



Illinois Power Agency  
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Chicago, Illinois 60601

InClimate, Inc. - Program Administrator

### **Comments on ABP System Design Criteria**

Dear ABP Administrator, we are grateful for the opportunity to comment and give feedback on system design criteria. We absolutely agree that consumers should be protected from poor system design, but have concerns about how implementation could actually harm consumers rather than protect them.

Placing hard boundary lines on what projects can and cannot qualify for ABP incentives will add additional complexity and confusion for system owners to navigate. It will also prevent system owners that wish to go solar, but due to their roof shape, or preferences on the location of panels have limited design options.

We support instead an option of offering more customer education and focus on ensuring that system owners are fully aware of the implications their system's design and/or location will have on its payback and output and not on creating hard limitations. We believe that this can be accomplished by additional information in the Standard Disclosure Form or a secondary Disclosure Form only required in some circumstances be developed to help ensure customers are making fully informed decisions.

We also wish to note that since the ABP contracts have collateral, collateral drawdowns, and require the use of custom capacity factors, the program itself is not incentivizing or being harmed by systems with lower output. The utilities will still receive RECS for the same price in ABP contracts regardless of what the design specifications of the system that generated the RECS are.

*A. System Efficiency as Compared to an Ideal System. One option would be to prohibit program participation from systems failing to meet a threshold efficiency standard. For example, if a system with a given location and size with an ideal azimuth and tilt would create 100 RECs per year, a system that creates less than 75 RECs per year would be prohibited from participation. Under this construct, the ideal system calculation for a given location would be performed automatically by the application portal using PVWatts data.*

1. *Should an ABP system be compared to a system with an ideal azimuth and tilt for that system's location and be limited to a certain percentage of the production of an ideal system? If so, what would be an acceptable threshold percentage?*

2. *Rather than prohibiting participation, could a disclosure requirement scoring that system based on its percentage of optimal efficiency achieve the same goals?*

Setting a maximum system efficiency especially for residential systems is very limiting and will prevent many systems from participating. System efficiency is dictated by numerous variables listed in the questions below. We will cover the specifics of each of those factors in the relevant sections, but a few other factors are important specifically due to efficiency.

Tilt and Azimuth for residential systems is often limited to the available roof space. Shading is also highly dictated by the shape of the roof and the surrounding landscape. Setting strict limitations across all systems will result in many confused homeowners wanting to go solar, but living in a home with a roof that is not eligible.

Another important factor is the limitations of PV Watts itself. There are many other more sophisticated software models used by solar installers to calculate system efficiency and capacity factor. Approved Vendors should be allowed to use calculations based on other software and not default to PV Watts. One example of the limitation of PV Watts is PV Watts only allows for one input for system losses including shading, snow, degradation, wiring, etc. Other more sophisticated software allows for each of those factors to be taken into account and tailored to that system.

Because of these reasons and the ones listed below setting a minimum system efficiency will prevent many potential system owners from being able to participate in the ABP.

We do not support absolute ranges, but agree that project applications should need to provide more information when system production differs from PV Watts by more than 5%.

*B. Capacity factor. A project's capacity factor is used to calculate a project's REC delivery estimate, and thus its overall incentive value.*

1. *Should there be a minimum capacity factor for projects submitted?*

2. *Should an absolute range be drawn for each tracking type (fixed tilt, 1-axis tracking, 2- axis tracking)? If so, what range?*

3. *Alternatively, should capacity factors that deviate from the imputed PVWatts capacity factor by more than a certain percentage be disallowed? If so, what percentage?*

A system's AC capacity factor can be extremely impacted by the connected array's DC size. There are many reasons systems are designed with a larger than average AC size. Systems with battery backups often over-size AC size. Inverters are also only made in certain kW sizes. Installers and customers are left to choose the best size inverter for the job, but based on size limitation, pricing, and availability a wide range of AC/DC ratios are installed.

PV Watts can be used as a tool to flag systems and request additional information from the Approved Vendor, but we do not support disallowing capacity factors based on the PV Watts. As long as another approved model can support the proposed alternate capacity factor it should be allowed. As we mentioned in our response to the previous question PV Watts is extremely limited and rudimentary compared to other commercially available software i.e. Aurora, Helioscope, PVsyst. Setting PV Watts as the standard that measures other capacity factors will result in less accurate capacity factors being used.

Also, it is important to note that customers often request lower capacity factors be used for their system. ABP Contracts all have long term collateral drawdown provisions that many customers find to be quite burdensome. Many customers choose to have their system use a lower capacity factor resulting in a lower likelihood of a future collateral drawdown. This should still be allowed as an important consumer protection.

C. *Azimuth*. *Currently, ABP systems are not limited to any particular azimuth or azimuth range.*

*1. Should there be a required azimuth range for ABP systems? If so, what should that range be? (for example, should all of or portions of systems with an azimuth less than 90 degrees or greater than 270 degrees be prohibited?)*

We do not support limiting participation based on azimuth for any systems, but especially for residential systems. Rooftop systems are limited to the existing roof on the structure. Setting a limitation will make many potential system owners ineligible for the ABP, even if they fully understand the implications of a non-ideal Azimuth.

Instead we recommend that this is used as one of the criteria that is included in the additional customer information for systems that fall outside the normal design parameters.

D. Payback Period for Purchased Systems

1. *Should there be a maximum payback period for ABP systems? If so, how many years/months would constitute an unacceptable payback period?*
2. *Should an internal rate of return (“IRR”) be allowed as a substitute for simple payback, and if so, what minimum IRR should be set?*

Payback period calculations vary substantially by the assumptions used. Due to the difficulty in consistently calculating a payback period or IRR, we do not recommend any minimum or maximum standards are set based on these criteria. We would however recommend that additional information be given to customers to help them better understand the economics of going solar.

There are also many non-payback related criteria that go into designing a system that could result in customers choosing a more expensive option with a longer payback period. For example many customers have a preference for black on black modules because the modules blend in with their roof. They should be allowed to choose a longer payback period to achieve the aesthetic they prefer. This is perhaps most poignant if using a system like Tesla’s solar roof as an example. Some customers prefer to pay a high premium for certain manufacturers or a certain system design, regardless of the payback period. Also, as we mentioned in our comments earlier this longer payback period does not impact the cost of RECS for the ABP itself.

F. Financing Structure

1. *Should any of the requirements contemplated herein vary based on financing structure (ownership vs. leases vs. PPAs)? Why might leases or PPAs be handled differently in protecting consumer interests?*

We defer to companies that specialize in Leases and PPA’s for feedback here, but the relevant data points will vary substantially across the three ownership models.

To summarize we find these design criteria to be important factors that system owners or potential system owners should be aware of and well educated on. However, creating boundary lines where systems can and cannot participate in the ABP program based on these factors will prevent people who want solar from installing it. Therefore, instead of setting lines where systems become ineligible, system owners should be provided with additional information to ensure they are making a fully informed decision. I am happy to follow up with more information or answer any questions you may have.

Sincerely,

Dylan DeBiasi