

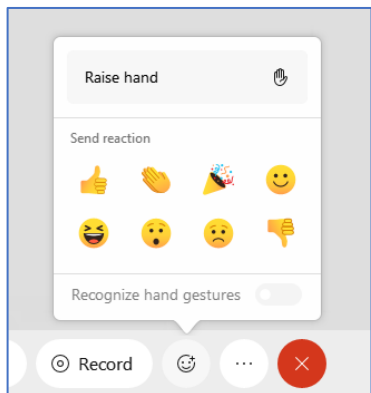


# **Long-Term Renewable Resources Procurement Plan Update**

Workshop 3  
July 13, 2021

- **Workshop 3 out of 3 for Revising Long-Term Plan**
- **Prior Workshops**
  - June 25, 2021
    - RPS Budget, Plan Development Process, Utility-Scale Procurements, Diversity & Equity
  - July 7, 2021
    - Adjustable Block Program; Illinois Solar for All
  - Presentations, recording and, requests for comments available at [www.illinois.gov/ipa](http://www.illinois.gov/ipa)
- **Written request for stakeholder feedback to follow after this workshop**

- **This workshop is being recorded**
  - The presentation and the recording will be posted on the IPA website
- **To ask question or make a comment, use the “Q&A” option on the lower right of your screen.**
  - All participants are on mute to reduce background noise.
  - When submitting questions or comments, please select “All Cohosts”
  - If you would like to clarify a question or comment you have made, you can use the “Raise Hand” feature which can be found either next to your name in the participants list or under the emoji icon at the bottom of your screen to request to speak. When this feature is used, the host will unmute you so you can speak. Once you are finished, please make sure to mute yourself.



- **Community Solar**
  - Pending legislation
  - Selection of projects to increase project variety
  - Waitlist management
  - Small subscriber requirements
  - Coordination between utility subscription management and ABP subscription management
- **Break**
- **REC Pricing**
  - Potential legislative changes to REC pricing
  - Comparison to REC prices (and other incentives) in other states
  - Applicability of CREST Model
  - Model inputs
  - Small subscriber adder
  - Illinois Solar for All REC pricing
  - Making model more dynamic

# Community Solar

- **Pending legislation would create a process for managing selection of waitlisted community solar projects**
  - 250 MW total allocated proportionately based on existing waitlist share
  - 90 days for award size, additional 90 days for portfolio of projects to be presented
  - 150 days for new REC delivery contract development
  - Substitution rights without penalty in the case of excessive interconnection costs
- **Would also create new categories for the Adjustable Block Program including a category for “community-driven community solar”**
  - Initial reopening of two years of block capacity (at least 10 MW per block)
  - After that, 5% of ABP capacity allocated to this new category
  - Would specify a variety of selection criteria that involve community members and organizations in the projects, consider project location and size, focus on local subscribers, and intersect with other new statutory provisions related to energy equity certified contractors.
- **New provisions related to contractor diversity, equity, and labor**

- **2020 Revised Long-Term Plan included the following proposal for when funding comes available to open new blocks:**
  - Half of community solar capacity allocated to waitlisted projects, other half for projects that are:  
**“intended to increase the variety of community solar locations, models, and options in Illinois”**
  - Application/selection process:
    - Minimum of 60-day notice prior to blocks opening, 60-day application window (possibly longer – stakeholder comments)
    - Project Selection
      - Projects placed in four categories based on development density of township and assigned points based on that category
      - Point assigned for projects developed in response to an RFP from a municipality or community group
      - Point assigned for projects that commit to only subscribers in same township (or adjacent townships if population is below 50,000)
      - Additional points for small projects (below 500 kW, and 100 kW)
      - Random selection for tie-breaking
  - Commission Order contemplated stakeholder feedback to refine the scoring approach



- **Stakeholder feedback**

- Request for Comments issued in November 2020, responses received in December 2020
- 9 entities provided comments
- Agency held-off on further development of selection process proposal to defer to legislative developments
  - Unable to open additional blocks and apply criteria absent legislation authorizing additional funding



