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# Illinois Solar for All: Random Selection Guidance

This guidance document outlines the protocol for how project applications will be randomly selected, should random selection be necessary.

## Random Selection Overview

As noted in the [Project Selection Protocol](#), qualifying project applications within a sub-program will be scored and ranked from most to least points. For each stage of the Protocol, projects will then be selected in rank order until the relevant budget is filled. Random selection will only be necessary if there are multiple projects in the same score group (e.g., three projects have a score of 6) and accepting all of those projects would surpass the available budget within the sub-program. Then, instead of selecting all projects in that score group, individual projects within that score group will be placed in random order by the Program Administrator (using the project application numbers) and then projects chosen until the appropriate incentive level has been reached. Random selection has the potential to be used at multiple selection stages within the sub-program, in the process; for example, it can be used during both the Environmental Justice Communities Selection and the Low-Income Communities Selection. It is important to note that an individual project's scoring could differ from one stage of the selection within the sub-program (say, the Environmental Justice Communities selection stage) to the next (say, the Low-Income Communities selection stage) due to the weighting of factors like geography and project size for the applicant projects within each stage.

The random selection of projects is conducted by a script written in the Python programming language. Within each selection stage and for each score group, the script ingests the list of qualified projects (initially sorted by assigned project number) in ascending order. Next, the `random.shuffle()` function is executed a separate time for each score group, with the input list for the respective score group as its argument.

Finally, the randomized ordered lists (one for each score group) returned by this function are used to construct the order in which projects will be eligible to accept incentives within that selection stage. This ensures that randomization will be completed on the day of project selection. The script and input tables (lists of qualified projects for each random selection) will be made available upon request.

The seed value for this randomization is provided by the microsecond value of the computing system time at the time of script execution, and the seed value used for selection will be stored for replication purposes. When the seed value is retrieved, it is then transformed by application of the Mersenne Twister, which uses the seed value as an input to two one-way functions to generate a new output. That output is then used to retrieve the corresponding item from our list of qualifying projects. This method is the same randomization algorithm used by many other software systems including PHP, R, Ruby, Stata, and Microsoft Excel.

For each Project Selection, the random selections, if necessary, will be generated at the office of the ILSFA Program Administrator, Elevate Energy, in Chicago. Initial project scores include scoring rubrics based on the distribution of projects in the weighted categories (e.g. geography, size), and proposed contract values will be posted on the program website, as well as e-mailed directly to Approved Vendors.

Approved Vendors have until **12:00 p.m. CT** the day before Project Selection to review project scores. Additionally, Approved Vendors will have until that time to withdraw projects from the random selection process, by notifying their Approved Vendor Manager via e-mail.

Interested parties are invited to attend and observe the generation of randomization time seeds (please write to [Info@IllinoisSFA.com](mailto:Info@IllinoisSFA.com) if you plan to attend), and the Program Administrator will make the time seeds available upon request. A webinar of the Project Selection will also be made available. All program dates will be listed in the program year calendar.