations. EDF/CUB would appreciate the opportunity to review it further.
2. EDF/CUB suggest that the most recent tariffs are included in the CREST model.
3. Consistent with EDF/CUB's comments previously in this document, IPA should include a separate pricing subcategory for projects that are in the >10 kW - 25 kW range, due to the wide disparity in prices of systems at 10 kW and 100 kW. This should be added to the model.
4. IPA should develop different capacity factors by geographic region. There is a demonstrated difference in solar PV module output between the northern region of the state, geographically represented by the ComEd territory, and the southern region of the state, geographically represented by the Ameren Illinois territory. There also exists differences within the Ameren Illinois territory itself, with module output in its far southern territory higher than its territory in the mid-upper half of the state. Accounting for the differing system outputs volumes would compensate systems more fairly.

D. Community Solar Calculations. EDF/CUB are concerned that there appear to be major discrepancies in the Community Solar calculations in multiple workbooks. It appears as though the Tariff rate set forth in the cash flow document is inconsistent with the modeled net metering value outputs and inputs. This discrepancy can misalign the PMT and NPV calculations in the workbook.

E. Community Solar Pricing. Beyond the errors, EDF/CUB remain concerned that the Community Solar pricing does not reflect the C&I subscriber financial incentive correctly. These are companies that can and do enter into long-term PPAs from renewable energy facilities today at competitive rates to suppliers, without a $43/REC price. In fact, the procurement prices in the Initial Forward Procurement are likely more reflective of the economics of Community Solar with Commercial and Industrial Subscribers. If the errors in calculation do not explain the very high prices, IPA should conduct a thorough evaluation of its cost and revenue modeling assumptions for large community solar projects with Commercial and Industrial Subscribers. There is a material danger to achieving the objectives of the Act if the Agency overpays for RECs, using up a significant percentage of its budget (as would be the case here). If the IPA does move forward with higher initial block prices for large Community Solar projects with Commercial and Industrial Subscribers, then it should implement fail-safe protections to prevent a surge in the market that could cause lasting harm, including:

1) A more rapid decrease in REC pricing for community solar projects for subsequent blocks. Prices can always be raised if needed, but high prices should not automatically continue without control for multiple blocks. That is the exact boom-and-bust cycle the Act seeks to avoid.
2) Lottery open and soft close lottery for community solar systems, to prevent a Minnesota-like surge in applications at a price that must be fixed.
3) A willingness to adjust prices more quickly if warranted.

8. Illinois Solar For All Program

EDF/CUB are signatories to the Illinois Solar For All Working Group Comments. Rather than repeating the positions set forth in those Comments, EDF/CUB incorporate those by reference here.

Dated: November 13, 2017