- **Key takeaways from stakeholder comments**
  - Timelines should be extended
  - No consensus on development density approach for scoring
  - Consider minimum scores to ensure project diversity
  - Clarify that RFPs can be issued prior to block opening
  - Consider points for projects that don't use greenfield sites (e.g., brownfields, rooftops)
  - Consider adopting Illinois Solar for All MWBE sub-contractor approach (points for binding commitments to utilize MWBE sub-contractors)
  - Consider other geographies for subscriber commitments (perhaps county-level rather than township)
  - Include safeguards to ensure points for small projects do not lead to co-located small projects that game the process

# Selection of Projects to Increase Project Variety

- Absent legislative changes that create new community-driven community solar category and specify selection criteria, what additional refinements or considerations should the Agency include in the next Revised Long-Term Plan for future blocks that are “intended to increase the variety of community solar locations, models, and options in Illinois”?
- Besides defining the selection process, are there other considerations related to project applications or subscriber requirements that the Agency should consider for these types of projects?

- **2020 Revised Plan included provision that projects had to verify that they had maintained land use permits and site control**
  - 136 out of 797 projects removed from waitlists through this process
  - 4 projects were taken off waitlists in 2019 after initial project selection, 2 projects in 2020 and 2021
- **Should there be another round of verification?**
  - Are land use permits and site control the correct verifications, or should this process be modified?
  - What provisions should be considered for restoring lapsed items?

# Small Subscriber Requirements

- **Current approach**
  - Small Subscriber adder was created as an incentive to help meet legislative goal of “ensur[ing] robust participation opportunities for residential and small commercial customers and those who cannot install renewable energy on their own properties”
    - In lieu of a set requirement for percentage for such subscribers (note, nearly all projects made a commitment to a minimum of 50% small subscribers as part of the lottery process)
  - REC price adder for demonstrated percentage of subscribers under 25 kW (adder level to be discussed later in workshop)
  - For the 33 projects energized to date, 94% of capacity (11,305 subscribers) are small subscribers.
    - In contrast in Minnesota, 87% of subscribed capacity (by MW) have gone to commercial customers (797 MW of community solar in operation)
  - Should small subscriber approach for projects in future blocks be updated? For example:
    - Minimum subscription levels rather than a REC Price adder
    - Refining definition of small subscriber to customers with higher acquisition costs
      - Lowering 25 kW size cut-off
      - Create different small subscriber requirements or thresholds for residential and small commercial subscribers?
      - Limits on multiple subscriptions from one business entity (e.g., multiple branches of a bank) to count as small subscribers?

- **For subscribers to receive net metering credits:**
  - Community Solar Providers must enter subscriptions into utility subscription management portals
- **For the purpose of REC payments including small subscriber adders:**
  - Subscription levels based on a quarterly review of subscriptions entered into ABP portal. Subscriptions correlated with signed disclosure forms and reconciled with reports from utility subscription management portals
- **Community solar providers have reported issues with utility-portal subscriber management including**
  - Delays in processing
  - Unexpected caps on subscription sizes
    - Note, the Agency has relaxed requirement for provision of a new disclosure form for changes in subscription sizes from the greater of 1 kW or 5% to the greater of 2 kW or 10%
- **Are there adjustments that should be considered to allow for better coordination between subscription management for subscribers to receive net metering credits and the ABP program requirements to verify subscription levels for REC payments?**

- **Comments on other aspects of Community Solar for consideration in the Revised Long-Term Plan.**

**Break**



# REC Pricing

- **Pending Legislation\* would open new ABP Blocks prior to the development and approval of the next Revised Long-Term Plan:**
  - Small Distributed Generation REC Prices 4% lower than last open block (note, cut-off for Small Distributed Generation increased from 10 kW to 25 kw).
  - Large Distributed Generation REC Prices 4% lower than last open block for projects on waitlists. REC Prices for non-waitlisted project to be determined by the IPA.
  - Community Solar REC Prices 10% lower than last open block (inclusive of required 50% small subscriber commitment and adder).
  - New Public Schools category REC Prices equal to last open block for the applicable size.
  - New Equitable Eligible Contractor category REC Prices 4% lower than last open block for applicable project type and size.
  - Provisions to extend community solar REC delivery obligations to 20 years (with recalibration of REC prices from 15-year delivery obligations).
  - For Large DG and Community-Driven Community Solar, payments changed from 20% up front on energization to 15%, and subsequent payments spread over six years rather than four years.
  - Standard Community Solar projects and Public Schools projects paid as REC are delivered over life of contract rather than on front-loaded schedule.

\*all items subject to change – identified changes based on publicly available bill drafts

# Continuing 4% Price Change Between Blocks

Block Group	Block Category		Block 1	Block 2	Block 3	Block 4	Block 5
Group A	Small	≤10 kW	\$85.10	\$81.70	\$78.43	<b>\$75.29</b>	
	Large	>10 - 25 kW	\$78.70	\$75.55	\$72.53	\$69.63	<b>\$66.84</b>
		>25 - 100 kW	\$64.41	\$61.83	\$59.36	\$56.99	<b>\$54.71</b>
		>100 - 200 kW	\$52.54	\$50.44	\$48.42	\$46.48	<b>\$44.62</b>
		>200 - 500 kW	\$46.85	\$44.98	\$43.18	\$41.45	<b>\$39.79</b>
		>500 - 2,000 kW	\$43.42	\$41.68	\$40.02	\$38.42	<b>\$36.88</b>
	Community Solar	≤10 kW	\$96.12	\$92.28	\$88.58	\$85.04	<b>\$81.64</b>
		>10 - 25 kW	\$87.07	\$83.59	\$80.24	\$77.03	<b>\$73.95</b>
		>25 - 100 kW	\$70.95	\$68.11	\$65.39	\$62.77	<b>\$60.26</b>
		>100 - 200 kW	\$60.47	\$58.05	\$55.73	\$53.50	<b>\$51.36</b>
		>200 - 500 kW	\$55.46	\$53.24	\$51.11	\$49.07	<b>\$47.10</b>
		>500 - 2,000 kW	\$52.28	\$50.19	\$48.18	\$46.25	<b>\$44.40</b>
		Co-located systems exceeding 2 MW in aggregate size	\$47.03	\$45.15	\$43.34	\$41.61	<b>\$39.94</b>
Group B	Small	≤10 kW	\$72.97	\$70.05	\$67.25	<b>\$64.56</b>	
	Large	>10 - 25 kW	\$73.23	\$70.30	\$67.49	\$64.79	<b>\$62.20</b>
		>25 - 100 kW	\$65.61	\$62.99	\$60.47	\$58.05	<b>\$55.73</b>
		>100 - 200 kW	\$53.75	\$51.60	\$49.54	\$47.56	<b>\$45.66</b>
		>200 - 500 kW	\$48.07	\$46.15	\$44.30	\$42.53	<b>\$40.83</b>
		>500 - 2,000 kW	\$44.64	\$42.85	\$41.14	\$39.49	<b>\$37.91</b>
	Community Solar	≤10 kW	\$91.89	\$88.21	\$84.69	\$81.30	<b>\$78.05</b>
		>10 - 25 kW	\$82.82	\$79.51	\$76.33	\$73.28	<b>\$70.35</b>
		>25 - 100 kW	\$66.65	\$63.98	\$61.42	\$58.96	<b>\$56.60</b>
		>100 - 200 kW	\$56.12	\$53.88	\$51.72	\$49.65	<b>\$47.67</b>
		>200 - 500 kW	\$51.09	\$49.05	\$47.08	\$45.20	<b>\$43.39</b>
		>500 - 2,000 kW	\$47.88	\$45.96	\$44.13	\$42.36	<b>\$40.67</b>
		Co-located systems exceeding 2 MW in aggregate size	\$42.59	\$40.89	\$39.25	\$37.68	<b>\$36.17</b>

- **Administrative approaches (e.g., Illinois, New Jersey)**
  - Typically use CREST or similar models
- **Competitive Procurements (e.g., Delaware, Maine)**
  - Can be a single clearing price, or as bid
  - Often for larger projects, then used to set prices for smaller sized projects
- **Market-based and index pricing (e.g., New York, Massachusetts, Rhode Island)**
  - Starts with administrative approaches or competitive procurements and then adjusts based on market signals such as energy and capacity prices, or other factors
- **Can be difficult to calibrate between states because of differences in net metering and other policies.**
- **Do stakeholders who operate in other states have observations about ABP REC prices compared to incentives in those other states, and how those differences impact market activity and consumer interest in solar?**

- Agency conducted a Request for Feedback on REC Pricing in November/December 2020
  - 15 responses
  - Some interest in setting prices through competitive procurements (especially for community solar)
  - Generally supported no more than a 4% decline for next blocks, but some concerns with even that level of change
  - Concerns about impact of declining ITC, lower net metering values, changes in market costs and access to tax equity, and uncertainty about smart inverter rebate levels

- **Current approach**
  - CREST is a cash-flow modeling tool developed by the National Renewable Energy Laboratory
  - IPA REC Price Model
    - Takes the difference between the net present value of 25-year costs from CREST and the 25-year net present value of realized net metering benefits
    - Divides that difference by the estimate of 15 Year REC production to come up with a REC Price
    - Modeled six project sizes to create REC prices for project size ranges
    - Input assumptions vary for DG, Community Solar, and Illinois Solar for All Sub-Programs
    - Inputs based on Agency research, NREL studies, and stakeholder feedback

- **Key Inputs**
  - DC Capacity Factor (14% DG, 15.5% Community Solar)
  - AC/DC ratio (75%)
  - Installation costs based on NREL 2107 Benchmarking Study (rolled forward to 2019 with 4% annual decreases)
  - Financing costs and structure (45% debt/equity ratio, 12% IRR for DG, 14% of community solar)
  - Net Metering value (assumes 20% of value retained by customer)
  - \$1,000/acre/year land lease cost for community solar
  - \$6,000/MWac/year property taxes for community solar
- **Request for Comments will include a full list of inputs and what was used in current model**



# Model Inputs

- Installation Costs

Table D-1 - Residential Solar PV Installed Costs (10 kW, scaled from 5.7 kW System)

			Total Project Cost (\$)
			10 kW AC
	\$/W DC	\$/kW DC	13 kW DC
Module	0.43	430	\$5,733
Inverter	0.19	193	\$2,580
Hardware BOS - Structural Components	0.11	113	\$1,512
Hardware BOS - Electrical Components	0.24	244	\$3,257
Supply Chain Costs	0.42	419	\$5,582
Sales Tax	0.09	89	\$1,186
Installation Labor	0.30	304	\$4,052
Permitting, Inspection and Interconnection (PII)	0.10	96	\$1,275
<b>Total EPC Cost</b>	<b>1.89</b>		
Sales & Marketing (Customer Acquisition)	0.34	343	\$4,570
Overhead (General & Admin.)	0.31	308	\$4,105
Net Profit	0.35	346	\$4,613
<b>Total Installation Cost</b>	<b>2.88</b>	<b>2,885</b>	<b>\$38,465</b>
<b>NREL Model Categories</b>			
Generation Equipment			\$12,418
Balance of Plant			\$14,404
Interconnection			\$1,275
Development Costs and Fee			\$10,369
<b>Total</b>			<b>\$38,465</b>

Table D-6 - Commercial PV Installed Costs (2,000 kW, scaled from 1,000 kW System)

			Total Project Cost (\$)
			2,000 kW AC
	\$/W DC	\$/kW DC	2,667 kW DC
Module	0.43	430	\$1,146,667
Inverter	0.10	104	\$278,261
Hardware BOS - Structural Components	0.15	145	\$387,775
Hardware BOS - Electrical Components	0.14	140	\$373,936
Installation Labor & Equipment	0.13	126	\$334,932
Permitting, Inspection and Interconnection (PII)	0.10	105	\$279,045
EPC Overhead	0.17	171	\$455,620
Sales Tax	0.05	48	\$128,353
<b>Total EPC Cost</b>	<b>1.27</b>		
Contingency (4%)	0.04	41	\$109,819
Developer Overhead	0.40	397	\$1,057,962
EPC/Developer Net Profit	0.11	114	\$303,732
<b>Total Installation Cost</b>	<b>1.82</b>	<b>1,821</b>	<b>\$4,856,101</b>
<b>NREL Model Categories</b>			
Generation Equipment			\$2,422,452
Balance of Plant			\$1,096,642
Interconnection			\$279,045
Development Costs and Fee			\$1,057,962
<b>Total</b>			<b>\$4,856,101</b>

- Additional size examples available at:

- <https://www2.illinois.gov/sites/ipa/Documents/2018ProcurementPlan/AppendixD-June-4-2018.pdf>

- If using the CREST tool as the basis for the REC Pricing model is maintained and updated, what assumptions and inputs should be updated?

- **Small Subscriber Model based on stakeholder input received in 2017**
  - Used analysis from a 2016 Rhode Island Office of Energy Resources survey of subscriber acquisition, subscriber replacement, and management and billing costs
  - Those costs then calibrated to net present value of 25-year life of project and assumed net metering revenue

Adder	\$/REC	
	Group A	Group B
Less than 25% small subscriber	No adder	No adder
25% or greater small subscriber and less than 50% small subscriber	\$11.17	\$10.88
50% or greater small subscriber	\$22.34	\$21.77

Note, Initial Plan also had additional category for small subscriber levels over 75% (approx. \$11 higher)

- **How have subscriber acquisition models evolved over the past five-years, and how do those impact small subscriber acquisition and management costs?**

# Illinois Solar for All REC pricing

- Distributed Generation Sub-Program (Residential)**

- 100% of value of net metering retained by customer for 1-4 unit buildings, 50% for larger residential buildings, and debt financing level set at 0% (compared to 20% net metering value retained and 45% debt financing for Adjustable Block Program)

- 1-4 Unit Buildings

System Size	Group A	Group B
≤10 kW	\$143.09	\$143.09
>10 - 25 kW	\$127.55	\$127.55
>25 - 100 kW	\$103.28	\$103.28
>100 - 200 kW	\$90.40	\$90.40
>200 - 500 kW	\$84.41	\$84.41
>500 – 2,000 kW	\$80.69	\$80.69

- 5+ Unit Buildings

System Size	Group A	Group B
≤10 kW	\$117.62	\$118.20
>10 - 25 kW	\$107.08	\$107.65
>25 - 100 kW	\$87.70	\$88.28
>100 - 200 kW	\$74.67	\$75.26
>200 - 500 kW	\$68.59	\$69.19
>500 – 2,000 kW	\$65.32	\$65.92

# Illinois Solar for All REC pricing

- **Low-Income Community Solar Sub-Program**

- 50% of value of net metering retained by customer, 5-year payback, and 35% debt financing (compared to 20% of net metering value retained, 15-year payback, and 45% debt financing for Adjustable Block Program)

System Size	Group A	Group B
≤10 kW	\$121.99	\$119.55
>10 - 25 kW	\$111.98	\$109.52
>25 - 100 kW	\$93.32	\$90.82
>100 - 200 kW	\$80.72	\$78.20
>200 - 500 kW	\$74.78	\$72.23
>500 – 2,000 kW	\$71.29	\$68.74
Co-located systems exceeding 2 MW in aggregate size	\$64.88	\$62.30

- Subscriptions for anchor tenant at Adjustable Block REC Price
- Small subscriber adders also apply

- **Non-Profit/Public Facilities Sub-Program**

- 50% of value of net metering retained by customer, owner of project assumed to not be a taxable entity, and projects below 10 kW eligible for smart inverter rebate (compared to 20% net metering value retained, eligible for Investment Tax Credit and Bonus Depreciation, and under 10 kW projects receiving retail rate net metering for Adjustable Block Program)

System Size	Group A	Group B
≤10 kW	\$155.87	\$156.57
>10 - 25 kW	\$142.55	\$143.26
>25 - 100 kW	\$118.57	\$119.28
>100 - 200 kW	\$102.83	\$103.55
>200 - 500 kW	\$95.61	\$96.34
>500 - 2,000 kW	\$91.31	\$92.04

# Illinois Solar for All REC pricing

- **Should Solar for All REC prices be recalibrated to updated ABP REC prices?**
- **What changes to adjustments between ABP and Solar for All should be made for each sub-program?**



- **Market Participants have expressed clear interest in stability of prices over time, including clarity on when and how prices change.**
- **Market conditions can change, tariffs on imported products, changes in net metering values, increased competition, etc.**
- **To date, the IPA has not made changes to REC Prices other than the 4% changes between blocks and reducing the maximum community solar small subscriber adder for projects approved after the 2020 Revised Plan was adopted.**
- **Should the Agency consider specific mechanisms or triggers for REC Price changes, in particular if there are market indicators that REC prices are higher than needed to encourage consumer uptake of solar?**

- **Comments on other aspects of REC Pricing for consideration in the Revised Long-Term Plan.**